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INDEX TO VOLUME EIGHTY

July, 1927—June, 1928

A

B

BOOKS REVIEWED

N

O

P

Q

R

S

T

U

V

W

Y

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THE RELATION OF VENEREAL DISEASES TO VISION DEFECTS.*

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New York.

Classification of the causes of blindness is altogether in a state of flux in this country. Incomplete case histories in the many eye clinics of our great cities, both at the ambulatory clinic and in the hospitals, make evaluation of records a trying study. Few of the causes of impaired vision and blindness are reportable afflictions; hence, complete records rarely come within the review of the health authorities.

Within recent years, the diagnoses established by ophthalmologists have been pretty carefully set forth at the time of admission of pupils to schools for training the blind; in some instances, workshops and institutions for the blind have had ophthalmologists determine the cause of the disaster. Missouri has a more complete compilation of dependable figures than any other state. For a number of years, the sore eyes in babies due to birth infections have been reported and in a few places we have a measure of the incidence of such infections. By tabulating the statistics in schools for the blind, we have been able to note the statistical trend over a period of years.

The medical profession has always known something of the great disaster wrought by syphilitic invasion of the eye tissues. Syphilis, however, was not a reportable disease until about the time we entered the great World War, and is not even now reported anywhere with any great degree of accuracy. A cross-section view of the prevalence of syphilis therefore is hard to secure.

The two types of venereal disease, both of which are all too common in this country and both of which are responsible for a great deal of impairment of vision and considerable blindness, do have distinct trails readily recognizable by the medical man or by the social worker.

Gonorrhea has long been recognized as a transmissible venereal infection causing great wreckage in the genito-urinary and birth canals and adjoining tissues. A hundred years ago, Gibson, in England, pointed out that expectant mothers afflicted with this disease were likely to give birth to children whose eyes would shortly be invaded or lost from gonorrheal invasion. It is rather interesting, too, to note that even a hundred years ago this wise English doctor pointed out not only the necessity for treatment of the birth canal long before the expectant birth but also the necessity for removing all possible soilage of the new born baby's eye tissues by cleansing and copious irrigation immediately after birth.

This wise preachment of Gibson fell largely on deaf ears until the advent of modern bacteriology and the application of Credé's observations in the Maternity

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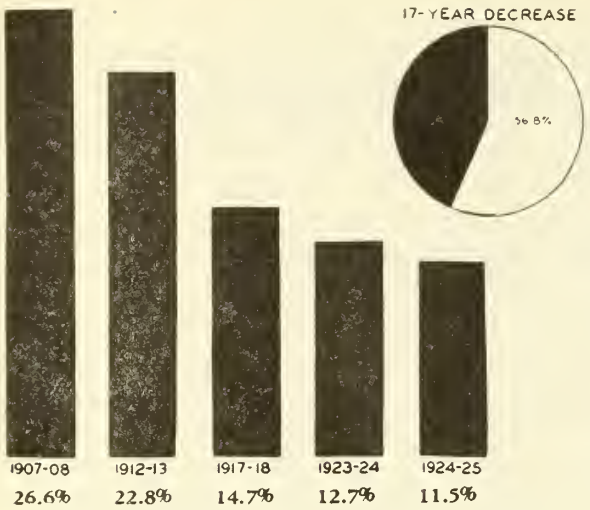

Hospital of Leipzig in 1881. The prophylactic treatment begun by Credé that, with but slight modification, has continued to the present and is responsible for averting many of the eye tragedies due to birth infections which would have occurred had this teaching not been generally adopted.

It is only fair to the teaching of Gibson to say that the modern methods were begun in 1881 and subsequently are but an elaboration and refinement of the methods advocated by him a hundred years ago, but are now based on a modern knowledge of germ life and growth.

Today we feel that the family doctor or accoucheur is grossly remiss, if the family is uninformed of the possibilities of germ invasion of the birth canal, of easy germ invasion of the eyes of the newborn and of their possible catastrophic results, and, further, we feel that those who are not alert in practicing preventive procedures that are almost certain to spare the newborn baby the tragedy of seriously impaired vision or blindness are unfaithful to the guild to which they belong.

A little comment on present teaching at this point may not be amiss. For too long a time the public and even physicians were too much impressed with the idea that the eye tragedies of the newborn were all due to gonorrhea and, in many instances, suggestive of parental immorality. About twenty-five years ago a young ophthalmologist, by the name of Stevenson, of Akron, Ohio, was wise enough to suggest full bacterial explanation of these eye infections at birth. Establishment of these facts enabled doctors to proceed with prophylactic procedures without thought of offending sentiment and enabled public authorities to teach what would be a wise precaution following every birth.

Dr. Stevenson was about the first American volunteer public health worker to point out that birth infections were due to at least half a dozen different kinds of bacteria. In the succeeding years by skillfully applying laboratory technique we have learned to recognize the various kinds of germs.

A doctor with his knowledge of birth procedure knows that it is almost impossible for a baby to be born without having its eye tissues soiled with feces and with colon bacilli. Anyone who knows the frequency of occurrence of boils, pimples and various local irritations caused by staphylococci will readily see that it is in no way disgraceful for these germs to be transmitted to the birth canal and for staphylococcal eye infections to result. Those who appreciate that the septic conditions following childbirth are usually due to streptococci and that they may have invaded the bruised tissues of the uterus or birth canal from a focus of infection in some distant area of the body, from the hands of the examining accoucheur or from instruments at delivery, will readily appreciate that streptococci may be found from time to time in the newborn baby's eyes. The pneumococci which bacteriologists find so constantly present in throats and lungs may be transferred readily by the expectant mother's hands to the vaginal tissues at any time before birth, may grow there, and thence gain access to the baby's eyes during birth. The micrococcus catarrhallis and other bacteria sometimes found in babies' sore eyes may have been transferred by the same route.

It is now generally accepted by students of the problem that approximately sixty percent of the birth infections are due to gonococci and that forty per cent are due to the other infections, any of which may be disastrous to vision.

It is from such studies that health officials find justification for urging that every newborn baby should have its eyes cleansed and protected from the possibility of any sort of birth infection, and complete justification for teaching every mother to insist upon having "drops" placed in the eyes of her baby. This is the small price of safety.

At the present time, thirty-two states supply to doctors and midwives, most of them free of cost, silver nitrate solution in the strength of one per cent in wax ampules convenient for use, and in packages suitable for carrying in bag outfits. This is the practice of your State Department of Health.

There is no excuse then, in the vast majority of our American families, for not cleaning up immediately any infection acquired as the baby passes through the birth canal.

The birth canal infected with gonococci may be rendered less hazardous for the expected baby by bringing the mother under competent medical supervision as soon as possible after conception, by utilization of the laboratory in studying its secretions and where dangerously infected, by beginning appropriate treatment long before birth occurs. Adequate treatment not only makes the baby less liable to acquire an eye infection, but also renders the mother less liable to serious bacterial invasion of her pelvic tissues.

The second place where this danger may be rendered less hazardous is by the application of drops of one per cent of nitrate of silver solution in the eyes of the baby as soon as possible after birth.

We have records from large maternity hospitals with statistics covering many thousands of births, including a large number of births where the mothers came from a walk of life with great exposure to the more virulent birth canal infections, and despite this factor these hospital records show that no eye infections developed and no eye disasters occurred.

It is not necessary to feature the need of immediate report of babies' sore eyes to the health authorities or for immediate treatment of the inflamed eyes developing within a fortnight after birth. This is the law in nearly all states now and is the kind of procedure all doctors would urge in any event.

Biblical references are made to the disease that affects the second and third generation. This undoubtedly refers to the hereditary evidences of syphilis. We have in every stage of syphilis hazards of the gravest moment to vision. It is safe to say that at least fifteen per cent of all blindness in America is due to this disease. For every case of total blindness traceable to syphilis, medical men and public health workers meet a still greater number, certainly several times as many, with seriously impaired vision due to syphilis.

It is well that the doctor should appreciate that when syphilis is transmitted to the unborn through the blood of the mother and subsequently attacks the visual apparatus, in infancy or childhood or later, it is very much more apt to affect the muscular and vascular coats, the interstitial tissues of the eye, than other parts, and it affects these coats early in life.

In heredo-syphilis of the eye the disease is apt to be sluggish and stubbornly recurring in character. The afflicted is likely to have his vision impaired a little more year by year through early childhood and school life, with partial invalidism due to impairment of vision reaching its height during the early productive years; and with partial blindness of fate, throughout the most useful period of life and until the end.

Interstitial keratitis, iritis, choroiditis, and retinitis, each may occur, and relapse

again and again, each recurring attack of these inflammations adding more impairment to vision. The pupil of the eye may be frozen; *i. e.*, completely caught in the inflammatory scar. The pupil may be closed down to a small opening or it may be caught with considerable opening, round or irregular in shape—it is fortunate if it be wide open. For this reason—an attempt to hold a good opening—you dilate the pupil as part of the treatment of iritis.

In syphilis of the eye, which is a by-product of venereal disease of the preceding generation, we may deal more hopefully now. With modern methods of attacking the virus of syphilis by appropriate medication injected into the blood vessels of the expectant mother before the birth of the child, we may avert these catastrophies and, incidentally, also avert all of the other manifestations of syphilis.

We have come within recent years to recognize the value and importance of almost routinely securing Wassermann tests of the blood of expectant mothers to determine the possibility of syphilitic infection, and with the indigent and careless woman, of invoking the aid of social workers to urge continuing treatment until cured. We are assured now by experience that if treatment of the expectant mother is begun by the fourth month of gestation and the treatment is given properly the child born of such a mother is almost certain to be born free of any evidence of syphilis.

Much may be done by the doctor, however, for the child born without having had syphilitic treatment through the blood of its mother for months prior to its birth. Hospital and ambulant clinics always have a long train of children and young adults registering and leaving, discontinuing treatment and resuming it again, month after month and year after year; most of them do not follow up treatment long enough to be cured, the vast majority of them being doomed to be economically and visually handicapped for life—community deficits, heavier deficits from year to year. Much may be done to avert these vision tragedies by holding these children to strict and long continued treatment in infancy or when recognized in childhood by finding the first eye stigmata. Here the doctor, the health officer and the public health nurse succeed best by co-operative team work.

Every effort in the interest of better social hygiene campaigns, every effort looking toward the establishment of more venereal disease clinics with follow-up workers, is bound to show its reflex in minimizing hereditary syphilis and its ravages in the tissues of the eye.

I should like to add a brief word about the acquired form of syphilis, particularly that acquired during adult life, and its relation to vision. Under modern conditions of living many an individual becomes afflicted with syphilis without in any way bearing the stigma of immorality. Whether or not the disease be acquired in innocence, is a secondary matter when we consider the disease from the standpoint of health, physical salvage of the individual and from the public standpoint.

Speaking particularly from the standpoint of conservation of vision of the afflicted, we cannot too strongly urge the routine Wassermann tests of the blood or spinal fluid of every individual who might in any way be suspected of having had or having acquired the disease, and of persistent and efficient treatment until cured. For a long and costly course of treatment the physician must often give service in part without remuneration or with altogether inadequate remuneration, particularly where no clinics are available.

Unfortunately, the eye symptoms of syphilis acquired in adult life often give no warning until long after the initial symptoms have been recognized. Unfortunately many an individual having taken treatment for a little while and seeing no signs of skin disfigurement or external evidence of disease that would prompt treatment, and not much out of health,

neglects to follow the medical man's advice. The eye tissues, like the tissues of the spinal cord and central nervous system, catch the brunt of the infection and suffer most from the toxic accumulations, sometimes only becoming easily recognizable twenty, thirty or more years after onset.

Too often an individual seeking medical advice comes with a shuffling gait and dragging toe, lost knee jerks, swaying station and failing vision. The physician or consulting ophthalmologist finds a hopelessly progressive atrophy of the optic nerve with blindness the inevitable result. If the patient had had adequate treatment fifteen or twenty years earlier no such eye catastrophe would have resulted and the locomotor ataxia or other grave complication might have been avoided.

We have no measure now of the trend of syphilitic eye disease since active intravenous medication has become a routine procedure. We shall have to wait a few years to determine if optic atrophy has been lessened as have other sequelae.

If, as physicians and health workers, we are able in the next ten or fifteen years to make the public realize that these two venereal diseases which so often cause profound impairment of vision or blindness are preventable, that they are curable if recognized in the early stages, and that it is more economical to practice prevention than cure, then we shall have performed our duty to mankind.

DISCUSSION.

Dr. Homer Dupuy (New Orleans): Mr. Chairman, I suppose you really might open the theme by making the observation that he who can distinguish syphilis under the protean forms, all things would be given unto him as to practice. Certainly, in every obscure picture in which the vision is seriously affected, the first thing we think about is lues. And at the present time, with the Wassermann tests and the other tests, it is hardly possible to escape the diagnosis.

But the most important thing, it seems to me, brought out by the paper is this fact: that though the child show no sign, not a stigmata of syphilis, whenever the background of the eye, the fundi, including the optic nerve itself, is involved, despite the negative microscopic and other evidences, I would still think it good practice to go on with the antiluetic treatment by all means.

Mr. Chairman, I am sure we are indebted to our distinguished visitor for bringing before us a very practical theme which can be discussed by all men because syphilis belongs to us all.

Dr. Dowling (New Orleans): Mr. Chairman, I don't know if all the men practicing in the country have had the same experience I had or not, but I had six years of country practice and in that time I never saw a case of gonorrheal ophthalmia. After I began the study of eye, ear and throat in the hospitals, I was rather amazed at the number of cases at the clinics for examination and for treatment. I am fearful however there are cases of this character that are not recognized by the physician. The fact that we have used nitrate of silver freely in the past years has gone a long way toward preventing this trouble. As Dr. Royer stated, it is furnished free by the State Board of Health. Nitrate of silver should always be used when the baby is born. If that is done we will get rid of ophthalmia.

It is a great pleasure to find Dr. Royer here this morning. I have known him for years. For twelve years he was associated with the Health Department of Pennsylvania. Later he was the health officer of Halifax, Nova Scotia. I had the privilege and pleasure of traveling through Massachusetts some years ago when visiting the tuberculosis hospitals and he was one of the party and was responsible for many good meals. I hope we will have an opportunity of showing him some bivalves of Louisiana before he gets away. I am glad indeed to have the opportunity of hearing him.

Dr. W. S. Taylor (Olla): I have been in active practice of medicine for fifty-six years. I suppose in that fifty-six years I have delivered as many women as most physicians. Dr. Dowling said that he never saw a gonorrheal ophthalmia for six years. I assure you I never have seen a case of gonorrheal ophthalmia in my practice for fifty-six years. During that time I was practicing medicine entirely in the country. There was no such thing as gonorrhea in my country. It was unknown. So I saw no cases of gonorrheal ophthalmia.

When we found it was necessary to use the silver one or two per cent solution in the eyes of all new-born children, of course I fell into line and I used it and I have used it since. Possibly that accounts for my remarkable escape from cases of gonorrheal ophthalmia.

Now, as Dr. Dowling says, he is furnishing this silver to the midwives and to the physicians. He is, but I want to say to him and I want to say to you that they are not using it. I know a half dozen physicians in my country that never carry nitrate of silver solution or any other antiseptic or antigonococcic with them. They go ahead and deliver these women and that is the end of it. Well, they are, fortunately, like myself, practicing medicine in the country and they don't get cases of gonorrheal ophthalmia often under such conditions.

Somebody has said that the midwife is responsible for this to a great extent. She is no more responsible for it in my country than the doctor. Absolutely no. Because he doesn't use it and she doesn't use it. Now something should be done along that line because these men are going to get caught some of these days with a case of gonorrheal ophthalmia which is going to destroy the eyes of the child. I am making this little talk for Dr. Dowling's benefit as well as for the benefit of the Louisiana State Medical Society.

Dr. Dowling: May I ask Dr. Taylor one question? As an executive officer of the Louisiana Parish Protective Association, I am sure he will see that they observe the law.

Dr. Taylor: I have done that which I could do. I have gone to them and talked to them and pointed out to them the necessity for the use of this one per cent silver solution and yet they go ahead and deliver these women, don't carry it with them, and that we don't get cases of gonorrheal ophthalmia there I must say is very fortunate. Somebody should get after them like you do and force them to do it. I am a home doctor and they frequently say, "Oh, that is Taylor. He can't force us to do anything."

Dr. Dowling: The reason I mentioned that: I read the constitution of the Protective Association and it obligates the members to comply with the health laws. That is the reason I called his attention to it.

Dr. Royer (closing): I have but one little thought to add. It was prompted by Dr. Taylor's remarks. I know there are many places in the United States where physicians are remiss in not offering this protection, but I wonder how such a doctor would defend himself in court if a case of ophthalmia neonatorum developed where he failed to use a prophylactic. I wonder if he could defend himself or say he was in line with modern medical practice.

It has been a very great pleasure to meet with you all. I very greatly appreciate, Mr. Chairman, this unusual privilege.

MENTAL HYGIENE IN RELATION TO GENERAL HEALTH.*

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"A sound mind in a sound body, is the best gift of the gods." Thus spoke Juvenal, the Latin poet, eighteen hundred years ago, and the changes wrought by centuries of time have in no manner altered the truth of this assertion. Inferior seed will yield a poor harvest, a diseased tree will bear defective fruit, and a sick body will hamper and weaken an otherwise brilliant mind. It has been said that "a sound body begets a sound mind," and even if there are exceptions, both conditions must be acquired and cultivated, if the highest round on the ladder of efficiency is to be the goal we are striving for. In order to attain this end, the laws of hygiene, as applied to both the body and mind, must be respected and obeyed. The mind may be developed to phenomenal heights, but if it has to reside in a sickly body, it will fail in the amount of work it would normally be expected to turn out, and sooner or later, it will cease to function in a practical and rational manner to the maximum of its capabilities. In other instances, minds which are, in the beginning, perfectly normal and evince great possibilities, are, when hampered by physical ill health, retarded in development, and not infrequently produce abnormal personalities. Thus it becomes a well known fact that hygiene of the body and hygiene of the mind are, like the states in the Union, "one, and inseparable"; or, as Longfellow so beautifully expressed it, when speaking of Hiawatha and his bride, "Useless each, the one without the other."

Mental hygiene has for its primary purpose the attainment in the individual of a healthy personality, well balanced, and sufficiently familiar with its own emotional mechanism, smoothly to adjust itself to any new or difficult environment in which it might be placed. In other words, it en-

*Read before the Louisiana State Medical Society, New Orleans, April 26-28, 1927.

deavors so to train the various faculties and emotions, that when a strange and powerful experience is met, the individual will not be overwhelmed with discouragement, or go off on a tangent, but will face reality squarely.

This moulding of a healthy personality must be begun in early life, before the soft mental wax of youth has been dented by adventitious ideas of unguided adolescent origin. This problem has to be worked out in the home and in the schools, and therefore, the need is great that parents and teachers be instructed in the fundamental principles of mental hygiene. It is our duty as the guardians of mental and physical health to teach the laity what they should and must know. The future welfare of our civilization depends upon this, and as the population becomes more dense and the tax on the mind becomes greater, the necessity for this knowledge becomes more urgent. One has only to visit our institutions for the care of the insane and the mentally deficient, and note the pathetic extreme to which the human mind can digress in the wrong direction, and observe the great numbers of mentally sick human beings, to become aware of the urgent necessity for prompt action of some kind.

The National Society for Mental Hygiene was born of this necessity, and has for its object the advancement of such knowledge as will aid in the betterment of present mental conditions, and the prevention of this most distressing of all human ills. It teaches us how to acquire and enjoy mental health, and thus make life worth living. In some sections of our country, this worthy organization is accomplishing splendid results, and it is to be regretted that it is not functioning actively in Louisiana. The need for it is great, and if there were branches in every large town in the state, with the majority of their memberships composed of parents and teachers, the results for good would be of incalculable benefit to society. Through the efforts of various organizations, and especially of our Board of Health, the principles of hygiene, insofar as they relate to general health, are fairly familiar to all, but in reference to that portion of it which applies to the mind, there exists almost universal ignorance among the laity. An actively functioning mental hygiene organization in the thickly populated centers of our state is the greatest need of the hour, and if I can drive this one idea home, and make it bear fruit, I will feel that this paper has not been in vain. Education is the remedy, for without it the subject will never be appreciated, and its tenets will never be observed. Our insane hospitals would not be so overcrowded, many useful citizens would be saved for society, and many more mentally deficient would develop good instead of anti-social tendencies, if the principle of mental hygiene were better understood, and more frequently applied. This branch of Medicine is more important today than ever before in the history of the world. The modern stress of living conditions, brought about by progress and competition in attaining success, makes it so. In every branch of science, in every walk of trade and industry, twice as much mental exertion is necessary as was the case a century ago. The tax on the mental faculties has become so great that unless met with a well balanced personality, backed up by a healthy body, there is going to be a break sooner or later.

The foundation for mental, as well as physical health, is more substantially laid during early life than at maturity, and the ideal in both conditions is better, and more surely realized if mental and physical hygiene is practiced during the early period of development. But this does not mean that adults are not amenable to these principles. Dr. George K. Pratt, in writing a paper on this subject, well said, "The first thing for adults to understand is that mental health means more than mere freedom from insanity." If we will bear this in mind, we will readily see there is

much to be accomplished at this period of life. There are numerous phases of mental health, just as there are many stages of physical health. A man with toothache is not in the best state of physical health, nor is a man of moderate means who is irritated and harrassed by an extravagant wife in the most desirable state of mental health. A man who becomes a victim to worry, or one who is guided by his emotions rather than his intellect, or one who habitually lives in a world of day dreams, and shuts himself up in an air castle to the exclusion of his fellow man, is placing in jeopardy his mental health.

The rational and effective course to pursue to preserve normal mental health, or to rebuild it when it is weakened, is to learn to face reality squarely. You have to be a good soldier and look the difficulties which usually beset the path of life straight in the eyes. You must take them up as they appear, and dispose of them with equinimity and reason. If this course is pursued, there is little danger of their overwhelming us. The weakling who runs from them is soon overcome with the worry and remorse born of cowardice, and starts down the thorny road of mental ill health. Tom Moore, the great Irish poet, probably did not know there was such a thing as mental hygiene, but when he wrote, "Whatever sky's above me, here's a heart for every fate," he simply emphasized in his inimitable verse one of the shining tenets of that science as it exists today. If this were taken as a text, and preached to our youth, as well as the adults of our land, it would act as a sure guidepost on the highway of life, and when the cross road of worry, despondency, and suicide was reached, the traveler would seldom hesitate as to which was his course.

Another salient maxim of mental hygiene is to learn to think with your intellect, and not with your emotions. Every human act, in order to be normal in all its phases, must emanate from our intelligence. The various emotions are strongly grafted upon our being, and unfortunately, frequently control our lives. Judgments formed, decisions made, and prejudices cherished on emotional ground, rather than reason, soon lead to mental ill health. One pursuing this course, is simply deceiving himself as to facts, and once this condition becomes a fixture in his life, he is mentally sick, and unfit to face the problems which daily arise. This, and similar conditions, make an individual anti-social. The prodromal symptoms of this common personality usually manifest themselves in young life, when prophylaxis is best exerted. Whereas many phases of poor mental health can be alleviated, and even cured, in adult life, I am sure no one will deny that the surest good results are to be obtained in childhood, and by the influence and training exerted by parents and teachers. First see that the child is physically fit, and then impress his young mind with sane, common sense thoughts, correcting him with kindness well seasoned with firmness. There are two extreme conditions not infrequently found in the home, which work incalculable harm to mental health. One is found in the harsh, tyranical parent, and the other in the over solicitous, over indulgent, unwisely loving parent. Both are likely to bring about dire results to the impressionable and youthful personalities of their children, and the over affectionate parent will probably create the greatest havoc. In both instances the parents are guided by their emotions, instead of their intellect. Bad seed are planted, and a poor harvest will be the result.

CONCLUSION.

I would stress the following points:

1. Mental and physical hygiene are so closely interwoven, that it is impossible to violate the laws of one without affecting the other.

2. The best time to lay a good foundation for mental health is during childhood.

3. Whereas mental hygiene applies to adults as well as to children, in the latter, the results are more substantial.

4. A more actively functioning mental hygiene society in Louisiana is to be desired. Its need is great, its teachings are essential, and the betterment of society demands it.

DISCUSSION.

Dr. Chas. Holbrook (New Orleans): There are so many interesting phases of Dr. Stafford's paper that one hardly knows where to begin. If we could walk through his institution, our institution that he governs, the State Colony and Training School at Alexandria, and see the 260 or 270 feeble-minded children there, we would be doubly impressed and we would all be willing to put our shoulders to the wheel and see if something could not be done to lessen this great load that we have to carry.

The feeble-minded problem and its allied problems today are probably the greatest question before us. It used to be the thing among medical men to know nothing of nervous diseases or anything relative to the mind or the brain. The medical man used to pride himself on this lack of knowledge. Fortunately that attitude is changing. It is changing in a large measure because of the public desire for information along these lines.

You can hardly pick up a magazine today without finding something relative to mental health. The public is often better educated on some of these problems than our medical profession so it behooves us to know something about these things.

The feeble-minded situation in Louisiana is especially bad. We haven't the adequate facilities to take care of the children. I am going to ask Dr. Stafford, if he will do so, to tell us just what the situation is in Louisiana, and what the plans are in the future, and what we as doctors can do to help out the situation.

Dr. W. J. Otis: Dr. Stafford's paper, when it is published in the Journal, should be read not only by every medical man but by every citizen of the Commonwealth of Louisiana. Mental hygiene in itself means making a success out of failures, and unless the individual knows how to go about making successes out of failures, the individual who attempts to teach our citizens is at a loss to know how to commence. The proper way to teach this individual how to make a success out of failures is through the physician in the medical school.

When we were given a course in neurology in the old days, we were given five or six lectures and we crammed for two questions in the department of medicine. I think some of the schools are still doing that today. They probably get three questions or four, not any more than half a dozen. The man is supposed to know all neuropsychiatry and that which neuropsychiatry teaches in probably not more than twenty lessons and some exhibitions of abnormal conduct and the four questions in this examination.

That is where the system is wrong. If we as physicians want to teach the public, what are the most of us going to teach them? It is quite true as Dr. Holbrook said that the layman is much better educated than some of the physicians. Let your institutions give so many lectures on Mental Hygiene. It is just as necessary to know the essentials of mental hygiene as it is to know about this bacillus and that bacillus or that heart sound and that fluctuation and that sinus and this sinus.

Unless we have the proper training in the medical schools we are at a loss to handle the problem on the outside. Mental hygiene should be taught in the home as well as the school. The results of abnormal conduct and abnormal reactions are largely due to parental control. As the twig so the tree. Unless we can bring that broadly to the people as physicians and know what we are talking about, we are going to have a crop of charletans springing up in our midst and then all the medical colleges in the country are not going to down them. We have it every day. We have the bone rubbers because of the neglect of systematic and intelligent massage.

There is no reason why medical schools can't take it up. They will have to face the issue sooner or later and the sooner the better.

Dr. T. J. Perkins (Jackson): In discussing Dr. Stafford's paper, I do not know that I can add very much to what he has said, but I would like to emphasize the points brought out in his paper.

I do not know of any subject that is of greater interest in public health than the question of mental hygiene. It brings out not only a medical question in connection with public health, but a sociological question as well. The sociological feature has brought about a doubt as to the legal responsibility of the character born and reared in an atmosphere of crime and rebellion against law and order. The man needs mental hygiene for the development of his aesthetic and emotional nature. It also brings about a question of differentiation between the man who is a criminal through environmental conditions, and the man who has the inherent lack that we find in the psychopathic personality.

With the increase of mental conditions, we must recognize the fact that with a properly functioning society of mental hygiene many of these individuals could have been steered around the con-

flicts upon which they finally foundered. The normal development of personality, the balancing up of personality traits, would certainly prevent a great many patients going to our mental hospitals.

It is a question upon which the public must be educated, and there is no organization that is capable of carrying on this system of education like the medical profession and the public health department in connection with our public schools. There should be a mental hygiene clinic established, as Dr. Stafford has brought out, in all of the principal towns and cities of this state. We are going to have to face this question, and as long as we neglect it, just so long will people in increasing numbers be brought to our state hospitals.

I thank you very much.

Dr. Oscar Dowling: May I say for the State Board of Health that the board is thoroughly in sympathy with the idea of mental hygiene clinics and it will co-operate to the extent of its ability.

Mr. Chairman, while I am on the floor—we have with us Dr. J. C. Geiger, a native of Louisiana, a graduate of Tulane, recently appointed executive officer of the Department of Health of the City of Chicago, and I, therefore, move that the privilege of the floor be granted Dr. Geiger.

Dr. J. C. Geiger: I am a little surprised that Dr. Dowling should take this opportunity of introducing me. I only dropped into this meeting by accident. I came down the river with Mayor Thompson's party. As a graduate of Tulane and a one-time member of the Louisiana State Medical Society, it gives me a great deal of pleasure to come before you. This trip of the Mayor of the City of Chicago is somewhat surprising to a number of people, but was done for many reasons; one in particular, to bring to the attention of this part of the Valley his efforts to make a waterway from the Great Lakes to the Gulf. Incidentally, he had with him a number of congressmen and senators and a large number of business men of Chicago on this trip.

We left Chicago, going by way of St. Louis, and took two steamers, going down the Mississippi to Cairo and up the Ohio and back again to Cairo, leaving there about Tuesday morning. The mayor's party rescued people here and there. Mayor Thompson left a large sum of money and medical supplies all along the route.

My connection with the trip is that I was detailed as executive officer of the Department of Health.

I was much interested in the discussion brought up on the question of mental hygiene. Being in charge of a large department of health, the question of mental hygiene to me is a very important point. I am particularly interested in mental hygiene as it comes under our department, but I am curiously more interested in having some continuity of plan, a practical plan that we can work out in the schools of the City of Chicago. I have no doubt that a plan could be suggested that would be of some service to a department of health, but the department of health cannot go into a school system, speaking as an administrative officer, without some definite practical continuity of action, at least an idea or a plan that would be a success.

So far as I am concerned, I thank you very much for allowing me this privilege of being here this morning. I am always glad to be back home. I happen to have been born in Alexandria and my connection with the Department of Health in Chicago is due partly to Tulane University. I happen to be connected at the University of Chicago as Professional Lecturer in Epidemiology. It is exceedingly pleasant to me to be before you and meet old friends.

Dr. Stafford (in closing): Dr. Holbrook asked that I say something about the feeble-minded situation. I am always glad to talk on that subject. It is one that is very close to me.

I suppose that most of you gentlemen are probably in the same fix that I was a few years ago before I paid any attention to this subject; I didn't really appreciate the situation.

Gentlemen, there is no question but that the subject of feeble-mindedness is one of the greatest social problems that faces us today. A survey of large areas throughout the country has demonstrated beyond contradiction that two per cent of our general population is mentally defective. That means, bringing it home, that there are close to 35,000 mentally defectives in the State of Louisiana.

When you first hear that it is appalling to you. But fortunately, we don't have to take care of all that 35,000. A large proportion of them are sufficiently high-grade to care for themselves and get out and make their own living and adjust themselves to normal social conditions. But it has been demonstrated that eight per cent of that two per cent are hospital cases, cases that should be in an institution. That will mean that there are about 2800 feeble-minded people in Louisiana that should be in an institution.

At present, we have an institution which is in its infancy, just beginning, and we have an occupancy of 262. That is as many as we can take. We have a new building under construction which will take care of 130 more, so probably about

the first of the year we will have a population of abut 400.

What we need is appropriations for buildings to care for these people. I have 500 applications in my office on file now waiting for admission.

One of the most interesting features of the feeble-minded question to the general medical profession is in regard to etiology. The second thing on the list is birth injuries as a cause. Intracranial hemorrhage stands at the top of it. Of course, you all know that heredity plays the largest part. Heredity probably accounts for fifty per cent of our feeble-minded, and birth injuries stand second on the list. It is well to bear that in mind and in all of our obstetrical cases have that in front of us. The only time to do anything is in the beginning, and not wait until the brain has been destroyed or interfered with by intracranial pressure.

MILK, ITS RELATION TO INFECTIOUS DISEASE.*

PAUL R. NEAL, M. D.,
MONROE, LA.

Good milk has done more than any other single food to promote health, but bad milk has probably caused more sickness and death than all other food combined. Milk is a good culture media and is associated with the transmission of more different infections than any other single food. It is the only animal product which is almost entirely used in its raw state. It is difficult to obtain, handle, and deliver in a safe, sanitary condition. In infancy and sickness, when we are most susceptible to infectious disease, milk is often the sole article of our diet.

Milk contains more bacteria than any other article of food, and the number of bacteria is the best single index as to its sanitary character. Bacteria which are pathogenic for man usually enter the milk from human sources; two notable exceptions are bovine tuberculosis and malta fever.

The diseases which have been spread by milk are: tuberculosis, typhoid and paratyphoid fever, diphtheria, scarlet fever, septic sore throat, dysentery, malta fever, infantile paralysis, epidemic arthritic erythema, foot-and-mouth disease, and we may also add "milk sickness," which has not been shown to be a bacterial disease.

Up to 1907, Trask of the U. S. Public Health Service, collected data on 260 milk-borne epidemics, to which may be added 240 collected by Hart, Busey and Kober, and 90 which were collected for Denmark by Caroe, making a total of 590 epidemics of milk-borne disease in the period from 1878 to 1907.

Typhoid ranks first among milk-borne diseases. We have data on 282 epidemics of this disease, transmitted by milk, representing a total of 14,973 cases with 845 deaths.

Of the 125 milk-borne epidemics of scarlet fever collected by Trask, Hart, Busey and Kober, data are given for 100, in which there were 8073 cases with 178 deaths. By the same authors also, data are given for 48 of the 51 milk-borne epidemics of diphtheria cited by them. These include 2875 cases with 242 deaths. From the same source we have data on 6 out of 7 reported milk-borne epidemics of septic sore throat, comprising a total of 921 cases with no deaths. Since 1908, severe epidemics of septic sore throat have occurred, traceable in each instance to milk, and adding more than 12,000 cases to the number recorded above. These figures will give you some idea of the enormous economic loss in sickness and death due to milk-borne disease.

Leslie Frank of the U. S. Public Health Service has collected data on 112 epidemics from 1918 to 1923, an average of 18.7 epidemics due to milk each year. For the year 1924 he collected data on 44 such epidemics for that one year alone. This apparent increase in the prevalence of milk-borne disease is probably due to the fact that health officers are studying epidemics

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more efficiently and are more frequently able to determine the cause.

THE CHARACTER OF MILK-BORNE EPIDEMICS.

1. *Explosive nature.* It is characteristic of milk-borne epidemics that the appearance of cases is sudden and in fairly well defined crops. Consumers of infected milk usually receive the infection from a common source at or about the same time, and making allowances for variations in incubation periods, they usually become sick at about the same time. The severity of the cases is usually augmented due to the fact that bacteria multiply freely in milk, thereby resulting in a massive dose of infection.

2. *The disease follows the milk route.* The location of the cases when plotted will be found to correspond more or less closely with the milk route of some dairy or milk plant. When the infected milk supply is one which reaches all parts of the city, the location of the cases is not significant, but they will be found to have nothing in common except the milk supply.

3. *The better homes are invaded.* The incidence of cases may be expected to be higher in the well-to-do homes than in the homes of the poorer classes, since the former enjoy a more liberal use of raw milk for beverage purposes, while the latter use it principally for coffee and tea.

4. *There is a special incidence among milk drinkers.* In many instances the only person in a home who is attacked is the one who drinks raw milk, and in others the only one spared is the one who does not drink milk.

5. *Age and Sex.* Women and children drink more milk than men and it is generally believed that a high incidence among women and children is characteristic of milk-borne epidemics.

Milk which is apparently good, and even certified milk, has been known to be the cause of epidemics. For example, an epidemic of paratyphoid was reported by Williams at Albany, N. Y., caused by certified milk. Another outbreak occurred at New Rochelle, N. Y., in 1924, in which certified milk was responsible for 60 cases of enteritis among infants and adults. Paratyphoid B. was isolated from their stools and also from the stools of a milker employed at the dairy farm.

There was an outbreak of diphtheria at Westchester County, N. Y., in 1920, due to certified milk.

SOURCE OF CONTAMINATION OF MILK.

Milkers and milk handlers may be convalescent cases of typhoid or of other infectious diseases or may be ambulant carriers of these diseases. The milk handler who has diphtheria, scarlet fever, septic sore throat or poliomyelitis may cough or sneeze into the milk. Milkers have been known to spit on their hands before milking. Some of them wet their hands in milk during the process of milking and others frequently do not wash their hands after using the toilet. Some milk handlers are so economical that they spit the milk back into the can after tasting it.

Air, dust and flies may contaminate the milk either in the barn where it stands in the pail or in the milk depot where cans are often allowed to stand with the covers off.

Milk utensils, coolers, bottles and other containers may not be properly sterilized, and in many instances are found to have been washed with polluted water, in some instances polluted water has been added directly to the milk. It sometimes happens that milk bottles are refilled without washing as was found in the typhoid epidemic at Montclair, N. J., in 1902, where all the cases were on one dairy route, but only those who were taking pint bottles were attacked. It was discovered that the first case, moving in from another town, took three pints of milk a day. These bottles were collected, refilled without washing, and distributed, resulting in 29 cases of

typhoid in the homes buying pint bottles. No cases occurred in families who bought only quart bottles.

Typhoid fever heads the list of milk-borne epidemic diseases. In Washington, D. C., a study was made of all the typhoid cases from 1907 to 1910, and 10 percent were found to be due to milk. Epidemics due to milk may be extensive, for illustration the Boston epidemic in 1908 in which there were 410 cases, 348 of whom were supplied with milk from a farm where the owner had typhoid fever. At Palo Alto, California, in 1903, there were 232 cases of typhoid among the users of milk from one dairy where the milk cans were washed and the milk diluted with water which came from a creek polluted with sewage. In 1893 at Oakland, California, there were 362 cases of typhoid among the people who patronized one dairy. The milk from this dairy was infected by the excreta of a typhoid fever case living on the bank of a creek which supplied the dairy with water.

Milk is usually infected with typhoid by an ambulant carrier or a convalescent case. Sears, Gerhart and Mack report an interesting epidemic which occurred in Portland, Oregon, in 1924. The source was a urinary carrier, age 72, who gave no history of having had typhoid and who had never heard of an epidemic of this disease. He was found to have a seminal vesiculitis which gave a pure culture of typhoid bacilli.

Tuberculosis. About one-eighth of the deaths from tuberculosis are due to the bovine type of the disease which is almost commonly transmitted by milk. The infection may gain access to the milk through diseased udders. This source, however, appears to play a minor role, since only 1 to 2 per cent of the tuberculous cows have udder lesions. Tubercle bacilli are not secreted through healthy udders. The common method of infection is undoubtedly by manure. The mucus from diseased lungs is laden with tubercle bacilli. The cow cannot spit up the muco-pus, but swallows it, causing the feces to be highly infected. In 1910 a study of 551 samples of milk in 4 American cities showed the presence of tubercle bacilli in 46 or 8.3 per cent. This was assumed to be representative of the milk supply of American cities at that time.

Scarlet Fever. In this disease the milk is usually infected through the intervention of someone who is actually suffering from this disease. Ramsey reports an epidemic of 128 cases in Michigan in 1924 due to ice cream which was made by a man suffering from scarlet fever. Outbreaks of this disease due to milk may be very extensive. In the first 20 days of January, 1907, there occurred 717 cases in four towns in Massachusetts, and in each of these towns over 80 percent of the cases took their milk from one large dairy which was the main source of supply for these four towns.

Diphtheria. Epidemics of this disease apparently due to milk were reported in England as early as 1877. The infection is usually due to a clinical case or a virulent carrier on the dairy farm. Two instances are reported in which the disease apparenty came from the cow; one reported by Deen and Todd in which there were two cases of diphtheria in a family whose cow had mammitis. Klebs-Loeffler bacilli were isolated from the milk of this cow and from the throats of the two cases. In 1917 McCoy, Bolton and Bernstein reported an extensive outbreak of diphtheria due to ice cream at New Port, R. I. This epidemic was explosive in character, attacking the older age groups more than children and was mild with no fatalities.

Septic Sore Throat. Widespread and severe epidemics of this disease have been spread by milk. One in Boston, in 1911, caused 2000 cases with 48 deaths. In this outbreak there was a relative immunity among children and a high mortality among the aged and infirm. The milk from the dairy responsible for this outbreak had for years been above suspicion and extraordinary precautions were taken to insure its safety and purity. This dairy had enjoyed

a clean record for 28 years preceding this epidemic. There was an epidemic of 10,000 cases in Chicago, studied by Capps and Miller, who found sore throat in the dairy workers and a mastitis effecting 4.6 percent of the cows. Through abrasions and fissures, etc., the teats of a cow may become infected with streptococci of human origin, and the cows may remain a carrier of this organism for several weeks.

Diarrheal Diseases. These diseases are frequently milk-borne, as the *B. dysenteriae* grows well in milk and is a common cause of infantile dysentery, which has a high mortality in the first year of life. The milk is usually infected in the home or in the wards of a hospital were some member of the family or a nurse who is suffering from diarrhoea prepares the milk for the infant. Flies have been found to carry *B. dysenteriae* for several days, and infected flies are common around wards where there are patients who have dysentery.

Malta fever is primarily a disease of goats, but is transmitted to man through infected milk. The organism, *Brucella melitensis,* appears in the milk of the infected animal and in all the other body secretion. Ten per cent of the goats supplying milk in the Island of Malta were found to be infected, and an endemic area has been found along the Rio Grande river in the United States.

Foot-and-mouth disease is an infection primarily of cattle and secondarily in man. It is transmitted by a filterable virus which was the first virus of this kind to be discovered. The infection is transmitted through milk and milk products, and the disease in man shows the same symptoms which are seen in animals. The course of the disease in man is mild and is seldom fatal except in very weak children.

Epidemic arthritic erythema is a disease resembling dengue which has been transmitted by milk. An epidemic of this disease in which 80 people were attacked, occurred at Haverhill, Mass., in January, 1926. Pain and swelling of the joints were a common symptom and all but one case in this epidemic took milk from one dairyman. A similar outbreak of this disease occurred in Pennsylvania in 1925, in which there were 400 cases.

Infantile Paralysis. Two epidemics of this disease have been transmitted by milk which is an unusual rather than a common means of transmittal. One of these epidemics which occurred at Cortland, N. Y., in December, 1925, was studied by Knopp, Godfrey and Aycock. It consisted of 8 cases all of whom took milk from a certain dairy. A milker at this dairy was sick but continued milking until paralysis of his left arm forced him to discontinue. He then sought medical treatment and his case was diagnosed as poliomyelitis. These 8 cases occurred in a town of 1500 on the route of a dairy which supplied but 4 percent of the city's milk supply. The milk was handled by a person who was actually sick with the disease at that time and the chain of evidence as to the transmission of the infection is about as complete as is found in the majority of milk-borne epidemics.

"Milk Sickness," while not known to be an infectious disease, is a poisoning carried by milk which should be mentioned here. This disease was first recorded in this country in North Carolina in 1776. It is an acute non-febrile disease which is due to the ingestion of milk from a cow suffering from a disease known as "trembles." This disease in animals is caused by eating white snake root or rayless goldenrod. The toxic principle of these poisonous plants is excreted in milk. It is quite fatal to both man and animals. The poisoning is characterized by great prostration, persistent vomiting, constipation and high mortality.

CONCLUSION.

Milk-borne epidemics of infectious diseases are common and are much more often recognized at the present time than they have been in the past. They are always

due to raw milk or its products. There is no record of an epidemic of milk-borne disease which was due to milk properly pasteurized.

DISCUSSION.

Dr. K. E. Miller (New Orleans): The paper of Dr. Neal very clearly emphasizes the fact that milk is an important vehicle in the transmission of disease. Although the number of epidemics that has been cited in this paper may seem comparatively small in relation to the number of epidemic diseases as a whole, we must bear in mind that the number of epidemics that have been studied and recorded perhaps represent but a small portion of the actual total damage caused by milk-borne diseases.

Frank's studies indicate very clearly that the more we look for milk-borne epidemics, the more of them we find. We have good reason to believe that there are a great many individual cases of milk-borne disease and epidemics that escape recognition as being of milk-borne origin. Take typhoid fever for illustration. We know that undoubtedly typhoid carriers play an important role in the transmission of this disease, but it is only within recent years, the past four or five, that we have had any adequate conception at all of the extent of our typhoid fever carrier problem. This has been brought about by the use of the brilliant green biomedium for the isolation of typhoid germs from the feces and stools of patients.

The work of our State Board of Health field laboratory is very illuminating in this respect. Mr. Heffernan, the field laboratory agent of the State Board of Health, has a record of 403 examinations of dairy workers, that is, the feces and stools of these individuals, with a finding of sixteen positives, or 3.97 per cent, practically four per cent of the individuals examined have proven to be, by the brilliant green biomethod, positive carriers of typhoid fever germs.

In Alabama, a similar series of examinations has been made with the same method with somewhat higher evidence of typhoid carriers, I think about five per cent.

With such a large incidence of typhoid fever carriers among dairy workers, it is reasonable to suppose that those dairies which are not rigidly controlled with respect to typhoid carriers constitute a very great hazard to public health.

You, perhaps all of you men here, are called upon from time to time to give medical certificates to food handlers. In view of the indicated instances of typhoid carriers among the general public, the issuance of medical certificates should become much more than a simple perfunctory matter, because we are turning loose people to handle food of others in the raw state in many instances, especially among dairy workers, and certainly we must expect a great hazard to public health from active carriers of typhoid fever germs.

Dr. Neal's paper also very properly pointed out some of the specific modes in which infection of the milk supply takes place. There is ignorance of considerable extent among the laity on this subject, and even, sometimes, we find gross ignorance among health officers. I have in mind now a very good illustration of this. A certain health officer in Tennessee, a county health officer, was telling me on one occasion about a case of typhoid fever that he had to deal with in the family of a well-to-do farmer. He emphasized the fact this farmer was not only well-to-do, but he and all of his children were well educated. They had typhoid fever in the family and he said that he had great difficulty in convincing those people that they had gotten their typhoid fever from milk drawn from cows that had been drinking out of a pond covered with green scum. Now I don't wonder that he had difficulty in convincing any intelligent person of the origin of that typhoid.

As long as ignorance of this kind prevails with respect to the methods of transmission of typhoid fever and all milk-borne diseases, we can't expect to make much progress in their control. From a practical standpoint we know that milk is a problem, a serious problem, in the spreading of communicable diseases, typhoid and other diseases, and what are we going to do about it? Are we going to say, "Stop drinking milk." Why, certainly not. We can't cure one evil with another. But it behooves every physician to concern himself about the safety of the milk supply that is going to his patients and to his community.

There are some five fundamental principles in the safety of a milk supply. One is healthy milk handlers (and in that I include the absence of carriers); second, healthy cows; third, sanitary equipment including barns, milk utensils and the like; fourth, sanitary methods; and fifth, adequate refrigeration.

Of these five principles, I think I would say that the first and the last are the most important. However, we are not expecting the doctors to become dairy inspectors. The State Board of Health and the local Board of Health provide men for that purpose. Moreover, when we expect doctors to become the foremost exponents of better milk in their communities, we do not expect them to do so by dictating the technical methods by which better milk supplies are to be

secured. The agencies that I speak about, the State Board of Health and the local boards of health, have men who are specially trained for this purpose. What we do want is for the doctor to champion the principle of better milk and then call in those whose business it is to prescribe and institute the protective measures.

Dr. John Schreiber (Franklinton): There is no doubt but that Dr. Neal has proven his point that diseases are carried by the milk route and he does not need anything from me in regard to that. The case has been well covered and Dr. Miller has told us how to keep them from doing that thing. He has given us the method by which we can prevent this. All that I will do with my five minutes will be to recall an instance or two that shows that many cases are not getting into the record at all. Dr. Miller made that remark. There must be a great many instances that do not get into the literature at all, individual cases and the smaller groups of cases.

I recall an instance of scarlet fever being reported in a community where I was doing public health work and naturally it occurred to me there must be some more scarlet fever cases, so I struck out to see if I could find the source of that one case. I found two other cases that had not been reported but which were scarlet fever. They had a physician, but one of them had been reported as sore throat (taking quinine by the way), and the other put it down as sore throat with rash. As soon as this reported case came out, another physician called up the office and stated he had a case of scarlet fever that he probably wouldn't have reported if he had not heard about the other case, and that was another instance of an unreported case of scarlet fever, a very mild case.

In tracing these up, I finally concluded they came from a milk source. The first three cases were milk-borne; the fourth case, however, was not a typical case of scarlet fever. After going over these cases, the special health officers concluded they were scarlet fever and the two severe cases were the result of this early case. We could not prove that the first case was scarlet fever, so that is just another instance of finding unrecorded cases and a case that we were quite sure was scarlet fever brought on by the milk route but could not get into the literature for lack of proof, one of the unproven cases.

There occurs to me something that might happen occasionally in the distribution of typhoid fever. We are inclined to think of the carrier only as being in the dairy. I think I know of an instance where the man's milk route became infected from the outside. Now there are a great many people still milking in a rather careless kind of manner in the smaller dairies. Dairies are getting better but the methods are not improving very rapidly. In this community the dairies were in pretty fair shape but the methods were lax. The men had not learned good methods of keeping clean and there was no steam used. I think every sanitary code requires that milk bottles should never go out of the house where there is communicable disease unless they are sterilized by some responsible person, somebody responsible for the health of that community. There is a considerable amount of neglect about that feature. This man had seven or eight cases of typhoid on his route. I am quite sure that he got a case from the outside. He carried these milk bottles back and washed them in the tub like all the rest, merely with warm water and not at a temperature that would in any way affect the typhoid germs and prevent the carrying of infection. We could not find any record of any one having had typhoid fever and two examinations were made of everybody in that plant. There were no carriers. But there were cases of typhoid fever in this community. Some were on his route. I am quite sure there was an instance where the milk bottles were carried back, placed in the tub with the other bottles and the infection spread in that way.

The average physician takes it for granted the bottles are sterilized. They may be in some places but in lots of places the bottles are not sterilized. This whole community of something like 14,000 people was being supplied with milk from containers in the cleansing of which there was not one ounce of live steam used.

These dairymen who just wash their bottles should certainly scald them. You can readily see that infection can get in from the outside.

I only mention these two instances. I think they may be of some practical use to you. It might help to caution the people not to let those bottles out of the house where there is a communicable disease until some responsible person has sterilized those bottles. The statutes of law provide for that but it is very often neglected.

I thank you.

Dr. Neal (closing): I wish to thank Dr. Miller and Dr. Schreiber for their discussions. I really haven't anything further to say except in the instance of a large city like New York approximately 200,000 people come in contact with the milk supply in the production and handling of the supply of that city each year, so you can see the large possibilities for infection due to carriers and cases of the various communicable diseases. The same situation would apply to a city this size only in less proportion.

THE MILK PROBLEM FROM THE MUNICIPAL HEALTH OFFICER'S VIEWPOINT.*

J. G. MARTIN, M. D.,
LAKE CHARLES, LA.

In this paper I will endeavor to give briefly my experience with the milk problem in the City of Lake Charles during the time I have been health officer.

In 1922, when I took over the duties of health officer, we had no milk ordinance in effect. Milk was being produced and distributed with practically no supervision. The fact that on my return from the army I found my children had been drinking milk from a dairy 75 per cent of whose herd was tuberculous was largely responsible for my accepting the office. I therefore went into office with the determination to clean up the dairies and to furnish the public with milk as near safe as we could manage to get it.

In the early part of the year 1922 we adopted a milk ordinance drawn up for us by Dr. Lucas, scientific assistant with the United States Public Health Service. Operating under this ordinance we succeeded in improving the quality of the milk; but we were much surprised and gratified when in the spring of 1924, after a statewide dairy survey made by the American Child Health Association in collaboration with the Louisiana State Board of Health, Lake Charles was rated as having the best milk supply of any city in the state. This distinction, by the way, we have been able to maintain during two succeeding surveys.

While the ordinance was a good one, we felt that it had some weak points. For instance, grading of the dairies was determined entirely by the bacteria count. This we felt was a defect, since a dairyman could, by simply keeping his milk at a very low temperature, make a grade of A, no matter how much dirt the milk might contain. When, a little more than a year ago, the U. S. P. H. S. Standard Ordinance as amended by the State Board of Health was recommended to us, we immediately saw that with its system of grading on points of equipment, sanitation and methods at the dairy as well as on the laboratory examination of the milk, it was an improvement over our old ordinance. Accordingly we took the necessary steps to adopt it; but before doing so we submitted it to the dairymen, who, at a meeting called for the purpose of considering the ordinance, endorsed the ordinance and asked for its adoption. It has now been in force for a year, and my conclusions as to its workings are as follows:

As regards the health of the community, I would simply call your attention to the fact that last year our death rate for white residents was 7.1 per thousand—very much lower than in any previous year. The death rate among children between one month and fifteen years has steadily declined. In 1924, between these age limits we had 37 deaths, 12 white and 25 colored; in 1925 there were 34 deaths, 10 white and 24 colored; in 1926 there were 25 deaths, 6 white and 19 colored. This steady decrease in the number of deaths among children accompanied a steady increase in population. Last year, with a population of about 17,000, we had not a single death among white residents from 2 to 15 years of age. Our local undertaker is authority for the statement that while in former years it was his custom in the early spring to put in a stock of children's coffins, in the last few years there has been no demand for them. We ourselves consider the improved milk supply to be the greatest single factor contributing to the better health conditions in our city.

So much for the milk ordinance as it affects the public—and the public should come first.

Now, how does this ordinance effect the dairymen? From our experience, and from the testimony of various dairymen, we have

*Read before the Louisiana State Medical Society, New Orleans, April 26-28, 1927.

come to the conclusion that it has benefitted the dairy industry. The ordinance has been strictly enforced. One or two of the dairymen gave us some trouble, but since being made to realize that we were in earnest about the enforcement of the ordinance they have ceased to combat it and are now co-operating. The great majority of the dairymen are hearty in their endorsement of the ordinance, realizing that the requirements demanded of them, instead of proving a hardship have been a help in the operation of their business, and a source of general satisfaction. The per capita consumption of milk in the city has increased over 50 per cent. None of the dairymen have become bankrupt and none have gone out of business—on the contrary several new dairies have been established and appear to be flourishing. It is our belief that the dairy industry is on a more substantial basis now than it has been in years, and many of the dairymen say they would not go back to the old conditions for any consideration.

We have thus come to the conclusion that the Standard Ordinance is of real benefit to the community. It has promoted a greater consumption of milk, thus improving the nutrition of the children and benefitting the dairymen in a financial way. It has one objection, which is that it throws a considerable burden on the health officer and his staff. The results, however, we feel are well worth the trouble.

DISCUSSION.

Dr. W. H. Robin (New Orleans): The role of the municipal health officer varies with the city and the population he has in charge. In some communities, especially in some of the more enlightened population, a more modern construction of matters is comparatively simple. In a cosmopolitan city like New Orleans, with its many age-old traditions and habits and consisting of such a varied population composed of so many nationalities, the problem is more complex. These statements can be emphasized in the case of milk control.

The old milk man, with his two-wheel cart and ten-gallon cans, one of which was sometimes used for water, used to be a familiar sight on the old cobble stone streets of New Orleans. That type has long since passed and we can say that, from a standpoint of adulteration of milk, the problem has been reduced comparatively to nothing here in New Orleans.

The bacterial side of the milk question is nearer and harder to impress on the minds of the dairymen and the people. Our semi-tropical climate and the long haul necessary for a great proportion of our milk supply adds to the difficulty of producing a milk of lower bacterial count.

Like all progressive communities, New Orleans is in favor of furnishing to its citizens the best quality of foods of all sorts and we feel especially determined in regard to the milk supply. The City of New Orleans has always been glad to accept the advice and follow the leadership of the Public Health Service and, when the standard ordinance as proposed by that Service was offered for the adoption by municipalities, the City of New Orleans, through its Board of Health and Commission Council, was quick to take advantage of the opportunity and passed, after a considerable effort and propaganda, such an ordinance. Unfortunately, due to a misapprehension of the facts, under the belief that the State Board of Health had passed the standard milk ordinance and that it was a part of the sanitary code, the ordinance adopted by the City of New Orleans was declared illegal, due to minor technical differences with the supposed ordinance in the sanitary code of the State Board of Health.

More recently another effort was made to pass a new ordinance but, unfortunately, in the interim, a large force in opposition had been recruited and, due to honest differences about the practicability of the ordinance, it was defeated.

My Board and myself are for the adoption, as soon as feasible, of some form of ordinance which will help give the same control from a bacteriological standpoint as we now have from a chemical standpoint, with milk. I feel sure in saying that whenever we can show the Commission Council of New Orleans that the passage and enforcement of such an ordinance will not be inimicable to the best interests of the city and that it can be practically put into effect, that we will receive their support in the enactment of such a law.

In the meantime, I can pledge the undivided efforts of my Board and myself in the enforcement of all sanitary measures in connection with the dairy industry and, in this way, we hope by a campaign of inspection, education and encouragement to bring the dairy people and the public up to such a state of enlightenment in regard to this question that they will be among our strongest supporters in any proposed ordinance.

Dr. Dowling: May I speak for myself? Officially I want to thank Dr. Robin for the co-operation and support he gave to the milk ordinance passed on to the commission council of the City of New Orleans, adoption of which unfortunately, for good reasons of their own, was postponed, but will certainly come back some time to the Board of Health for consideration.

I want to read to you now from the United States Department of Agriculture Farmers' Bulletin No. 602 on the "Production of Clean Milk," the definition of clean milk. "Clean milk is milk of good flavor from healthy cows that is free from dirt and contains only a small number of bacteria none of which are harmful." Note the statement, "a small number of bacteria."

With reference to the temperature, they refer to the fact that when milk is drawn from the cow it varies from 80° to 100°F. The temperature most favorable to the growth of bacteria is retarded by continuous low temperature. The growth at 70°F. is rapid, at 50° it is much retarded and at 40° or below it is very slow.

I wanted to give you that information as coming from the Department of Agriculture in Washington which, of course, comes from the dairy division.

In the recent trip over the state we have found in some of the most remote places some of the neatest little dairies. They are cheaply constructed but their equipment and construction is such as to render them able to produce the best milk possible. I would gladly refer to dairies that we saw outside of the larger cities, at Melville, Ville Platte, Winnsboro, Kelly and other points. I mention this to show you that these people are interested in the production of good milk, that people in the remote sections can do it and they ought to be able to do it in other places.

The time is not far distant when the milk supply of the City of New Orleans will be equal to that of any city on the American continent.

Dr. Martin's reference to the low death rate among the babies is extremely interesting.

I thank you for this opportunity and on behalf of Dr. Martin, I do not know that there is anything I could add beyond expressing my appreciation for Dr. Martin to Dr. Robin for the discussion of the paper.

THE THEORETICAL PRINCIPLES AND THE PRACTICAL IMPORTANCE OF ELECTROCARDIOGRAPHY.*

GEORGE R. HERRMANN, M. D.,

NEW ORLEANS.

The electrical phenomena accompanying the heart beat were first detected about the middle of the nineteenth century. Kölliker and Müller as early as 1855 proved that each beat of the frog's heart

*Read before Orleans Parish Medical Society, February 28th, 1927.

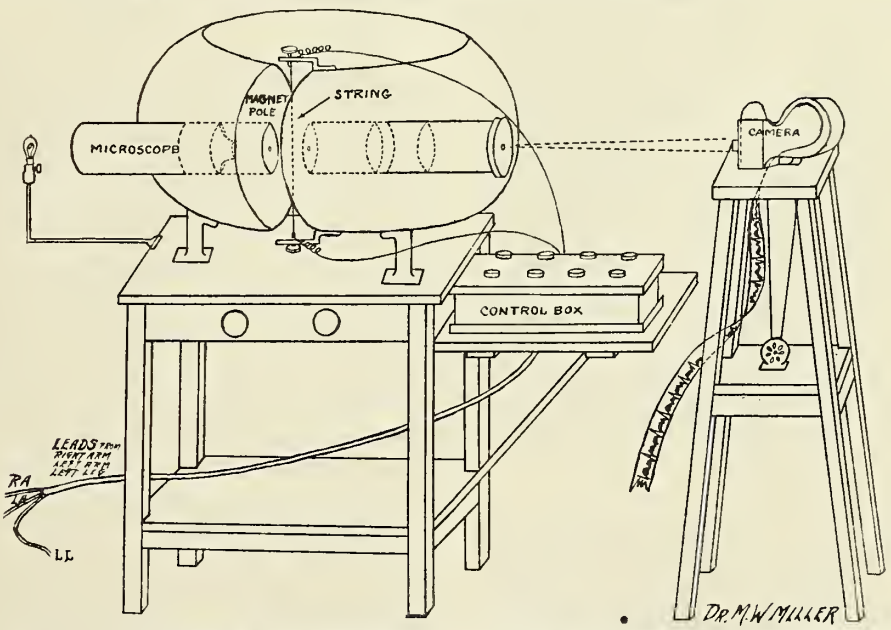

Fig. 1. A diagrammatic representation of the String Galvanometer or Electrocardiographic Outfit used for the detection and photographing of the effects of the minute electrical effects that precede, inaugurate and accompany each heart beat.

was accompanied by a difference of electrical potential. The cardiac electrical changes are transmitted from cell to cell, each cell activating an adjacent cell. In this way one may account for the extreme slowness of transmission of the electrical process. Ludwig and Waller in 1887 recorded the electrical phenomena accompanying the human heart beat by means of a capillary electrometer, the terminals of which were placed upon the chest wall in the precordial region.

THE ELECTROCARDIOGRAPH.

In 1903 Einthoven began his epoch-making studies with a delicate string galvanometer of the electrical mechanism of the heart beat. (Fig. 1.) The principle of the string galvanometer is simple. The string is a silvered or platinized quartz filament which is suspended between the poles of a powerful electromagnet. The electrical phenomena concerned in the heart beat produce only slight differences of potential of one-tenth to one millivolt. This low voltage results in a minute current which flows through the delicate string suspended in the powerful magnetic field of the galvanometer. The minute heart currents generating magnetic fields at right angles to its course, varying in intensity with the degree of the difference of potential, thus exerting varying degrees of attraction and repulsion of the magnetic field of the electromagnet and consequently greater or less movement of the string. The resulting deflections of the string are magnified by microscope lenses. The field is illuminated by an intense source of light and the magnified image of the deflected string is photographed on sensitive film or paper as the electrocardiogram.

The studies of Einthoven, Lewis, and many others have placed the science of electrocardiography on a firm foundation and made it our most valuable method of precision, giving us information about the cardiac mechanism which we can often elicit in no other way.

An accurate knowledge of the special anatomy and physiology of the heart is a prerequisite to a clear conception of electrocardiography and clinical cardiology in general. (Fig. 2.)

THE SPECIAL ANATOMY OF THE HEART.

The Sino-Auricular Node. The special anatomy of the heart in which we are interested includes the subendocardial microscopic structures that have to do with the genesis and propagation of the electrical phenomena that precede and accompany each heart beat. The first structure of importance is a peculiar mass of neuromuscular and connective tissue lying just beneath the epicardium in the sulcus terminalis at the junction of the superior vena cava and the right auricle, known, after its discoverers, as the Keith-Flack or sino-auricular node. This mass of specialized tissue receives nerve fibers from the vagi, especially the right vagus and sympathetics and an arterial branch from the left coronary artery. The excitatory process develops in this sino-auricular node, and for this reason the term "pace maker" of the heart is often applied to this tissue mass.

The Auriculo-Ventricular Node. The junctional tissues between the auricles and ventricles are of a similar neuromuscular nature. Fine fibers of specialized tissue beginning in the right side of the interauricular septum just beneath the endocardium near the thebesian valve of the coronary sinus, converge and unite to form another node described by Aschoff and Tawara. The fine fusiform fibers are intricately interlaced with nerve fibers, ganglion cells, arterioles and connective tissue to make up this auriculo-ventricular node.

The Bundle of His, the Branches and the Purkinje Network. A sharply demarcated group, the His bundle of specialized large fusiform cells in parallel arrangement, in fasciculi and ensheathed, extends from the A-V node horizontally forward and slightly downward for a distance of two centimeters.

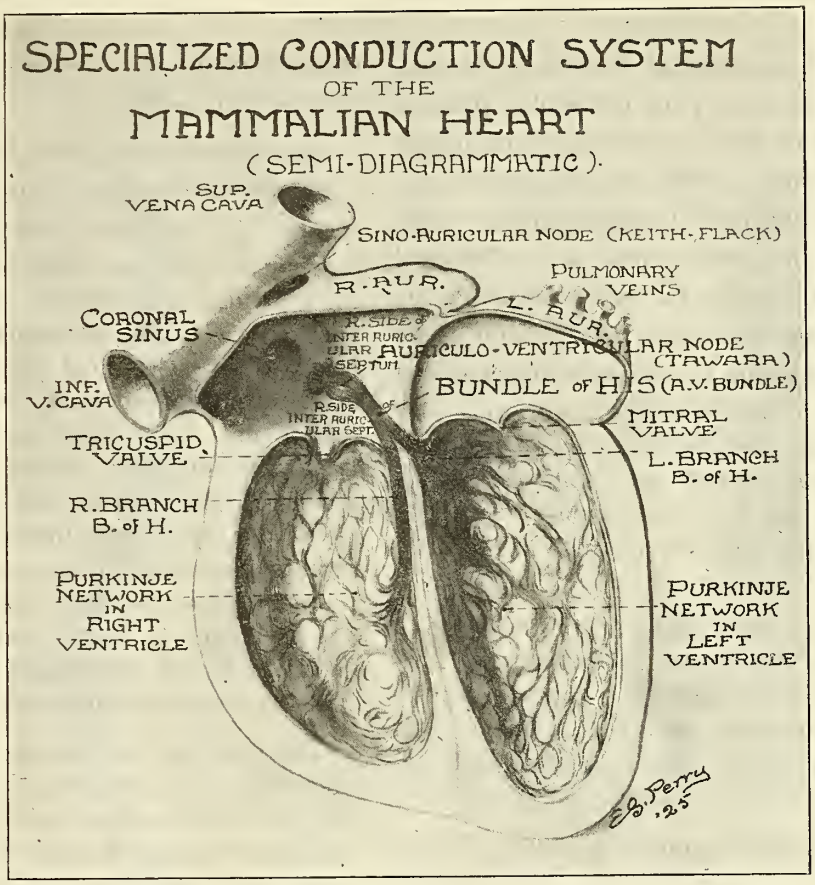

Fig. 2. A diagrammatic representation of the special anatomy of the heart which is intimately concerned in the origin or genesis and the conduction or propagation of the excitatory electrical process that precedes and accompanies each heart beat.

in the right side of the interauricular septum. The His bundle proceeds to the junction of the interauricular septum with the triangular membranous portion of the interventricular septum, the central fibrous body at the anterior border of which it divides into a right and a left branch, and saddles the interventricular septum. The right branch proceeds as a single strand to the base of the anterior papillary muscle, whence the specialized tissue rapidly spreads out just beneath the entire endocardium as the Purkinje arborization or syncitial network of the right ventricle. The left branch of the His bundle perforates the membrane at the anterior edge of the so-called undefended space, divides up immediately beneath the ventricular endocardium, just inferior to the point of junction of the right anterior and the posterior aortic cusps, into two main groups of fibers, one of which goes toward the base of the anterior and the other to the base of the posterior papillary muscle. From these main points the Purkinje network divides, ramifies subendocardially throughout the left ventricle. The vagus nerves have fibers distributed to the auriculo-ventricular node and the His bundle, but not beyond the bifurcation of the main A-V bundle in the mammalian heart.

THE SPECIAL PHYSIOLOGY OF THE HEART.

The physiology or mechanism of the normal heart beat is intimately associated with the special structures just described. The practical theory is that there is in each specialized and ordinary heart muscle cell a constant building up (anabolism) of cer-

tain combined material having a distinct potential energy. This metabolic process occurs at a certain constant rate regularly and uniformly in every heart muscle cell. The accumulation of potential energy rises to a constant level where it is "touched off," falls promptly to zero, liberating the kinetic energy of cardiac contraction. The level of discharge is always reached in the same time. The specialized neuromuscular tissue in the sino-auricular node or pacemaker holds control by virtue of its supreme liability or its faster rate of anabolism, assuming that the process in the ordinary muscle is on a slower incline.

The pH of the blood and of the specialized tissues has been shown to be intimately associated with the rate of genesis and propagation of the impulse that initiate the heart beat. (Carter and Andrus.)

The physico-chemical changes taking place in the sino-auricular node produce an electrical stimulus, a difference of potential, which can be detected by the string-galvanometer or electrocardiograph. This stimulus or impulse spreads with equal speed in all directions through the auricular muscle, "'touching off" all the products of anabolism and liberating the energy of the auricular contraction. The impulse is then taken up by its branches to the subendocardial arborizations of the Purkinje network of each ventricle. The time consumed by the stimulus in passing through the auriculo-ventricular node and His bundle normally never exceeds 0.18 seconds (the PR interval of the electrocardiogram) while the intraventricular spread takes place in 0.06 to 0.08 seconds (the QRS interval of the electrocardiogram). (Fig. 3.) Thus the spread of the impulse or excitation wave is very rapid, the rate of transmission through the specialized tissues being about 5,000 m.m. per second, while that through the ordinary heart muscle tissue is only 500 m.m. per second. The excitation of all parts is thus almost instantaneous, the energy is liberated and contraction results.

THE TRACINGS AND THEIR INTERPRETATION.

Electrocardiograms are photographic records of the above described successive movements of the string of the galvanometer, induced by the electrical phenomena that precede and accompany each heart beat. These electrical phenomena are indeed minute, especially when they are taken, not from the heart directly, but from the surfaces of the extremities by means of salt solution and metal conductor electrodes, as is the clinical practice. The minute electrical changes conducted from the surface of the body through the string are sufficient to cause the successive deflections, which when photographed constitute the electrocardiograms. (Fig. 3.)

The time marks, transverse lines across the paper, are shadows of the one broad and the four narrow sprockets of a wheel which are passed through the beam of light under the control of a tuning fork and a synchronous motor. One complete rotation of the wheel is accomplished in one-fifth of a second. The divisions indicated by the narrower sprockets, and consequently narrower lines, have a time value of one twenty-fifth or four one-hundredths of a second. The longitudinal lines are shadows of millimeter lines that are etched on the cylindrical lens of the camera. Every fifth millimeter line is made broader in order to facilitate measuring. Since the string of the galvanometer should always be so standardized that one millivolt moves it exactly one centimeter, the electrical value of the deflection can be determined by noting the extent of the movement of the string in millimeters, each of which under standard conditions has a value of a tenth of a millivolt.

The recorded deflections or waves have been arbitrarily named as indicated in the figure, P, Q, R, S, T, and rarely there is also a U. Any other designation might have suited equally well. In fact, the use of let-

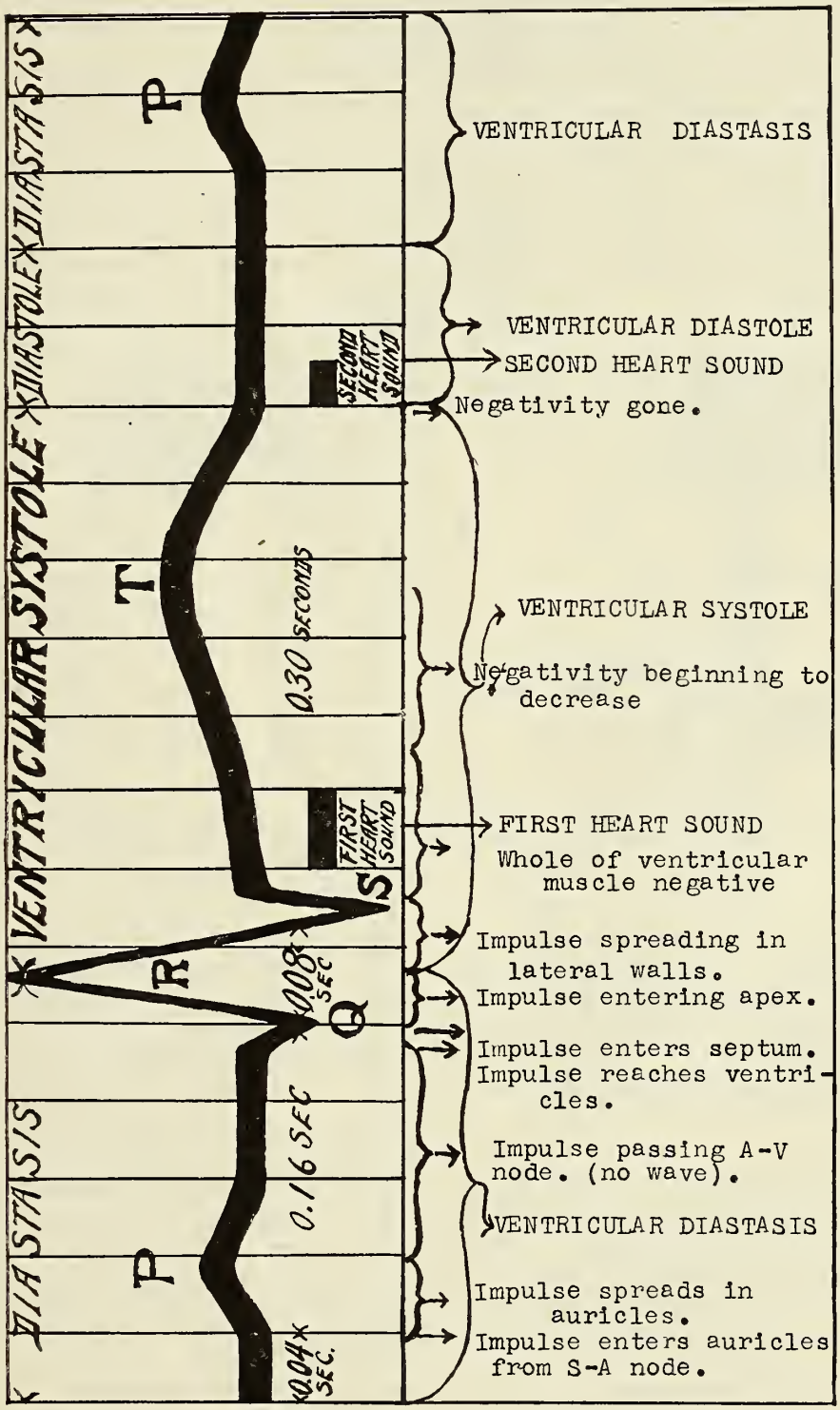

Fig. 3. The events of a single cardiac cycle as shown by the Electrocardiogram. With slight modifications from one of Dr. Richard Ashman's illustrations. Note that the conduction time of the impulse, from the beginning of P to Q is about 0.16 seconds, and that Q, R and S together last about 0.08 seconds, while the RT interval occupies about 0.30 seconds. The relations of the ventricular mechanical effects and the heart sounds to the electrocardiographic waves are indicated.

ters similar to those used in sphygmographic work might have been less confusing. It is, of course, too late to change now as much undue confusion might result. The waves of the electrocardiogram have been, as a result of animal experimental and human pathological studies, identified with certainty with activity in certain parts of the heart. Primarily, it must be understood that the electrocardiogram is a combination of right ventricular and of left ventricular effects.

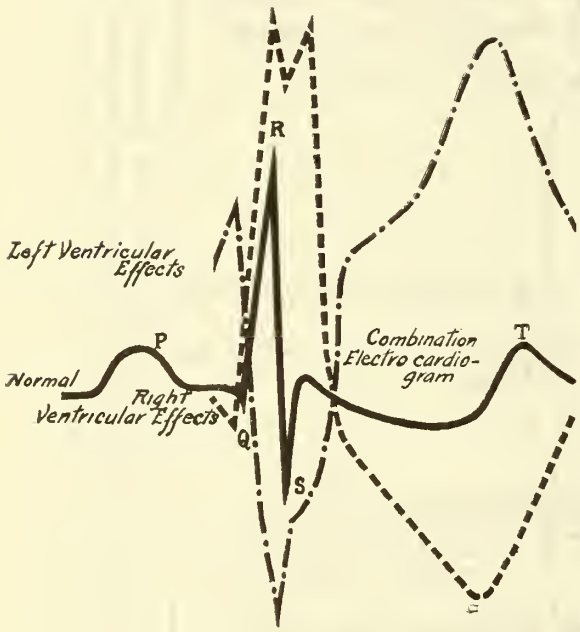

Fig. 4. A tracing of the electrical effects of the left heart (levogram) and of the right heart (dextrogram) and the normal combination electrocardiogram which is the algebraical summation or combination of right and left ventricular effects. These tracings were obtained by taking the normal electrocardiogram of a dog and then producing by pressure temporary complete block first in the left branch and then in His bundle.

The P wave is the result of changes in the auricles. The P Q or P R interval is measured from the beginning of the P waves and is the time required for the electrical activity to spread from the pacemaker or S A node through the auricle, the A V node and the His bundle to the ventricles. Normally this interval or A V conduction time is 0.12 to 0.18 seconds and any values above 0.18 seconds indicate disturbed A V conduction. The Q R S group traces the spread of the excitatory process through the right and left branches of the His bundle into the broader ramifications or arborizations of the Purkinje network. This spread normally consumes only .06 to .08 seconds, but any defect in either of the major branches produces a greater or less prolongation of this interval and accompanying changes in the T waves. The reasons for these changes lie in the fact that the normal electrocardiogram is the resultant of left and right ventricular effects, with the spread of an excitatory process which is ten times as rapid in the specialized tissue as in the heart muscle. A block in either major branch allows the opposite ventricle to receive its impulse first and to proceed in the inscription of its electrical effects, while the blocked ventricle awaits the slow progress of the excitatory process through the septal muscle and consequently inscribes its effects late and contracts asynchronously.

The T wave is most probably an inscription of the progress of the excitatory process from the Purkinje tissue through the ventricular wall or musculature and the deactivation process. Digitalization and myocardial changes produce changes in the T waves of all leads.

THE LEADS.

The three leads usually used in the routine taking of electrocardiograms are arbitrarily numbered I, II, and III. Lead I is taken from the right arm or hand to left arm or hand; lead II, from right arm or hand to left leg or foot; and lead III, from left arm or hand to left leg or foot. The three standard leads are used in order to have, as indicated in Figure 5, the electrical effects in three planes, and thus be able to determine persistent or temporary abnormal predominance of effects of one or the other ventricle.

THE ANALYSIS.

The analysis of electrocardiograms consists in the identification of each of the waves and an estimation of its normality; a determination of the exact lengths of the

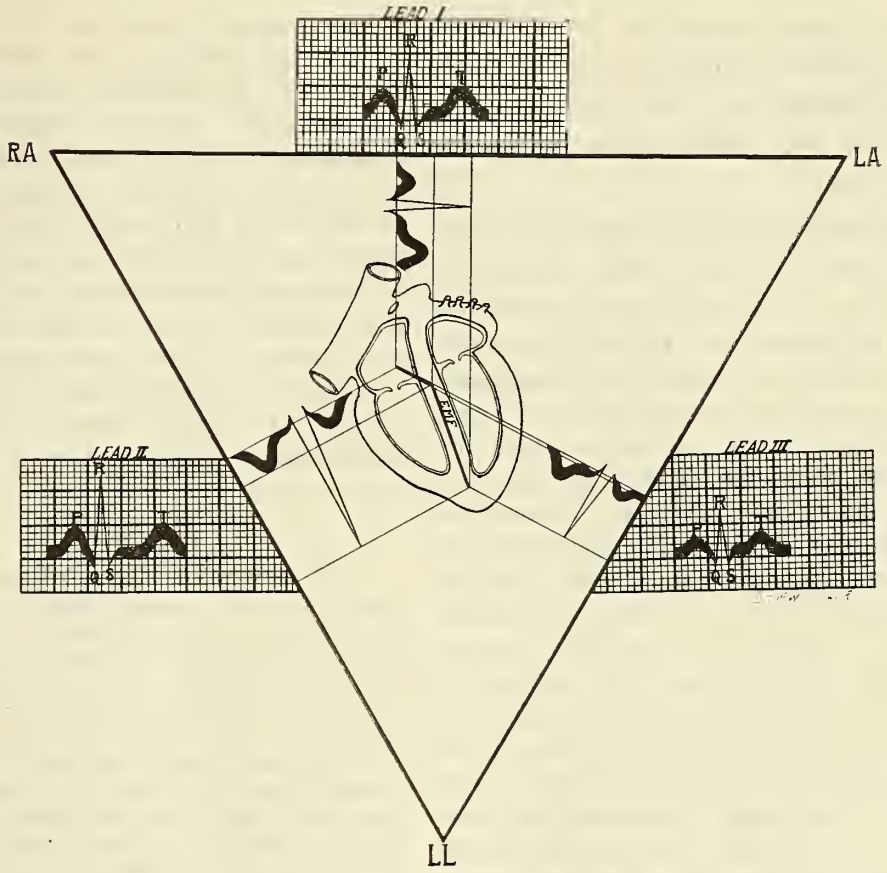

Fig. 5. A schematic representation of the position of the heart and its combined electrical effects or function E. M. F. with respect to the standard three leads. This is the equilateral triangle of Einthoven and the projections of the electrical forces into the plane of the lead indicates approximately its electrical value and the directions of its chief deflections in the respective lead.

P. R. and the Q. R. S. and sometimes, also, the S. T. intervals; an estimation of degree of predominance of the effects of one ventricle or the other; a recognition of any irregularity and its cause; and a correlation of the electrocardiographic findings with the known facts of cardiac mechanism disturbances and cardiac pathology.

Electrocardiograms graphically demonstrate the following more or less common disturbances: Sinus tachycardia; sinus bradycardia, from constant or temporary vagus stimulation; sinus arrhythmia; premature contractions, ectopics or extrasystoles, determining definitely the point of origin, whether auricular, junctional, or ventricular; paroxysmal tachycardia and especially the location of the abnormal ectopic pacemaker; auricular flutter, with the ratio of auricular to ventricular activity; auricular fibrillation; heart block, sinoauricular, atrioventricular, or bundle branch block, delayed conduction with only partial or complete block; and auriculo-ventricular rhythm.

Further evidence is given, as to abnormal course or direction of the excitatory process through the auricular muscle; changes in the ventricular muscle; predominance of one ventricle or the other; and the effect of drugs, such as digitalis and quinidine.

THE VALUE OF THE METHOD.

Electrocardiograms are not only invaluable, but in some conditions indispensable in the diagnosis and treatment of some types of heart disease. As pertinent facts

sustaining these contentions, I will mention some cardiac conditions which are not at all detectable nor determinable with certainty by any means other than electrocardiography.

Among these conditions are first of all various types of heart block, especially block in the intraventricular conduction tissues, the right or left branch of the His bundle, which may defy the diagnostic acumen of even the keenest clinician. Then, too, the exact degree of auriculo-ventricular conduction disturbance in the His bundle itself can often be determined absolutely in no other way. Sino-auricular fibrillation and auricular flutter with or without higher regular or irregular grades of block. Irregularity due to frequent premature contractions originating in various foci and the point of origin of a paroxysmal tachycardia can be established with certainty only with the aid of this method of precision. Congenital or pure primary dextrocardia, with its rotation of the heart axis and conduction tissues, yields pathognomic changes only in the electrocardiographic tracings.

Electrocardiographic tracings, furthermore, aid in the rational interpretation and evaluation of murmurs by indicating predominance in the electrical effects of the left or right ventricle. These signs of predominance are reliable in the presence of clinical evidence of enlargement.

Electrocardiographic curves furnish valuable graphic evidence, such as sharply inverted T waves, substantiating the diagnosis of coronary thrombosis, which the clinical picture of an abnormally prolonged attack of cardiac pain suggests.

Electrical axis fixation, which is suggested by the presence of identical electrocardiograms obtained with the patient in the supine, the left lateral, and the right lateral position is confirmatory evidence for the diagnosis of chance adhesive pericarditis. (Dieuaide.)

Electrocardiograms are of distinct help in the gauging of the effects on the heart of therapeutic agents. Electrocardiography provides another precise prognostic index; furthermore furnishes an absolute check on bedside diagnosis; a check which religiously used cannot but add to our proficiency, increase our facility in diagnosis, and sharpen our all too sluggish and too easily self-satisfied power of observation, at the same time insuring a visualizable understanding of the mechanism of the heart beat without which cardiological interpretation is antique and unscientific.

DISCUSSION.

Dr. B. R. Heninger (New Orleans): Dr. Herrmann is to be congratulated on his thorough interpretation of this subject before our Society in so short a period of time. He has shown us tonight what it took me about four years to learn.

The point I want to bring before you is not so much the valuable assistance the electrocardiogram gives in arriving at a diagnosis, but its prognostic value and the benefit derived from prompt institution of the indicated treatment. Therapy in heart disease is most important. At Touro, both in private and in ward cases, without inquiry, purely from the cardiogram, we get the desired information, this method proving of inestimable service in post-operative sequents—intestinal obstruction, digitalism, and so on. It is in cases where clinical diagnosis is difficult, as slow auricular fibrillation and in determining coronary thrombosis that the electrocardiographic tracing has its particular field of usefulness. Coronary thrombosis is a subject that should interest every surgeon, especially when considering operation on a patient over forty-five. Any person over forty-five who has abdominal pain should be subjected to rigid examination by cardiographic system. I recall very vividly several cases of coronary thrombosis incorrectly diagnosed and know physicians who at one time thought there was no such condition. I know of an instance where an operation performed for suspected gall-bladder disease turned out to be coronary thrombosis.

I voice my gratitude and appreciation to Dr. Herrmann for presenting a subject so interesting alike to internist and surgeon.

Dr. John H. Musser (New Orleans): In a very rapid survey such as Dr. Herrmann has just made it would be impossible to bring out every point of his subject, but I must say that he has broken

more records for rapid talking and succeeded in covering more ground in less than a half hour than the average man could do in two hours—and he did it very well.

There is one heart condition that it is difficult to diagnose and that is slow fibrillation. It has not been very generally recognized, yet it is a condition that is found with really great frequency and there is no way of diagnosing it accurately unless you have an electrocardiographic study. There is no difficulty in making a diagnosis of rapid auricular fibrillation; it is perfectly obvious to the surgeon, or to the gynecologist, or to anyone who is not doing internal medicine, what is wrong. But when there is a slow pulse, with heart rate around seventy, it is very difficult to make a diagnosis of a fibrillar irregularity. Some of the cases, without the use of the electrocardiograph, it is impossible to diagnose.

As a means of gaining prognostic information the instrument is invaluable. In cardiac physiology it has broadened our knowledge materially by the study of the action of the heart. In this connection I am reminded of a conversation I had with a quite prominent Philadelphia physician, known to most of the internists here, who was one of the pioneer workers in electrocardiography. It was in 1915, after he had been working with the string galvanometer for several years, that I had this talk with him. He said that he felt we had reached that stage of knowledge on the subject where we had discovered all that was to be known and he believed that the limit of the possibilities of the electrocardiograph had been attained. That was twelve years ago, before Dr. Herrmann studied medicine. Since that time our knowledge has been vastly broadened; we have learned a great deal more and there is still much more to be attained by means of this instrument. While we know now how to recognize the irregularities, there is still much to learn about cardiac physiology that has not as yet been touched.

I can add nothing to what has been said this evening, but would like to express my appreciation of the electrocardiograph. If any of you went through the struggle that a great many of us did when working with the polygraph, and stayed two or three hours attempting to get pulse graphs, which had to be printed in ink and often blurred out when you got half through, you can realize what a wonderful gift the electrocardiograph is, particularly in the study of cardiac irregularity. To send a case in and in a few minutes get a tracing of the reaction of the heart is a great thing to those interested in heart disease.

Dr. Chaillé Jamison (New Orleans): I think Drs. Musser and Herrmann struck a note that should be emphasized, that is, that the electrocardiograph gives us a graphic index of the electrical reactions of the heart; it leads us to the diagnosis of certain irregularities which we can arrive at in no other way. However, for those who have not kept up this study, I want to again emphasize the subject of cardiac reserve, the infections of the heart, both chronic and acute, which cannot be readily diagnosed by the electrocardiograph.

Dr. George R. Herrmann (closing): The several points mentioned by the discussants should certainly have been covered.

Dr. Heninger mentions the direction of our endeavors in this field from now on. Prognosis is a difficult matter under any circumstances, but with graphic records we may in the very near future be able to prognosticate with some degree of reliability.

The point brought out by Dr. Musser I intended to insert in the earlier group of conditions in which the electrocardiograph tracing is of great value and, as he states, almost absolutely necessary.

Dr. Jamison's remarks concerning the necessity of some further means of detecting early myocardial functional disturbances is quite well taken. Electrocardiograms may later be found to be invaluable in estimating this function, although at present we must admit that the field is limited.

The point brought out by Dr. Fossier concerning the electrocardiogram in acute infectious diseases of the heart I attempted to bring out when I mentioned the prolongation of the P R interval, which was the only evidence of acute rheumatic involvement of the heart in a few cases that I have seen as it was in his case.

THE NEWER CONCEPTION OF ACHYLIA GASTRICA.*

DANIEL N. SILVERMAN, M. D.,
NEW ORLEANS.

Thirty-five years ago Einhorn[1] advanced the idea that the absence of gastric secretion was a functional condition and designated to it the name, achylia gastrica. This thought was the first departure from the original idea that atrophy of the stomach always caused the suppression of stomach juices. Although the term achylia

*Read before the Orleans Parish Medical Society, March 14th, 1927.

was at first applied to the stomach which possessed neither ferments nor hydrochloric acid, it is at present generally employed to denote absence of hydrochloric acid (Faber.) The analysis of a given stomach's secretory function had been based solely on the response of the organ to the ingestion of a carbohydrate meal (Ewald test-breakfast or similar substance). Further studies by Rehfus[2] showed that in some instances the secretion of the stomach may be delayed. There are stomachs which will show no acid at the end of one hour but sometimes considerable quantity at intervals thereafter.

Certain substances are now known to be better promotors of the gastric secretion than the carbohydrate meal. The value of the extract of beef in this respect has recently been confirmed by Gompertz and Cohen,[3] who also demonstrated the succogogic action of yeast extract. However, there are cases of achlyia gastrica which do not respond to food substances and which require more powerful stimulants for a finer differentiation.

The animal experiments of Popielski,[4] Keeton,[5] Koch and Luckhardt,[6] and others proved that histamine is a drug with a marked stimulating effect on the gastric secretion in dogs and cats. The effect of histamine on the human gastric secretion was then observed by Carnot, Koskowski and Libert.[7] They introduced the duodenal tube into the stomach and injected the drug subcutaneously. By withdrawing the contents at intervals they noted an increased flow of gastric juice 30 to 55 minutes after injection, accompanied by an increased total acidity, free hydrochloric and proteolytic activity. In consequence of this work, Matheson and Ammon[8] carried out an investigation on twelve hospital patients, mostly convalescents and without any obvious disturbance of gastric function. By using small doses of histamine, subcutaneously, they reported the exciting power of the drug on the flow of gastric juice in man. The dose employed approximated 1.5 mg. of the salt (phosphate). No harmful gastric or general disturbances resulted and the authors suggested the possibility of employing histamine as a means of investigating the state of gastric secretory function and perhaps as a therapeutic agent.

Gompertz and Vorhaus[9] followed with their studies of the gastric response to histamine in various disorders of the stomach, particularly in cases of achylia gastrica. They believed the reaction to this compound promised to offer a means of differentiating between true achylia, *i. e.*, achylia with destruction of the secretory glands, and pseudo-achylia in which usually a functional inhibition of secretion occurs. In their seventeen cases of achylia gastrica, without sufficient numbers to group the cases, ten showed considerable amounts of free hydrochloric acid following histamine stimulation. In some cases of low acidity, the response to histamine reached the same figures as in those patients who showed a normal or increased acidity after the Ewald meal. In 66 per cent of their cases, Gompertz and Vorhaus[9] showed the maximum rate of secretion in from thirty to sixty minutes after the injection, 22 per cent attained the maximum in from 60 to 90 minutes, while 11 per cent reached it in 15 to 30 minutes.

In a series of studies on seventeen subjects, six of whom were normal, and eleven achlorhydrias, Dobson[10] found that the maximal effect from histamine stimulation is usually obtained at the twenty-five minute interval. He is led to conclude that histamine is a strong stimulus to gastric secretion, especially to the secretion of acid, and that true achylia gastrica may be a relatively infrequent condition.

The present report constitutes an analysis of several groups of cases presenting achylia gastrica with the view of differentiating the true from the functional type by means of histamine injection.

After having determined that the stomach fails to secrete acid after food

ingestion, aspiration of the fasting gastric contents is made on a subsequent day. The tube is then left in place. 1 c.c. of 1-1000 solution of histamine hydrochloride is injected subcutaneously. The gastric juice is allowed to flow or is aspirated every five minutes. The quantity of free hydrochloric acid in each sample is determined at the bed-side by the H-ion concentration method of Denis and Silverman.[11]

The largest group of achylia cases in this series, and the one in which the writer is especially interested, is associated with disturbances of the gallbladder. In this group the reaction of the stomach glands to histamine injection is most suggestive. Ten patients were tested and nine responded with normal to hyperacidity values. The achylia was persistent in one individual who was past the age of sixty and a mild diabetic. She was seen in consultation with Dr. Lemann because of an intractable diarrhea. Four of these gallbladder cases had a previous cholecystostomy but no claim is made that the operation produced the achylia. In one case, however, gastric analysis before cholecystostomy showed a hyperacidity. Katsch and Kalk[12] reported a case of cholecystitis in which the anacidity was responsive to histamine. Five months after removal of the gallbladder this responsiveness had disappeared. There is evidently further confirmation of the close relationship existing between the gallbladder and the secretory functions of its allied organs.

Achylia gastrica is a constant finding in pernicious anemia. The researches of Levine and Ladd,[13] Evans[14] and numerous other authorities have proven the invariable association of these two conditions. In a recent article, Grinker[15] advanced the opinion that normal gastric acidity may be present in pernicious anemia, and that the achylia which does occur is not predisposing. In his excellent critique of Grinker's report, Musser[16] states, "It would appear from the very brief case reports which he has presented that the diagnosis of pernicious anemia might well be questioned, particularly so when hematologists at the present time very generally accept the absence of free hydrochloric acid in the gastric contents as one of the necessary symptoms which go to make up the symptom complex of pernicious anemia." In support of this statement a group of eight cases with pernicious anemia were analyzed and failed to manifest any evidence of acid secretion even when stimulated with histamine. In this group, two women in their early thirties and with recent symptoms showed a permanent achylia. In one there was a marked clinical and hematological improvement following dietary treatment without any tendency towards recovery of the gastric secretion.

In three individuals with achylia gastrica vera, that is permanent suppression of gastric acidity following histamine injection, no causal agent could be determined. Some would speculate on this condition as a possible predisposing factor or forerunner of pernicious anemia.

Since the visits of Finsterer to this country a few years ago many more subtotal gastrectomies have been performed for the relief of peptic ulcer. He advocated the removal of the acid-bearing area of the stomach to prevent recurrence as well as obviate occurrence of the so-called marginal ulcer of gastro-enterostomy.

Through the courtesy of Dr. Graffagnino I have been privileged to observe three of his cases with Finsterer's operation performed years ago. The patients are in perfect health. Two of the cases failed to show any trace of hydrochloric acid, (in one of which the writer found a hyperacidity just prior to operation), whereas the third is able to secret a normal acidity following histamine.

I wish to express my thanks to Drs. Lemann and Graffagnino for the privilege of studying their cases, and my sincere appreciation of the valuable assistance ren-

dered by Drs. Efron and Wight of the Touro Resident Staff.

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DISCUSSION.

Dr. Allan Eustis: I do not know that I can add anything to the subject matter that Dr. Silverman presented before you, "The Newer Conception of Achylia Gastrica." The work is of intense interest and he is to be congratulated on taking a broader view of achylia than we have in the past, for it is a step in advance to recognize it as a symptom and not as a disease. Achylia gastrica is accepted as a diagnosis in so many of our larger hospitals, but I have thought for years that it was no more a diagnosis than tachycardia or fever. There is some cause for the achylia and if Dr. Silverman's paper has done nothing else, it will stimulate us to ascertain the reason for the achylia and this method will probably assist us in determining it—those disturbances of mechanical origin, those of the gastric mucosa or impaired function, just as we find the cause in a case of decompensated heart.

The principal reason Dr. Silverman asked me to open his discussion is because some years ago I did some work with histamine. In looking up the literature I came across an abstract in "Chemical Abstracts" in which histamine is mentioned as promoting pancreatic secretion. It is also of interest in this connection to notice the correlation between disease of the gall-bladder and the achylia gastrica. On account of the frequency of associated pancreatitis in chronic gall-bladder disease the pancreatitis may possibly be a causative factor in the achylia.

SOME FACTS ABOUT CANCER.*

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The last quarter of a century has witnessed a distinct change in the relations between the physician and the public. Then such a meeting as this was unheard of, today it is so usual as to pass without comment. The education of the laity in medical matters is progressing apace, thanks to the activities of the American College of Surgeons, the American Medical Association and similar bodies, and the happy results are evident on all sides. To take but a single illustration, the tremendous reduction in the death rate of tuberculosis is due not only to the achievements of medical science, splendid as they are, but to the increased knowledge on the part of the general public as to how to prevent the disease and how to treat it when it has occurred. Such bodies as the American Society for the Control of Cancer are attempting similar things for that last great scourge of mankind, and I am therefore grateful to you for giving me the opportunity of bringing before you tonight some of the knowledge concerning cancer which you, as social workers, should consider it your duty to spread among the unfortunate with whom you are brought into contact. For the unfortunate poor are too often the ignorant also, and ignorance, I say without hesitation, is cancer's strongest ally.

In some respects the situation has markedly improved in recent years. Thus Bloodgood tells us that during the decade from 1890 to 1900, 99 per cent of the patients examined for breast disease at the Hopkins Clinics required operation, while 85 per cent of those operated upon proved to have malignant disease, in most instances so far advanced that even the most radical procedure was frankly hopeless from the outset. Since 1920, on the other hand, operation has not been indicated in 50 per cent

*Read by invitation before the Louisiana State Conference for Social Betterment, March 17, 1927, in New Orleans.

of such cases, and only 25 per cent of those operated on have proved to have cancer.

Other aspects of the picture, however, are not so bright. Gynecologists tell us that more than 80 per cent of the cervical cancers they see have passed beyond the stage where operation could be attempted with the faintest hope of success, and the general surgeon is too often sickened to the soul by finding hopelessly inoperable conditions when he has opened an abdomen for suspected cancer of the internal organs. Obviously, in the face of such facts as these, we have traversed only a small portion of the road which leads to ultimate conquest.

Cancer is today the leading cause of death among adults. Approximately five hundred thousand people die yearly from it, nearly one hundred thousand of them here in America. It claims its victims at the rate of one every four minutes, and it more than equals the combined devastation of storms and earthquakes and volcanic eruptions throughout the world. Between the ages of fifty-five and seventy, one man out of every eight dies from cancer, and between the ages of forty-five and sixty-five, one woman out of every five dies from it. Moreover, on the surface, it seems to be increasing something like 2½ per cent yearly; it has apparently increased in the last quarter of a century 83.3 per cent among the whites and 88 per cent among the colored here in the United States alone.

Much of this increase, happily, is apparent rather than real. Increased accuracy in diagnosis explains part of it, and increased strictness on the part of health officials, who no longer tolerate vague causes of death, explains more. Moreover, increased longevity has made this malady, which is pre-eminently a disease of middle life and old age, apparently more frequent. Really, the increase in the cancer death rate is exactly proportionate to the increase in the common causes of death in those who have passed the prime of life, heart disease, nephritis, cerebral hemorrhage and diabetes. In other words, increased medical skill is prolonging lives which formerly would have been lost earlier from other conditions. As one writer puts it, every person saved from death in youth is one more potential victim for cancer in old age, every improvement in public health leads to an apparently increased cancer mortality, and the cancer incidence is increasing just about to the extent that people are kept from dying of something else. Even granting, however, that the disease is stationary and that the mortality is not really increasing, the death rate is still one which physicians cannot view with complacency or laymen without fear.

Our knowledge of cancer is still extremely limited. In reality, all we know is that it is the abnormal growth of inherently normal cells. The symmetry and regularity of organs and tissues of the body are due to some power of limiting normal cell growth, and when this inhibiting power, which is as yet unidentified, is lost, the cell growth runs riot. In other words, cells growing out of their natural environment and beyond their natural size, destroy first the local tissues which feed them and eventually kill the entire host.

Various theories have been advanced and discarded. The biochemical theory, to mention one, is based on the fact that ordinary salt is at least one of the potent factors underlying the disease in that it affects the chemistry of the circulating plasma in such a way that it feeds the cancer cells and allows them to grow, part of the claim being that organs with a large blood supply are predisposed to cancer. This is crediting nature with a grave error, in the first place, and in the second, the blood supply is always proportionate to functional activity. In proportion to size, to take but a single illustration, many times as much blood goes through the thyroid as through the brain, an admittedly vascular organ, yet neither of these is often the seat of malignant dis-

ease, so that the theory is apparently not tenable in its practical application.

The parasitic theory is equally untenable. Senn in particular disproved it by grafting bits of malignant tumors into pockets he had cut in the skin of his own forearms, with so little success that he eventually died of heart disease. Nuzum did have some success in transmitting breast cancer from a human being to white mice after culturing his material in ascitic fluid. He demonstrated a micro-organism in the cancer cell identical with the organism isolated from mouse cancer, and reproduced it experimentally in a small series of animals, but the results were not uniform and the experiment halted at this point.

Cancer is not hereditary in the accepted sense of the word. The work of Maude Slye would tend to prove that its transmission in mice obeys the laws of heredity originally propounded by Mendel. In other words, the appearance of cancer in families is a manifestation of the Mendelian theory, which recognizes two types of inherited characteristics, the dominant and the recessive. The recessive type shows cancer tendencies, and cancer therefore is not, as we ordinarily understand the term, truly hereditary.

Ignorant as we are about the actual etiology or causation of cancer, we are very sure of one thing, that certain conditions are definite precursors or forerunners of it. It begins frequently in moles or warts, harmless in themselves, which have become malignant through constant irritation over a long period of time. It appears in old scars, and it follows constant irritation of the tongue, lip and cheek from decayed teeth, defective bridge work, even lack of attention to oral hygiene. It is common among men who smoke, and I am not trying to be humorous when I venture the assertion that it may perhaps, in this generation, be equally common among women who smoke. It appears on the inside of the cheek in the East Indian races who chew the betel nut, which has a rough exterior. It has long been recognized as a source of peril among physicians who work with the X-ray. It appears frequently on the abdomen among the natives of Kashmir, who carry under their clothing small pans of coal for warmth. Cancer of the cervix is found almost exclusively among women who have borne children, and the predisposing cause is unquestionably the birth injuries which are apparent in some form or other in the cervix of every such woman. It is preceded by gastric ulcers in a fair percentage of cases or by hemorrhoids or any condition which gives rise to constant irritation along the digestive tract.

We have recognized for many years that irritation of some sort was a definite predisposing cause, but only recently has it been proved conclusively by laboratory experiment. The fourteenth annual report of the Cancer Commission of Harvard University contains the results of a study by Miss E. E. Jones in determining the susceptibility or immunity to a transplanted tumor in mice. The race of mice in which this particular tumor is found is susceptible in 100 per cent of the cases; that is, the transplanted tumor grows in every instance. But mice of another race are completely immune to it under ordinary circumstances. The addition to the inoculated tumor, however, of a piece of sterilized flannel results in the development of malignancy in about 15 per cent of the animals, seeming to prove that local irritation, no matter how simple, can overcome an inherited immunity which, without such irritation, is capable of preventing any growth whatever.

Cancer is not, as has been so often asserted, exclusively a disease of civilized peoples. Civilization seems to have nothing to do with the case, except that by increasing the life expectancy some thirty years, it adds proportionately as many possible people in whom the disease may

develop. In India, for instance, the life expectation for males is 26.6 years, whereas with us it is 54 years, which means that the number of males reaching the cancer age is just that much smaller than it is with us. Moreover, the chances of any but external cancer being recognized are small, and the absence of records and of certified causes of death are equally obvious sources of error. Finally, whenever clinics with modern facilities have been established in Eastern nations, it is always found that the incidence, all things considered, is about what it is in the civilized Western nations.

Part of the reason for the appalling death rate in cancer lies in the ignorance of the laity concerning its early symptoms, and their unwillingness to recognize them when they are present. It cannot be too emphatically stated that cancer in its early stages is a most treacherous disease in that it causes no pain and is apparently a trivial thing. Yet the person who treats it as such is literally gambling with death, with all the odds against him. Any local sore which does not heal within a reasonable time, any skin defect which tends to spread, may be cancer. Any lump in the breast, no matter how harmless it may seem, should be excised, and examined by a competent pathologist. It may be harmless, but in 90 per cent of women past forty it means cancer. Moreover, when cancer of the breast can be diagnosed clinically, that is, by inspection and palpation, in most instances it is so far advanced that even the most radical operation effects only a small percentage of cures.

Irregularities of menstruation are no more natural at forty-five than at twenty-five, bleeding is not a normal accompaniment of the menopause, and neither discharge nor bleeding is ever physiological after regular menstruation has ceased. Unfortunately, early cancer gives rise to no definite symptoms unless it is on the exposed surfaces of the body. In the stomach and other internal organs it may not be apparent until it is quite far advanced. Therefore in the cancer age any digestive disturbances, diarrhea, loss of weight, slight elevation of temperature, anemia, in short, any constitutional symptoms should be looked upon as evidence of trouble somewhere, and the investigation should not cease until cancer of the internal organs has been eliminated by every possible clinical and laboratory measure, and by exploration of the abdomen, if necessary.

Moreover, the patient, having recognized that something is wrong, and having submitted himself to his physician, should make sure that his physician knows his business. Education along these lines is needed not only by the laity. Even the best diagnostician makes his mistakes, and the members of the "wait and see" school make mistakes consistently. An unhealed sore, a vague lump, needs something more than examination by hand. It needs removal and examination by a pathologist, and the physician who advises his patient to wait and see what will happen is doing him a deadly and irretrievable wrong. A woman who consults a physician for uterine bleeding and is dismissed with ergot or some similar drug, without a careful pelvic examination, should seek another physician at once. As for cancer of the internal organs, I speak with special feeling; scarcely a month passes that I do not have handed over to me, as a general surgeon, a patient for whom I can do nothing beyond opening and closing the abdomen, because early symptoms were disregarded, and a hopelessly inoperable condition was permitted to develop.

Until we learn, or rather until we put into practice what we already know, that at some stage in its growth cancer is always a local disease, with cures possible and probable in most cases, our cancer mortality is not destined to improve. Bloodgood's figures again prove this conclusively. In the cases in the Hopkins Clinic in which the diagnosis of cancer of the breast could be made only by the path-

ologist, the five year cures averaged 80 per cent; where the diagnosis was made by the surgeon before operation, they averaged 25 per cent. Such evidence is conclusive.

Obviously, then, the proper treatment for cancer in every case in which it is possible is immediate radical removal. Morever, all definitely precancerous lesions should be either cured or removed. In all instances they may not become malignant, in fact, in the majority of cases they probably will not, but I agree with Bloodgood that every such operation cheats cancer of at least one potential victim. Unfortunately, however, surgery is not always possible. Gynecologists tell us that only 10 to 20 per cent of the cervical cancers which they see are operable, by which they mean that only in this small percentage is the disease truly local, which means again that it can usually be diagnosed only by the pathologist. The same proportion, in my experience, holds for cancer of the internal organs, the stomach, the large bowel, the rectum, etc.

What, then, are we to do for these other victims? We may, of course, perform a palliative operation, done to make the patient as comfortable as possible during the remainder of his life, with no expectation of a permanent cure. And we may use irradiation. Deep ray therapy has not given us the results which we once hoped for, and its employment promiscuously, without selection of cases, leaves many of these unfortunates in an even more deplorable condition than they were originally. Radium, likewise, must be used with great discrimination, but so used, it is a real boon. In cancer of the cervix particularly its results are sometimes little short of miraculous. The patient becomes clinically well, in a certain percentage of cases there is an apparent cure, and even in the advanced cases it lessens the infection and foul discharges which make these patients horrors to themselves and those about them. But radium should not be regarded as a substitute for the knife; most often it is resorted to because the local stage of the disease is passed and radical surgery is no longer possible.

Medicine is absolutely useless. There has never been a cure by drugs in which the diagnosis was not open to doubt. Salves, ointments, external applications, sera, vaccines, all the host of advertised cures are little more than get-rich-quick schemes for those who promulgate them. No field of human affliction is open to so much quackery as is cancer, and unfortunately the medical profession itself, in the person of some of its members, sometimes through ignorance, sometimes through a complete lack of scruples, becomes the tool of these charlatans. Throughout the civilized world today the cause and cure of cancer are alike being sought unremittingly, and when the truth is discovered, it will be proclaimed to the public through the proper channels quite as promptly as was the discovery of salvarsan, of diphtheria antitoxin and of insulin. Flee from the advertised cure for cancer as you would from the plague, for death stalks in its wake.

It might be well to mention one or two instances of the correct way in which the cancer question is being investigated. In the Hamburg clinic of Schottemüller, for instance, an investigation has been carried on for over three years, involving thousands of rats and mice, based on the admitted fact that cancer cells consume more sugar than do normal cells, and on the assumption that the successful treatment of the disease may lie in a starvation diet, with total removal of the sugar content. The matter is still in the stage of animal experimentation and it may never come to more, but it is being studied scientifically and honestly.

Better known, perhaps, is the work of Blair Bell of Liverpool, who is in charge of the English committee investigating the use of colloidal lead in cancer. The thoroughness and impartiality of this work,

and the extraordinary co-operation being received from the profession generally in England, are guarantees of its worth. Every case which is accepted for treatment is gone over by a board of examiners both before and after the lead is used, and no one man's opinion is final, so that whatever results have been secured are thoroughly authenticated, which, I might say in passing, differentiates such results as these from those attributed to quack cures. Animal experimentation is being carried on simultaneously with the work on human subjects, and biochemists and physiochemists are investigating the subject from every angle. There is no question but that lead has some effect on the cancer cell, though whether it will prove to be the curative agent for which we are looking it is still too early to say. At any rate, the ultimate solution of the problem lies in just such methods as Blair Bell and his committee are employing.

In conclusion, a few facts stand out in the prevailing confusion of the cancer situation. Cancer is not contagious and it is not hereditary as we ordinarily understand the term. Its primary cause is still unknown, but it is definitely proven that constant irritation is a predisposing cause. The ultimate reason for every cancer fatality is either procrastination or faulty diagnosis. The disease is essentially a local one, and prompt recognition of the early symptoms is imperative for a cure. The one successful treatment is surgery, supplemented by irradiation when indicated; roentgen-ray and radium are adjuncts to surgery rather than cures in themselves. Without exception, drugs, local applications and serum treatments are useless and worse than useless, in that they lull the sufferer with a false sense of well-being and security until the time has passed when the recognized methods of treatment can avail. Finally, dark as the outlook is, there are rays of light. Whether, as Dr. W. J. Mayo has recently suggested, a cancer immunity can be developed as can an immunity to diphtheria, scarlet fever and similar diseases, is questionable; it is highly desirable, certainly, but extremely improbable, in the face of our present knowledge. Passing, however, from the realm of speculation and setting our feet upon the firm ground of facts, we know definitely that cancer in its local stage is a curable disease, and every case of cured cancer is additional evidence that cancer be cured.

PSYCHIATRY FOR THE GENERAL PRACTITIONER.*

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There are so many specialties in the practice of medicine and surgery that a general practitioner cannot be expected to become an expert in all of the specialties of the healing art. However, all general practitioners are presumed to have at least some knowledge of every specialty, and there are some who make an honest effort to become fairly well acquainted with the entire scope of medicine and surgery.

When it comes, however, to nervous and mental diseases there seems to be a disinclination on the part of the average practitioner to even learn the rudimentary facts. It is hard to determine whether this is due to lack of interest or because the specialty is somewhat uninviting to the average doctor. The fact remains that the study of mental diseases is practically an unknown field of effort except to those few who spend the greater part of their life segregated with the mentally abnormal; and these are finally looked upon as slightly psychopathic, by their fellow practitioners.

This being the case, I have thought it worth while to present some features of psychiatry which should be of general

*Read before the Rapides Parish Medical Society, April 4th, 1927.

knowledge to every physician. It will be noted that these remarks are mainly confined to the problems covered by diagnosis, prophylaxis and prognosis. The matter of treatment is purposely ignored as that can only be satisfactorily given in an institution. The family physician, however, has a sacred duty in the prevention of mental diseases, a decided responsibility in diagnosis, and it is to him that the family frequently looks for advice as to the future of the case. Thus it appears only proper that every physician should know enough about mental abnormalities so that he can fulfill this responsibility to his clientele.

The chief problem in diagnosis is the early recognition of the fact that the patient has a psychosis, combined with an ability to make at least a tentative diagnosis. It is astonishing how many physicians fail to realize that certain abnormal conduct constitutes a psychosis rather than a crime or a deliberate social error. A more liberal knowledge of psychiatry would be of great help in the proper treatment of many of the social problems of the community. Prophylaxis as far as insanity is concerned is also of the greatest value. The physician should be the teacher of his community and the intelligent citizen should be instructed that only by the prevention of inheritable mental abnormalities can the great increase of insanity be checked. Like breeds like, and the children of the abnormal will be abnormal. Anyone who doubts this fact can learn the truth by visiting any psychiatric hospital and studying the records. The great increase in insanity must be prevented and it can be—by sterilization of the mentally unfit.

It is also of the greatest importance that the physician understands just what can be done for psychiatric cases once they are diagnosed. Many cases have a hopeful prognosis, some have a chance for recovery and others will never recover. Each mental condition has its own prognosis and these prognoses can be easily learned. I would urge especially the greatest honesty in dealing with the families of the insane. Nothing can be gained either by deceiving them as to the outcome or delaying telling them the real status of the case. For the purpose of convenience I have, in this paper, divided human life into seven decades; and have assigned to each period one type of mental disease. I believe that this scheme in itself will be of general benefit to the general practitioner as presenting a simple method for the more rapid arriving at a possible diagnosis. It is not to be supposed that each mental disease I mention confines itself sharply to a certain ten year period of human existence, but the average is well preserved.

FIRST DECADE.

(Up to ten years of age)

The most common condition to be met in this period is one of the forms of feeblemindedness. Prenatal care, the avoidance of birth injuries, and the proper treatment of the diseases of childhood, such as scarlet fever, will go far toward the elimination of many of the acquired cases of mental deficiency. Hypothyroidism, producing myxedema, should be early recognized and treated. Especially interesting in this decade are the cases of Little's disease producing spastic hemiplegia, epileptiform convulsions and imbecility. The recognition and treatment of cranial hemorrhage at birth should do much to lessen the number of these in the future.

While epilepsy in childhood is frequently diagnosed, the fact should not be overlooked that this condition is usually concomitant with feebleminded states and so well is this appreciated that juvenile epileptics and feebleminded are often cared for in the same institution. It would not seem too much to ask each physician to familiarize himself with the Simon-Binet measuring scale of intelligence, as by the use of this scale the average case of feeblemindedness can be detected. The feebleminded child should be diagnosed as early

as possible, and if such facilities are available, should be given the benefit of special education in classes for backward children. The family, however, should not be deluded by spacious promises as to the results of such education. A feebleminded child with a four year old mentality can learn all that any four year old child can learn, but, no matter how strenuous the pedagogical effort may be, he can never be taught the facts which require a five or six year old brain to master. The parents should be told of the condition, and its hopelessness, and preparations should be made for the adult life of the defective child which will be in harmony with its maximum intellectual ability. Finally the family should be informed as to the matter of heredity, and every case of mental deficiency should be sterilized in order to prevent the appearance of similar defects in the future generations. Only by such treatment can we prevent the endless propagation of the feebleminded.

SECOND DECADE.

(From ten to twenty years)

This is the period in which cases of hebephrenic dementia precox are first recognized. As children these cases are markedly antisocial, introverted, and different from the rest of the neighborhood, but their apparent brilliancy in school life and their unusual exemplary moral conduct cause them to be greatly admired by the older generations. They usually do very well in high school, and at times are able to enter college. The mental break comes suddenly, after a period of confusion and excitement; following these preliminary symptoms there are frank hallucinations, splitting of the personality, negativism, and most sad of all a sharp antagonism and even hatred of the parents. Once the disease has been inaugurated, it is useless to hope for recovery, and the family should be advised to place the child in the state hospital for the insane, unless they are financially prepared to face an outlay of several thousand dollars a year for the remainder of the patient's life. The family practitioner should endeavor to make an early recognition of the dementia precox personality, and give advice to the family which will lead the potential patient away from the school-room, and if possible toward a life spent in the open, preferably among rural surroundings with a minimum of stress and mental responsibility. It is believed by many psychiatrists, though up to the present time not definitely proven, that if these cases can be recognized before adolescence, the sharp break to actual insanity can be prevented by proper supervision of every portion of the child's mental and physical life. It is my personal opinion that little can be done in the way of prophylaxis but it is worth while to make every effort to prevent unnecessary mental stress and strain. The general practitioner at times has trouble differentiating dementia precox from psychopathic personality. This will not be difficult if a careful history is obtained. In the one case it is always possible to obtain the precox personality whereas in the psychopathic there is an entirely different history of early life showing incorrigibility, and constant conflict with social customs and the law.

THIRD DECADE.

(Between twenty and thirty)

In this decade we have the individual facing the problems, financial and social, of early adult life. It is here that we frequently find the class of mental case known as the manic depressive psychosis. This disease, first clearly described by Kraeplin, consists of either periods of excitement, periods of depression, or in the same individual, excitement with depression alternating. It is very easy to recognize the average manic personality. They are extremely busy people but do not do anything real well. They dash from one enterprise to another without awaiting to finish anything. Irresponsible and active, they gain a reputation in the world of belonging to the "go-getter" class. Owing to their supreme egotism and boundless self-

confidence in their ability, they venture into financial enterprises which usually end in disaster. Such cases are known to the psychiatrist as manic personalities or as cases of hypomania. The depressive type is also usually easily recognized. To them the sky is always dark, and the flowers less sweet than a generation ago. They believe that the world is rapidly going to the dogs, and that in some way they are to blame for the existing condition. They feel incapable, inefficient and constantly suffer from an inferiority complex. Both of these types of individuals should be, if possible, protected from themselves. The more normal members of the family should be advised constantly to life, and by being busy, avoid continual individual from plunging headlong into what is often financial disaster for the family, while on the other hand the depressive individuals should be encouraged and stimulated to look on the bright side of life, and by being busy, avoid continual introspection and self-condemnation. The time frequently comes when the manic case grows to be such a nuisance to the community, and the depressive case such a danger to himself on account of possible suicide that institutional care is required. If the patient is committed, the family should be encouraged by the explanation that these conditions are often temporary, and that the attack is usually recovered from. Following recovery from the first attack these patients should be handled with the greatest tact and kindness by the family. There is no case where the rehabilitation of the recovered patient is more of a problem than with the manic depressive case and the private practitioner should aid and direct, not only the treatment of the family, but of the entire community, toward such cases upon their return home.

FOURTH DECADE.

(Between thirty and forty)

No class of insanity is capable of causing such constant disturbance in a small community as the true paranoiac. These cases are slow in development but usually become well recognized before the fortieth year. At first merely hypochondriacal, they later become grandiose and develop well systematized and fixed delusions of persecution. Feeling that they are right and the world is wrong they are prompted by their superiority complex to correct all the errors they see in their fellowman. As volunteer reformers they figure in constant litigation, and keep their little world in a state of continual unrest. The majority of these cases is the protection of the community the fact that they are not recognized as being insane, simply adds to the confusion. Being of the slowest development, they are not early diagnosed, and little or nothing can be done as far as prophylaxis is concerned.

The most important feature in these cases is the protection of the community from the false accusations of these individuals; the marital partners especially are frequently accused of the most outrageous crimes, and so cleverly is this done that the entire neighborhood, not recognizing that these accusations are the product of a diseased mind, often aid in the complete destruction of an innocent person's reputation. The physician, dentist, lawyer and pastor frequently become deeply involved in these cases because of their professional and ethical relationship. Once the diagnosis is made it is best to consider every statement of these paranoiacs untrue unless sustained by the most careful and complete investigation. Frequently the only relief that the family and community can obtain is to commit these cases to a state hospital, and if this is done the physician should inform the family, once the diagnosis is made by the psychiatrist, that no hopes can be entertained for future recovery.

FIFTH DECADE.

(Between forty and fifty)

Whenever the attention of the physician is called to a patient, who, between the age of forty and fifty, shows a sudden and

marked change in personality with symptoms of neurasthenia, the first thought should be to eliminate the possibility of general paralysis. This final result of luetic infection comes unexpectedly, many years after the primary chancre has come, gone and been forgotten. Often the victim, thoroughly reformed from early vices, has become a respectable member of the community, and syphilis is the last disease considered or thought of by the practitioner. However, if there is a change in personality, accompanied by definite neurology, such as tremor, rigid or irregular pupils, changes in the deep reflexes, an ironing out of the facial expression with a loss of clearness in speech, then paresis must always be considered and the case should be referred to the laboratory for examination of blood and spinal fluid, and the psychiatrist for the finer mental tests.

The early diagnosis of paresis is often of greater importance to the family than to the patient. These men frequently become grandiose, and possessed of a great sense of business ability, and through reckless investments the entire funds of a family may be lost before it is realized that the head of the family is insane. The prophylaxis of paresis consists in the early teaching of sexual morals to the young and the immediate, and unremitting treatment of syphilis from the hour the chancre is diagnosed. In other words the prophylaxis of paresis must start twenty years before the symptoms of mental disease appear. Once the symptoms are so pronounced that a diagnosis of paresis can be made, the time has passed to expect any curative results from treatment. The usual expectancy of life is from two to five years after the disease is diagnosed and the family should always be told that the apparent improvement, known as the remission, does not mean a cure, but that the disease is always fatal.

SIXTH DECADE.

(Fifty to sixty years)

Melancholia is distinctly a disease of the involutional period. So true is this that our nomenclature now terms the condition "Involution Melancholia." With the mental symptoms, appears premature ageing, and in women,—an early menopause. The psychic picture is distinctive and easily diagnosed. Agitated depression, self-accusation, constant worry, insomnia, and loss of weight in the presenilium form a symptom complex that is easily recognized. The onset frequently follows periods of grief and stress, such as are the result of sickness and death of loved ones. Once the disease is recognized the only rational treatment is institutional care. The family should be told that the outlook is very unfavorable for recovery and that, while slight improvement can be expected under hospital treatment, still the depression will continue. Often the agitation is so continued in these cases that death comes as a result of exhaustion. It would seem reasonable to believe that as the condition is associated with the menopause that glandular treatment would be of benefit but so far no form of medication has yielded any satisfactory results.

SEVENTH DECADE.

(Sixty to Seventy)

There are few problems in economics that present more difficulty than the modern care of the aged. In past ages the old people were cared for by their children in their homes. The American home is rapidly disappearing, and with the increasing social and financial demands made upon the younger generation by the modern social customs, it appears more and more difficult to care for the decrepit and senile outside of state institutions. Each year the demands made upon such hospitals are increasing in number and urgency.

Everyone who lives long enough grows old, and most old people seem odd and peculiar to the younger generations. The children and grandchildren often seem to have neither time, understanding, nor sympathy enough to care for these unfortunates who have committed no error except to outlive their usefulness. In such

cases the family physician has an unusual opportunity to effect an adjustment and arrange methods of care which will enable these old people to remain at home. Most of them do not need more than a warm place by the fire, simple food, and kindly care. However, when arteriosclerosis and cardio-nephritic conditions add their symptomatology to that of simple senility, there are often periods of confusion, disorientation, and mild excitement. Yet, even these symptoms subside rapidly under the simplest care in institutions, and there is no reason why the same favorable results should not be obtained in the home.

The prognosis, of course, is hopeless as to recovery, but these cases can be made comfortable and easily provided with all the necessities of life, and some of its comforts. It is a reflection upon modern civilization to believe that the only way to care for these unfortunates is to place them in a state institution. There are greater things in life than money and amusement, and every community and family must ultimately be judged by the care and consideration they give their aged and infirm.

SUMMARY.

1. Every general practitioner should know at least the fundamentals of psychiatry.

2. Each decade of life has its peculiar mental condition, the diagnosis of which presents no insuperable difficulties to the family physician.

3. The general physician has definite responsibilities to his clientele in matters of prophylaxis of mental disease, advice concerning the probable prognosis and ultimate methods of care of the psychiatric patient.

CASE REPORTS AND CLINICAL SUGGESTIONS

ACUTE ENCEPHALITIS.

(CASE REPORT)

MAURICE CAMPAGNA, M. D.,

NEW ORLEANS.

C. F. B., a white boy aged 19 years, was admitted to the Mercy Hospital, February 13, 1927, with the following history:

The patient retired Saturday, Feb. 12, 1927, as was his custom at about nine o'clock with no noticeable complaint, except a feeling of being tired, having worked hard that day. At about 12 o'clock midnight the lad's father, upon retiring, noticed that the bed linen was soiled, and on investigating found that the patient had involuntarily defecated and voided in bed. He immediately awakened the lad who was sleeping soundly and reprimanded him. At this time it was noticed that he had a numbness of his right arm. Believing this to be postural, the affected member was massaged with alcohol and the patient dropped back to sleep. At eight o'clock, upon being aroused, he complained of an inability to use his right arm and soon thereafter vomited.

Upon being summoned to see the patient I found that the boy was unable to talk. He was conscious and was able to move all members except the right arm. He was immediately removed to the Mercy Hospital where it was found that during the interim of the first examination and his admission to the hospital he had lost the use of his right leg.

Physical examination revealed a fairly well developed and nourished white male about nineteen years of age, five feet six inches tall, weight about one hundred and thirty pounds. The temperature was 101° F. (rectal), pulse 88, respiration 30. The lad was somewhat anemic and of an asthenic type. The pupils were mid-dilated, and reacted to light sluggishly; ear, nose and throat were negative for pathology. The facial expression was absent on right side. The chest was bilaterally symmetrical, expansion was good. The heart and lungs were normal. The abdomen was rigid, more so on the right side than on the left, and no organs were palpable. The genitalia were normal. There was right hemiplegia of the spastic type. The reflexes showed a 2 plus Babinski; the right knee jerk was 3 plus as compared to the left knee jerk which was 1 plus; the ankle clonus two plus. All other reflexes were exaggerated.

Laboratory findings: The total white cell count was 17,250, of which 18 per cent were small mononuclears, 1 per cent large mononuclears, and 81 per cent polymorphonuclears.

Spinal puncture: Forty-five cc. of clear fluid were removed under decided pressure, with 200 cells per c. mm. The Wassermann was negative. The smear showed only polymorphonuclear cells without bacteria. The cultured fluid showed no growth. A second spinal puncture showed an increased pressure with the same findings as the first except a diminution of the cells, with a great deal of degenerated neutrophiles.

The *roentgen ray* showed no opacity in the cranial vault. The sinuses were negative, and the mastoid cells clears.

The patient died February 17, 1927, exactly 100 hours after the onset of illness.

Autopsy findings: The brain was somewhat dry over the vortex, but showed some edema at the base. The cortical vessels showed marked congestion, and a few very small petechial hemorrhages. The organ was very soft in consistency, especially over the left hemisphere, which was somewhat larger than the right. On section there was found throughout the left hemisphere marked injection and numerous small petechial hemorrhages. These were generally present in all the lobes and were more marked just beneath the grey matter. Throughout, there was also found marked edema, making the white substance soft and of jelly-like consistency. The right hemisphere showed some injection and a few petechial hemorrhage, but to a much less extent than the left hemisphere. The lateral ventricles and the third ventricle were of normal size and contained a small amount of clear fluid. The choroid plexus showed congestion. The basal ganglia and mid-brain showed slight congestion. The cerebellum showed a marked injection and some edema of the inferior surface.

Microscopic examination of the tissues showed a marked congestion of the larger vessels and capillaries throughout the brain and meninges. The brain showed extensive edema, congestion, diffuse infiltration of moderate number of polymorphonuclear and lymphoid cells. The capillaries showed congestion, occasional rupture with petechial hemorrhage, and some showed exudation of a few polymorphonuclear and lymphoid cells in the surrounding tissue.

Smears and cultures from the brain substance were negative. Rabbits inoculated subcutaneously and into the masseter muscle showed no ill effects.

SUMMARY.

A case of acute encephalitis is reported with a sudden onset and no prodromata in an apparently previously healthy individual, terminating fatally within four days, and with no known etiological factor.

PHYSICIANS AND LIQUOR PRESCRIPTIONS.

A recent editorial in the State Times of Baton Rouge, protesting rather strongly against the physician who prescribes alcohol without observation of the laws which circumvent reputable practitioners, has been answered by Dr. C. A. Weiss, one of the Councilors of the Louisiana State Medical Society. Dr. Weiss says in part:

"It is unfortunate that the physician in the natural pursuit of his calling in curing and healing the sick must prescribe pain allaying and soothing as well as stimulating drugs. In order to be properly qualified to administer these drugs he must follow a prescribed course of study, stand state board examinations and qualify with his national and state governments. The federal government gives him a number, just as it does a distiller or tobacconist, by which he is ever afterwards known to his government. We are compelled to make yearly renewals of this number, at the same time paying the government and state for the privilege of this renewal. When we are given our number we are also given a book of several hundred pages setting forth, what, when, where, how and in what quantity we are allowed to prescribe any of the narcotic or pain relieving drugs. For the violation of any of these laws the doctor is subject to a fine of as much as $2,000 or an imprisonment up to five years. In order to obtain these same drugs for the administration to his patients he must purchase from the federal government and state board of health certain forms issued by the authorities for this purpose, and in this state must write the prescription on special duplicate prescription blanks sold by the board of health. Failure to comply with these laws and regulations cause the doctor many more petty annoyances. The law abiding American citizen can move anywhere at any time and carry on his trade or profession unmolested. But not so with the reputable medical practitioner.

NEW ORLEANS
Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

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For three years, H. B. Gessner, M. D., *Chairman*
For two years, Paul J. Gelpi, M. D., Lucien A. Ledoux, M. D.
For one year, H. W. Kostmayer, M. D., *Secretary;* Oscar Dowling, M. D.

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THE JOURNAL *does not hold itself responsible for statements made by any contributor.*

Manuscripts should be addressed to the Editor, 1551 Canal St., New Orleans, La.

AN ANNOUNCEMENT.

It is with the most sincere regret that we are obliged to announce the resignation of Dr. H. W. E. Walther from the position of Editor of the New Orleans Medical and Surgical Journal. Dr. Walther has for nearly four years given his time and services unsparingly to the Journal. He has been devoted and assiduous to his Editorial duties, according to them more of his time than he could well afford in the busy and active life of a practitioner of the healing art of medicine. He has sacrificed himself and always has he been willing to give up other things when his duties to the Journal demanded or required such a relinquishment. The results of his efforts, and those of the State Editorial Committee, the managing editor and his associates, can be appreciated readily by a comparison of the Journal of three years ago with that of the present day. Larger in size by far, increasing its pages from an average of 47 to an average of 89 pages of reading matter, better in content and appearance as a result of change in type and size of page, and more carefully edited than in former years, the Journal now stands as one of the best of the State magazines that represent the medical community of organized medicine in the various irregular localities marked off by arbitrary or natural boundaries. To Dr. Walther all credit should be given by the members of the Louisiana and Mississippi State Societies for his efforts, perhaps apparently indirect, but not the less actually directly affecting their medical life and their professional outlook.

It is with a certain feeling of editorial inadequacy that the successor of Dr. Walther replaces him. The high standards set and the achievements accomplished by his predecessor makes the new Editor realize fully how difficult it will be to supplant him. However, it is with the most earnest desire, and most ardent wish to carry on the splendid example already set, that the new piece of work is undertaken.

In conducting a medical journal that represents the organization of a state or states, certain limitations are placed on the Editor. It is not his to pick and choose. Articles which may be of general interest, of especial scientific value, or of great merit, can not be selected always because of the obligations of the Journal to the State Society. This is as it should be. Every member of organized medicine should have the opportunity offered him to express his ideas and to present the results of his studies and observations. He should have his forum and his press wherein his ratiocinations may be presented to the medical world. The affording of this is one of the important functions of the State Society at its Annual Meeting, and of the State Journal throughout the year. It will be the duty and the pleasure of the Editor

to further to the best of his ability the desire of any member of the two state medical organizations who may wish to make use of the periodical which represents him.

In order to present subjects of general interest, it is proposed to publish from time to time reviews of subjects which may appeal to the large body of readers. These articles, surveys of the literature largely, will be presented with the hope that they will bring up to date knowledge of the particular subject under discussion. With the great mass of constantly piling up information about this or that disease, test, operation or method of treatment, it is impossible for a man, unless he is omnivorous in his reading, to keep at his finger tips the latest details or the diffusely published results of all these papers. It will be the purpose of these critical essays to give a general inspection of the particular field reviewed at the time.

It is also to be hoped that it will be possible to establish and to secure contributions to a department which will deal with clinical notes and case reports. It seems a great pity that the large number of interesting cases that are observed in this and the surrounding community are not reported. The failure to do so lies in the unwillingness of the observer to record single cases. A series of cases representing the same unusual manifestations may be seen in a few very large hospitals and clinics, but the average physician is not in a position to command a large service nor to see a great many patients. It must not be forgotten that a number of isolated well studied case reports, prepared by members of the profession throughout the community, will soon make up a series upon which to base a careful review of the rare and unusual cases, or to prepare a dissertation on the exceptional in a commonplace condition. This also appears to be one of the functions of the State Journal which should appeal to the enlightened student of medicine, be he a country practitioner who sees many interesting cases, rarely reported, or an urban practitioner with a service in the wards of a large hospital. The institution of publishing the reports of various hospital staffs will in part only fulfill the need of recording cases, autopsies, operative methods and results which should be given to the reading public. There is room for much more of this type of work.

The Editor would like to call attention to the necessity of authors giving exact references when referring to the work of others. An inexact, wrong, or incomplete reference is a tremendous source of irritation and trouble to the reader who wishes to look up the article mentioned. In the majority of cases it is worse than useless. With this thought in mind, it seems right to request authors to give the name and initials of the author referred to, the Journal in which the article is published, with the volume number, page and year of publication.

Lastly, your Editor wishes to call on the members of the two constituent State Societies represented by the Journal, to help and assist him in his editorial duties. Criticism of any kind will at all times be welcomed, but constructive criticism alone is valuable, destructive complaints, depressing and demoralizing.

THE FIFE BROTHERS RELEASED.

It was with a distinct feeling of surprise, not to say disgust, that organized medicine of Louisiana read of the pardoning of the Fife brothers, notorious chiropractors of the state. These men had been convicted by a jury of their peers; the trial findings had been substantiated through all courts of appeal, up to the Supreme Court of the United States, and now all this is to be set aside, presumably because of a large petition, signed by thousands who did not know just what the signing of such a petition meant. To the members of the laity, chiropractic repre-

sents only a form of treatment. They do not realize that in States less well protected by Medical Practice Acts than is Louisiana, the chiropractor not only treats, but also diagnoses disease. Only a few week's training is required to secure a license to practice. The medical man realizes his shortcomings and difficulties after a minimum training of six years. He appreciates that it takes years to make a doctor. Knowing this he attempts to protect the public by compelling all men who would treat and diagnose disease to achieve a certain standard before being given the right to take the life of an individual in his hands. This is done with a spirit of altruism alone, a spirit which is found in no other profession. When some one near and close to them dies of diphtheria or some other preventable disease, treated by a chiropractor, then, and perhaps then alone, will certain citizens appreciate the value of maintaining high standards in the treatment of disease.

THE FLOOD AND THE PARISH HEALTH OFFICERS.

The recent disaster has demonstrated the value and effectiveness of the commoner forms of health protective measures. Thousands of people have been rendered homeless by the flood, have been torn from their homes and environment and forced to mingle indiscriminately with other people in a similar plight. They have been of necessity grouped together in the close and intimate contact of the refugee camps, yet not one single instance of a serious epidemic has occurred in all of the camps throughout the State. This speaks volumes for the success of the united medical precautions of smallpox and typhoid vaccinations and the attention to sanitation and water supply.

The Parish and Municipal Health Officers and their assistants have sacrificed themselves both physically and financially that the work might be accomplished with smoothness and efficiency whenever the concentration camps chanced to fall within their territory. All honor and respect, as well as the gratitude of a healthy people, the only reward, should be theirs.

It may not be inappropriate to mention here that the Louisiana Constitution directs the establishment of State, Parish and Municipal Boards of Health Under this mandate the Legislature promulgated Act 79 of 1921, amended by 296 of 1926, which provides the authorization under which these health organizations are constituted. At the same time it makes the appointment of health officials for the parishes and municipalities mandatory. In the event that a parish or municipality is financially unable to sustain a local body, the Legislature provides for a district organization.

The unfortunate feature of health work is that very little and often no salary at all is attached to the responsible position of Health Officer. It is equally unfortunate that oftentimes those who have accepted the positions knowing the conditions under which they are expected to give their time and energies become dissatisfied. This leads to work at cross purposes, or no work at all, and often nullifies the effect of a position, the duties of which should be discharged with diligence and enthusiasm. It not infrequently happens that a police jury or a community fails entirely to appoint a health officer. In this instance it becomes incumbent upon the President of the State Board of Health to nominate one. While legal this action obviously is not desirable, if it can possibly be avoided. What we need to circumvent these impasses which make for friction and ineffective work is, of course, a solid professional and public sentiment to back the doctor up. The Supreme Court has passed on the constitutionality of the Health Act and finds it valid. If the medical profession will only give it their strong moral support, Louisiana will have a State health service second to none.

VALE—SALUE.

Elsewhere in these pages reference is made to the retirement of Dr. H. W. E. Walther from the active editorial management of the Journal after four years of diligent service. It is with regret that the Journal Committee sees him retire from the position in which he has contributed so industriously and successfully to the upbuilding of the Journal. Our regret is lessened by the knowledge that it is the desire to contribute more directly to medical literature which necessitates Dr. Walther's resignation. We would not willingly stand in the way of our associate's *self-realization*, to borrow an expression of Dr. Brandt V. B. Dixon.

The Committee is fortunate enough to be able to announce its acquisition of Dr. John H. Musser to fill the vacancy left by the loss of Dr. Walther. Dr. Musser has already, as full-time professor in charge of the Department of Medicine, School of Medicine, the Tulane University of Louisiana, made a place for himself in Louisiana medical circles. In addition to his general educational preparation and his professional attainments, he brings to his new task a considerable experience with editorial work in connection with the American Journal of Medical Sciences. His freedom from the irregular calls of private practice will permit of the methodical allocation of part of his time to the task of building the Journal up to higher levels of usefulness. We are confident that time will prove the Committee's choice to be a good one.

CORRESPONDENCE.

To the Members of the Louisiana State Medical Society:

Greetings:

Some parts of our fair state are just emerging from the great catastrophe of the flood disaster; although it has been a terrible ordeal, we all realize that, while some suffered great loss, the experience will, in the final outcome, prove, as Hon. Herbert Hoover has pointed out, a blessing in disguise, inasmuch as flood preventive measures will be taken in the future.

It will be recalled that our House of Delegates passed resolutions, at the New Orleans meeting, proffering the resources of organized medicine in this state, "for emergency relief in disaster"; this is in accordance with the general plan of the American Medical Association. We were—and always are—ready and willing to live up to this offer; fortunately, however, no organized medical relief was needed in any emergency, for every crevasse was anticipated and the Red Cross and State Board of Health, who had so wisely prepared, had men on the ground to render necessary medical and sanitary aid as needed. Thankful to say; some individual members of our organization volunteered their services to the State Board of Health and were assigned to certain concentration camps; several others were ready to go, but not needed. I, having heard that more were wanted at Opelousas, had the information published and two capable physicians and a sanitary engineer got in touch with me, but there were no vacancies at the time. As a further proof that there was no paucity of doctors, I might mention that, although our resolutions were promptly communicated to Hon. John M. Parker, in supreme charge of flood relief work, we received no calls for aid from him and he expressed the hope that conditions would not become such that he would have to call upon us.

Now, however, there is a possibility that, even yet, some of us may be needed; should epidemics of any severity result from this flood, those of us who can get off should be ready to go; therefore, it behooves all those in this position to give their names to the authorities, viz: State Board of Health, Red Cross or Hon. John M. Parker, to be called should the necessity arise.

Before closing, I want to commend the preparedness of the New Orleans profession, organized under the auspices of the Orleans Parish Society, with President Fossier in charge, which was ready to protect the health of the city, had it been visited by the dire calamity of a flood, so gloomily predicted by many pessimists; this would have been a REAL need for "emergency relief in disaster," as the possibilities from insanitation and pollution in such a large city would have strained medical resources to combat them.

Things are never so bad that they might not have been worse and, while we extend our sincere sympathy to those who were so unfortunate as to have their homes or communities inundated, we hope that the "silver lining" to the cloud will soon appear and that our state will emerge greater, happier and more prosperous than ever.

Fraternally yours,

ARTHUR A. HEROLD,
President.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

The Board of Directors has held one meeting and the Society one regular Scientific Meeting and one Joint Clinical Meeting with the Charity Hospital Staff during this past month of June.

The Board of Directors has approved the question of group insurance. This was submitted to the General Membership at the regular scientific meeting and was also approved. If 75 per cent of the membership subscribes to this insurance it will go into effect. This insurance calls for a $3,000 policy to each of the members subscribing, the premium of this policy being about $13.00 a thousand. This premium payable quarterly with the dues of the Society or annually if desired. Aside from the low premium rate another feature in considering this insurance is that there is to be no physical examination. Fuller details of this insurance have been mailed to each of the members and it is requested that those in favor or against this plan of insurance send in their replies as soon as possible to the office of the Society.

Dr. Sam C. Cohen, Dr. Lily L. Dismuke, Dr. Paul R. Neal and Dr. Thomas H. Oliphant were elected to active membership in the Society.

At the regular scientific meeting it was our pleasure to have as our guest Dr. Wm. B. Fisk, chief surgeon of the International Harvester Company of Chicago, Illinois, who read a paper on Osteomyelitis of the Terminal Phalanges.

Also a guest of the Society was Dr. Valeria Parker, field director of the National Society of Social Hygiene, who gave an interesting talk on the Social Hygiene Program.

The following papers were read at this meeting:

"Personal Observation and Immediate End Results in Gun Shot Wounds of the Abdomen," by Dr. Martin O. Miller.

"Visceral Injuries in Gun Shot Wounds of the Abdomen," by Dr. Frank L. Loria.

A joint discussion of these two papers was opened by Dr. Jerome E. Landry and closed by Dr. Miller and Dr. Loria.

At the joint Clinical Meeting interesting cases were presented by the following: Drs. C. Jeff Miller, Urban Maes, Joseph Hume, P. A. McIlhenny, George R. Herrmann, Muir Bradburn, E. L. King, H. Theodore Simon.

The full stenographic notes of these cases will be published in an early edition of the Journal.

During the month of July there will be only one meeting of the General Body, this being the Second Quarterly Executive Meeting. After this the Society will go into summer recess until the first meeting in October.

The membership of the Society is 489.

REPORT OF TREASURER.

Annual Book Balance, 4/28/27	$4,330.43
Receipts during May	329.33
	$4,659.76
Expenditures	3,671.18
	$ 988.58
Outstanding Checks	7.46
Bank Balance, 6/1/27	$ 996.04

REPORT OF LIBRARIAN.

The Assistant Librarian was in Washington, May 16-19, according to the instruction of the Board, to represent this Library at the thirtieth annual meeting of the Medical Library Association. Over 60 medical librarians were in attendance and most profitable hours were spent in discussion of medical library problems. A detailed written report is being prepared to be read to the Society at such time as the Board shall designate. The total of expense for the trip, including railroad and Pullman fares, hotel, meals, etc., amounted to $123.39.

Since the return of the Assistant Librarian, the reference work has been very heavy, both from the accumulation during her absence and current calls. Four bibliographies have been prepared and added to our files on subjects as follows:

Tumors of the Pericardium

Tumors in Infancy and Childhood

Sickle-Cell Anemia

Lipiodol in the Roentgenography of Fallopian Tubes.

Beginning with June 1, a record is being kept of reference calls in the Library, exclusive of calls for particular books, etc. It is thought that this will prove interesting in showing the subjects of particular attention just now, and the types of calls which the Library endeavors to fill.

Gifts have been received during May from Northwestern University Medical School Library, Marquette Medical Library, University of Indi-

ana Medical School Library, Tulane University Medical School and Dr. Joseph Hume.

16 books were added during the month. Of these 10 were received by gift, 1 by purchase and 5 from the New Orleans Medical and Surgical Journal. A notation of titles of recent date is attached.

NEW BOOKS—MAY.

Surgeon-General's Office U. S. Army—Index Catalog, vol. 6.

American Surgical Association Transactions, vol. 44.

U. S. Public Health Reports, vol. 41, pt. 2.

American Medical Directory, 1927.

Ophthalmic Yearbook, 1926.

Corscaden—History Taking and Recording, 1926.

McGowan—Pernicious Anemia, Leucemia and Aplastic Anemia, 1927.

Karsner—Human Pathology, 1926.

Harris—Neuritis and Neuralgia, 1926.

Feingold—Catalog of Collection on Ophthalmology, 1926.

Schellberg—Colonic Therapy in Treatment of Disease, 1923.

Storey—Status of Hygiene Programs in Institutions of Higher Education, 1927.

H. THEODORE SIMON, M. D,.
Secretary.

CHIROPRACTIC.

By H. L. Mencken.

But the chiropractor, having no such investment in his training, can afford to work for more humane wages, and so he is getting more and more of the trade. Six weeks after he leaves his job at the filling station, or abandons the steering wheel of his motor truck, he knows all the anatomy and physiology that he will ever learn in this world. Six weeks more and he is an adept at all the half-nelsons and left hooks that constitute the essence of chiropractic therapy. Soon afterward, having taken post-graduate courses in advertising, salesmanship and polite conversation he is ready for practice.

* * *

As I have said, it eases and soothes me to see the chiropractic so prosperous, for it is his sublime function in the world to counter-act the evil work of the so-called science of public hygiene, which now seeks to make morons immortal. If a man, being ill of a pus appendix, resorts to a shaved and fumigated long-shoreman to have it disposed of, and submits willingly to a treatment involving balancing him on McBurney's spot and playing on his vertebrae as on a concertina, then I am willing for one, to believe that he is badly wanted in heaven. And if that same man, having achieved lawfully a lovely babe, hires a blacksmith to cure its diphtheria by pulling its neck, then I do not resist the divine will that there shall be one less radio fan in 1967.

* * *

What is needed is a scientific inquiry into the matter, under rigid test conditions, by a committee of men learned in the architecture and plumbing of the body, and of a high and incorruptible sagacity. Let a thousand patients be selected, let a gang of selected chiropractors examine their backbones and determine what is the matter with them, and then let these diagnoses be checked up by the exact methods of a scientific science. Then let the same chiropractors essay to cure the patients whose maladies have been determined. My guess is that their errors in diagnosis will run up to at least ninety per cent and that their failures in treatment will push ninety-nine per cent.

MALARIAL THERAPY IN GENERAL PARALYSIS OF THE INSANE.

In view of the hitherto almost hopeless prognosis in general paralysis of the insane the percentage of recovery (or remission) we have obtained seems to be complete justification for the use of malarial therapy. In addition, from a hospital point of view the treatment is certainly well worth while, as the patients become much more easily dealt with, and, in fact, if the only improvement to be found was in their habits (which almost invariably become clean) the advantages accuring therefrom would be sufficient to warrant the work.—Steel and Nicoll, Lancet, 1927, 1,484.

TREATMENT OF NEVI WITH RADIUM.

To the parents or the patient this condition is of the greatest importance. It is not a matter of life or death, but unsightly marks or scars can be the source of much embarrassment. Treatment undertaken lightly, resulting possibly in more scarring than is necessary, will be a life-long reminder to the physician that his experience or training was not sufficient for this work. Experience must be the guide in the choice and use of a therapeutic agent. I am convinced that the most thorough removal and the best cosmetic result can be obtained in the treatment of nevi by the use of radium.—Johnston, Z. A.: Radiology, 1927, 8, 292.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

FLOOD SANITATION.*

The problems of health and sanitation involved in the Mississippi Valley Flood are the greatest in the history of the country. These problems concern a million and a half people in seven states, covering an area of at least two hundred thousand square miles.

From the first week all agencies concerned in meeting these problems have fully recognized the size and the nature of the task and have taken every necessary step to adequately protect the half million refugees crowded in concentration camps, and other thousands living in box cars and second floors of flooded homes.

On April 28, 1927, the Red Cross National Medical Officer called the first flood health conference at Memphis to develop plans for the coordination of Red Cross medical and nursing services, the United States Public Health Service, the Army and Navy Medical Services, State Medical Societies and the American Medical Association with the services of the seven State Health Departments in the flood area.

The first important result of the conference was the definite recognition of the several State Health Officers as the officials in complete charge of all health and sanitation within their respective states and as the officials directly responsible for all such work. The second important result was the establishment of a central clearing house for all requests for personnel and materials and for all offers of service and materials. The conference voted unanimously to make the Red Cross Headquarters their clearing house, with Dr. W. R. Redden, National Medical Officer in charge.

Through these channels every State Health Officer has made known his needs, and not once in eight and one-half weeks has a single request been turned down.

The conference further recognized two definite phases in the emergency health and sanitation program: first, the refugee period during which thousands of people were suddenly driven out of their homes into camps and box cars, and second, or period of readjustment, measured from the time these people returned to their homes to the time when conditions of health and sanitation became comparable to those existing before the flood.

*Written by Dr. W. R. Redden, National Medical Officer of the American Red Cross.

Immediately plans were inaugurated to meet the needs of an effective program of health and sanitation. Already Surgeon General Cummings had assigned to the Red Cross Disaster Relief Headquarters as Liaison Officer one of the most outstanding Medical Officers of the Service, Senior Surgeon John McMullen, who took charge of the assignment of all personnel of the United States Public Health Service.

The next step was to measure the number of health specialists and sanitarians and the amount of biologics there was available from State, County and Municipal Health Departments outside of the flood area. Within forty-eight hours, in response to telegrams sent to fourteen or fifteen State Health Departments, we had listed seventy-five to eighty health officers, sanitarians, epidemiologists and chemists ready to give service with salaries paid by their respective states or counties, and expenses to be covered by the Red Cross.

Furthermore, it soon became evident that local county medical societies near or in the refugee camp communities had organized rotating visiting medical and dental services for the camp dispensaries and emergency hospitals. In addition to this, the health departments, assisted by the sanitary corps of the National Guards, established in each camp a sanitary service sufficient to guarantee safe water, safe milk, proper waste disposal, and clean food handling.

The fact that during eight and one-half weeks there has not been a single outbreak of disease or a single epidemic of any kind in the camps, that even the ordinary illnesses among the refugees have been far less than among a similar group under ordinary conditions, is the finest tribute to the splendid work of the doctors, sanitarians and nurses in these camps.

Already six weeks have passed since refugees have started to return to their homes, yet there has not been an outbreak of disease. Here again is a testimony to the exellent clean-up work done by the sixty health officers and sanitarians loaned by other states, to the thirty or forty United States Public Health Service experts loaned to the Health Departments of the flood states, and to the Health Officers themselves and their assistants. There is every indication that with the continuation of this work and the establshment of permanent local health measures the flooded areas may escape the ravages of the filth-borne diseases which invariably follow in the wake of floods.

The Red Cross, as the one volunteer agency chartered by Congress to give service in time of disaster and to institute measures for the prevention of epidemics, has already spent over two hundred thousand dollars in assisting State Health Departments to meet these unusual problems and has approved the expenditure of an additional three hundred thousand dollars to complete the work.

A glance at the kinds and quantities of personnel and materials will give some idea of the nature of this assistance. The Red Cross has furnished sixty Health Officers and Sanitarians at a cost of twenty-five thousand dollars, in addition to the hundreds of local physicians who have rendered volunteer service in camps. A total of one hundred and fifty Public Health nurses have given valuable service in camps and in the conduct of universal typhoid inoculations. Over one and one-quarter million pounds of hydrated lime and 40,000 pounds of unslaked lime, along with 40,000 cans of chloride of lime constitute the contribution of disinfectants for camps and villages. One hundred and thirty thousand gallons of crude oil, plus a donation of another 100,000 gallons, have been used to destroy carcasses of dead animals which have numbered about 60,000. To meet the need of mosquito control with the malaria hazard multiplied a thousand fold by the myriads of newly formed pools, ponds and puddles, the Red Cross has supplied 225,000 gallons of spraying oil and 191 spray cans, and considerable labor. To further combat malaria, it has instituted a program for screening fifteen thousand homes of malaria carriers under the careful direction of J. A. LePrince of the United States Public Health Service, one of the best known experts in the field of malaria control in the country and a former assistant to General Gorgas in his Panama sanitation work. This program includes the employment of thirty additional sanitary inspectors to assist in carrying out the details of sanitary operations.

Furthermore, it has already donated 275,000 mosquito bars to flood sufferers, and stands ready to furnish all that are needed to replace those lost or damaged by the flood.

Although there is a division of opinion among experts about the use of quinine as a prophylactic for malaria, the Red Cross has taken the stand that the use of quinine has a definite economic value, and has therefore furnished reasonable quantities to State Health departments. The extent of this service to date can be measured somewhat by the thirty million grains of quinine already sent out.

In Louisiana, Dr. Dowling has asked for large quantities of soft soap to be used in scouring out the filthy water-soaked homes—14,700 pounds are already in use, with plenty more to follow.

The campaign for universal immunization against typhoid has been considered the most effective measure to combat this disease. The campaign started in all refugee camps and completed up to 90 per cent, has been aggressively pushed to include all members of the communities as they return to their homes. With 536,000 complete immunizations on record, there should be no difficulty in reaching a grand total of 700,000 people with this protection. The task already constitutes the most important protective work ever accomplished outside of the great armies of the world in time of war. But this does not represent the only protective work, for at last 160,000 people have been vaccinated against smallpox during the refugee period, to say nothing of the other thousands of school children who are compelled by law to be vaccinated in some of the states.

Faced with the greatest problem of health and sanitation in the history of the country, the veteran health officers of the seven flooded states have conducted for eight and one-half weeks an effective program of prevention against malaria, typhoid fever, dysentery, and other filth-borne diseases. In this fight they have had the constant assistance of the co-ordinated services of the United States Public Health Service under the guidance of Dr. John McMullen; of the Red Cross Medical Service under Dr. W. R. Redden; of the Red Cross Nursing Service, under Miss Elizabeth G. Fox, director, and Miss I. Malinde Havey, assistant director of the Red Cross Public Health Nursing Service; of the Health Officers and Sanitarians of fifteen outside states; of the state and county medical societies, and the officers of the sanitary corps of the National Guard and the Army. With the continuation of this fight along established lines, we can predict ultimate success in the control of the diseases which have always followed in the wake of floods and other national calamities.

The following Chairmen of Scientific Sections for the meeting of the Louisiana State Medical Society, 1928, have accepted their appointment by the President:

Medicine and Therapeutics—Dr. J. H. Musser, New Orleans.

Pediatrics—Dr. L. R. DeBuys, New Orleans.

Nervous and Mental Diseases—Dr. R. H. Bryant, Pineville.

Bacteriology and Pathology—Dr. W. H. Harris, New Orleans.

Public Health and Sanitation—Dr. Fred J. Mayer, Opelousas.

Gastro-Enterology—Dr. D. N. Silverman, New Orleans.

General Surgery—Dr. Louis Abramson, Shreveport.

Gynecology and Obstetrics—Dr. W. B. Chamberlain, Baton Rouge.

Eye, Ear, Nose and Throat—Dr. F. C. Bennett, Monroe.

Urology—Dr. H. W. E. Walther, New Orleans.

Radiology—Dr. W. R. Harwell, Shreveport.

Orthopedic Surgery—Dr. Guy A. Caldwell, Shreveport.

Those desirous of reading papers should communicate with the various Chairmen as promptly as possible.

The following resolutions were adopted unanimously at a meeting of the Surgical Staff of the Charity Hospital, held May 18th, 1927:

WHEREAS, on May 7th, 1927, Frederick William Parham, a member of the Surgical Staff of the Charity Hospital, was removed by death;

BE IT RESOLVED; that we, the members of the Surgical Staff of the Charity Hospital assembled, do fully appreciate his valuable services to the Institution and the loss sustained by his death. For fifty years he was one of the most active members of its Staff; a leader of its reform movements, as well as in its surgical progress. It was through his efforts that the great scourge of puerperal infection was finally wiped out. In 1890 he introduced aseptic surgery into the Institution. To accomplish this he bought the first sterilizer used in the hospital and prepared his own instruments and materials. This marked a new epoch in the history of this great hospital. Although these two achievements stand out probably the most conspicuous, there was not a day that he was not striving for the betterment of the patients, the advance of surgery and the welfare of this hospital.

BE IT FURTHER RESOLVED; that we extend to his family and friends our sympathy, feeling that they have the consolation of knowing there were few men in his profession who have enjoyed a better and more deserving reputation.

(Signed) JOS. HUME,
Chairman,
P. GRAFFAGNINO,
Vice-Chairman.
E. L. KING,
Secretary.

IBERVILLE PARISH MEDICAL SOCIETY.

At a meeting of the Iberville Parish Medical Society, held April 5th, 1927, at Plaquemine, La., the following officers were elected:

Dr. W. E. Barker, Jr., Plaquemine, La., President.

Dr. Eugene Holloway, Plaquemine, La., Vice-President.

Dr. Guy A. Darcantel, White Castle, La., Secretary-Treasurer.

Dr. E. L. King was elected to a fellowship in the American Gynecological Society in May, 1927.

MINUTES OF THE MAY MEETING OF THE NORTH LOUISIANA SANITARIUM STAFF.

The regular monthly meeting of the North Louisiana Staff was held on Tuesday, May 24th, 1927. There were twenty doctors present, and following dinner served by the Sanitarium, the Clinical program was taken up.

Dr. Herold, president of the Louisiana State Medical Society, gave an interesting report of the proceedings of the recent meeting of the State Medical Society and of his trip to the tropics.

Drs. Abramson and Scales presented a patient on whom they had done a plastic operation for a bilateral ectropion following a severe burn of the eyelid and forehead.

Led by Drs. Crain and Abramson, the Staff discussed surgery of the gall bladder, particularly anastomosis of the gall bladder to the stomach or duodenum. Reports of cases recently operated on in the Sanitarium were given, and thus far results have been most satisfactory.

Dr. Rigby reported the use, most successfully, of bismuth potassium tartrate in the treatment of Vincent's Angina.

The regular monthly Staff Meeting of our Lady of The Lake Sanitarium was held at that institution May 25th. There was about a 50 per cent attendance.

The following case records were taken up and freely discussed.

Dr. Eidson, Case No. 6270, Stab Wound of Upper Abdomen with Protrusion of Omentum, Surg. Inspection, Recovery.

Dr. C. A. Lorio, Case No. 6377, An accident case in which the patient presented a Compound Comminuted Fracture of the Leg complicated by symptoms of shock and hemorrhage. The loss of blood not having come from the leg but the patient's condition being so bad, no exploration of the abdominal cavity was made, and patient gradually recovered.

Dr. Chamberlin, Case No. 6098, Ruptured Appendix, with general dissemination of infection

throughout entire abdominal cavity. Gradual improvement with subsequent sloughing of abdominal muscles and fascia around wound allowing the intestines to prolapse into wound. By daily replacement, covering intestines with rubber dam, and held in with gauze and pressure bandage, wound slowly healed by granulation covering up the intestines entirely. This was followed by an hepatic abscess which was drained and patient made a good recovery.

Dr. Jeff McHugh reported an interesting case of fetal monster, in which the heart and part of the small intestines were extra-costal and extra-abdominal without any herniation. This was a preliminary report, the doctor intending to present the specimen along with pathologist's report at future meeting.

SEMI-ANNUAL EXAMINATION OF NURSES.

The semi-annual examination of the Louisiana Nurses' Board of Examiners was held in New Orleans and in Shreveport, May 2d and 3d, 1927.

The successful applicants are:

Inez Mary Achee, Roberta Edna Ainsworth, Dorothy Annie Alexander, Alida Mary Amedee, Marie Helen Arceneaux, Georgiana Marie Barrilleaux, Frances Louise Beckham, Mary Leola Blardone, Pearl Mathews Bookmiller, Miriam Bowman, Margaret Elizabeth Carr, Lollie Cotten, Currow, Edith Lenore De Vilbiss, Estelina Marie Diaz, Eunice Mable Dyess, Leonise Earle, Refugio Elvir, Montana Engbarth, Mary Madalen Fontana, Laura Mae Fortenberry, Mary Kathryn McNamara Gillin, Mabel Victoria Hanna, Mary Alice Harwell, Rosa Belle Hickman, Mildred Elizabeth Hunt, Ila Celestine Hyde, Lucia Reynolds Jones, Lillian Beatrice Kelley, Julie Marie Landry, Maude Schilling Landry, Irene Larza, Rita Margaret Legendre, Susie Lowery, Cecilia Finley McDevitt, Dora Margolin, Elizabeth Martin, Margott Mayer, Marie Lynda Miller, Lois Lucille Morgan, Carrie May Mullins, Alma Marie Oubre, Helena Petersen, Alice Mary Sass, Mary Lee Slocumb, Jessie Maude Smith, Sister Sylvester Henkel, Zoe Marie Theriot, Marie Antoinette Toups, Doris Valentine Vernon, Jeanette Elizabeth Wallace, Claire Thelma Wambsgans, Mary Edna Williams, Ouida Evelyn Williams, Ellen Trent Wilson, Henry Nelle Wise.

Gertrude Arant, Myrtle Florence Bass, Thelma Irene Russell Brun, Hazel Eleanor Chapin, Mattie Elizabeth Crump, Ruth Duett Boyett Fort, Zera M. Hewitt, Adelaide Robert Kelley, Louise Poland, Hazel Christine Skeeles, Marie Stewart, Mary C. Stuckey, Thelma Sturdivant, Gladys Greye McGhee Bickham, May Breithaupt, Mamie Jackson De Shazo, Grace Belle Fletcher James, Carrie Jackson Kyle, Thelma Scott, Mrs. Frank M. Lampkin, Maude Agnes Walther, Lucy Branch, Bertha Miller, Zula Emma Smith, Nettie Olivia Leteff, Mary Elizabeth Robertson, Theodora Robertson, Linda Johnson, Edna Ruth Black Coycault, Barbara Cathrine White Cronan, Emily Marrie Talbot, Beatrice Evelyn Mayer, Margaret Peterkin Ward.

Leah Baumy, Stella Elizabeth Clarke, Lillian Belle Flynt, Mathilde Irene Gautreaux, Ellen Gough, Doris Lang, Julia Euphrasia Lapeyrouse, Dorothy Veronica Martin, Lottie Belle Underwood, Cleo Watson, Blanche Marie Crain, Florence Eugenia Hamner, Leola Huckabay, Lou Ellen Hutcherson, Jeanne Jenkins, Clara Belva Moore, Bessie Adeline Stuckey, Gussie Nadine Stuckey, Mary Mason Stewart.

Colored applicants: Morlein Florence Bates, Lucile Alexenia Mitchell, Allie Mae Penn, Ercell Carmel Young.

The American Board of Otolaryngology conducted an examination at Washington, D. C., on May 16 and 17, and at Spokane, Washington, on June 4. Of the 142 men examined at Washington, D. C., 119 were passed and 23 failed to pass the examination. In Spokane, the number passed was 46, and the number failed was 6.

The next examination will be held in Detroit on September 12, 1927. The applications for examination should be sent to Dr. H. W. Loeb, Secretary, 1402 Grand Boulevard, St. Louis, Missouri.

UNITED STATES CIVIL SERVICE EXAMINATION—MEDICAL OFFICER (SPECIALIST IN PATHOLOGY).

The United States Veterans' Bureau Hospital at Knoxville, Iowa, is in need of a specialist in pathology. Applications for the examination for this position are now being received by the United States Civil Service Commission under its general announcement for medical officers.

Full information regarding requirements for entrance to the examination is given in examination announcement No. 43 which, together with application form 2600, may be obtained from the United States Civil Service Commission, Washington, D. C., the secretary of the United States Civil Service Board, Customhouse, New Orleans, La., or St. Louis, Mo.

ASSISTANT MEDICAL OFFICER, ASSOCIATE MEDICAL OFFICER, MEDICAL OFFICER, SENIOR MEDICAL OFFICER.

Applications for these positions will be rated as received at Washington, D. C., until December 30.

The examinations are to fill vacancies occurring in the Indian Service, the Public Health Service, the Coast and Goedetic Survey, Panama Canal, the Veterans' Bureau Field Servcie, and other branches of the Federal classifield service throughout the United States.

Specialists are needed in practically all branches of medicine and surgery. There is especial need for medical officers qualified in tuberculosis or neuropsychiatry.

Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or customhouse in any city.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE U. S. PUBLIC HEALTH SERVICE.

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C., Aug. 8, 1927; at Chicago, Ill., Aug. 8, 1927; at New Orleans, La., Aug. 8, 1927; at San Francisco, Cal., Aug. 8, 1927.

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written, and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

DIED: Florena Gates Rich, New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1925; on the staff of Charity Hospital; aged 29; died May 12, at the Touro Infirmary of acute leukemia and pericarditis.

IMPORTANCE OF DENTAL SERVICE FOR THE NEGRO GROUP.

Every negro having a communicable disease is a menace to the health of all with whom he may be associated, and particularly to the well-being of those he may serve personally and intimately. Dental and oral maladies, which commonly injure health by interfering with nutrition or occasioning general disorders, also lower resistance to numerous communicable diseases. The average negro and his children, under prevailing conditions in North America, are almost if not wholly as susceptible to dental disorders as the average white person. In 1925 there were about 1300 colored dentists in the United States, a ratio of 1:8500 of negro population. Most of these practitioners live in the larger cities.—Carnegie Foundation for the Advancement of Teaching, Bulletin No. 19, June 27, 1927, p. 88.

METHODS OF COMBATING MALARIA.

The methods of combating malaria are all based upon the idea of breaking the circuit between the person with malaria germs in his blood, the infected and infecting mosquito, and the non-malarial individual. Fortunately quinine properly and persistently taken will usually cure the carrier. Efficient screening of houses offers a good deal of protection. Strategically placed pigsties and horse-or cow-barns will deflect a great many anophelines from nearby houses. But valuable as these methods are and indispensable as quinine is in the early stages of control, the surest protection lies in preventing the breeding of anophelines.

For this several plans have been tried. Minnows placed in stockponds, pools, and lakes will eat the larvae or "wigglers." A film of oil on the surface of water will kill them. Drainage on a large scale often rids a whole area of the disease. Minor ditching insures the rapid flowing of surface water and removes the danger from stagnant pools. The filling of low marshy ground is also useful.

Of late the dusting of breeding-places with a powder composed of one part of Paris green (known in Europe as Schweinfurth green) and 100 parts of sifted road dust has proved simple, cheap, and remarkably effective. Originating with the United States Public Health Service, this plan has been tried in Europe with the aid of the Foundation. In Italy a semi-official station for combating malaria was helped to test the method, at first in two towns in Calabria and Sardinia, and later during 1926 in seven other places. The results are gratifying and seem to show that the control of mosquito breeding is of fundamental importance in malaria prevention.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

TRANSACTIONS OF THE HOUSE OF DELEGATES, 1927.

The twenty-fourth annual session of the House of Delegates of the Mississippi State Medical Association met in the assembly hall of the Edwards House, Jackson, May 10, 1927, President T. E. Ross of Hattiesburg in the chair. Roll call showed thirty-five members present. President Ross stated that the flood conditions north of Vicksburg, and the consequent crowded conditions in Vicksburg, necessitated the Council changing the meeting from Vicksburg to Jackson.

E. F. Howard, Vicksburg, was elected a member of the Committee on Budget and Finance to succeed S. W. Johnston whose term had expired. The Secretary read the following report:

"*To the House of Delegates, Jackson, Mississippi.*

Gentlemen: Most of you are thoroughly familiar with the reasons that caused the Council to change the meeting place of the Association from Vicksburg to Jackson. This change is unfortunate but the conditions necessitating the change were still more unfortunate.

A year ago the House of Delegates requested the Council to plan a redistricting of the state into councilor districts. The Council held at least one meeting but no very definite action was taken. This matter should be finally disposed of. There are several societies running on a temporary basis pending changes in the districts.

Our membership is larger by exactly one hundred than at this time last year. This is gratifying. Sincerely yours,

May 10, 1927 T. M. Dye, Secretary."

Treasurer Buchanan read his financial report which was automatically referred to the Committee on Budget and Finance. (See Exhibit B.) For the Secretary's financial report, see Exhibit A.

At this point a recess of five minutes was had to allow the Councilor Districts to select members of the Nominating Committee, the selections resulting as follows:

First District—J. W. Lucas, Moorhead.
Second District—P. W. Rowland, Oxford.
Third District—W. H. Anderson, Booneville.
Fourth District—J. O. Ringold, Vaiden.
Fifth District—Henry Boswell, Sanatorium.
Sixth District—I. W. Cooper, Meridian.
Seventh District—O. A. Lomax, Waynesboro.
Eighth District—W. H. Frizell, Brookhaven.
Ninth District—C. A. McWilliams, Gulfport.

Under the head of Unfinished Business, E. F. Howard brought up the matter of lye legislation and the following committee was appointed to draft suitable legislation: E. F. Howard, Chairman, Vicksburg; R. M. Adams, Ripley; George Baskervill, Greenwood. (To this committee later were added G. K. Adkins, Jackson and E. L. Posey, Jackson.)

Under New Business, J. M. Buchanan moved that the Association appropriate $2,000.00 from the General Fund for the relief of flood sufferers, which was carried.

D. W. Jones moved that the Chair appoint a committee of three to attend the Rehabilitation Conference now in session in Jackson. This motion was carried and President Ross appointed D. W. Jones, E. F. Howard and H. F. Garrison. T. M. Dye moved that this committee be empowered to proffer the Conference a loan of one thousand dollars from the Medico-Legal Fund, which was carried.

E. F. Howard brought to the attention of the House the urgent needs of a certain physician in the flooded area, whereupon a substantial free-will offering was made among those present. S. S. Caruthers moved that the Chair appoint a committee of three to investigate the condition of physicians in the flooded territory. Carried.

I. W. Cooper moved to reconsider the motion appropriating two thousand dollars for relief, upon the ground that the motion should specify more specifically how this money was to be used. W. H. Frizell moved to table a reconsideration until Wednesday's session. Both motions prevailed.

D. J. Williams offered the following amendment to the By-Laws:

"Amend Chapter X, Section 1, to read 'one dollar' instead of 'twenty-five cents.'" Whereupon the House adjourned to meet at 8 o'clock Wednesday morning.

The House reconvened at 8:30 o'clock Wednesday morning, May 11, 1927, President Ross presiding. Roll call showed thirty-two present. The amendment to the By-Laws offered by D. J. Williams was called up and carried.

The motion to reconsider the appropriation of $2,000.00 was brought up by W. H. Frizell moving that the Chair appoint a committee of one to disburse this two thousand dollars as he saw fit. At this point Mrs. D. J. Williams was invited to explain the urgent need of mothers and young

babies in camps, whereupon S. W. Johnston moved to turn over one thousand of the appropriation to the Woman's Auxiliary for these needs, which amendment was accepted by W. H. Frizell and his second. S. E. Eason moved to use the remaining thousand dollars among needy physicians in the flooded area. Carried by a rising vote. The original motion as amended was carried, the Chair appointing E. F. Howard a committee of one to disburse the money appropriated for the relief of physicians in the flood area of the Delta.

Past-President G. S. Bryan appeared in the House at this time and received a cordial welcome, the House rising as a whole. A few brief words by Dr. Bryan expressed his thanks and appreciation for this expression of love.

A motion by T. M. Dye to adjourn the House until after the adjournment of the General Session on Thursday was carried.

The House of Delegates met at 3:30 p. m., Thursday, May 12, following the final adjournment of the General Session, T. E. Ross, President, presiding. Roll call showed twenty-six members present.

The Committee on Public Policy and Legislation made a verbal report through I. W. Cooper. The Secretary read the following report of the Committee on Necrology:

"As Chairman of the Committee on Necrology, I beg leave to submit the following report: During the past year God in His infinite wisdom has called to their reward twelve of the most loyal and faithful and distinguished members of this Association. Since last we met the following members have died:

Theodore Borroum, Corinth.
F. T. Carmack, Iuka.
H. F. Crook, Jackson.
J. D. Donald, Hattiesburg.
H. G. Fridge, Denco.
I. G. Kecham, Wanasoga.
T. K. Magee, Fernwood.
W. E. Sharp, Pascagoula.
B. A. Sheppard, Lexington.
Nolan Stewart, Jackson.
G. S. Turner, Hattiesburg.
D. C. Warren, Union Church.

C. D. MITCHELL, Chairman."

W. H. Anderson for the Committee on Hospitals made the following report, which was referred to the Committee on Public Policy and Legislation:

COMMITTEE ON HOSPITALS.

"Mississippi has five State owned hospitals, namely, Charity Hospital, Jackson; Charity Hospital, Vicksburg; Charity Hospital, Natchez; South Mississippi Charity Hospital of Laurel, and Mattye Hersee Hospital, Meridian. The appropriation for these five hospitals for 1926 and 1927 is $514,431.77. The Legislature made appropriation to twenty-three hospitals dispersed over the State for 1926 and 1927. The least amount being $2,000.00, the largest $20,000.00. Amounting to $118,600.00.

In the United States the average is one licensed doctor to about seven hundred and fifty people; in Mississippi one registered physician to about thirteen hundred people. In the cities with State owned Charity Hospitals, one doctor to about five hundred and fifty population. Some rural sections having only one licensed physician to more than two thousand population.

Many patients must be treated in the hospital if they are to have the best in modern medicine, and the treatment must be administered within twenty-four to forty-eight hours if the life of the patient is to be saved. This is an era of preventive medicine and preventive medicine should be practiced by the same physician who practices curative medicine. The small town and rural district do not have as many physicians as they need.

The community hospital is the only hope to solve our rural medical problems. It will encourage cooperative medicine, encourage physicians and surgeons, nurses and dentists to remain in the small town. It will enable 75 per cent or 80 per cent of surgical and medical treatments to be administered at homes where patients are now forced to go to the city. It will enable much of it to be done at an earlier date with probably better end results and will save a lot of expense in time, railroad fare and hotel bills.

Therefore, we would suggest that our Committee on Legislation memorialize our Legislature that, in view of the fact that so many hospitals are calling for aid for charity, that they be checked very closely to determine whether or not people are being admitted who do not deserve free treatment, even in part.

(2) And that the Legislature be advised against the construction of any more large Charity Hospitals.

(3) To encourage the building of community hospitals over the State, at least to the extent of helping the people organize and operate community owned hospitals, advising the kind of construction and appropriate funds sufficient to take care of the actual charity need of the community.

Committee. By W. H. ANDERSON."

The Committee on Budget and Finance made the following report:

BUDGET AND FINANCE COMMITTEE.

"We suggest the following budget for the year:

Reportorial	$250.00
Council	100.00
Secretary (salary and expenses)	600.00
N. O. Journal	1,000.00
Transactions	100.00
President's Expenses	100.00
Incidentals	50.00
Total	$2,200.00"

Geo. E. Adkins made a minority report for the Committee on Budget and Finance as follows:

"In regard to that part of the Councilors' reports referring to expenses incident to attending the called meeting of the Council on Oct. 23, 1926, I wish to file a minority report of the Budget and Finance Committee, recommending that the accounts be paid as submitted.

I am of the opinion that hotel bills and meals on a trip like this can be properly classed under the head of 'traveling expenses' (Chapter VIII, Section 2, By-Laws)."

The Budget and Finance Committee had deleted several items of expense submitted by various councilors in attendance upon a called meeting of the Council at which the redistricting of the state was discussed. This minority report was for the purpose of again including these items for payment. The minority report was adopted by the House by a unanimous vote, on motion of Henry Boswell.

The Secretary read the following from the Woman's Auxiliary:

WOMAN'S AUXILIARY.

"We, the members of the Woman's Auxiliary to the Mississippi State Medical Association, wish to express to the Medical Association our sincere appreciation of the confidence placed in us, in the giving of $1,000 to be used by the Auxiliary for flood relief.

We also thank you for your courtesy and kindness in helping us so much to make our fourth annual convention a pleasant and successful one.

MRS. W. H. FRIZELL, Pres.
MRS. HENRY BOSWELL, Rec. Secty."

"To the House of Delegates of the Mississippi State Medical Association:

The Woman's Auxiliary to the Mississippi State Medical Association is organized and working to co-operate with the physicians in extending the aims of the profession. It is the desire of the Auxiliary to be useful in an intelligent and helpful way to the Medical Association. But we reallize that "if we are to be effective in this work of educating the public in health matters, we must first educate ourselves." Therefore, we submit to you for your approval and subject to your revision, the following plan of work, as worked out by the Committee on Education and Publicity:

First. To work for full time county health departments, through local organizations.

Second. To study State health laws, and work for their enforcement, especially for control of rabies in dogs.

Third. To study and work for control of communicable diseases, under the direction of the State Health Department.

Fourth. To have "Hygeia" in every public school and library.

Fifth. To furnish clothing for flood relief work through the central chairman of this work, and to continue this through the rehabilitation period.

Sixth. To stand ready at all times as an organization to answer any call from the Medical Association.

Signed,

MRS. W. H. FRIZELL, President
MRS. HENRY BOSWELL, Rec. Secty."

I. W. Cooper, D. J. Williams and T. M. Dye were appointed a committee to reply to the communication from the Woman's Auxiliary.

The Council through its Secretary, D. W. Jones, made its report, which was adopted.

REPORT OF THE COUNCIL.

1927 Meeting.

"To the House of Delegates Mississippi State Medical Association:

The Council begs to submit the following report of its activities since the last meeting of the Association:

1. Medical Organization. At the 1926 meeting of the Association, a resolution was introduced in the House of Delegates calling for a redistricting of the State into Councilor Districts. This resolution was referred to the Council with a request that it present a plan at the 1927 meeting of the Association. Pursuant to that instruction, Chairman Williams called a meeting of the Council for Oct. 22, 1926, at noon, at the Edwards House. All the Councilors were present at this meeting except Holmes and Robertson. Dr. T. E. Ross, President of the Association, was present by invitation.

After considerable discussion, it was decided that it would not be best to make any extensive changes in the present plan of districting, but that the Council would devote the time chiefly to a discussion of the present arrangement with a view of making such modifications as might seem best to perfect the functioning of the local societies as they now exist.

Certain tentative changes were proposed, subject to approval by the local societies affected, and the several councilors instructed to put them into effect and be ready with a report at the 1927 meeting of the Association.

Another meeting of the Council was called by Chairman Williams for Monday night, 7 P. M., at the Edwards House, just preceding the meeting of the Association. All the Councilors were present at this meeting, and President Ross and Secretary Dye, by invitation.

The working out of the tentative programs was discussed, and the net results of the changes finally made are hereby reported as follows:

District No. 1—The nine counties in this district are comprised in two societies, the Clarksdale and the Delta. They have semi-annual meetings and are growing and doing good work. No changes.

District No. 2—This consists of the North Misssissippi Medical, the DeSoto, the Panola, and the Tate county societies. They are holding regular meetings and doing good work. No changes.

District No. 3—All the counties in this district are in one society, the Northeast Mississippi. They report a membership of about two hundred, hold four meetings a year, good programs, no discord. A suggestion whereby Calhoun would have been transferred into the Second District, and another whereby Noxubee would have been transferred into the Sixth, was not agreeable to them, and it was dropped.

District No. 4—This consists of the Winona District Society, the Attala County, the Holmes County, with Calhoun County unorganized. No changes as to district, but Councilor Holmes urged to get some organization in Calhoun, or place that county in one of the larger societies.

District No. 5—It was recommended that Issaquena, Sharkey and Claiborne merge into the Warren County society. Issaquena and Sharkey accepted the recommendation, and are working well in the new arrangement, to the satisfaction of all concerned. Claiborne County prefers to retain her position as the sphinx of the Association. "They won't pick cotton and they won't run away,
And they won't do nothing the white folks say."

District No. 6—A new society comprising the counties of Lauderdale, Newton, Neshoba, and Winston, has been organized under the name East Mississippi Medical Society. The Council recommends that Kemper, Leake, and Scott go into this society. If certain members in these counties find it more convenient to affiliate with other societies, let them proceed according to the regulations, getting permission for transfer from their Councilor s district.

District No. 7—This is composed of two local societies, the Clarke-Wayne, and the South Mississippi. The latter comprises the counties of Covington, Forrest, George, Green, Jasper, Jones, Lamar, Marion, Pearl River, Perry, Smith and Jeff Davis. They are doing excellent work.

District No. 8—There are two societies in this district, the Tri-County, and the Homochitto Valley. There are about fifty members in each of these societies, and the Councilor reports satisfactory work. The Council recommends to the House that Lawrence County be placed in the Eighth District, with the Tri-County. If some of the members in this county find it more convenient to attend other societies, let them get transfers according to the regulations.

District No. 9—There are three local societies in this district, the Harrison-Stone, the Hancock, the Jackson County societies. Marion, Lamar, Pearl River and Perry have been transferred to the Seventh District. This arrangement is satisfactory to everybody concerned and they are doing good work.

We recommend that charters be issued to the Warren-Issaquena-Sharkey Society, the East Mississippi, the South Mississippi, the Northeast Mississippi, the Central, the Tri-County; and that all local societies not now in possession of proper charters proceed at once to get them.

The Council further orders that hereafter all membership transfers must be made according to the By-Laws; and local Secretaries are warned not to accept members outside of their jurisdiction unless properly transferred.

The Council has done its best to perfect the organizations and to build up the local societies, and respectfully submits this as its report under the instructions of the House.

D. J. Williams, Chairman.
D. W. Jones, Secretary."

I W. Cooper placed Meridian in nomination for the 1928 meeting of the Association. On motion nominations were closed and Meridian unanimously selected.

W. H. Frizell made the following report for the Nominating Committee:

REPORT OF NOMINATING COMMITTEE.

To the House of Delegates, State Medical Association:

We, your Nominating Committee, after due deliberation and consultation with members of this Association, present the following nominations for your consideration:

For President—Dr. Jno. Darrington, of Yazoo City; Dr. M. L. Flynt, of D'Lo; Dr. C. M. Murray, of Ripley.

For Vice-President—Dr. E. Benoist, Natchez; Dr. E. S. Bramlette, Oxford; Dr. E. L. Posey, Jackson.

For Councilor Sixth District—Dr. W. G. Gill, Newton.

For Councilor Seventh District—Dr. E. M. Gavin, Richton.

For Board of Health—Dr. S. E. Eason, Union County; Dr. A. L. Emerson, DeSoto County.

For Board of Health, Second District—Dr. B. S. Guyton, Lafayette County.

For Board of Health Fourth District—Dr. George Brown, Yalobusha County; Dr. J. B. Shaw, Calhoun County; Dr. T. W. Holmes, Montgomery County.

For Board of Health Fifth District—Dr. Dudley Stennis, Newton County; Dr. C. T. Bell, Kemper County; Dr. H. S. Gully, Lauderdale County.

Delegate to A. M. A. (Two Years)—Dr. T. E. Ross, Sr., Forrest County.

Fraternal Delegate to Alabama—Dr. I. W. Cooper, Meridian.

Fraternal Delegate to Arkansas—Dr. D. C. Montgomery, Greenville.

Fraternal Delegate to Louisiana—Dr. W. H. Frizell, Brookhaven.

Fraternal Delegate to Tennessee—Dr. W. H. Anderson, Tupelo.

Respectfully submitted,

The Nominating Committee.

I. W. Cooper.

W. H. Frizell, Secretary.

I. W. Cooper asked to be allowed to withdraw the name of C. M. Murray. M. L. Flynt asked to be allowed to withdraw his own name. On motion the Secretary cast the vote of the House for John Darrington for President and he was declared elected. E. L. Wilkins moved that the Secretary cast the vote of the House for the remaining nominees, which was done. The House adjourned to meet at eight o'clock Tuesday morning, May 8, 1928, at Meridian.

Signed:

T. M. Dye, Secretary.

MINUTES WOMAN'S AUXILIARY.

The Fourth Annual Convention of the Woman's Auxiliary to the Mississippi State Medical Association was called to order by the President, Mrs. Sydney Johnston, of Vicksburg, at 10 o'clock A. M., May 11, 1927, in the Edwards House, Jackson, Mississippi. Twenty-two members were present, a good attendance in the face of conditions. The flood situation made it necessary to change the meeting place from Vicksburg to Jackson, to cut the session to one day's time, and to eliminate all social activities.

The invocation was given by Mrs. Henry Boswell, of Jackson and Sanatorium. A charming informal welcome was extended the convention by Mrs. E. L. Posey, of Jackson, and was beautifully responded to by Mrs. Clark for Mrs. I. C. Know, of Vicksburg.

The President expressed for herself and Vicksburg keen regret that their plans for entertaining the convention had to be abandoned on account of the refugee work in the camps at Vicksburg.

Minutes of the last annual meeting were read, corrected and adopted.

Mrs. S. E. Dunlap, Treasurer, gave a concise and encouraging report, which was adopted.

Mrs. D. J. Williams, of Gulfport, who had previously been appointed by the President as chairman of Flood Relief Work, was called upon to make a report. She announced that the Medical Association had that morning voted to contribute $1,000 to be used by the Auxiliary in Flood Relief Work. She reported that she had, in company with the President, made a survey of the refugee camps at Vicksburg and found the need urgent for underclothing for women and layettes for babies. A motion was made, seconded and carried, that the Auxiliary co-operate with the chairman of Flood Relief Work in supplying immediate needs and for rehabilitation work as long as necessary.

Motion was made, seconded and carried, that thanks be extended the Medical Association both for their vote of confidence in the expenditure of the $1,000 donated and for their courtesy and help in making the convention successful.

The report of the Committee on Education and Publicity, of which Mrs. M. H. Bell, of Vicksburg, is chairman, was read and adopted. This report

stressed the following aims to be worked for in the State Auxiliary:

(1) To work for full time county health departments through local organizations.

(2) To encourage birth registration.

(3) To study State Health laws and work for their enforcement.

(4) To work for control of communicable diseases, especially rabies in dogs and tuberculosis.

(5) To place Hygeia in every public school and library.

(6) To work for health promotion through prenatal care, school and mental hygiene.

(7) To aid in Flood Relief work as long as needed.

Business was suspended to introduce Dr. T. E. Ross, of Hattiesburg, who gave some encouraging and helpful suggestions.

Acting upon his suggestion a plan of work, embodying the aims and purposes of the Auxiliary, was drawn up by the Secretary to be presented by Dr. Ross to the House of Delegates of the Medical Association.

Among the reports from the nine Councilors' Districts, that of Mrs. T. G. Hughes, Clarksdale, First District, was especially good. This district made a spendid response to the call for flood relief.

Mrs. W. H. Frizell, President-Elect, Brookhaven, gave a report of work in her district that was very encouraging. The Auxiliary there is organized on the pattern of the Medical Society and meets at the same time, four times a year.

The report from the Harrison-Stone Auxiliary, of which Dr. Emma Gay is president, was read by Mrs. Williams. This Auxiliary has done a marvelous work both locally and for flood relief.

The report from Issaquena-Sharkey-Warren was read by Mrs. Clark, Secretary to the Auxiliary, and showed fine work and co-operation.

The following amendments to the Constitution and By-Laws were voted upon and adopted:

Article IV. Officers.—The officers of this Auxiliary shall be a President, President-Elect, two Vice-Presidents, a Recording Secretary, a Treasurer and Parliamentarian.

Article V. Executive Board.—These officers, together with the Councilors, and the Past Presidents, shall constitute an Executive Board to conduct the business of the Auxiliary.

Article VI. Section (b).—Nominating Committee shall be composed of five (instead of seven) members.

Article IX. Dues.—Each county Auxiliary shall pay dues to the State Auxiliary at the rate of twenty-five cents per capita, on or before October the fifteenth.

Each Auxiliary shall also pay dues of $1.00 for each society to the Southern Medical Auxiliary.

The President's address at this point gave a clear resume of the year's work and defined the aims of the organization. The retiring President, Mrs. Sydney Johnston, was given a rising vote of thanks and appreciation for her skillful, tactful, unselfish and wise administration.

The Nomination Committee, Mrs. Clark chairman, presented the following names for the state officers:

President—Mrs. W. H. Frizell, Brookhaven.

President-elect—Mrs. H. F. Garrison, Jackson.

1st Vice-President—Mrs. S. E. Dunlap, Wiggins.

2nd Vice-President—Mrs. T. E. Ross, Hattiesburg.

Recording Secretary — Mrs. Henry Boswell, Sanatorium.

Treasurer—Mrs. E. M. Gavin, Richton.

Parliamentarian—Mrs. D. J. Williams, Gulfport.

There being no further nominations, these officers were duly elected. Mrs. L. A. Barnett was re-elected Councilor for the Second District, and Mrs. J. M. Acker was re-elected for the Third District for terms of five years.

The retiring President, Mrs. S. W. Johnston, presented the newly elected President, Mrs. W. H. Frizell, in a charming manner. Mrs. Frizell was enthusiastically received and was cheered on presentation of her program for the prospective year's work.

The meeting was adjourned after calling a meeting of the Executive Board for 2:30 P. M.

The Executive Board in session at 2:30 P. M. elected Mrs. S. E. Dunlap, 1st Vice-President, to serve as organization chairman for the ensuing year.

Dr. F. J. Underwood, on being presented by Mrs. Frizell, the President, outlined a definite plan by which the Auxiliary may co-operate to advantage with the Public Health Department. He emphasized work for full time health departments, for child hygiene activities, and for immunization of dogs against rabies.

The meeting adjourned until next year at Meridian.

Mrs. W. H. Frizell, Prest.
Mrs. Henry Boswell, Sec'y.

EXHIBIT A.

SECRETARY'S FINANCIAL REPORT.

RECEIPTS, 1926.

(May 8 to December 31, 1926)

May	8—Balance in Bank	$2946.28	
Dec.	31—95 Dues	285.00	
	Total		$3231.28

DISBURSEMENTS, 1926.

(May 8 to December 21, 1926)

May	13—Registrar	$ 12.50	
	15—President Bryan	100.00	
	15—Councilor Jones	11.50	
	15—Councilor Williams	24.52	
	15—Councilor Gavin	4.00	
	15—Councilor Lucas	16.55	
	15—Councilor Frizell	7.75	
	15—Councilor Robertson	46.61	
	15—Councilor Holmes	9.40	
	28—Reporter	226.90	
June	18—A. M. A.	6.75	
	25—Treasurer	1800.00	
July	6—Printing	24.00	
	6—Treasurer Buchanan	12.00	
Dec.	29—Printing	5.75	
	31—Postage	10.00	
	31—Secretary	500.00	
	Total		$2840.71
Dec.	31—Balance in Bank		390.47

RECEIPTS, 1927.

(January 1 to May 6, 1927)

Jan.	1—Balance in Bank	$ 390.47	
May	6—967 Dues	2901.00	
	Total		$3291.47

DISBURSEMENTS, 1927.

(January 1 to May 6, 1927)

Mch.	18—Treasurer's Bond	$ 18.75	
	24—Stationery	20.50	
Apr.	14—1M Envelopes	22.60	
	26—Printing	35.10	
	27—1M Postal Cards	10.00	
	27—Printing	3.00	
May	5—Telephone and Telegraph	9.50	
	6—Postage	10.00	
	Total		$ 129.45
May	6—Balance in Bank		$3162.02

(Signed) T. M. DYE, Secretary.

EXHIBIT B.

TREASURER'S REPORT

TO

MISSISSIPPI MEDICAL ASSOCIATION

MAY 10, 1927

Balance Association funds as shown by last report		$3557.04
July 1st, 1926, Received from Dr. T. M. Dye, Secretary		1562.50
		$5119.54

DISBURSEMENTS.

May 24th, 1926, to Dr. J. F. Underwood	$470.73	
May 25th, 1926, to New Orleans Med. & Sur. Journal	234.58	
Aug. 19th, 1926, to Andree Printing, Inc.	155.50	
Sept. 4th, 1926, to New Orleans Med. & Sur. Journal	19.20	
Sept. 28th, 1926, to New Orleans Med. & Sur. Journal	238.44	
Jan. 6th, 1927, to New Orleans Med. & Sur. Journal	252.66	
Apr. 12th, 1927, to New Orleans Med. & Sur. Journal	250.25	1621.36
Balance		$3498.18

RECEIPTS MEDICO-LEGAL FUND.

Balance last report		$6804.64
July 1st, 1926, received from Dr. T. M. Dye, Secretary	$237.50	
May 6th, 1927, Interest on T. C. No. 20522 to May 1st	165.21	
May 6th, 1927, Interest on T. C. No. 20873 from August 4th, 1926, to May 1st, 1927	29.55	
May 6th, 1927, Interest on Liberty Bonds	170.00	602.26
		$7406.90

DISBURSEMENTS.

May 22nd, 1926, to Dr. S. H. Hairston	$250.00	
Nov. 3rd, 1926, to Dr. J. H. Rush	250.00	500.00
		6906.90
Association Balance		$ 3498.18
Medico-Legal Balance		6906.90
		$10,405.08

The above funds are represented as follows:

Cash in hand	$1079.94	
Time Certificate No. 21879	5325.14	
Second Liberty Loan Bond No. E 00167150	1000.00	
Third Liberty Loan Bonds Nos. 1539096-1539097 for $1000 ea.	2000.00	
Fourth Liberty Loan Bond No. K 00705340	1000.00	
		$10,405.08

Respectfully submitted,

J. M. BUCHANAN, Treasurer.

THE FLOOD AND THE MEDICAL PROFESSION.

Now that the flood is receding and there is time to think about what has been done during the past few weeks, we may safely say that the medical profession has on this occasion, as it has always done previously, met the situation. Whenever there is an emergency, it is always to the medical profession that the people go for help. In time of war or famine, pestilence or flood it is the old regulars who are appealed to for help. No matter how popular the various cults may be in time of peace, when there is any real trouble the regular medical profession is looked to and called upon.

It is always the local physician who faces the real emergency. Often without adequate help and without sufficient supplies, it is he who must assuage the suffering and give first aid to the injured. It goes without saying when the daily press states that the Red Cross is on the way and a train load of physicians and nurses is being sent that the local doctor has already been on the job and has things well in hand by the time help—and much needed help it is true—reaches the "front".

Recently Nicholas Murray Butler spoke of the "doctor who cared mightily for every patient, who stopped at nothing, whose tenderness matched his skill, and whose devotion went parallel with his service." Once more our hats are off to the home doctor.

At its regular monthly meeting, June 10, the Staff of the Vicksburg Sanitarium presented the following program:

1. Intestinal Obstruction, Dr. G. M. Street.

2. General Miliary Tuberculosis, Dr. J. A. K. Birchett, Jr.

3. Edema of the Larynx, Dr. J. A. K. Birchett, Jr.

4. Gastro-Intestinal Hemorrhage, Dr. W. H. Parsons.

The June meeting of the Issaquena-Sharkey-Warren Medical Society was held on the 14th at Vicksburg with the following program:

1. Acidosis and Alkalosis, Dr. J. A. K. Birchett.

2. Tonsillectomy, Dr. D. A. Pettit.

3. Medical Ethics, Dr. E. F. Howard.

SOUTHERN PEDIATRIC SEMINAR.

Announcement is made that the Southern Pediatric Seminar will be held at Saluda, North Carolina, from July 25th to August 6th, 1927. The program indicates that this year's work will be a well rounded, post-graduate course in pediatrics. Dr. D. Lesesne Smith, M. D., is registrar and may be addressed at Infants' and Children's Sanitarium, Saluda, N. C.

EX-PRESIDENTS.

At the 1927 meeting of the Mississippi State Medical Association eighteen of the twenty-four living ex-presidents were registered. Fifteen of this number were present at a luncheon given by Drs. Willis Walley and D. W. Jones on May 11th. On this occasion there was organized the ex-Presidents' Club, which elected P. W. Rowland, chairman, and D. W. Jones, secretary. The following members were present: P. W. Rowland, Oxford; J. M. Buchanan, Meridian; W. W. Crawford, Hattiesburg; D. W. Jones, Jackson; D. J. Williams, Gulfport; S. W. Glass, Clarksdale; I. W. Cooper, Meridian; T. M. Dye, Clarksdale; Willis Walley, Jackson; F. J. Underwood, Jackson; Henry Boswell, Sanatorium; S. W. Johnson, Vicksburg; W. A. Dearman, Gulfport; G. S. Bryan, Amory; T. E. Ross, Hattiesburg.

The object of this club is to promote good fellowship among the members and to encourage attendance at the meetings of the Association. They will sit together at a luncheon once only at the annual meeting; the host of the luncheon will not be announced until the luncheon is served. There are "no dues, and no politics." The oldest member present becomes chairman automatically. The active president of the Association will be the honor guest and will be initiated in due form.

The South Mississippi Medical Society held its regular monthly meeting at Hattiesburg on June 7. The program was as follows:

1. Physiotherapy, Dr. W. W. Hickman, Hattiesburg.

2. Infections of the Maxillary Sinus, Dr. S. J. Gaddy, Hattiesburg.

3. A Paper, Dr. Forbus of Johns Hopkins, Baltimore.

4. Acute Osteomyelitis, Dr. M. L. Flynt, D'Lo.

5. Eczema, Dr. R. W. Hall, Jackson.

6. Abruptio Placentae, Dr. J. S. Gatlin, Laurel.

7. Cranial Injuries, Dr. R. H. Cranford, Laurel.

A dinner was served by the Alumnae of the South Mississippi Infirmary, the proceeds of which were to go to a nurse suffering from pulmonary tuberculosis.

MORE HEALTH UNITS.

Full-time County Health Departments for a period of sixty days have been organized in Humphreys, Sunflower, and Issaquena counties. It is thought that with adequate medical and nursing personnel, together with Sanitary Engineers and Inspectors, the people of these counties could be immunized against typhoid, general sanitation improved in the community, and from a health standpoint the people would be better off than they were before the flood came. It is also felt that with this two months' intensive public health program that such demonstrations could be made that the citizenship of those counties will busy themselves to the end that permanent full-time health departments will be established.

For the period April 20 to June 1, the Hygienic Laboratory of the State Board of Health has distributed 252,000 c.c. of typhoid vaccine.

The North Carolina State Board of Health has furnished to the Mississippi State Board of Health five well trained sanitary inspectors. Indiana has furnished three, and Alabama one Sanitary Inspector and one Sanitary Engineer.

Seventy nurses have been used in flood relief work in the nine inundated counties in Mississippi.

Too much cannot be said for the medical profession of Mississippi for the splendid spirit manifested in rendering unselfish and untiring services to the flood sufferers. The State Board of Health had offers of services from medical men in the state sufficient to take care of a disaster of five times the enormity of the present one. This is the usual practice of the medical profession of Mississippi. In the World War and at all other times they have been ready and willing cheerfully to do whatever needs to be done. The physicians of the Delta flooded area are undaunted by the harrowing scenes they have experienced and are cheerful and optimistic with regard to the future, notwithstanding the fact that most of them have lost most of their possessions and in some instances have been wiped out completely from a financial standpoint. All of them have worked almost day and night in the work of protecting and relieving their fellow sufferers with no thought of remuneration. Can you beat that?

Under the chairmanship of Dr. F. J. Underwood the following public health program was presented at the Social Workers' Conference at the University of Mississippi, June 23:

1. Health Problems and Health Work in the South, Waller S. Leathers, M. D., Professor Chair of Preventive Medicine, Vanderbilt University.

2. Importance of Communicable Disease Control in Mississippi—Present Day Methods—Hardie R. Hays, M. D., Director Bureau of Communicable Diseases, Missisippi State Board of Health.

3. Importance of a State-wide Milk Sanitation Program for Mississippi—With a Plea for Uniformity in Procedure, Mr. Leslie C. Frank, Sanitary Engineer, U. S. Public Health Service.

Ten minute discussion of Mr. Frank's paper by Mr. H. A. Kroeze, Director of Bureau of Sanitary Engineering, Mississippi State Board of Health.

4. Our Maternal and Infant Welfare Program, Mary D. Osborne, R. N., Supervisor.

5. Present Status of Full-time County Health Work—Plans for Future Development—Calvin C. Applewhite, M. D., Director, Bureau of County Health Work, Mississippi State Board of Health.

Dr. E. M. Gavin of Richton, Mississippi, was re-elected Councillor for the Seventh District at the recent meeting of the State Association in Jackson.

Dr. B. T. Robinson of New Agusta, who is head of the County Health Unit for Perry County, reports success in his campaign of vaccinations and examination of school children.

Dr. Henry Boswell of the Mississippi State Tuberculosis Sanatorium has returned recently from several days spent in Indianapolis attending sessions of the American Sanatorium Association and the National Tuberculosis Association. While in Indianapolis, Dr. Boswell was given the very signal honor of being elected president of the American Sanatorium Association. This is the first time that this honor has ever been conferred upon a Southerner. Dr. Boswell was also re-elected to a place on the Executive Board of the National Tuberculosis Association. He is likewise the only Southerner to be accorded a place upon this board.

Dr. Boswell leaves about the middle of June for New York in answer to a request from Dr. Taylor that he serve as Chairman of the Committee on Early diagnosis of Tuberculosis during the campaign. Dr. Boswell goes to confer with other authorities relative to the direction of this important campaign work.

The Jackson Infirmary Training School announces the following list of graduates: Miss Mary A. White, Miss Virginia Inman, Miss Maudette Cooper, Miss Jeanette Mathews, Miss Bessie I. Turner, Miss Minnie Gardner, Mrs. Esther Powell Curtis.

The Mississippi State Board of Health calls attention to a letter that is being sent from New York by a concern that styles itself "International Health Institute":

Secretary,
Chamber of Commerce.

Dear Mr. Secretary:

"We are in need of resident physicians in your locality—physicians capable of upholding the strictly ethical requirements of our Institution.

"May we prevail upon you to assist us in this matter by supplying us with the names of those who might qualify.

"Briefly, our plan is this:

"Those qualifying are allowed a fee of three dollars for each examination of subscribers to our Health Extension Service. Visits to resident physicians are arranged by us at periodic times during the term of the subscription.

"The affiliation will not interfere with their regular practice and it is understood, of course, that we will co-operate with and conform to every splendid standard of the American Medical Association.

"Our work is purely constructive and educational. Our service does not include medical and surgical treatment. A reflection of the great good accomplished is shown by the 400,000 membership of a similar organization.

"Thanking you in anticipation of a reply at your earliest convenience, we remain

Very truly yours,

INTERNATIONAL HEALTH INSTITUTE,
George W. Smith,
Assistant Secretary."

The Bureau of Investigation of the American Medical Association makes the following report:

"The 'International Health Institute, Inc.,' is at present, it seems, nothing more than a paper organization. It has for its president one Charles Berminster Munro, who used to be with the Long Beach National Bank at Long Beach, Long Island. Its vice-president is J. C. Lipsey, who is said to have been employed in an executive capacity by A. W. Hyde and Company, Inc., 2061 Broadway, New York City. The secretary is Gerard Warren Proctor, who is assistant sales manager of the A. W. Hyde and Company, Inc. The assistant secretary is George W. Smith, whose antecedents we know nothing about.

"Although we requested the International Health Institute, Inc., to give us the names of the incorporators, this request was not complied with. We have learned, however, that the incorporators were Josephine Applebaum, Thomas LePetri, and Amelia Decker. These three individuals, apparently, were mere figureheads whose names were used by the attorney for the International Health Institute, in order to comply with the state law requiring three adult residents of the State of New York to sign the papers of incorporation.

"The concern states that it intends to render a service similar to that of the Life Extension Institute, with four quarterly physical examinations and four urinalyses, 'supplemented with a complete course in body-building and rules of right living.' They state that they will pay a fee to regular registered physicians to make physical examinations, and we believe that the fee they offer is $3.00, which, of course, is hopelessly inadequate for any physical examination that is worth while.

"As you know, THE JOURNAL has taken the attitude for some time that there is no good reason for the existence of these various concerns that sell a urinalysis service, together, in some instances, with a physical examination. The proper person to do such work is the family physician, to whom the patient will be a human being and not a number. The physician who is familiar with the individual and his idiosyncrasies is in a position to give really valuable service in periodic examinations. The service that one gets from commercial concerns that are in this line is, even when honestly given, of indifferent value."

Central Medical Society met in Jackson, May 24, 1927. The Yazoo County physicians furnished the following program:

1. Acute Dilatation of the Stomach Following Operations, Dr. O. H. Swayze.
2. Hemothorax Following Gun-Shot Wound, Dr. T. J. Rainer.
3. Report of Some Interesting Cases, Dr. W. D. McCalip.
4. Why Doctors Don't Locate in the Country, Dr. C. M. Coker.
5. Syphilis, Dr. W. E. Noblin.
6. A Paper, Dr. W. H. Frizell.

BOOK REVIEWS

Diseases of Women: By Harry Sturgeon Crossen, M. D., F. A. C. S. 6th ed. revised and enlarged. Illus. St. Louis, C. V. Mosby Co. 1926. 1005 p.

It is hardly necessary to say anything regarding the appearance of the new edition (6th) of this work of so eminent a gynecologist. Crossen's Diseases of Women has been well known to students and practitioners. Beginning with the first chapter, on Taking a Gynecological History and How to Make Gynecological Examinations, what to note and how to interpret symptoms and physical findings, the volume is replete with all the newest advances in diagnosis and treatment. Systematically divided into chapters, from the external genitals to all deeper organs, from anatomical and physiological conditions to pathological conditions, with many illustrations concerning normal and abnormal histology and anatomy, illustrations of nonsurgical and surgical methods of treatment, the work is the product of a real master.

ADOLPH JACOBS, M. D.

Neuritis and Neuralgia: By Wilfred Harris, M. D., F. R. C. P. New York, Oxford University Press. 1926. 418 p.

The author has given to the medical profession, with a special interest to the neurologist, a book which is clear, concise, easily read and understandable. A salient factor of this publication is that it is shorn of all unnecessary and superfluous verbiage. The ear, nose and throat specialist will find thoroughly covered Sluder's sphenopalatine neuralgia. For the general practitioner the functional vasomotor disorders including a clear and concise conception of acroparesthesiae. To the neurologist he presents a wealth of neurological data concerning neuritis and neuralgia as is not found in other publications. Even though the author has given his own views on trigeminal neuralgia they are, as he states, the results of his own personal observation and study. The book contains many excellent illustrations. It is intelligently written in sequential neurological order and no doubt will find its place on the book shelf of every physician who keeps abreast of the times. This work of Harris on such an interesting neurological subject fills a niche of its own.

W. J. OTIS, M. D.

Textbook of Bacteriology: By Hans Zinsser, M. D. New York, D. Appleton & Co. 1927. 1053 p.

Zinsser's present edition of this standard medical text has been fully revised and brought thoroughly up to date, Indeed one may say with assurance that this is the last word in textbooks on bacteriology.

In addition to the bacteriological data per se, the author has spared no effort in furnishing the general medical reader with that information so often difficult to find, in the practical applications of the knowledge derived from the vast majority of the recent advances in this field. It would pay any surgeon or medical practitioner to invest in this work and peruse its pages at great length.

F. M. JOHNS, M. D.

Principles of Surgery for Nurses: By Montague Sydney Woolf, M. D. Philadelphia, W. B. Saunders Co. 1925. 350 p.

The author has taken up the principles of surgery for the instruction of nurses in a most instructive way.

There is a short resumé of the history of surgery which is followed by a discourse on bacteriology, inflammations, and following this, the fundamental principles of the surgical diseases of the different systems are discussed, with a most excellent and full summary after each chapter.

The book is recommended highly for the purpose for which it was written.

I. M. GAGE, M. D.

Pseudo Appendicitis: By Thierry de Martel, M. D., and W. H. J. Antoine, M. D. Philadelphia, F. A. Davis Co. 1925. 211 p.

The authors have shown that all cases diagnosed as chronic appendicitis operated on with the removal of the appendix have not resulted in the relief of the clinical symptoms.

The book deals with pathological states of the right half of the colon, especially cecum and ascending colon. The pathological states being (1) abnormally mobile cecum, (2) ptosis of cecum which is fixed and adherent; perivisceritis of inferior quadrant, (3) ptosis of hepatic flexure only, (4) ptosis of whole right colon, (5) Jackson's pericolic membrane, (6) pericolitis of hepatic flexure and perivisceritis of superior quadrant, (7) union in double-barrel shotgun fashion of ascending and transverse colon.

All of the above may simulate chronic diseased states of the appendix which are not relieved by appendectomy.

The pathology, symptomatology, and roentgen-ray findings with medical and surgical treatment

are fully and thoroughly discussed. There is a complete bibliography appended.

This book should be found in the library of those engaged in surgical practice and should be thoroughly studied by the younger surgeons.

I. M. Gage, M. D.

The Duodenal Tube and Its Possibilities: By Max Einhorn, M. D. 2d ed. rev. and enl. Illus. Philadelphia, F. A. Davis Company. 1926. 206 p.

This little book of 197 pages, written by the father of gastro-enterology in this country, is the single text which alone deals with the duodenal tube and its congeners. Dr. Einhorn has outlined in six brief but concise chapters the clinical importance of applying his original idea (duodenal intubation) to the diagnosis and treatment of disease.

The duodenal contents, representing the tangible products of the stomach and pylorus, duodenum, pancreas, liver, gall-bladder and biliary ducts, are described and methods for analysis are discussed. For example, one notes the important information derived from tests of the duodenal contents and biliary tract disease, especially cases of jaundice with or without obstruction and from tests for the pancreatic ferments. However, the chemical methods applicated by the author on determining the quantity of these ferments, have been found inaccurate and valueless for proper study of the external pancreatic function. The author's criticism of the Lyon technique is without due justification,—numerous authorities having been convinced that the biliary drainage following magnesium sulphate instillation into the duodenum, affords a very valuable diagnostic and therapeutic agent in inflammations of the biliary system.

Many case histories are cited for the purpose of illustrating the clinical value of abnormalities found in the physical, chemical and microscopic characteristics of duodenal content.

The chapter on the use of a duodenal tube in therapeutics considers in detail methods for duodenal alimentation and medication in addition to the employment of this instrument in surgical procedure. No credit is given to non-surgical biliary drainage as a therapeutic method.

The last chapter is a discussion of certain instruments allied to the duodenal tube but seldom used,—pyloric dilator, infantile pyloric catheter, delineator and aspirator.

This second edition of Dr. Einhorn's book will continue to serve a most useful purpose as a reference work, especially for the physician making use of the duodenal tube in his practice.

Daniel N. Silverman.

Studies in Intracranial Physiology and Surgery: Third Circulation; The Hypophysis; The Gliomas: By Harvey Cushing, M. D. (The Cameron Prize Lectures, 1925.) London, Oxford Univ. Press. 1926. 146 p.

There can be no monument so impressive as one that lives, breathes, thinks and works. A scientist may achieve immortality as purely through a school of able, well-trained disciples as through epoch-making achievements of his own. If a man do both, he attains a greatness no man may challenge. Halstead and Kocher live in Cushing, and as surely Cushing shall live in Weed, Dandy, Noffziger and the rest who have worked by his side.

Cushing has touched and illumined many subjects in his time, but his true love is the cerebro-spinal apparatus. His is a peculiarly inquisitive, lucid and pertinacious mind, and though his literary method suffers from the very profundity of his knowledge, the industrious reader is always amply rewarded.

The three lectures included in this volume were delivered as the Cameron Prize Lectures, at Edinburgh in Octobeer, 1925. They are a chronicle of research work carried out at Johns Hopkins and at Harvard, by Cushing and his associates. Problem leads to problem. From a blind alley of investigation a bypath leads to an achievement. Each achievement forms a new vantage-point from which new problems come to view. Successive workers carry the burden in a community of toil and speculation. Their ideas add to the slowly growing total until we see a new field full and clear. True, there are still unexplored places, but these are charted and we feel no doubt of the outcome. It is merely a matter of time and method.

Lecture I deals with the cerebro-spinal fluid, its source, circulation, function and absorption. To most readers this will be the most instructive and satisfying chapter. The information is almost all a matter of record, but few of us have read the widely scattered reports. Depending on the standard treatises, we have been puzzled and disappointed with the hazy and evasive accounts apparently derived from a common mysterious source of misinformation. There may be imperfections in this account, but if so the reader has the record before him, the process of reasoning explained, and he is free to disagree and prove

Lecture II—the pituitary gland as now known. Much light is shed on a subject that is still obscure. Demonstrable facts are established. Untenable hypotheses are exploded. Conclusions are carried as far as facts permit. Suggestive information leads on to speculation. Much work has been done and good progress made. The job is outlined and ready for the workers.

Lecture III—intracranial tumors and the surgeon, is a history of progress from Victor Horsley to date. It is calculated to make all general surgeons, most neurologists, and many pathologists very humble. The diagnosis, localization, and surgical treatment of intracranial tumors has progressed so far that the general surgeon cannot hope to catch up, the pathologist must take lessons from the neuro-surgeon-pathologist and the neurologist must follow his work or fall behind. The pathology and symptomatology of brain tumors have been as much illumined by the biopsy as have been those of abdominal lesions. The pathology of the living has supplemented that of the dead.

In conclusion I would warn all prospective readers that this is not a book for vacation hammocks. The unmistakable odor of toil hangs about it. Ample award awaits those who are willing to labor and think it through, but like an honest workman it despises a loafer and gives him nothing but a hard look and harder words.

J. D. Rives, M. D.

PUBILICATIONS RECEIVED.

Oxford University Press, New York and London: "A Handbook of Diseases of the Stomach," by Stanley Wyard, M. D., B. S., M. R. C. "Intracranial Tumours and some errors in their Diagnosis." by Sir James Purves-Stewart, K. C. M. G., C. B., M. D., F. R. C. P. "Manual of Bacteriology," by Robert Muir, M. A., M. D., Sc.D., LL.D., F. R. S., and late James Ritchie, M. A., M. D., F. R. C. P. "The Health of the Child of School Age," by various authors, with a foreword by Sir Thomas Oliver. "An Illustrated Guide to the Slit-Lamp," by T. Harrison Butler, M. A., D. M., M. R. C. S., L. R. C. P. "Malarial Psychoses and Neuroses," by William K. Anderson, M. D., F. R. F. P. S.

Paul B. Hoeber, Inc., New York: "Fundamentals of the Art of Surgery," by John H. Watson, M. B., B. S., F. R. C. S. "Approaching Motherhood," by George L. Brodhead, M. D.

Lea & Febiger, Philadelphia: "Practical Otology," by Morris Levine, M. D.

William Wood and Company, New York: "The Life and Work of Sir Patrick Manson," by Philip H. Manson-Bahr, D. S. O., M. D., F. R. C. P., and A. Alcock, C. I. E., LL.D., F. R. S. "Tropical Surgery and Surgical Pathology," by Karuna K. Chatterji, F. R. C. S. I.

Williams & Wilkins Company, Baltimore: "The Normal Chest of the Adult and the Child," by J. A. Myers.

P. Blakiston's Son & Company, Philadelphia: "Surgical Anatomy of the Human Body," v. 3, by John B. Deaver, M. D., Sc.D., LL.D., F. A. C. S.

The MacMillan Company, New York: "City Health Administration," by Carl E. McCombs, M. D. "How to Make the Periodic Health Examination," by Eugene Lyman Fisk, M. D., and J. Ramser Crawford, M. D.

F. A. Davis Company, Philadelphia: "Diseases of the Skin and Syphilis," by Albert Strickler, M. D.

Government Printing Office, Washington: Dept. of Commerce, Mortality Statistics, 1924. The Medical Dept. of the U. S. Army in the World War, Volume XI, Surgery, Part I.

Miscellaneous: "Dengue," by J. F. Siler, Milton W. Hall and A. Parker Hitchens. "An Outline of History of Ophthalmology," by Thomas Hall Shastid, A. M., M. D., F. A. C. S.

REPRINTS.

"Taking Medical Education to the Practitioner," by Charles A. Gordon, M. D. "Report of the Committee on Public Health and Medical Education, New York." "Pruritus Ani and Pruritus Vulvae of Fungal Origin," by Aldo Castellani, M. D. "Symbiotic Fermentation Phenomenon, Its Use in Differentiation of Micro-organisms and Identification of Carbon Compounds," by Aldo Castellani, M. D. "Action of Bacilli of Paratyphoid, Dysentery and Metadysentery Groups on Various Starches," by Aldo Castellani, M. D.

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THE GENESIS AND DEVELOPMENT OF THE SCIENCE OF MEDICINE.*

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HATTIESBURG, MISS.

PRESIDENT'S ADDRESS.

Ladies, Gentlemen, and Fellow Members:

I hope our subject tonight will prove of interest to all present. Instead of treating it from a strictly medico-scientific viewpoint, I wish to treat it more from a theoretical and historical basis, putting in medical matters of interest during the course of development of the subject. You will therefore pardon me, if I seemingly go so far in the past, as the dawn of time when there was no other than God, and who spake light, matter, and life into being, for a generic point, from which I shall attempt to trace (genealogically speaking) the period of gestation, birth, growth, and development of the mental tree of the science of medicine.

Man in all ages has been fond of, and greatly interested in, delving into the dim vista of the past for the origin of all things. Nothing has created more interest in his mind than to trace his own origin, and he has even tried in his enthusiastic endeavors to go beyond the Mosaic statement of the creation of man, and lose himself in the maze of hypotheses and theories advanced by ambitious thinkers. For our purpose, instead of tracing medicine from the present, backward (as man traces his ancestry), I shall go back to the creation of the world, accepting fully and unreservedly the Mosaic account as laid down in Genesis as a starting point for my theme, and there find the organic and inorganic matter, from which in due time and order, sprang the tree of medicine.

The science of medicine and the religion of man are so inter-correlated by the very nature of things that I shall refer often to the religious element or phase of human life without fear of being misunderstood.

Like all trees, for our purpose, it must have its time of planting, its rooting, its period of growth, and a moderate degree of development, before fruiting or engrafting branches onto other stocks as independent professions, yet so closely allied, as to be interdependent, one upon the other.

In planning the creation, an Omniscient God foreknew that He would create man, that man would fall from his high, sinless estate, that manifold evils would be visited upon him and his posterity in consequence; therefore, it was necessary that material must be in store for his physical assistance, or else, his seed would vanish from the earth.

He therefore took of the elements of illimitable space, and formed the earth. Man, in the maturer years of his intellectual growth, grouped these elements into a basic science called Chemistry.

After the void, of which God speaks, had passed away; after the elements, compos-

*Read before the Mississippi State Medical Association, Jackson, May 10-12, 1927.

ing the earth, had taken their places at His command; after all the inconceivable number of atomic and molecular combinations had taken place, for the need and purpose of the future man; inorganic chemistry was complete and ready for his every need.

The next act in the drama of creation was when God caused the flora to burst forth from the rocks in all its gorgeous beauty; and lo! organic chemistry was formed and ready for the advent of man.

But, yet another step must be taken in the great plan of the Divine mind, before his advent in the world. The animal kingdom in all its forms and phases, all created things capable of living in the sea, on the land, and in the air, must be created and ready to serve Him. Then, and not until then, did man appear on the earth.

What a beautiful world it was; the solid earth, the elements of which it was composed, the plant life in all its grandeur and glory, the denizens of the deep, the animal life on its surface, and the birds of the air, all created and subject to His will.

But man, the last and best of God's creation, fashioned in His own image, endowed with all but divinity itself, monarch of all created things, must fall—fall from his high and sinless estate, and bring upon himself and his posterity the evils which his temptation and sin entailed upon the race.

Listening to the beguiling influence of the serpent, our Mother Eve disobeyed the direct law or word of God. She stretched forth her fair hand and plucked the fruit of the tree of knowledge of good and evil. She ate; its flavor appealed to her. No momentary harm came to her; so she gave to her companion, and he ate also.

The deed was done beyond recall; sin, in the form of disobedience, had entered the world; and, although death was not instantaneous (as a quick deadly poison acts), it came as inexorably as if momentarily visited.

God, in person, charged them with the act of disobedience; and to their credit they did not lie, but pleaded guilty to the charge. Pronouncng a curse upon them, He drove them forth from the garden, and placed a flaming barrier before the gate to prevent their return.

They were exposed to all the evils loosed by Satan, when they accepted his version of the word or law of God. As physical ailments of every description began to prey upon them, man (in his extremity, born of necessity and despair), began to think, and to reason thus: "God told us before the fall that all thngs created were under the dominion and command of man, and that all should serve Him. "Surely," he reasoned, "all was not evil, but there must also be good; so, let us seek the good, for, did not the tree bear a fruit that was both good and evil?

"Therefore, let us be up and doing, let us be observant. Do not the animals eat of the roots in the ground, of the barks of the trees, of the herbs, and of the grass of the field; and are they not healed? May we not do likewise, and be healed of our ailments and live?"

So man began to gather together materials, some from the bowels of the earth, some from plant and animal life, and some from the air, observing and selecting the good, rejecting the bad; by so doing he planted the seed from which sprang our tree of medicine.

Figuratively speaking, it sprang forth a tiny, slender blade of hope, or promise, slow of growth, struggling for life, buffeted by the winds of failure, dropping a withered leaf here and there, again a new twig or leaf, or a bit of knowledge of proven value, stored up in his now rapidly developing mind and memory; thus adding to the material growth of our mental tree.

It was a slow, tedious, and often disappointing process of the accumulation of ideas, and of the application of those

thoughts, suggestions, and observances, extending over a vast period of man's history before its growth and development began to assume that degree or volume of facts, which aided and added to its material advancement.

As the centuries passed, and as man's necessities increased, he applied himself more and more assiduously to the gathering of remedies, until before long, enough of proven value was gathered by him to add materially to its growth.

The slender trunk or body began to show itself, and to grow stronger, larger, and higher, the more able to support the increasing weight of its now budding branches.

As the tree had its origin in the mind and brain of man, it was incumbent upon him that he nurture and care for it, and keep it fertilized with the food of human endeavor or labor.

For God had said, "that by the sweat of his brow, he should eat bread" to sustain life; so, he must as surely work and delve with hand and brain to work out the mysteries of remedies to aid him in his fierce battle against disease and ultimate death. He must need dig in the earth and rocks; he must go to the sea; he must search among the many roots of herbs, and of the barks, and leaves of plants and trees. He must needs go to the elements of the air.

All nature must be searched in his dire need of remedies to meet the ever-increasing number of diseases, now claiming a victim here, and a loved one there.

Stimulated by his desire to live, and by his wish to be able to alleviate human pain and suffering in others, he gathered his material without giving much attention to the character, or to the value of it.

As good and evil both entered the world from man's disobedience, so, in his haste to find relief from the ever-increasing number of human ills, he accumulated much that was worthless, harmful, and deadly, along with the good, helpful, and curative.

So great had this mass of remedies become, that it now dawned on his mind that he must prune off the worthless, the evil, the deadly, and carefully separate them from those remedies that gave relief, that cured disease, that saved or prolonged life.

As all power was given to Adam to name all things on the earth (animate and inanimate), so man now gave names to the many ills to which human flesh fell heir. He also began to note that the symptoms, repeating themselves in certain diseased conditions occurring in others, helped in the nomenclature, or classification of disease. By noting and grouping the symptoms, man was wondrously able to diagnose the nature of the illness with which the individual had been seized, and thereby enabled to draw upon his storehouse of remedial agents for its relief or cure.

The naming of, and the classifying of the now multitude of illnesses, and the noting of the group of symptoms accompanying each disease, was no mean or easy task; but there were great brains and master minds among men, even in those early times, which not only accomplished this Herculean task, but also classified the many remedial agents, laboriously preparing each remedy. From carefully noting its action, they were enabled thereby to fix the dosage with an exactitude that was remarkable to a high degree.

Thus, we had on one side the great array of diseases, and on the other, the countless number of remedies, prepared, dosed, and ready to be taken, or administered when in need.

From this good hour, medicine might well be called a science, imperfect though it was (and even so yet), but builded upon a foundation so broad and deep, that its superstructure has continued to build through the ages, and will continue to safely build, through the millenniums of

years to come. Like all things human, many evils fixed themselves upon, and entered into the budding science, obstructing its progress, and causing failure, disappointment, and despair. But with a bravery born of necessity, the men of medicine fought and strove steadily forward and upward, overcoming slowly but surely, the insuperable barriers encompassing them.

Not satisfied with the many remedies for the healing of disease (because of the many failures to cure), man turned to the vagaries of the mind for cures, namely, the practice of magic, to soothsayers, sorcerers, witchery, incantations, charms, fetich worship, and other things too numerous to mention, which, when added to an already over-crowded armamentarium, created such a mystery around the practice of the profession of medicine that the people soon began to believe that a God must preside over disease, and that this Deity was able to visit diseases of his own choosing upon any one displeasing him. So man strove to appease his wrath by appealing to those who posed as a medium through whom the angry God might be appeased, and his sickness healed.

Little by little, there built up around the structure of medicine, and the men who practiced the true art, and those who practiced magic, a kind of reverence, which soon grew into a spiritual acceptance that a God of medicine also existed, and that through him all cures were effected. Hence, the ancient Greeks gave us, through their great Homer, the fabled Aesculapius, the reputed God or father of medicine.

Out of this pandemonium of good and evil, Aesculapius, aided by his mythical daughters, Hygiea, Panacea, and Iosa, were said to be able to triumph over the visitations of the God of disease to such an extent, that hundreds of temples throughout Greece and Rome were erected in their honor, and were patronized by multitudes of the sick and afflicted, seeking relief and cure of their ailments.

This condition continued from the time of Homer, a thousand years before Christ to about B. C. 450, when there appeared upon the earth one of the mightiest intellects that God ever gave to the race, in the person of Hippocrates, the great physician, styled "The Father of Medicine." He was born on the Island of Cos, and began practicing and teaching his chosen and beloved profession, early in life.

He also traveled on the mainland of Greece, dispensing his wonderful knowledge, whither-so-ever he went. His writings, which were early celebrated, became the nucleus of a collection of medical treatises, by a number of authors of different places and periods, which were long attributed to him, and still bear his name.

He has the distinction of having been the first to put aside the traditions of early ignorance and superstition, and to base the practice of medicine on the study of man and nature.

He maintained the universal religious view that diseases must be treated as subject to natural laws, and his observation on the natural history of disease, as presented in the living subject, show him to have been a master of clinical research.

His accounts of phenomena show great power of graphic description. In treating disease, he gave marked attention to diet and regimen, expecting nature to do the larger part.

He reflected in medicine the enlightenment of the great age in Greece, and raised medicine and those who practiced it, to a level of the high standard, occupied by the Grecian philosophers of his day.

Many followers sprang into active practice from the teaching of Hippocrates, and it may be truly said that from the labors of his one hundred and three years of life the superstructure of medicine began to throw its now wide spreading branches over the then known world.

It is not necessary to note the rapid forming of the science from the time of

this great man, except to observe that men of great power of mind arose in each succeeding generation in ever increasing number, so that research and application went hand in hand, giving vigor and energy to our tree of medicine, whose widening branches and friendly foliage gave promise of realizing the hopes and desires of mankind in obtaining some degree of relief and restoration of health from the multitude of diseased conditions to which the human body was heir.

Frequent mention is made of the physician and his work in Holy Writ. Seven times we find reference to the medical man, extending from Genesis to the books of the New Testament, and all tend to show the physician was held in high esteem.

At the time our Lord walked and worked among men he not only performed great and wonderful miracles of healing of the sick, but He always commanded man to do that which man could do, teaching him plainly to do all that his finite power of mind and body could perform, and to ask of Him to bless his feeble efforts, leaving Him to do that only which God can do, to complete the healing process.

He further taught the people to "honor the physician," thereby elevating the science or profession to a high plane of estimation among the people, and proving, by associating man with His work of divine healing, that He was willing to be a partner in the work, a ready consultant in time of need, and a reliable guide when the way is dark and filled with human despair.

This co-partnership is one of which we should always be eager to avail ourselves. We will ever find a ready response by the greatest of all Physicians and we should be glad to advertise to the world of men that we are not ashamed of the divine partnership.

Beginning with the Seventeenth Century of the Christian era the art or science of medicine grew to such proportions that certain branches, needing more support than the parent tree could longer give, like the Ban Yan tree of South America, dropped a supporting tendril or root to the broad, stable foundations of the mother science, which, taking root, soon grew into great trunks, giving independent existence to those branches, yet retaining their fixed places on either side the science (medical), adding strength, vigor, and knowledge of application of the laws of prevention, and of the remedies for the healing of the nations.

With this added strength, medicine, pharmacy, and dentistry moved steadily forward and upward with ever-increasing momentum, making giant strides with even pace, vieing with each other in friendly emulation as to which could do more for the relief and cure of needy man. This friendly, loving relation continues to this good day, and will continue to the end of time.

Although great progress was made, the way was retarded by being cluttered up by many false evils, or cults, preying upon the very vitals of the science itself, vampire-like, sucking its life blood, fastening itself with a death-like grip, until detached and hurled away by loving hands of great minds arising in the profession from time to time, pruning away the dead or decaying twigs or branches, exposing the frauds, defying its enemies, overcoming seeming unsurmountable obstacles, preparing the way for modern medicine.

While great men arose in all generations and did valuable service in the interest of suffering humanity, no accurate or reliable data was kept in the archives of the profession until the beginning of the Seventeenth Century, when medicine was systematized into its fundamental sections or branches.

The great masters of medicine of that age began to organize themselves into bands of instructors, each teaching his

particular section or branch, gathering a body of ambitious young men around them who were eager to learn all that was then known of the science of healing.

Thus, slowly but surely, was laid the foundation from which has grown our great colleges and universities of medical learning of today. And as education of the civilized nations increased, education along the lines of medicine also increased, so that the advance in all departments of medicine has been so great and so rapid, that it is referred to, today, as one of the outstanding marvels of the age.

Beginning in the Seventeenth Century with the names of men with whose labors we are familiar, we find standing out boldly from a host of others such great characters as John Hunter, Edward Jenner, Louis Pasteur, Lister, Billroth, Virchow, Koch, Ehrlich, Sims, Osler, Flint and Murphy, each a pathfinder in his sphere of activity. Through their labors, medicine has reached the glorious climax of altitude and breadth enjoyed by you today.

Building on the foundation work of these men of revered memory, we sit at the feet of living exponents of the art of healing, who have taken up the mantles of those who have gone before, and who, aided by the wonderful revealing power of the laboratories, and of the too numerous to mention remarkable inventions of our age, have been able to reach still greater heights of success in the prevention of disease, the mitigation of pain, and the saving of human life, until the world stands in amazement and wonder at those who, aided by the Divine Physician, perform these miracles of healing.

I feel that we are justified in throwing bouquets of flowers at the feet of those men while yet alive and active and acclaiming them as entitled to a place in the Hall of Fame of medicine when they too have passed to their reward.

I refer with pardonable pride to a few of our very own masterful contemporaries, as Kelly, Moynihan, Deaver, Mayo, Crile, Finney, Bloodgood, and our own beloved Matas.

A host of others could be named, all of whom are known by their great powers of intellect, doing marvels in their respective lines, and teaching thousands of others seeking to follow in their footsteps, and, if possible, to attain to greater heights than the illustrious characters named.

Year by year, new secrets are wrested from the various diseases by our indefatigable research workers, the pathology shown under high powered lenses, the etiology given and pictured in unmistakable portrayal of photographic art, so plain that all may see and understand.

Hygeia, or Hygiene has opened up the way of progress along the lines of prevention, and bids fair before long to free mankind of many of the most feared and fatal diseases by strict observance of the laws of sanitation and of immunity.

A host of intrepid research medical men are untiring in their efforts to discover, isolate, and describe the elusive etiological factor of other deadly maladies (over which we now possess no curative agent), and are holding out a human hope that success will crown their efforts.

The work of the modern surgeon occupies no mean place in the great battle against disease. By following carefully in the footsteps of the master operators and teachers of today, thousands of surgeons are able to secure results so brilliant, that they are almost unbelievable, and with pardonable pride they are marching on in full confidence that surgical skill will produce results in the near future which will make present-day results poor, by way of comparison.

In the meantime, pharmacy has kept pace with the medical workers, so that the great pharmaceutical laboratories of the

civilized nations, with an army of world renowned chemists, are producing wonderful medicinal remedies for the cure of the many maladies now escaping prevention.

Odontology, or dentistry, has kept pace with medicine and pharmacy, lending valuable assistance in its field of work—in the alleviation of pain, in preservation of or arrest of decay in teeth, in removal and replacement of those too far advanced to save; thereby preventing absorption of toxins into the blood stream, and rendering incalculable artificial aid to the process of digestion by the proper mastication and preparation of our foods.

The noble profession of the Nurse, which sprang into separate existence during the Crimean War, under the peerless leadership of Florence Nightingale, has added much to the succees of modern medicine, and will ever hold a conjugal relationship to the profession, which no court, scientific or civil, can ever divorce.

God bless the noble band of workers in every field of endeavor in the science of medicine. May their labors yield an abundant harvest, and when the workers of our day and generation shall have dropped from their places one by one, as the leaves of a tree in autumn, may they be filled by worthy workers of other generations, who "shall carry on," and shall reach yet greater heights and breadths, until the friendly foliage of the great tree of medicine shall cover the earth, and sin, which was followed by disease and death, shall be banished from the face of the earth as a result of their labor, and the Son of man, on His second coming, shall say, "Well done, thou good and faithful servant."

THE DIAGNOSIS OF CORONARY OCCLUSION.*

I. I. LEMANN, M. D.,

NEW ORLEANS.

In May, 1921, I was summoned one morning by a colleague. He had heard moaning in the bath room and found his father-in-law, aged 62, lying there on the floor partly clothed. The patient was complaining of pain in the sternal region. The doctor could not feel his pulse at first. When I saw the patient within one-half hour he was lying on a bed in the adjoining room to which he had been carried. The pulse was soft, feeble and very irregular. The heart beat regularly, about 160 per minute; fetal rhythm. The respiration was Cheyne Stokes. The surface was cool and excessively moist. The tachycardia and Cheyne Stokes respiration continued until the next morning. Meanwhile he had been given morphin and digitalis. About one the next morning he had another violent precordial pain which again required one-half of a grain of morphin by hypodermic. Later that morning the heart and pulse were both regular—90 per minute—and the patient was very comfortable. The apex beat was a forcible thrust in the sixth intercostal space in the anterior axillary line. Still later in the day a rasping systolic mumur was heard over the precordium from the left sternal border to the apex. This murmur could not be heard the following day. The blood pressure on this third day was 104 systolic, 75 diastolic. At no time was there any edema of the lungs. The liver was felt two fingers' breadth below the costal margin. After the stormy twenty-four hours the progress was uneventful. There was never any return of the pain, the tachycardia nor the murmur. Gradually the apex beat and left limit of dullness receded toward the middle line. The heart rate was usually in the neighborhood of 70; there were constantly

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ectopic beats. We had at that time no heart station here but in July an electrocardiogram tracing was made at Clifton Springs Sanitarium and a negative T wave found in leads I and II. In referring the patient to Clifton Springs, I wrote "I have wondered whether the clinical picture of pain, tachycardia, arrhythmia, murmur and dilatation did not indicate that there had occurred a thrombosis of one of the coronary arteries and a consequent myocardial insult. If this injury occurred close under the epicardium, we might account for what was, I am sure, a pericardial friction sound." While at Clifton Springs he had several attacks of heart irregularity with a sense of weakness and consciousness of the heart. Upon his return to New Orleans in October he was doing very well except that the heart showed a decided enlargement both to the right and to the left. The action was regular and the rate only 72, lying. On December 26, 1921, while walking on the street, he felt that he had indigestion and went into a drug store to get something to relieve him. In a few minutes he was dead.

Dr. A., aged 53, while making a professional call, was seized with an attack of pain in the chest radiating down both arms. When I saw him, within fifteen minutes of the onset, he was lying on a couch in evident great agony. The face was flushed though the surface was cool and moist. The pulse was rapid. The blood pressure was over 200 systolic. It required a grain of morphine by hypodermic to relieve him. In a few hours the blood pressure fell to 140 systolic. Within the first forty-eight hours there was discovered a pericardial friction sound and a patch of crepitant rales in the left lung posteriorly. The heart had become irregular and the blood pressure had fallen to 110 systolic. The temperature rose to 101°. There was a distinct leucocytosis. This stormy period lasted about ten days. There was then a gradual and uneventful period of convalescence. The doctor was in bed one month. He gradually increased his activities so that after eight weeks he was beginning to go out a little though he had not resumed any professional work. In the midst of this period of well being, a little more than nine weeks after the first attack, he was taken suddenly with agonizing pains in the chest. He had been lying in bed, reading, and was just preparing to go to sleep when the attack began. I saw him within five minutes. He was on the edge of the bed, half-seated, half-standing, in an attitude of intense anguish. The surface was covered with a profuse perspiration. He was only partly oriented. I gave him a hypodermic of half a grain of morphin and subsequently gave three more injections of one-quarter grain each at intervals of fifteen minutes. By the time the pain was entirely relieved he was profoundly unconscious. The heart was rapid but not irregular. The blood pressure was about 140 systolic. The patient remained unconscious for five or six days. Meanwhile he developed a double Babinski and an exaggerated knee jerk on the right and it was noted that the right leg when lifted fell in a manner different from that of the left leg. By the end of the week a complete right sided hemiplegia was well estabished. The coma became merely a stupor and after a week the patient though apparently wide awake was entirely unresponsive to questions. This was followed by a period in which he was entirely disoriented. He began to talk, though with difficulty, and had trouble for a while in finding the word he wanted. Gradually he improved, gained control of his sphincters and became bright and interested. Finally, he was able to walk about with the aid of a crutch and some support. In general he presented the usual picture of a hemiplegic. Thirteen months from the time of the first attack, he succumbed to a third one. He had gone out riding in an automobile. His son noticed that the doctor did not seem to be well and asked whether he had pain. This he denied, saying that he was merely tired. He was, however, apparently so seriously ill that the ride was cut short

and he was carried in to the house of a friend. He still said that he had no pain but asked to be given a hypodermic of morphin, which was done. I reached him within ten minutes. When I arrived he was entirely unconscious, pulseless and covered with a profuse perspiration. Within a few minutes he died. Pulse tracings made by Dr. George R. Herrmann between the first and second attacks showed typical coronary T waves.

I have related these two cases to illustrate the now well recognized sequence of events following an occlusion of a coronary artery; pain, prostration, fall in blood pressure, fever, leucocytosis, pericarditis and in the second case embolism to the brain, (in other cases emboli have gone to the lungs, to other organs and to some of the peripheral arteries), arrhythmia and characteristic changes in the electrocardiographic tracings. The diagnosis of coronary disease is, of course, not a new one but the recognition that it was possible to survive for months or even years after an occlusion of a coronary has become general only in the past two decades. The first satisfactory account was published by two Russian physicians, Obratzow and Strachesko[1] in 1910. Since the paper of Herrick[2] in 1912, many contributions have been made to the American literature. As Christian[3] remarked: "Cardiac infarction, the result of coronary thrombosis, had been shown to me (as a student) in the postmortem room, but I can recall no reference to cardiac infarction or, as it is sometimes termed, coronary thrombosis, as a condition to be recognized during life." This was due in part, no doubt, to the influence of Cohnheim's teaching that coronary arteries are end arteries and that their occlusion must bring immediate death. In part too, the failure to recognize the condition intra vitam must be attributed to the confusion and controversy which still reign with regard to the pathogenesis and significance of angina pectoris and of cardiac pain in general. In the past generation there was a more or less general belief that the heart itself was devoid of "nerves endowed with the power of conscious sensation."[4] This led to a disregard of precordial pain of minor degree and a failure to evaluate all precordial pains. The work of Head, however, has served to teach us the significance of referred pain. On the other hand there was, and still is, a desire to attribute all precordial pain to angina pectoris and to explain the pathogenesis of the latter upon one basis; hence the numerous theories of coronary disease, coronary spasm, aortic disease, cramp of the heart muscle, etc. Upholders of the theory that all angina is due to coronary disease could point to the frequency with which coronary lesions are found postmortem in cases of angina pectoris but their opponents could well rejoin that angina pectoris has existed where no coronary disease was found and extensive coronary disease has been found where no angina pectoris had existed. Vaquez[4] divides angina into two classes—angina of effort and angina of decubitus and believes that the former is due to a sudden distention of the aorta while the latter is due to a sudden distention of the heart. MacKenzie holds that angina is due to the heart contracting when the supply of blood to the heart muscle is deficient: "There was found a definite class of hearts which gives rise to pain when the blood supply of the muscle is defective on account of obliteration or narrowing of the coronary artery or when the heart muscle is so damaged that it is unequal to the task of maintaining an efficient circulation, so that in its endeavor to do this it becomes exhausted and pain results."[5] Allbutt contends that angina is due to a "tension of quasi cutaneous investments (*i. e.*, the adventitia at the root of the aorta) * * * and that in the vast majority of cases of ordinary angina this tension is exerted upon the thoracic aorta whose ascending portion appears to be more exquisitely sensitive to tension than the rest."[6] Such a tension gives rise not only to the pain referred to the sternal and pre-

cordial regions and down the arms but brings about reflex inhibition of the heart and thus sudden death. But even Allbutt, after discussing with Hochhaus the latter's case of coronary thrombosis, yields that he "can no longer hold that the source of angina is exclusively aortic. * * * In these cases then, the intense anginiform pain appears to have been generated not by any extension of inflammation from the pericardium to the root of the aorta—vera causa as this is—but in the heart itself." The truth as to angina pectoris, as Vasquez has pointed out and Hamman[7] has again recently emphasized, is that it is not a disease but a syndrome. Because of the latter day proposal to relieve angina by cutting the reflex, it becomes all the more important to study this syndrome and to attempt to segregate those cases due to organic heart and coronary disease from those due to a functional cause (in the Allbutt sense). It is evident that such an operation can only be harmful where coronary disease and consequent myocardial damage are present. Such a differentiation is not always easy and the recognition of occlusions of small branches of the arteries may easily be overlooked. This is indicated by the following history:

A man of 42 was taken suddenly with a sharp knife-like pain in the precordium shortly after a very light evening meal on Jan. 31, 1927. He had just had a disagreeable controversy. The pain continued all night and all the next day but he did not seek medical advice for twenty-four hours. He then went to Touro Infirmary and was there examined by one of the residents who found nothing abnormal. While the patient declared that he had a pain and that it was exaggerated by any exertion, his suffering was not apparent to the onlooker. He went home but returned the next morning when he was referred to me. I met him casually in the hall and was not impressed by any need for an immediate examination, nor did the patient demur when I set the time later in the day for the consultation. When I examined him in the afternoon I too could find nothing wrong. After hearing the account of his controversy I was inclined to believe that the pain had no real organic basis. The patient was perfectly calm and spoke of his pain in almost casual fashion, yet he insisted that he had not slept for nearly forty-eight hours and that any exertion, even bending over, increased the pain. I sent him home to rest and to take some bromide. Later that evening when my associate, Dr. R. T. Liles, saw him the pain was so great that two-thirds of a grain of morphin had to be given. The blood pressure at that time was 150 systolic. It had been 130 systolic, 100 diastolic in the afternoon. The following morning, February 3rd, after a quiet night the blood pressure had fallen to 110 systolic, 70 diastolic. In the evening the heart rate was 84; no murmur, no irregularity. The temperature had risen to 100 2/5°. There was less pain but generalized discomfort. The leucocyte count was 10,000, with 77% polymorphonuclears. The leucocytosis rose to 12,000 on February 4th. The temperature ranged from 99½° to 101° on February 2nd, 3rd, 4th, 5th and 6th. It still rose as high as 100° on February 8th. February 4th he looked more toxic. The color of the face was dusky, pulse 72, blood pressure 104 systolic, 80 diastolic. No murmur, no irregularity. Lungs normal. Some precordial pain again at 6 p. m. On February 5th any little exertion still brought on the pain. At 8 a. m. no heart murmur was heard. At noon there was a very distinct leathery rub to be heard from the left border of the sternum to the left posterior axillary line. It was loudest in the nipple line. The blood pressure was 98 systolic, 66 diastolic. The murmur was no longer to be heard after 2 p. m. An electrocardiogram made on February 11th showed coronary T waves with inversion in leads II and III, Q. R. S. complex was notched in leads II and III. In spite of strong advice to the contrary the patient left the hospital on February 11th. At this time he was entirely free of pain and apparently in normal health.

One notes, therefore, how relatively mild an attack of coronary occlusion may be and how transitory and elusive the physical signs. When we put together, however, the clinical picture of precordial pain, falling blood pressure (from 150 down to 98) transitory pericardial friction sound, fever, leucocytosis, characteristic coronary T wave in the electrocardiogram, we can have no doubt of the diagnosis. This patient probably suffered the occlusion of a much smaller and less important coronary vessel than was the case in the first two instances related. We must remember that even extensive thrombosis of the coronary system is not incompatible with life. Gross[8] and others have shown the extensive anastomosis of the coronary arteries and fortunately these anastomoses increase with age so that provision is made for the nutrition of the myocardium when a vessel becomes occluded. Experimental work by Porter,[9] Miller and Mathews,[10] F. M. Smith,[11] Hamburger, Priest and Bettman[12] has shown that dogs survive ligation and occlusion of one or other of the coronary vessels. Thayer[13] has reported a case where the patient lived for three years in apparent good health after the coronary insult. Autopsy showed "apex of both ventricles and the lower part of the septum was replaced by a mass of cartilaginous scar tissue clearly the result of an old cardiac infarct with organized intraventricular thrombi." Osler[14] reported that he had seen a heart "showing almost complete obliteration of the left coronary, only a pin point channel could be traced a short distance; of the right coronary the main branch was obliterated so that only one of full size passed in the posterior interventricular groove." Paul D. White[15] has reported a series of thirty-two patients in whom the average duration of life after an attack of coronary thrombosis was fifteen and one-half months, ranging from a few hours to seven years. The average age of life after the attack in thirty-five other patients still living was twenty-four and one-half months. The average for the total series of sixty-two patients was twenty months and White expected that would be lengthened considerably when after an interval of years a final report will be made of the cases.

The difficulties of the diagnosis of cases of coronary thrombosis lie not only in differentiating these cases from the angina syndrome due to other causes and in the recognition of minor forms. Unfortunately, it is not always the precordial pains that dominate the picture. The pains may be abdominal and simulate those of intraabdominal disease such as perforated gastric or pyloric ulcer and particularly gall-bladder disease. The sudden deaths ascribed to "acute indigestion" are in reality due to coronary obstruction. One of our most esteemed colleagues died some years ago in his office in an attack which at first so simulated a gastric condition that an attempt was made to pass a stomach tube to empty the stomach. Within the past few weeks I witnessed the sufferings and end of a man who had attributed his distress to an indiscretion in eating as well as in alcohol. He had maintained a status anginosus for seventy-two hours or more and even toward the end still described his sensation as something like a bad heart burn. This was all the more strange because he had for several years suffered typical minor anginal pains in the chest and down the left arm brought on by exertion or emotion and terminating at once when he came to rest. Belching and gastric distress are frequent in anginal attacks and have been commented upon by every writer. Belching indeed, as MacKenzie points out, often brings relief and seems to terminate an attack. It is sometimes difficult to make a diagnosis between gall-bladder disease and repeated attacks of angina. Some of the latter, characterized by apparently minor gastric symptoms in my own experience, have in the end proved to be based upon coronary disease. Another colleague presented a picture that might have been mistaken for a myocardial affection secondary

to a chronic cholecystitis. He died of myocardial failure many months after the cessation of his painful attacks. His sallow complexion, slight jaundice and tenderness in the right hypochondrium might all have pointed to a mistaken diagnosis. A national figure, a member of Wilson's War Cabinet, was operated upon for gall-bladder disease and died suddenly in an angina during his convalescence from the operation. Faulkner, Marble and White[16] report three cases where this confusion of diagnosis arose. It is all the more puzzling to realize that both coronary disease and gall-bladder disease may exist in the same patient; to attribute to each disease the proper value in estimating the symptoms is a well nigh impossible task. From 1920 to 1926 I observed an old man—77 years old when I first knew him, nearly 83 at the time of his death. There was no doubt as to the nature of his angina attacks for more than four years. They came on after exertion, they ceased when he came to rest. They were not associated with any gastric symptoms. They were always relieved by amyl nitrite inhalation or by spirits of glonoin on the tongue. In the spring of 1926 he began to suffer pain in the right hypochondrium and ceased having the "heart attacks." He had no appetite and lost weight rapidly and finally became jaundiced. At times there were terrible agonizing pains at the ensiform cartilage. He grew weaker gradually and died after being in a stuporous state for a number of days. The autopsy showed a considerable pericarditis over the right auricle and an area of fibrosis on the anterior surface of the apical region. While no definite statement is made in the protocol as to the condition of the coronaries the above is evidence as to their involvement. The gall-bladder contained a stone measuring 2½ cm. x 1½ cm.

Levine and Trauter[17] report two cases of coronary thrombosis where the acute epigastric pain and tenderness, together with a leucocytosis of about 20,000 and a moderate fever made the diagnosis of acute inflammatory or perforative lesion of the upper abdomen seem probable. Autopsy revealed the true condition in each case.

Hardt[18] reports a case "where the history and clinical findings closely simulated a case of perforated peptic ulcer." The autopsy showed an obliterative pericarditis, extreme thinning of the left ventricular walls with a mural thrombus. The branch of the left coronary was partially obliterated by an old thrombus. The duodenum had an old healed ulcer. Besides this there was a small superficial acute gastric ulcer. Hardt reviews a large series of peptic ulcer cases showing chronic ulcerations. "Patients with this condition," he comments, "frequently have pains which radiate upward over the chest and occasionally down the arms and not infrequently are treated for a cardiac condition. In some cases, the symptoms are undistinguishable from those of angina pectoris."

I must not presume further upon your patience to enter upon longer discussions. I cannot, however, refrain from referring briefly to certain other aspects of the attacks of angina and coronary occlusion. The statement has been handed down from text book to text book that there is a characteristic attitude of the patient, a *sine qua non,* without which the dread diagnosis may not be considered. It is said that the patient in an attack of angina remains immobile and dreads to move; no one who moves about, certainly no one who threshes about and engages in vigorous movement may be regarded as the victim of impending disaster. Nothing could be more untrue. There is no characteristic attitude. I have seen cases—as that of another doctor and close friend—where the slightest motion, even the effort necessary to empty the bladder, brought on the pain. He lay, therefore, in his status anginosus absolutely immobile. On the other hand, another man found relief from the pain by a "rocking chair motion" by bending the trunk upon the thighs or by swaying the trunk from side to side. I recall another

patient who was exceedingly restless and excitable and twice got out of bed in spite of attempts of three or four people to restrain him. At the time he actually got out of bed and walked about the room he was practically pulseless. He nevertheless lived for seven hours longer.

Nor is the premonition of death always present, as one is led to believe by many of the texts. I have seen patients smiling and interested in spite of the pain. Such a one was the recent patient who described his pain as like heart burn. I do not think that he had any premonition of death. Neither he nor his by-standing relatives would have shared (had they known it at the moment) in my gloomy prognosis based chiefly upon the long duration of the attack (over seventy-two hours). Yet he lived seven hours longer, of which he was unconscious less than two hours. I have been struck too, as others have been, by the fact that dyspnea while sometimes great, may in other cases be slight or transient. Cheyne Stokes breathing I have often seen after coronary occlusion. The final phase in the case of a doctor was initiated by the terrifying experience of being awakened by the failure to breathe. Falling asleep again the patient would again be awakened by the apnea.

CONCLUSION.

Coronary occlusion must be regarded as a common occurrence. "As the profession becomes better acquainted with the characteristic features of the accident it will be a familiar clinical condition." I have in my records of thirty-six cases with the syndrome of angina. There are in fifteen of these cases adequate grounds for believing that a coronary occlusion had occured. Christian had seventy cases in his service at the Peter Bent Brigham Hospital in ten years. I have already referred to Paul White's series of sixty-two cases. There are in the literature a number of smaller series with autopsies.

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DISCUSSION.

Dr. J. H. Musser: Coronary occlusion is a subject in which I am specially interested. It happens that my father, my grandfather and my great-grandfather, all of whom were doctors, died of attacks of angina. My grandfather's death apparently was due to coronary thrombosis; at autopsy it was proved to be the cause of my father's death, and while I cannot tell about my great-grandfather, there is reason to believe that he also died of coronary occlusion. At one time there were ten Drs. Musser practicing medicine, and of the ten, five died suddenly from angina, so you can perhaps appreciate my rather personal interest in Dr. Lemann's paper.

I had a relative who had an attack about two years ago and remained quiet almost a year and who has been subsequently free from symptoms. The prolonged rest after an attack is a point

worthy of accentuation, because the tendency is for people, as soon afterwards as they possibly can, to be up and around.

There are one or two points of more than passing interest brought out by Dr. Lemann, one of which is the leucocytosis, an almost invariable finding in these conditions—fever and a high leucocyte count. It is one which should be pointed out as likely to confuse us in our diagnosis when there is the possibility of pain being referred elsewhere than the usual.

Another point, not generally conceded, is the frequency of coronary occlusion. Of course, we know that it is spoken of as a doctor's disease. Irrespective of that, it is much more frequent than we realize. W. W. Waite of El Paso organized a pathological society, got the doctors there interested in the subject of autopsies and made arrangements to assist associates who had autopsies. He also got the permission of the coroner to autopsy all cases of sudden death. In the course of two years in El Paso, which is a small community, he had very many, thirty-eight cases, I believe, of coronary obstruction, the majority of which brought about sudden death. The collection of hearts in his museum furnish very interesting specimens to anyone wishing to work up this subject. So we must not disregard this condition and believe it is rare. It is a disease which attacks most frequently those past the middle of life.

Another point I wish to emphasize, but which I cannot explain, is that previous attacks of angina seem to predispose to coronary thrombosis. I do not say that coronary obstruction is essentially a sequel of angina, but I do believe that individuals who have frequent attacks of angina eventually terminate their life by coronary obstruction.

Dr. S. Chaille Jamison: There are one or two points that I think it might be well to refer to. We have a general idea and on the whole it is true, that only the middle aged, or those past middle life, suffer from coronary thrombosis and angina and that sclerosis of the coronary vessels is always implied. Three or four years ago I reported a case of a boy of seventeen who died of coronary thrombosis. I believe that is one of the youngest cases ever reported in the literature. The patient was brought to the Mercy Hospital complaining of abdominal pain. Dr. Ficklen, the chief surgeon of the hospital, examined him, thought it was a pain of little moment and told him to go home. One night, a week later, he returned to the hospital complaining of excruciating epigastric pain, not radiating at all. I saw him and his general appearance revealed nothing of note. The pulse was rapid, the blood picture showed a leucocyte count of 20,000 and there was nausea and vomiting. Dr. Ficklen, who was called in consultation, looked him over and decided that his condition was so bad it was better to wait before attempting anything surgical as he would die on the table. I remarked that if he was not so young my diagnosis would be angina pectoris. The boy was not relieved by repeated medication and by morning he was dead. A good point in diagnosing these cases is that morphin has little effect in relieving pain. At autopsy an obstruction of the coronary vessels, practically complete, was found. There was no evidence of arteriosclerosis—he had a chronic appendicitis, nothing further. I think that case is worth keeping in mind.

Coronary thrombosis seems to be an extremely rare disease in the negro in spite of the fact that he is more prone to arteriosclerosis than any type of person with whom we come in contact. At autopsies, for three or four years, I have watched for this condition without success, even in cases of the most marked sclerosis, where the vessels were like pipe stems. Thrombosis is certainly exceedingly rare—to my knowledge there has been only one case found in the last few years.

Another point and a most important one, is the treatment of these cases—what is best for the patient? When we see a man with falling blood pressure it is natural to feel that cardiac stimulation is indicated and to give large doses of digalen or digitalis by hypodermic. My opinion is that digitalis is absolutely contra-indicated. Morphin we can give, but even when administered in large doses it has little effect.

A very interesting case that came under my observation is a friend of Dr. Hume, who referred him to me. At the time he was suffering with epigastric pain and I made a diagnosis of duodenal ulcer. At my request he was thoroughly studied on two different occasions with the roentgen ray, and fluoroscoped by two different men of experience and no ulcer was found. In the meantime he developed several attacks of agonizing pain radiating down both arms that Dr. Hume and I thought were angina. These passed off. Later, about two months ago, there was a recurrence of the pain in the epigastric region, intense, but no nausea or emesis. He was seen by Dr. Pratt, who made a diagnosis of ruptured duodenal ulcer, and immediately the patient was taken to the Presbyterian Hospital. Drs. Ficklen, Hume and I saw him and, as far as I could see, the picture presented at the hospital was not coronary thrombosis. Operation disclosed a duodenal ulcer perforating through the peritoneum. He says he has never felt better in his life than since the operation.

Now, I had to take back my diagnosis twice. I thought it was an ulcer and took it back, made a diagnosis of angina, and at operation it was proved to be an ulcer. I believe a man could have both, and although fond of this man, professionally, I hope when he comes to die the diagnosis will be thrombosis.

Dr. I. I. Lemann (closing): I am very much interested in Dr. Musser's suggestion that frequent attacks of angina may predispose to thrombosis. I look back on some of my cases and recall repeated attacks of angina before the final thrombosis, but in some of them it seems to me that I can also recall indications that they had preceding thrombosis, so I cannot say whether these attacks were at first angina terminating in thrombosis, or were repeated thrombosis causing angina. I remember, in this connection, a patient who gave a family history of angina; her mother and three or four brothers (one of them a doctor) died of angina. The pain she complained of was typical angina in type radiating down both arms. She called it neuralgia. For a long number of years she had what I am sure now was really thrombosis of the coronary arteries and finally she succumbed to heart failure. I can recall several doctors who had repeated attacks of apparent angina without thrombosis and finally died of coronary thrombosis.

The point brought out by Dr. Jamison is somewhat foreign to the topic of my paper namely: the treatment of coronary thrombosis. Regarding the use of digitalis in coronary thrombosis, I merely wish to call attention to the very wide and different views held by equally good men, equally quoted as authorities on the subject. Some on the one hand advocate its use, while others, equally competent, are strong opponents of digitalis therapy. It seems to me that sometimes good is derived from the use of digitalis in these cases. The first case I reported tonight had digitalis and at the time I was inclined to attribute his recovery to the digitalis.

How can we know this for certain? Our experience thus far has been, that digitalis or no digitalis a certain number are going to survive many months or years.

AMEBIC DISEASE.*

J. C. COLE, M. D.,
NEW ORLEANS.

Since the World War, we read more often reports of rare conditions, conditions formerly thought of as uncommon, and purely foreign, but today, as a result of their wide-spread prevalence, attracting our attention.

With the means of rapid transit we have attained, erstwhile foreign nations have become neighbors, and the world akin. This is of particular interest just at this time, when the entire Mississippi Valley, directly, and the South, indirectly, is suffering the direst calamity in the history of the Mississippi River.

Pestilence usually stalks in the wake of floods. We may expect an increase in those diseases acquired through contaminated food and water. Among these I wish to mention amebic disease. This infection is becoming very common, and while in its early stage it is easily controlled and effectively treated, in the chronic form, it is very difficult to control and more often ameliorated than cured.

It is not my purpose to enter into a detailed discussion of the many conditions and complications arising from the presence of the pathogenic ameba in the human organism, but rather to review with you some of the more interesting turns this protozoan organism takes in its journey from the mouth to the anus. Whenever the word ameba is used, I have in mind the endameba histolytica.

The endameba histolytica does not live apart from its host. Whether it is evacuated from the bowel, or drained from a liver abscess, or expectorated from an abscessed lung, or whence it may come, the ameba immediately loses its individuaity and becomes a harmless nothing. It is not possible to inoculate the human host or the laboratory animal by feeding them active vegetative ameba. The infection results from contact with carriers.

Just as it is generally accepted that a person can have tuberculosis without having tubercular disease, one may harbor cysts of ameba, and not show clinical

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evidence of amebic disease. It is these apparently healthy carriers of amebic infection who demand our earnest study and concern.

It might be impressive to think of amebic disease as a filth disease, having been acquired through one of the angles of a triangle of "F"—flies, feces, food. Flies from contaminated feces light upon food stuffs, which are ingested, carrying the infectious cyst through the stomach, intact, into the small gut, where sporulation takes place and active, vegetative ameba result. These ameba are carried on into the big gut, the site of election, where the disease is established. The most favorable sites are the cecum, flexures and rectum.

The host is now actively infected with a tissue parasite. These parasites busily apply themselves to ingesting the intestinal mucous membrane, which together with the red cells, resulting from tissue destruction, form their source of food supply. Thus begins a war to the bitter end, between the ameba on the one hand and the host on the other. If the host is capable of repairing the destruction of tissue as rapidly as the ameba destroy it, the adjustment is a happy one to both man and ameba, since no active symptoms of disease result. But where the repair forces are unable to keep abreast of the destructive forces, and extensive areas of ulceration result, the ameba do not have an opportunity to encyst, but are forced into the lumen of the gut, and rapidly passed out in large numbers in the stools. Encystment does not take place within the tissue, but in the lumen. In their destructive process of the layers of the gut wall, capillary erosion results, thus opening up avenues of entrance into the vascular system. Having gained entrance to the radicals of the portal vein, they may find lodgement in the liver, which serves as a depot, from which the ameba are carried through the general circulation into various viscera,—the brain, the lung, the spleen, the bone marrows, etc.; a hepatitis may result, or a liver abscess, one of the most serious secondaries of amebic disease.

Going back to the original site of infection, usually in the dependent portion of the large intestine, with a predilection for the sigmoid, cecum and rectum. If the cecum is involved, vague symptoms of gastro-intestinal disturbance are noted, with tenderness in this region, associated with periodic diarrhea and constipation. The diagnosis of chronic appendicitis is frequently made, and not necessarily incorrectly. Cysts of endameba histolytica are usually demonstrated, and, it may be, an occasional vegetative ameba is found. This type of infection may continue as such, or the periodic diarrhea may give place to an active dysentery. I think it very important in getting a history from such cases that we stress particularly the difference between diarrhea and dysentery.

When the stools reach twenty, thirty or forty a day, containing blood and mucus, with abdominal cramps and tenesmus, it will be a simple matter to demonstrate active, vegetative ameba. The frequent desire to stool, with pain and bloody mucus, suggests that the lesions giving rise to these symptoms must be low in gut, and rectoscopic examination will disclose one or many crater-like ulcerated areas, situated from about one-half inch above the anal orifice upward.

With this introductory review, I would emphasize the ease and satisfaction with which vegetative and encysted ameba are demonstrated. At no time will a case of active amebic dysentery be unable to provide a specimen of material for study. Some clinicians resort to the proctoscope to secure material directly from the base of the ulcer. I prefer a specimen as passed by the patient, reserving the protoscope for making observation upon the progress of healing, under treatment. Cysts are rarely, if ever, found in the bloody mucus of an acute condition; they are found in constipated or formed stools. The specimen is

prepared in the usual way, when looking for ova or intestinal parasites, except that the washed specimen is mixed with Lugol's solution for the purpose of differentiating the nuclear bodies of other cysts. In the case of the histolytica, the nuclei number from one to four, in ameba coli, from four to eight. Repeated examinations, it may be over several days, are sometimes necessary to make a diagnosis. The demonstration of vegetative ameba is rarely possible in material removed from liver abscess and cysts are never found, as the ameba must leave the tissue and go into the lumen, before ripe cysts are thrown off.

We have to accept amebic disease as of more than passing interest. Liver abscesses are being encountered, and the carrier is known to be abroad. The carrier must be detected and treated; his intestinal tract must be sterilized, insofar as cysts of histolytica are concerned. Liver abscess, if not recognized and given the benefit of proper and early treatment, frequently precipitates fatal issue. Acute amebic dysentery incapacitates its victims, and unless controlled in its early stages, progresses into a state of chronicity, difficult to alleviate.

Unless one is familiar with the pathology of amebic disease he cannot appreciate the difficulties sometimes experienced, in getting a permanent cure through any one system of treatment. The line of attack must be directed toward ameba in the tissues and those in the lumen of the gut.

Upon making a diagnosis of active, acute amebic dysentery, the patient should be put to bed and kept upon an easily assimilable diet for at least two weeks.

Until recent years, ipecac, and its active principle, emetine hydrochloride, were recognized as the sheet anchor in the treatment of this condition. Because of the nauseating dose of ipecac required, I have abandoned its use. Emetine, stovarsol and yatren have proven almost magical in controlling the active symptoms of amebic infections.

Aside from knowing the curative properties of our remedies, I think we should be equally informed as to what harmful effects, if any, they may have upon our patients. Emetine hydrochloride is a very potent protoplasmic poison, and a careless, prolonged use of it will result in damage to the cells of the gut wall, to such an extent that ameba histolytica are able to reproduce in spite of its presence. This, I think, is the explanation of the so-called emetine fast state. Prolonged and indiscreet use of emetine will produce a profound muscular palsy, or weakness, simulating locomotor ataxia. Young and Tudhope, after animal experimentation, hold that one grain of emetine every twenty-four hours, not more than ten or twelve grains in all, is a safe dose.

Stovarsol, a synthetic arsenical, is contraindicated in those cases hypersensitive to arsenic. I have had just a few unpleasant situations arising from its use, yet not enough to discourage me in continuing it. Aside from its solubility, it has the advantage of being taken by mouth and producing no nausea or other disagreeable symptoms.

Yatren probably derives its amebicidal properties from the 28 per cent of iodin it carries. If used indiscreetly, abdominal cramps and frequent stools result. Turner and Jones have made some observations in the use of yatren, with most favorable results. It is given by mouth in doses of one gram three times a day.

With a known case of active dysentery, the following orders are written: To bed. Liquid or semi-solid diet, 0.5 grain emetin hydrochloride morning and evening, by hypodermic, for four days. Discontinue emetin, giving stovarsol, 0.25 gm., three times daily for seven days, watching carefully for any toxic symptom that may arise. A similar course of emetin for another four days. If no contraindications,

allow patient up, with return to normal diet, and stovarsol 0.25 gm. three times a day for another week, when treatment is discontinued for a like time. This method of every other week treatment is continued for six weeks from initial medication. If at any time acute symptoms return, resort to use of emetin as before. If there is no clinical evidence of disease after six weeks' treatment, in order to maintain the effect, give stovarsol 0.25 gm. every other day for two or three months. If periodic clinical, proctoscopic and stool examinations give no evidence of disease or cysts, the intervals between treatments are lengthened, but periodic courses of stovarsol or yatren are given for at least one year.

There are probably those who do not accept with me the theory that amebic hepatitis, which includes amebic liver abscess, is primarily a medical condition, and should be treated as outlined in the case of dysentery, with the possible exception of aspirating large quantities of amebic pus.

One should treat the healthy carrier in the same manner that the convalescent from the acute condition is treated.

Amebic disease is not purely tropical, but general and wide-spread.

There should be a routine and careful study of stools in all cases, but especially in those with a vague history of gastro-intestinal upset.

Prolonged treatment and periodic studies of all cases known to have had amebic disease are advisable.

The term amebic dysentery has dragged into disrepute the more dignified term amebic disease, since the true dysenteric case is probably in the minority.

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SEPTICEMIA.*†

ISIDORE COHN, M. D.,

NEW ORLEANS.

A patient who has been desperately sick recovers. The attending surgeon attempts to analyze the reason, he attributes the success to some remedy which he has administered. The satisfaction is great. Enthusiasm may lead to flights of imagination and rhetoric. If the enthusiast is prominent his mere announcement of another *cure* is sufficient to make many follow in his path.

In reviewing the literature of Septicemia it is interesting to find that this has recurred from time to time.

Every surgeon has been confronted at some time in his practice with cases of septicemia. The subject must therefore be of interest to all.

In the treatment of this disease we should be guided by *principles*, not statements; facts, not figures. We need to know more of the mechanism of defense and resistance of the body rather than reactions stimulated by various clinical procedures. When drugs are suggested for intravenous use we ought to know whether the results obtained are due to direct actions, or reactions. We should not accept the easier path, to follow the line of least resistance and accept statements made by seemingly well recognized authori-

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ties whom one would expect had exhausted experimental aspects of the problem before presenting the subject for clinical use.

John Gibbon recently has said "Improvement will come with the exercise of better surgical judgment and with the broader knowledge of general medicine."

There is no field which requires a greater exercise of judgment and which demands a more general knowledge than septicemia. Broader knowledge of this phase of medicine will make us realize that waves of enthusiasm have occurred and recurred; that many agents have been alternately lauded and condemned; that theories have been advanced and experimental proof of their validity presented, to be followed by contradiction of the theory and disproof of experimental evidence.

The last two or three decades have seen the revival of all forms of so-called chemotherapy. Enthusiasts claim many things for particular drugs. Time has buried many of these drugs in the volumes of libraries and newspaper files; and these are only referred to on occasions such as this when it is desirable to remind ourselves of the value of caution in the acceptance of so-called specific remedies. In all of the ages only a few specifics have been found.

It will be my purpose to attempt to recount some of the history of the successes and failures of the treatments advanced for septicemia during the past thirty-five years.

It is well to keep in mind the following questions:

What was the basis for deductions? Was it well laid plans based on experimental findings followed by clinical application, such as insulin in diabetes, or were the clinical results obtained in extreme cases which terminated favorably and on such findings experiments were conducted or hypotheses advanced to prove the rationale of the plan? Let us see.

A. F. Currier at a meeting of the Americaan Gynecological Association, 1893, advocated the use of inhalations of pure oxygen as a means of cure for septicemia.

The essay is a philosophic one based on the then accepted ideas. While we do not have to agree with the premises of this hypothesis we can appreciate the underlying thought which it conveys. *Give the patient a chance.* Maybe today we might do well, when we are tempted to do otherwise, to get a tank of oxygen or some other inocuous substance for the patient to inhale.

The following quotations from this paper should be of interest: "Fundamental to the consideration of this subject are the following facts: The blood is the vehicle by which *noxious* as well as *nutritious elements are carried to all parts of the body.* In Neelson's classification septicemia is defined as a condition of the blood in which poisonous effects are produced more or less rapidly and intensely by germs which it contains."

"These statements presuppose the fact that the normal blood of healthy animals does not tolerate pathogenic organisms; that when they are present it tries to get rid of them. *The process of phagocytosis is the chief means of disposing of them and effectng a cure, but when this process is defective for any cause, or when the vital forces of the body are feeble in their resistance or the pathogenic organisms especially active, the symptoms of septicemia are apparent. The present pathology of septicemia seems to rest upon foundations which are firm.*"

"The natural forces are to be sustained by the greatest possible abundance of the most concentrated food substance, especially milk, and by an abundance of alcohol. The object of this article is more particularly to direct attention to the availability and utility of oxygen as a means of treatment."

"The dark color of the blood, the small size and disorganized condition of many of the red globules in septicemia, and the shallowness of the respiration indicate a deficiency in the oxygen supply."

"That which is noticeable when chemically pure oxygen is inhaled at such a pressure as is compatible with existing conditions of respiration, is usually as follows: A stimulus to deeper respiration; warmth of the extremities, perhaps warmth of the entire body; increased tension of the pulse; a more natural color of the surface of the body, if it has been dark or very pale."

"The stimulation of the blood current and of the respiratory function is, of course, directly favorable to the purification of the blood by elimination of its toxic elements. The stimulation of the nerve centers presiding over functional activity, which is possible if intoxication is not too pronounced, is apparently the effect of the oxygen, and this, if sufficient and continuous, will produce a favorable result whether there is direct germicidal action upon the bacteria in the blood or not."

In 1903 Charles C. Barrows of New York suggested the use of formalin intravenously. In his paper he mentions some of the suggested remedies only to condemn them.

"The application of Crede ointment and the introduction of the silver salts under the skin hardly seems rational, and it would be as reasonable to attempt to take the fortress of Gibraltar with a popgun as to cure acute general septicemia by the ingestion of fresh brewer's yeast, although this has been recommended by a distinguished bacteriologist." (Barrows.)

Barrows believed that he could *"introduce into the general circulation some principle which would destroy bacteria or inhibit their development in the blood, and neutralize the toxins which they are supposed to produce."* The cure in his first case was so spectacular that I quote it in detail:

"At a meeting of the New York Obstetrical Society, held on January 13, 1903, I reported the following case:

The patient, a negress, of slight frame, twenty-six years old and married, was admitted to ward 22, Bellevue Hospital, on December 25, 1902. She was in labor, and at the time of her admission was having a chill. Her temperature was 104.2 F., her pulse 124, and she was breathing at the rate of 30 a minute. There was a fetid bloody discharge from the vagina. She was delivered at six o'clock on the following morning of a macerated, decomposed, female fetus of about six months growth. After delivery of the secundines the patient was given an intra-uterine injection of a 1 to 10,000 solution of mercury bichloride. One hour after delivery, at 7 A. M., she had a severe chill accompanied by a rise of temperature from 99.4 at 3 A. M. to 105 at 7 A. M. At 2 P. M. the same afternoon her uterus was irrigated with hydrogen peroxide, followed by two quarts of normal saline solution. A considerable quantity of clots and shreds of tissue was obtained as a result of the douche. She was then transferred to the gynecological service, ward 23, where she was curetted on December 27th, and a large amount of decomposed membranes and placental tissue removed. She then showed signs and symptoms of pronounced general sepsis. On December 25th, the day of her admission, a microscopical examination of the blood was made, which showed the absence of malarial organisms, and a leucocytosis of 18,000. On December 30th, a blood culture was taken by Dr. Buxton in four flasks of bouillon, which gave a pure culture of streptococcus. At this time her urine showed albumin to a considerable extent, but no casts. *The patient was seen by the writer then for the first time. Her temperature was 108, her pulse 150 to 160, small and thready, and her respiration 38. She was in a low, muttering delirium. There were present absolutely no local signs or symptoms, and from all external appearances the patient was*

rapidly approaching death from a profound general sepsis. She was at once given an intravenous infusion of 500 cubic centimeters of a 1 to 5000 aqueous solution of formalin. In three hours her temperature had fallen to 105, and in six hours it had fallen to 101, her pulse being 104 and her respiration 28. For three hours the temperature remained at 101, when it gradually began to rise until it reached 103, her pulse having risen to 120. It remained at 103 for three hours when it plunged downward, until in three hours the thermometer registered by the rectum only 95. The pulse had fallen to 86, and the respiration to 22. In twelve hours the temperature had reached 102, and the pulse 110. It then dropped to normal, but rapidly rose to 103, although the pulse did not go higher than 112. Although a second blood *culture had been taken, there had not been time for a report, so it was decided to give her a second infusion, 750 cubic centimeters of the same solution being then given her. There was a slight chill without a further rise of temperature, which, in the course of twelve hours, fell to normal, where it has practically been since. The woman is now entirely well. Several blood cultures have been made, and none taken since the first infusion have shown any streptococci.* Frequent microscopical examinations of the blood have been made, and no morphological changes have been found in the red corpuscles. The albumin in the urine has cleared up, and no blood has appeared in this secretion."

William H. Park and W. A. Payne, according to Barrows, after experimental work, stated that formalin was not only useless but harmful.

Bauer (1903) says: "From the available facts it seems improbable that formaldehyde has a specific value in septicemia. The intravenous injections of antiseptics probably do not kill the bacteria in the blood in septic cases but does *dilute the toxins. Normal saline by the same route will do this equally well, and with less probability of injuring the delicate structures of the blood.*"

Hugh Young had reported in 1898 a case of septicemia *treated by blood letting and transfusion with salt solution.* He was enthusiastic over the wonderful therapeutic possibilities of saline infusions.

It is of interest to note that newspapers were reporting cures while experiments and direct available medical information contradicted the conclusions of Barrows with regard to the value of formaldehyde. History repeats itself. The case of Barrows was equally as spectacular as Young's cases in which mercurochrome has been used.

At this time (1903) Crede had already advocated intravenous use of silver salts. Harrison in 1904 wrote the following: "Intravenous injection of collargol has been proved by sufficient mass of *clinical material* furnished by observers such as Crede, Schmidt, Fehling, etc., to be the best therapeutical resource at our command in the treatment of septic infections." (Two grammes of 5 per cent solution of collargol was usually injected.)

During the great war Browning and his associates advocated acriflavin from which excellent results were obtained.

British observers also reported enthusiastically on Eusol.

Of all the therapeutic agents advocated as specific germicides in septicemia in recent years the two which have been championed by Hugh Young have caused the greatest amount of favorable and unfavorable consideration.

These reports of Young have certainly stimulated inquiry, experiment and thoughtful discussion. Young and his associates have published many papers. All are familiar with his general conclusions, but since his first successful case parallels the results obtained by Barrows with formaldehyde the case is here briefly summarized.

"The first clinical case (No. 1) in which the value of mercurochrome 220 soluble as an intravenous germicide was positively demonstrated was that of a man who came to me on December 30, 1922, complaining of pain in the kidney. Ureteral catheterization showed pus from both sides and infection with the B. coli communis. Following examination the patient developed a chill and fever. He was admitted to the hospital on *January 2, 1923,* with a temperature of 103.4 degrees, in a very toxic condition. On the following day the patient became irrational, temperature was high, and blood culture showed 140 colonies of B. coli to the cubic centimeter. The patient continued to grow worse, and on January 3 the temperature was 103 degrees. *He was irrational and medical consultants predicted that he would live only a few hours.* He was then given 34 cc. of a 1 per cent solution of mercurochrome. *He had a chill, high temperature,* with a drop within three to four hours to normal. Within twelve hours he awoke from his lethargy. He ate his breakfast the next morning. *Blood culture was sterile.* The urine promptly became free from infection and the patient was discharged seven days later perfectly well. *This patient, who had been treated in conjunction with Colston, gave us our first positive demonstration of the remarkable effects of intravenous therapy with mercurochrome."*

"Conclusions: After a very painstaking study of our own cases, those which have been published in the literature and furnished us by doctors, and after the extensive laboratory study with animals we feel on absolutely sure ground when we state that our belief in the efficacy of intravenous injections of mercurochrome in combating both local and general infections—slight and grave, and our previous statements have been verified and justified."

There are several outstanding facts which should be noted in connection with Young's report.

Hill and Colston in a report on "The Effect of Intravenous Administration of Mercurochrome on the Bacteriostatic Action of Blood (1923)" state "It has been shown that *following intravenous administration of mercurochrome the bacteriostatic action of the blood* against B. coli is increased. This *increase appears to be greatest from 15 to 45 minutes after injection after which it rapidly disappears."*

If this is to be interpreted literally the gun fire must inhibit sufficiently in 45 minutes to prevent further action by bacteria.

The report of Young *lays stress on the sterile blood culture. Experimental evidence proves that bacteria injected directly soon disappear from the blood stream without medication. The report shows that there is a definite and alarming reaction at times.*

It is admittedly a bacteriostatic agent, not bactericidal; even this action is evanescent. Sterile cultures on particular occasions following drug administration are not to be taken as reliable criteria of the effect of a drug. Can one look too lightly on the violent reactions? However, based on these reports, the use of the remedy was begun in an indiscriminate manner. The apparent good results have seeped into the literature. All of the failures and bad results have not been so fortunate.

Some have utilized the drug for the reasons given by Hinton: "The result obtained by Churchman relative to the selective action of certain dyes in inhibiting the growth of certain bacteria, *and the excellent reports from the clinic of Hugh Young regarding the therapeutic use of these dyes intravenously,* have interested us on the Eliason service at the University Hospital so much that we have tried them out in a number of cases."

"In a small series of cases no definite conclusions can be drawn, yet in noticing the marked decrease in wound exudates in four cases, and the clinical improvement in seven, in addition to the *fact that the in-*

jections seem to do no harm, it appears that a continued use of the dyes in ill and in the average case may in time increase its sphere of usefulness."

Hinton reports eleven cases. In two of these where the patient had hemolytic staphylococcus aureus infections, demonstrated in a blood culture, the patient died promptly in spite of gentian violet. In one a negative blood culture was obtained, but positive culture from the parotid gland; gentian violet was used, the patient recovered. In five cases where there were negative blood cultures, but gram positive organisms were obtained from pus discharging from the wound, recovery was attributed to the use of gentian violet.

Is it fair to give a favorable expression relative "to the use of gentian violet in cases of extreme septicemia" from such evidence? Will not the reasons given by this author, and many others, be challenged? Is the fact that this agent was used by Dr. Hugh Young sufficient warrant for its indiscriminate use? The pathology of septicemia and the action on various portions of the reticulo-endothelial system by drugs was not even seemingly considered.

Hugh Trout presented his observations on intravenous use of mercurochrome before the Southern Surgical Association at the same meeting as Hugh Young. He states that "There can be no question of the thoroughness with which this work was done, nor can anyone, knowing Dr. Young, doubt for one moment his sincerity, but, *we do have the right to question whether his enthusiasm has not allowed him to attribute to this dye beneficial effects which are, perhaps, not results, but merely coincidences.*"

"In virulent streptococcus infections, mercurochrome, whether given in massive doses or small repeated doses, had little or no effect in checking or altering the course of the infection, or in preventing its fatal termination."

"Finally, were you to ask me for my own personal view given briefly, I would state it about as follows: 'Given a patient with a positive blood-stream infection, in whom all possible foci has been removed, mercurochrome is worth a trial, and, at least, *gives us one more thing to do in these otherwise hopeless cases, and such will often prove of some comfort to the family, even if not of benefit to the patient; but I do not believe all the claims made for it as a blood-stream sterilizer are as yet proven, and mercurochrome, like any other substance, should not be put in a vein unadvisedly or lightly.*"

The splendid painstaking report of Brill and Mayers is abstracted without comment:

"Mercurochrome and gentian violet, in freshly prepared solutions, were employed in doses of from 5 to 7 mg. per kilogram of body weight in three cases of septicemia and in two cases of local gonococcal infections. The results obtained are indicated in the following case reports:

Case 1. R. D., a man, was admitted February 20, 1924, complaining of headache, pain in the joints and fever. The present illness was of six weeks' duration, though the patient did not go to bed until a few days previous to admission, when the symptoms became decidedly worse. On the day of admission, the patient was found dull and listless, with a temperature of 100.5° F., pulse 88 and a blowing systolic murmur at the apex. The leukocyte count varied from 9,600 to 22,200, with a differential count from 86 to 93 per cent, neutrophils. After the isolation of streptococcus hemolyticus from the blood, mercurochrome was administered intravenously on three successive days. There was no improvement in the clinical condition and a blood culture taken after the mercurochrome therapy again yielded an abundant growth of the streptococcus. Death occurred several days after the last injection of mercurochrome, and the diagnosis was confirmed by a necropsy.

Case 2. J. U., a man, admitted June 12, 1924, complaining of chills, fever, sweats and generalized pain. A blood culture, taken June 16, yielded an abundant growth of B. coli-communior. After two intravenous injections of mercurochrome, a negative culture was obtained from the blood. However, since the patient still seemed critically ill and since the temperature

had begun to rise again, the mercurochrome therapy was resumed. Three more intravenous injections of 5 mg. per kilogram of body weight were given on three successive days. A blood culture taken on the day after the last injection of mercurochrome again yielded an abundant growth of the colon bacillus. Notwithstanding the positive culture, the patient's condition suddenly improved two days after the last injection, and complete recovery ensued."

"*A superficial examination of this record might lead one to attribute the recovery to the mercurochrome therapy.* A more careful examination, however, discloses the following facts: The general course of the temperature curve during the mercurochrome therapy is essentially like the temperature record during the three weeks preceding the onset of treatment; namely, alternating febrile and afebrile periods. Although a negative culture was obtained from the blood after the second intravenous injection of mercurochrome, it will be observed that after the fifth injection, the blood culture was again positive, yielding approximately as many colonies per cubic centimeter of blood as did the original culture before any treatment was instituted. It will also be seen that the negative culture was taken during an afebrile period. In view of these facts, it seems reasonable to conclude that the recovery in this case was independent of the mercurochrome therapy."

"*Spontaneous recovery in B. coli sepsis is not at all unusual.* Jacob reported thirty-nine cases, with 60 per cent recoveries. Coleman and Hastings observed three cases, in all of which the patients recovered. More recently, Felty and Keefer of the Johns Hopkins Clinic reported a series of twenty-five cases, in seventeen of which the patients recovered."

"Summary and Conclusions: *Clinical observations were made on three cases of bacteremia and two cases of local gonococcal infections treated by intravenous injections of mercurochrome and gentian violet. These observations, which were carefully controlled by cultural checks, seem to indicate that in these five cases the intravascular injection of the dyes in no way interfered with the progress of the infection.*"

"2. Experiments on the effect of dilutions of mercurochrome and of gentian violet on the growth of staphylococcus, streptococcus and B. coli in *vitro seem to indicate that there was no direct bactericidal action on those organisms from three hours' exposure to mercurochrome and gentian violet in concentrations of 1:10,000, representing the maximal advisable concentration of these dyes in the circulation.*"

Shelton Horsley, Jr., "doubts very much if these or other antiseptic dyes sterilize the blood stream."

"These dyes may decrease the activity and toxicity of certain bacteria or increase the immunity and defense powers of the body, or both."

"Doses of either of the dyes of less than 3 mg. are of little, if any, value; several doses at intervals are necessary to obtain the full therapeutic effect."

"The mode of action of these intravenous dyes is unexplained. Similar results followed the intramuscular injections of milk at repeated intervals of one or several days."

Sir Thomas Horder, British Medical Journal, 1925, says that "chemo-therapy has been very disappointing. The intravenous use of various germicidal agents seem not to have been very helpful in civilian practice."

Barker, in the International Clinics, 1925, expresses the hope that "in time we may discover antiseptic agents that will on single injection kill promptly all the pathogenic germs in the body in cases of staphylococcus infection." He mentions among agents which have been used mercurochrome and gentian violet. He thinks that they should be tried until we have sufficient experience to determine "what their therapeutic value is."

Churchman in the Annals of Surgery states that "it would be absurd to expect any effect on organisms floating in the blood stream from gentian violet injected into the circulation. Experiments prove conclusively that the bactericidal property of gentian violet circulating in the blood stream soon disappears."

Dean Lewis in 1926 summarized some important points. He states that "the behavior of bacteria in the blood stream is of considerable interest, for it has a definite relation to the clinical picture. Experimentally, when staphylococci are injected into the blood stream they have usually disappeared after 24 hours. During a general infection staphylococci may completely disappear from the blood to reappear when a suppurating focus ruptures in a vein or an infected thrombus softens and particles enter the blood stream. *Staphylococci apparently use the blood stream as a means to transport and not as culture medium.*"

We might ask what is this chemotherapy which we are trying to apply? What has been its successes and failures? What is the attitude of the students of this subject?

No greater living authority can be quoted than H. H. Dale. He says "chemotherapy may be defined as the specific treatment of infections by artificial remedies. The object of those who study it is to find new remedies which will cure or arrest diseases due to infection, not by alleviating the symptoms or invigorating the patient, but by directly and specifically suppressing the infection.

"The aim of chemotherapeutic investigation, therefore, must be to find toxic substances which, having a strong affinity for the protoplasm of the parasite and a weak affinity for that of the cells of the host, could be administered in sufficient doses to kill the infecting organisms and leave the host unscathed. The search must be for substances which are maximally 'parisitotropic' and minimally 'organotropic.'

"Ehrlich aptly compared them to magic bullets, constrained by a charm to fly straight to their specific objective, and to turn aside from anything else in their path."

"The knowledge yet available concerning the chemistry of the protoplasm has no point of contact with a conception of this kind. Such knowledge affords no suggestion as to the nature of the chemical differences between the protoplasm of the vertebrates and that of the unicellular parasite, and furnishes no basis for prediction, or even for surmise, with regard to their differential affinities for chemical substances of known constitution."

"The attempts to combat bacterial infections by means of artificial chemical substances have been fewer in number, and, on the whole less fruitful of practical results than those directed to infection with animal parasites. Bechhold and Ehrlich (1906-1907), prepared a large series of phenol derivatives, which far exceeded all previously known organic disinfectants in their lethal action on diphtheria bacilli growing in nutritive bouillon. The experiments were later extended to other bacilli and cocci. In therapeutic experiments none of these substances proved successful. The reason of their failure was more obvious when it was found that *their disinfecting potency was enormously reduced by the presence of protein in the medium.* Bechhold subsequently showed, by ultrafiltration, that the disinfectant had entered into combination with the proteins of the suspending medium, and had thus been prevented from reaching the bacteria."

Felton and Dougherty (1922) measured in a series of dyes, the toxicity for mice, the bactericidal action on staphylococcus aureus in whole blood, and the inhibitory effect on the phagocytosis of staphylococci by leucocytes in serum. In a large series of dyes *they found that the inhibitory action on leucocytes was exihibted in weaker dilutions than the bactericidal action. So far as these measurements can be*

taken to cover the factors at work in disinfection in vivo, they would be unfavorable to the efficacy of these substances under such condition."

With the work of Dale, Hobo and others as a background, Walton Martin asks the questions:

1. "If living pathogenic micro-organisms penetrate the blood stream, is the blood infected as the cellular tissue is infected in a spreading phlegmon?"

2. "Since the matrix is fluid in which the blood cells and the bacteria are floating, is an opportunity offered for the introduction of a chemical which will destroy the microbes and prove harmless to the living cells?"

"It has been shown by repeated experiments that if an inert substance, like lamp black, is introduced into the blood, it disappears in a short time. *The minute particles of the injected substance settle out from the blood where the circulation is unusually slow in the peculiar capillary meshwork of the spleen, the liver and the bone marrow.* There they come in contact with a special group of cells and are taken up by them. These cells belong to a group now spoken of as the reticulo-endothelial system and are distinguished not only by a pronounced capacity for phagocytosis but by their special reaction to certain vital stains."

"In experiments recorded in a paper by Hobo, the material used was fine India ink and the amount used from 2.5 to 3.0 cc. The particles were the same size or smaller than staphylococci and the solution was injected into the ear vein of rabbits. The animals were killed at periods varying from forty-five minutes to seventeen days after the injection. At autopsy the spleen, the bone marrow and the liver were found to be stained black. The other organs and tissues, the lungs, heart, brains, nervous tissue, gastro-intestinal tract and the kidneys were unstained. The microscopical examination showed, even in the early stages, particles of India ink in the star cells of Von Kupffer of the liver, the sinus endothelial cells and the pulp cells of the spleen and the endothelium of the capillaries of the bone marrow.

"There can be no question of this powerful reaction following the intravenous injection of certain chemicals; the chill, temperature, diarrhea, appearance of the patient; all suggest a violent disturbance. One cannot dismiss the evidence presented of rapid recovery. But how often does it occur; how much is due to the bactericidal action of the drug, how much is due to its toxic effect on the body cells? *It should be borne in mind that shortly after its introduction into the blood the chemical comes in contact with the cells of the reticulo-endothelial system, and almost certainly profoundly influences them.* May it not be that at times substances are liberated that are harmful to the bacteria? *Is not the action dependent on how much the drug stimulates or conserves the natural defense mechanism of the body?* At other times, may not some of the chemicals introduced produce various degenerative changes in the cells of the liver, the spleen and the kidneys."

"Dramatic reports of collections of heterogeneous clinical material is not convincing. Shall we speak, in coming years, of the sterilization of the blood or the poisoning of the body cells by the intravenous injection of certain of these chemicals? We have seen that contamination of the blood stream occurs under a variety of conditions. In many cases blood cultures show simply showers of bacteria; the absence of bacteria in the blood stream often indicates but examination between showers. Many so-called septicemias terminate with startling suddenness untreated."

"The point I wish to emphasize is that in the generalization of infection a very complex process is passing on in the body. The presence of microbes in the blood is but one phase or part of this process. To

speak of the blood as infected, in the sense that the cellular tissue is infected in a spreading phlegmon, is erroneous and misleading. To speak of the blood being sterilized by the intravenous injection of a chemical as a test tube containing a broth culture is disinfected, is equally misleading and erroneous."

It will be seen that Martin has emphasized the importance of the defense mechanism, the principle role of which is played by the reticulo-endothelial system. The importance of this system has only recently been considered before this body by Dr. Allen O. Whipple in the Chaillé Memorial address.

It will be sufficient to present briefly some of Aschoff's conclusions with regard to this system. "Phagocytosis is but one highy developed property of these cells, a circle of cells whose particular function it is physiologically as well as pathologically to devour degenerated white and red blood corpuscles and to metabolize them. The macrophage system acquired importance when Metchnikoff demonstrated its relationship to antibody formation in the development on immune bodies."

It would seem fair to state the following: Many attempts have been made to prove that cures in cases of septicemia have been due to the introduction of some chemical substance directly into the blood stream. This has been based on the belief that in vivo the action of the drug would be the same as in vitro. It seems to have been overlooked that the concentration is uncertain when the solution is put into the circulation. There is experimental proof that the maximal concentration advisable to introduce into the circulation has no bactericidal action. (See Brill and Mayer.) It is further known that the inhibitory action of various dyes on leukocytes was exhibited in weaker solution than possess bactericidal action. The presence of protein in media always reduces the activity of germicides. If the foregoing statements are correct, and we have reason to believe that they are, *we have little to expect in a direct curative way from intravenous chemical medication.*

The so-called specific action of the various dye stuff presupposes a selective bacteriotropic action and a negative organotropic action. This, Dale contends, we have no reason to believe exists.

Apparently the stimulating effect on the body cells by the drug injected has been overlooked.

There is experimental evidence to prove that bacteria disappear soon from the blood stream and settle in the spleen, liver, bone marrow, and lymph nodes.

Positive blood cultures signify only that the organisms are being transported by the blood stream. It does not signify that multiplication takes place in the blood stream.

Multiplication takes place in the foci where the organism settle out from the active circulation—in the reticulo-endothelial system.

Phagocytosis is the special function of the cells of this system.

Infection stimulates the defensive mechanism of these organs, which consists not only of phagocytosis but the elaboration of bactericidal substances.

It is a common experience that dye stuffs produce a violent reaction at times. Martin questions if this is not due to a disturbance of the defensive mechanism.

If the defensive mechanism is *essentially in the tissues of the reticulo-endothelial system why is it not better to stimulate this system by a known and comparatively harmless procedure, one which adds bactericidal properties without tissue destruction, by blood transfusion.*

Do everything possible to stimulate the native resources of the patient without introducing agents which may be potentially harmful.

* * * * * *

The following cases, W. K. and S., indicate that with proper supportive measures

and a watchful waiting policy the result will be as satisfactory as those obtained by dye stuff injections. It may take courage at times to resist these fashionable methods, but I believe that if one must resort to intravenous therapy a whole blood transfusion will be decidedly of more satisfaction to the patient. Time alone will answer the question.

Case 1. Master S., aged 5 years. The primary condition is supposed to have been a sty on the upper lid of the right eye. This abscess on the upper lid was incised by the attending physician. The swelling was associated with a marked febrile reaction, chills, and headaches. I saw this child the following day, June 9. The findings at that time were edema of the right lid, and several small discharging sinuses in and about the operative wounds of the upper lid. There was redness and swelling of the forehead, and edema of the right temporo-maxillary region. The temperature was 103.4. A diagnosis of orbital cellulitis was made. I suggested a blood culture and immediate operation, to be followed by use of hot compresses.

The blood culture revealed four colonies of staphylococcus per cc. of blood. At the operation we found all the tissues of the supra-orbital region greatly infected. Pus seemed to be exuding from the various layers of the scalp. A great amount of pus could be seen in the orbit. A gentian violet pack was introduced, and nothing further was done. Two days later there was less edema; the discharge was free. The child seemed greatly improved as he was playing about in bed. On June 13 he was given an anesthetic. There was free drainage from the upper lid and the skin over the nose. There was apparently no further spread on the right side of the forehead. There was some edema of the left side of forehead. Pus seemed to have accumulated in the left supra-orbital region, and across the bridge of the nose, therefore an incision for drainage had to be made. By June 22 there was marked improvement, with very much less pus present. The child's general condition was better. He left the hospital on July 8. At the present time, which is March 19, all wounds have healed entirely, the scars are pliable, and while there is some widening of the nose, and the scars on the forehead are prominent, the child suffers no disability. A plastic operation will be done at a later date.

Comment: Chemotherapy was urged upon us in this case. It was realized that as long as there were undrained areas the temperature would persist. It occurred to us that if we could provide sufficient nourishment and stimulation we might be able to avoid introduction of the depressing factor, which so often follows intravenous medication. It was argued that should we need intravenous therapy transfusion should be resorted to. You will note that it was not necessary.

Case 2. Master W. K., aged 9 years. Complaint: Fracture of the right leg, with multiple lacerations, the result of an automobile accident. When admitted it was the impression of the House Officer that an immediate amputation was necessary because of the great laceration of the skin and muscle, the condition of the bones of the leg, and the great rotation; the foot was completely rotated backward. There was very little skin covering the muscles of the leg from knee to ankle. Examination, however, revealed a dorsalis pedis pulse; the posterion pulse could not be palpated. In view of the palpable dorsalis pedis pulse it seemed desirable to make an effort to save the leg. Accordingly after giving him morphin, a small amount of ethylene was given, the wound debrided, and a Thomas splint applied. The color of the foot remained satisfactory at all times. The wound was Dakinized. He developed a marked febrile reaction associated with tachycardia. Blood cultures were repeatedly negative. The temperature was of a septic type. He developed a rash on his body which was difficult to differentiate from the ordinary exanthemata. Dr. DeBuys, in consultation, suggested that he had a septic endocarditis as the cause of the temperature. The temperature persisted, ranging from 100 to 103. The rash was recurrent in character. We resisted the urge to give this child chemo-therapy or even intramuscular injection of blood. We contended, as in the previous case, if anything should be indicated, transfusion would be more helpful than any other measure. It is true he is now walking on crutches. The entire area which had been denuded of skin has epithelized. His general condition is excellent. He is certainly as well as he would have been if any of the dye stuffs had been used.

Case 3. Mr. W. L., aged 33 years. Diagnosis: Furuncle of nose, cellulitis of face, streptococcal septicemia. Patient had had a coryza for several weeks, and his nose became inflamed. He was referred to a doctor who advised operation. Before having anything done patient consulted Dr. J. P. Leake, who kindly referred him to me. At the time of the examination there was a diffuse redness of the face, which resembled a

butterfly, particularly covering the bridge of the nose and both cheeks. This appearance, the patient stated, had been evident for the previous twenty-four hours. A smear was taken for culture from the furuncle of the nose. Streptococcus was reported by the Pathological Department. The temperature was 103. The total white cells were 12,250, of which 89 were neutrophils. Believing the condition to be one of streptococcus septicemia, he was given anti-streptococcus serum. When about 30 cc. had been administered patient became very pale, respiration slow, pulse became almost imperceptible. He had a few convulsive movements of the extremities. Morphin and atropin were given immediately. Respiration became more regular, the convulsive movements ceased, and the color improved. He was apprehensive that death was impending. The temperature in the next few hours dropped from 104 to 99 degrees. During the same afternoon the temperature rose to 103 degrees. Blood culture was reported negative at the end of twenty-four hours. The advisability of intravenous medication, with one of the number of dye stuffs, was considered, but it was decided not to give anything until a positive culture could be obtained. Gentian violet and mercurochrome solutions were kept on the table by his bedside. No harm was done with them in this way. Local applications of magnesium sulphate, lead and opium, and pure carbolic acid followed by alcohol applications, were used as conditions seemed to indicate each. The patient recovered and left the hospital on April 2.

Case 4. Mr. A. S. Diagnosis: Alveolar abscess, staphylococcal septicemia. Examination, December 21, 1926: Marked swelling of the left cheek, redness, heat, edema of upper and lower lid. Swelling of the mucous membrane of the cheeks. Patient unable to open mouth. Pus seemed to exude from cavity of left molar.

Operation, December 23, 1926: Incision was made along the body of the mandible, lifting up the masseter muscle with it. A large quantity of pus was evacuated. A pair of Ochsner forceps was introduced upwards in front of the parotid gland, and by using the point of the forceps as a guide, a small incision was made in the long axis of the body and through this incision the forceps were reintroduced, running up into the subtemporal fossa. Pus was evacuated from all of these locations. It seemed, however, that there was some pus under the sternomastoid, below the mastoid process. A large quantity of pus was evacuated from this region, but in doing this, a branch of the external jugular vein was injured. It was necessary, in order to control the bleeding, which was very free, to connect the incision over the body of the mandible to the posterior incision, along the anterior margin of the trapezius—thus making it necessary to cut across the upper portion of the sterno-mastoid with an irregular incision. The bleeding was controlled, and a dichloramin pack introduced into the depths. Penrose tubes were introduced.

Progress Notes, December 24, 1926: Since operation the temperature has been on a lower level, the maximum being 99.8 degrees. There is some edema of upper and lower lid on the left side, and some edema of the left cheek. There is some deviation of the mouth to the right side, suggesting the possibility of facial nerve paralysis.

December 25, 1926: Much less swelling of the face and less edema of lids. No increase in redness. Foul odor to mouth. The pulse volume is good. Patient has voided 37 ozs. in the last twenty-four hours. Transfusion of 460 ccs. of whole blood; donor, brother. No reaction during the giving. We next dressed his face. A large amount of pus was found when the pack was removed, at the left body of the mandible, and the tissues all exposed; they were found bathed in pus. All of the Penrose tubes were removed and the wound cleaned with peroxide. Iodoform gauze pack with compound tincture of benzoin was introduced in the large wound over the mandible. Penrose tubes were re-introduced in the sinuses and above the ears. Over the temporal bone we noticed that there was some fluctuation of the scalp. A pair of forceps was introduced through the upper wound in the anterior portion of the temporal fossa, and a large quantity of pus was evacuated. We then introduced the forceps under the skin of the scalp, and by using the end of the forceps as a guide, a small incision was made, and a large amount of pus was further evacuated. We then introduced a Penrose tube into the depths, and Epsom salt compresses were applied.

December 27, 1926: Since the transfusion the patient has had a chill, about an hour after the return from the operating room. The temperature has been much less—99 degrees at 4 p. m. Patient very much more comfortable. He does not appear toxic.

December 28, 1926, 3:15 P. M.: For the past few minutes the patient has been complaining of pain in the chest and difficulty in breathing. There are some signs of pulmonary edema. Pulse at present is fairly strong, but rapid. Morphin and atropin given by hypodermic. Tight binder applied to chest. There has been some fresh oozing from dressings and expectoration of clots of blood.

Comment: In spite of the free drainage, transfusion, and supportive treatment this patient succumbed to this rapid virulent infection.

Case 5. Master M., aged 11 years. Diagnosis: Axillary adenitis, suppurative. The child was admitted to the hospital with a mass in the axilla which was hard and tender, but apparently not fluctuating. The total white cells were 14,000, of which 78 were neutrophils. The temperature was 100. Blood culture showed positive staphylococcus aureus. Culture from the pus taken from the glands in the suppurating area showed the same organism. After free drainage of a large quantity of thick, creamy purulent material the temperature rapidly subsided, and he left the hospital, apparently well, April 21. No intravenous medication was given. Local drainage being all that was necessary.

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DISCUSSION.

Dr. J. D. Rives: We know that protozoan organisms live in the blood stream and produce infections of the blood itself, and that these true septicemias may be cured by chemicals without injury to the host. It is therefore, idle to state that it is impossible to destroy micro-organisms in the circulating blood. If we admit that bacteria can produce true septicemia we must admit that in time a drug may be found to cure the condition.

The real difficulty lies in the fact that the bacteremias with which we are familiar are not true infections of the blood, but manifestations of a very severe infection at one or more local foci, the organisms being fed to the circulation constantly or in showers. They are simply en route to their burial grounds in the liver, spleen, bone marrow, etc., and will promptly disappear from the blood stream if all local foci are chemicaled. Our failures to cure bacteremias by eradication of known local foci simply indicate that other foci exist undiscovered. They may be in the liver, spleen, or bone marrow, where the natural destructive powers have been overcome. I am unable to find any evidence that has ever conclusively proven the existence of a septicemia of bacterial origin without a local infection. If this view is correct, then the administration of chemicals intravenously for the purpose of killing these bacteria is fruitless, for a new army will promptly invade the blood stream as soon as the drug is eliminated. The bacteremia, being merely a symptom of the disease, recurrence will necessarily take place unless the local lesion is taken care of.

This method of treatment is being popularized in the profession by means of testimonials, strongly reminiscent of certain celebrated cancer remedies. These documents are very easy to get and are often misleading for the reason that they take no account of failures. Single widely

scattered cases of recovery may be found to prove the value of almost any remedy. They have no place in a scientific discussion. I have seen miraculous recoveries from septicemia both with and without intravenous medication, and the most miraculous one occurred weeks after mercurochrome had been tried without success. The "cure" took place following a violent crisis such as mercurochrome produces, and for no reason that I have ever been able to discover.

Dr. E. L. King: Septicemia is a topic in which I am intensely interested, because we have it almost constantly in our wards at Charity Hospital—not that it originates in our service, but so many infected patients are admitted from the outside.

In combating septicemia, as Dr. Gage says, one of our most useful methods is blood transfusion. We have been following the technique of Polak, giving small, repeated transfusions, 250 to 300 c.c. twice a week rather than one or two large transfusions. Polak's idea seems to be that the transfusion is primarily to stimulate the blood forming system; a certain amount of stimulation is derived from one transfusion; this is followed by a relapse, but another brings it up again and the process is repeated until the desired result is obtained. This is illustrated by the total and differential count before and after transfusion. In most instances we use the citrated blood. At Charity Hospital it is unfortunately difficult to get donors; the relatives themselves are very slow to act as donors, but when we get one or two and transfuse from them we feel that we have accomplished results.

It has been our experience that our diagnosis is clinical rather than bacteriological. In many cases of septicemia, presenting a typical picture at the time of admission, the laboratory test fails to reveal bacteria in the blood. I think that in these cases the bacteria are transient, appearing in the blood stream intermittently, and I believe that in most cases of septicemia there is thrombosis of the pelvic veins, with subsequent crumbling of the thrombus, and when this takes place bacteria are fed into the blood stream. If we are fortunate enough to get a specimen of the blood for examination at these times, the organism causing the infection can be demonstrated.

We have tried mercurochrome in some of our cases. Our first experiment was disappointing, a severe reaction followed its use and it took the patient a week to get back to her former poor condition—she got back to that point and finally died. We have used it in a good many other cases, but in one instance only, felt that we accomplished any good, a case of staphylococcal septicemia. At the time of the intravenous administration of mercurochrome her temperature was 106°; the next day she was decidedly better and a few days later the mercurochrome was repeated. Ultimately she recovered.

Of course, no conclusion can be arrived at because one case is seemingly benefitted, especially when so many others showed no results. I have a case in the ward at the present time who has been given two intravenous injections of mercurochrome, one blood transfusion, an intravenous drip, etc., with only transitory benefit. My prognosis this morning was that she would hardly live through the day.

Dr. O. C. Cassegrain: Septicemia is a very important and most interesting subject, but it is a good thing indeed, for the surgeon, that it is not as common as it might be for it is really a terrific disease and one very unsatisfactory to handle.

The best way to treat septicemia is to prevent its occurrence and while this may seem paradoxical it is nevertheless essentially true. Except in the fulminating types which fortunately are in the great minority septicemia occurs only in infections of some duration and only when resistance has been lowered to a minimum.

The problem, therefore, in all cases of severe infections, is not only to maintain body strength at all costs, but also to combat by all known measures the particular organism responsible for the infection. This brings out a very important point, namely; the necessity of making smears and cultures from all our infected cases. This, unfortunately is often neglected.

Surgical septicemia is usually staphylococcal or streptococcal. If it is true that it depends on lowered resistance, we may not infrequently successfully combat the infection, neutralizing the toxins before they have been able to do too great damage to the body, by the administration of specific sera. This is quite feasible in streptococcal infections, in fact it has been our custom for some time past, when dealing with infections severe enough to give general constitutional symptoms and which by smear culture of the pus showed the streptococcus to be the offending agent, immediately to give the patient antitoxin. We have not yet had cause to regret this measure. Unfortunately, at the present time, we have no serum for the staphylococcus.

I believe with Dr. Cohn that the use of dyes is unsatisfactory. I remember when Dr. Clark came back from a trip east a few years ago, how enthusiastically he spoke of the work Hopkins' men were doing with these dyes. I was impressed and used it in a few cases. But my

experience both with mercurochrome and gentian violet has been extremely unsatisfactory.

Dr. A. E. Fossier: I cannot resist the temptation of bringing to your attention a drug for which I am really grateful, because I feel certain it was the means of saving the life of a person very dear to me. I speak of tin and its salts. While it is used very little in this country, it has been extensively employed in Europe, especially by the French, from whom we have received glowing reports of the results obtained from its application. Recently it was noticed that workers in tin mines had acquired an immunity from staphylococcal infections, and that clinically it had a specific action on the staphylococci.

Its value has been proven to me in a case of staphylococcal septicemia and whilst of course, one case does not prove definitely the value of a drug, yet one case backed by many other reports in which the results obtained from it are equally good, certainly encourages the use of a remedy for which so much is claimed. I have used it in many minor staphylococcal infections with wonderful results. It can be procured under the name of "Ebanzyl" or Stanoxyl.

Dr. A. Jacobs: Just a word of caution concerning blood transfusions. This type of patient has a weak myocardium that cannot take care of a big load at one time, therefore small repeated doses 200-250 c.c. would be safer and of more value.

Not long ago I transfused, with 500 c.c. whole blood, a patient who had a severe secondary anemia. His pulse stopped and for a minute I thought he was dead. I attributed the accident, which fortunately did not prove fatal, to overloading the heart resulting probably in acute dilatation.

I merely offer my experience against large single doses of blood transfusion.

Dr. L. A. J. Brennan: I am somewhat prejudiced against the intravenous administration of drugs promiscuously and think we are leaning too far on that side in the treatment of diseases. I believe we should know and use the best method of employing any advocated therapy, especially with whole blood in transfusions and saline in infusions. The consensus of opinion today is that whole blood is very beneficial. It is a true stimulant promoting normal body function. My opinion is that the use of saline solution in unskilled hands is preferable to whole blood transfusion in the hands of the same, and I believe also that many of our cases of septicemia die, especially in certain cases where there is an increase of certain bacteria, such as the pneumococcus, in the blood stream. The viscosity of the blood is increased to such a point that in some cases of bacteremia the blood does not flow steadily thereby increasing stagnation and coagulation. Saline dilutes the blood thereby decreasing the viscosity and allowing the blood to flow more easily. This prevents thrombosis which is more liable where the increased toxins in the blood may cause crenation and disintegration of the red blood cells which may cause death from thrombotic promotions in the blood vessels. This is illustrated at autopsy in the finding of septic thrombosis. Thrombotic ulcers are found in the intestines, (terminal ulcers I like to call them). Again, coma in septicemia is often due to the distinctive action of the toxins on the cortical brain cells saline infusion dilates the toxins present in the blood and thereby diminishes their distinctive action on the somatic cells throughout the body in general. Saline transfusions are the simplest to give and ought not to be lost sight of in the adoption of other drugs, or discarded because it is a drug used intravenously. Saline, and also whole blood, are very beneficial in septicemia and should be used. Whole blood should be reserved for those cases of septicemia showing a progressive anemia.

I want to emphasize what Dr. Jacobs says, that, transfusions should be given in small volumes; given in large amounts they might cause acute cardiac dilatation.

I agree with Dr. Cassegrain that in combating septicemia it is of the greatest importance to determine the type of infection you are dealing with. If a streptoccal infection, use the antistreptococcal serum, which may neutralize the toxins as they enter the blood stream; repeating the serum every eight hours to take care of the new toxins that are formed. Serum, given intravenously, also dilutes the blood, thereby decreasing the percentage concentration of toxin in the blood. It also acts as a food and helps to nourish septic patients.

In staphylococcal infections hexamethylenamin has proved a very useful drug. While some men recommend using this drug intravenously, I am strongly against this method of use. Hexamethylenamin is taken up from the alimentary tract in large enough quantities if given by mouth. I get results from its oral use and I believe it is most likely a better way of administering it than by directly introducing it into the blood stream. I believe that when hexamethylenamin is given by mouth it enters the blood in a changed form. This is done by the liver. We must not lose sight of the fact that the liver is an important organ in converting our drugs given by mouth from toxic forms to non-toxic

forms before allowing them to be thrown into the blood stream. Therefore hexamethylenamin should be given by mouth, not intravenously, and administered continuously. You must not alkalinize your patient when using hexamethylenamin in septicemia.

Dr. Aldo Castellani: The subject of septicemia is of great interest to medical men practicing in the tropics. I remember that in Ceylon and India, septicemia used to be the bug-bear of both internist and surgeon.

I should like to say a word regarding the prognosis of the condition. We must distinguish between the types of septicemia. Streptococcal septicemia has a very grave prognosis; in staphylococcal septicemia the prognosis is not so grave. With regard to treatment, this is in my experience most unsatisfactory; sera, vaccines, and drugs are as a rule of very little use. In staphylococcal septicemia tin preparations (stanoxyl, etc.) seem at times to be useful.

I should like to call attention to a type of septicemia which is very little known; mycotic septicemia, or septicemia caused by fungi higher than bacteria. This type of septicemia is very rare, but does exist. Cases of Blastomyces septicemia have been seen by several observers, including myself, and in the Far East I saw a case of Sporotrichum septicemia.

The patient had had a slight accident to the middle finger of the left hand. The physician who treated him applied a mercury perchlorid lotion and all symptoms disappeared. After three months the patient developed fever of an intermittent type with at times rigors. There were no definite symptoms on which to make a diagnosis and the doctor who attended to him thought the patient had malaria, but quinine given in massive doses did not influence the fever. In the blood microscopically I found spore-like bodies of a fungus. A few days later the patient developed a small gumma-like swelling in the right mammary region from which S. *schenki* was grown in pure culture. Potassium iodid induced a complete cessation of the fever, and the patient recovered.

Dr. Isidore Cohn (closing): I am indeed grateful for the love feast we have had with regard to the methods of treating septicemia, by chemotherapy, hemotherapy, etc. I have purposely limited my remarks to the modern conception only, for the entire subject cannot be covered in twenty minutes.

As Dr. Castellani says, there are "septicemias and septicemias" and I am grateful to him for telling us of a type unknown to us.

I will confine my closing remarks especially to the widespread discussion of the new drugs, mercurochrome and gentian violet. Dr. King mentions a case where a splendid improvement took place in twenty-four hours following mercurochrome injections. I wish to cite a cure, apparently due to the intravenous administration of formaldehyde:

(See report of case of Barrows embodied in paper.)

We, of course, agree with Dr. Cassegrain that the ideal way to combat septicemia is to prevent it, but what of those cases that come to you with septicemia, too late for prevention?

I might say to Dr. Jacobs that a well organized team is absolutely essential in the use of blood transfusion, otherwise transfusion is going to cause a sudden reaction more often than you think.

Dr. Brennan has called our attention to urotropin, which brings us back to another of Young's hopes. In 1909 S. J. Crowe, working with Young and Cushing, eulogized urotropin. That is when the craze took a hold. You could cure a cold, meningitis, gall-bladder disease, etc.—it was due to the formaldehyde liberated in the system. We know that it does no good in gall-bladder disease or meningitis. And there are not many people who can boast such excellent results from its use as Dr. Brennan.

CARBON MONOXID POISONING,*

WITH REPORT OF NEW CHEMICAL TESTS FOR THIS GAS IN THE BLOOD.

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and
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Carbon monoxid is a colorless, tasteless, and practically odorless gas. These negative characteristics are very important because they render difficult the recognition of this substance by the unaided senses. It is also very inflammable, being the most important constituent of illuminating gas. It is lighter than air and hence rises and becomes diffused instead of settling in low places, as is the case of carbon dioxid, which is heavier than the atmosphere. "The actively poisonous character of CO * * * and the very common fulfillment of the conditions under which it may be discharged into inhabited places render it practically the most dangerous of toxic gases." (Witthaus.) It is given off in the manufacture of lime, charcoal, gunpowder

*Contribution from the Biological Research Laboratory of Birmingham-Southern College, Walter C. Jones, Director.

and other high explosives, and celluloid; it escapes in the combustion of gasoline and in the slow burning of coal. If the latter burns rapidly, CO_2 instead of CO is liberated. Even tobacco smoke contains small amounts of CO. A gasoline engine adjusted with too much fuel may render a closed garage dangerous to human life in five minutes. One part in 2000 of air is injurious and two parts in 1000 are hazardous to life. Coal gas contains from 4.0 to 7.5 per cent of CO; and water gas, from 30 to 35 percent.

The involvement of cases of carbon monoxid poisoning legally is not uncommon, for it is often difficult or impossible to determine whether a death from this gas is accidental, suicidal or homicidal. Also, sudden death from this cause is diagnosed frequently as due to heart disease, cerebral hemorrhage, status lymphaticus, etc. In some cases it is necessary to determine whether death was due to CO poisoning, so that the compensation liability of the company concerned may be ascertained.

PATHOLOGY

Pathogenesis.—All of the manifestations caused by carbon monoxid poisoning are due to the great affinity of hemoglobin for this substance, combined with the fact that the union of oxygen and hemoglobin is very unstable. The avidity of hemoglobin for CO is two hundred times as great as for oxygen. Thus oxygen is excluded from the blood and the tissue cells are asphyxiated. When the erythrocytes have become one third saturated, symptoms appear and they become urgent with one-half saturation; while death supervenes when sixty to seventy per cent of the hemoglobin has been converted into CO-Hb. A small amount of carbon monoxid, about 0.08 to 0.18 per cent, is present in the blood of normal animals and human beings, especially dwellers in cities. Absorption of carbon monoxid from the lungs is rapid if it is present in sufficient quantity. In an atmosphere containing ten per cent. CO, more than eighteen per cent saturation of the blood occurs in animals in one to two minutes. Fatal results may follow inhalation of carbon monoxid in small amounts if continued over a sufficiently long period of time. It is a typical cumulative poison.

Morbid Anatomy.—There are three findings that are so characteristic in the cadaver of a person dead from CO poisoning that they may be said to be pathognomonic. They are, (1) the bright red color of all the organs and tissues, including the blood, (2) the fluidity of the blood, and (3) the preservation of the body from decomposition. These features are most evident in the lungs and decrease in prominence as one follows the blood away from these portals of entrance of the poison, until the abnormal changes are found to be least marked in the superior and inferior venae cavae and their contents. The exception to this rule is the muscles, which are always markedly affected, whether near to or far from the lungs and heart.

In one of our cases, the color of the cadaver was such a marked red that this was noted by persons present who never before had seen an autopsy. This redness is most marked in the lungs and the muscles. In the blood it may be masked by the simultaneous presence of carbon dioxid. The gastro-intestinal tract is reddened and this feature may suggest the action of an irritant poison taken by mouth. In the latter case, the color is most marked in the upper end of the alimentary canal, decreasing toward the lower end; while in CO poisoning, the redness is distributed evenly throughout the entire tract. The preservation of bodies by this gas from putrefaction is very striking. In the case just mentioned, although the patient had been dead three months and the body had not been embalmed, yet the only sign of gross decay was mold on the face; and microscopic slides from the organs presented good histologic pictures. The usual post mortem odor was absent. In subacute and chronic cases, the heart and nervous system frequently suffer degenerative changes, especially hemorrhage and softening in the cortex and the nuclei of the

brain. Also, serous effusions are found in the pleural cavities.

SYMPTOMS

The symptoms of CO poisoning present every gradation from severe instances, where the victim enters into an atmosphere heavily laden with the gas and dies quickly, to the very mild cases where the patient suffers only from slight dizziness, nausea, and headache. Witthaus* divides the course of a typical acute case into four stages as follows: 1. Among the first symptoms to appear are headache, dizziness, lachrymation, tinnitus aurium, somnolence, nausea and vomiting, and general weakness. Respiration may be accellerated and dyspneic at first; later it becomes slower. The action of the heart is increased early and afterwards it becomes slow and irregular. Sometimes in this stage there is psychic exaltation like that of alcoholic intoxication. 2. The second stage is characterized by intensification of the manifestations of the first stage. In addition, the face becomes red and the pupils dilated. This redness of countenance is very significant. Motor disturbances occur, varying in intensity from mere tremors to clonic spasms. Consciousness is usually lost though it may persist, not only at this time but even into the next stage. 3. During the third stage sensation and motility are generally lost. Paralysis advances and when the respiratory center becomes involved death occurs by pulmonary edema. 4. This is the period of convalescence, primarily. However, during this stage the patient may die upon attempting even slight exertion. After recovering consciousness, the patient passes through symptoms similar to those described in the first stage. The temperature is subnormal.

The chronic form of poisoning by CO is not uncommon. "Persons exposed to constant absorption of carbon monoxid ..... are liable to a form of chronic poisoning characterized by headache, nausea, impairment of memory, mental dullness, muscular weakness, incoordination of motion, marked anemia, and sometimes even epileptiform or apoplectic attacks." (Witthaus.) Polycythemia is a very constant finding. Leukocytosis and glycosuria may occur in slowly fatal cases. This form of the malady is insidious in its onset and its cause is frequently overlooked merely because the physician does not have in mind CO poisoning as a possibility.

Sequelae.—Recovery from carbon monoxid poisoning usually is rapid; but when large amounts of gas have been absorbed the effects are marked, especially on the nervous system. Mental derangements, such as defective memory, mental depression, lack of initiative, defective will power, and confusional insanity are not infrequent after severe poisoning by this gas. Local paralyses and even hemiplegias may supervene. General weakness may be present for a long time. Vision is sometimes impaired. Relapses may occur after apparent recovery; these are due usually to involvement of vital nerve centers and they may lead ultimately to a fatal issue.

DIAGNOSIS

The diagnosis depends upon the history, symptoms, and blood examination; and after death, the autopsy findings. A history of possible exposure is exceedingly important. The symptoms in acute cases are very much like those of other narcotics or anesthetics. One particularly distinctive sign is redness of the face. The single procedure which makes the diagnosis absolute is the finding of carbon monoxid in the blood. The three all-important gross post mortem characteristics, namely, redness of the tissues, their preservation from decomposition, and the fluidity of the blood, have already been discussed. It remains now to take up the chemical examination of the blood in detail. Carbon monoxid has been found in the blood of patients following recovery as long as two weeks after the accident; and in fatal cases, it can be demonstrated chemically many months after death.

*Manual of Toxicology, 2 ed., William Wood & Co., New York, 1911.

TESTS FOR CO IN THE BLOOD

A rather large number of tests have been devised for detecting CO in the blood. The names of most of these, the various steps in carrying them out, etc., are shown in Tables I and II.* We have repeated all of these tests many times with varying dilutions of bloods, with different amounts of chemical reagents, etc., and thus have determined the optimum amount, etc., to be used in each procedure. This was necessary because the writers on this subject for the most part are not precise in describing the steps of the tests, sources of error, and various other points. We have found all of the tests very satisfactory except the one with phenylhydrazin. It is important to note that all of the tests described in Tables I and II apply best to blood which contains CO to the point of saturation.

Dilution of the Blood.—The determination of the optimum amount of water to be added to the blood in any given test is probably the most important point to be considered. In some instances, high dilution spoils the procedure, for example the mercuric and the zinc chlorid tests. In other cases, for instance the pyrogallol test, the dilution must be marked; while in the ammonium sulphid test the degree of diution is immaterial. There are more tests which require a small amount of dilution than there are that need a large proportion of water. This requirement moreover may vary from time to time, according to the varying percentages of CO in different specimens of blood, the quality of the chemicals used, and perhaps other factors. Hence it is safest to find out in each test with each specimen the most favorable dilution. This may be done easily by beginning with undiluted blood or diluted with only one or two parts of water. Then after the chemicals of any particular test have been added, dilute the mixture gradually and note the point where the contrast between the known positive and the known negative is greatest. Also, when too high a dilution has been made, the final colors may be brought into sharper contrast by adding drop by drop more undiluted CO blood to the CO tubes, and more undiluted normal blood to the normal tubes. These simple procedures make it possible to adjust accurately the dilution of each blood to fit most advantageously the peculiarities of each test.

Strengths of Chemical Solutions.—Although we have given in Table I a definite percentage concentration for each chemical, it is not absolutely necessary to use these amounts. They are merely quantities which we have found convenient and accurate. In nearly every instance, one may make a saturated or a half saturated solution and add it drop by drop to the blood until the maximum result, if any, appears. Of these concentrated solutions, one needs usually only relatively small amounts. In all of these tests except five, only one chemical is used.

End Reaction.—A positive result is indicated by the appearance of a red or pink color, which offers a distinct contrast to the chocolate brown of the control containing no CO. There may or may not be a precipitate or coagulum. If the blood is undiluted or only slightly thinned with water, the formation of a coagulum is the rule. If the blood is diluted moderately a precipitate forms; and if it is highly diluted, the chief or only change is one of color. The only exception to the appearance of a red color as the indication of the presence of CO, is the black precipitate produced by palladous chlorid. (This test is not included in the tables.) We have usually found the evidence of a positive result to appear at once, although a few authorities claim that in some instances there is a delay of several hours or longer. The most peculiar feature of many of these tests is the persistence of the red color indefinitely if the tubes are stoppered and set aside. We have preserved in this manner tannic acid, heat, and other tests for

*The platinic chlorid and the palladous chlorid tests have been omitted because these chemicals are expensive and they are not commonly used.

many months, and after this length of time the pink color was almost as marked as it was at the time the tests were first set up.

General Method.—Accurate results can be obtained with most of the tests described by proceeding as follows: Dilute the unknown blood with one or two parts of water. Make up half saturated solutions of the chemical reagents. To one or two cubic centimeters of blood (diluted) add a few drops of the proper chemical or chemicals. If the result is negative, dilute the mixture up to at least fifty parts of water to one of blood. If still negative, repeat the procedure with larger amounts of the reagents until equal parts of blood and reagents are used. Of course this general rule does not apply to the tests by heat and by simple dilution.

Sources of Error.—The sources of error are described in Tables I and II. They consist mostly of too high or too low dilutions of the blood. This point has already been discussed. In the heat test, some authors advise the boiling point; but we have found invariably that so high a temperature spoils the test. It should not go higher than 80°C. In viewing the tubes in any of the tests, one may use either transmitted or reflected light, and with the latter, various colored backgrounds; but usually the best results are obtained with light reflected from a white surface.

Controls.—Two controls should always be set up with each chemical test for CO, one with known normal blood and one with blood known to contain a considerable amount of CO. The latter is prepared by generating CO and passing it through normal blood. CO is generally obtained by heating oxalic acid in the presence of sulfuric acid. The latter aids in the reaction by absorbing the water liberated, and perhaps it acts also as a catalytic agent. Oxalic acid breaks up according to the following equation: $C_2H_2O_4 \longrightarrow H_2O + CO + CO_2$. The CO_2 is eliminated by passing the gas through strong (at least fifty per cent) sodium hydroxide solution, which absorbs much of this gas. Then the discharge tube leads into lime water in which a precipitate of calcium carbonate is formed from the CO_2 not absorbed by the sodium hydrate solution. Thus the lime water acts both as an indicator of the extent to which the CO_2 has been removed by the strong alkali, and also it aids in the process of purification by using up CO_2 itself. The gas tube finally leads to the bottom of a jar containing normal blood, where of course CO is absorbed. We desire to emphasize the importance of having a known CO control with every test. Many of these cases are medico-legal; and it is impossible to have one's work along this line stand the strain of court procedures without controls with both known normal and known CO blood. It is immaterial whether human blood or that of animals is used. The former probably is more convincing to a jury.

PROGNOSIS.

The chief point to remember in this connection is caution in predicting ultimate recovery after the patient has emerged from the immediately acute symptoms. Recovery usually is complete within a few days but sometimes the after effects persist for weeks or months or even years. Patients who have lived from one to three months after the acute stage of CO poisoning have been known to die ultimately from the results of the attack.

TREATMENT.

Prophylaxis. — Information should be scattered more widely concerning the numerous sources from which carbon monoxid may arise and poison human beings. Most people already know the hazards of illuminating gas but comparatively few realize the danger from running a gasoline engine in a closed room. People working around charcoal furnaces, lime kilns, plants where explosives are manufactured, etc., should be warned of the presence of CO and of its toxic effects. With the least onset of headache, nausea, palpitation of the heart, etc., these workers should be instructed to seek fresh air.

TABLE I—CONDENSED DESCRIPTION OF TESTS FOR CO IN THE BLOOD, MADE BY MEANS OF CERTAIN SALTS AND ACIDS.

For further details, see text.

CHEMICAL GROUPS		SALTS						ACIDS		
	NAME OF TEST	MERCURIC CHLORID	LEAD SUBACETATE Rubner's	POTASSIUM FERROCYANID	COPPER SULPHATE Zaleski's	ZINC CHLORID	PHENYLHYDRAZIN	TANNIC ACID	PHOSPHOMOLYBDIC ACID	PICRIC ACID
A	CHIEF CHEMICAL SUBSTANCE	Mercuric Chlorid ½ S. S.	Lead Subacetate 25%	Potassium Ferrocyanid 20%	Copper Sulphate ½ S. S.	Zinc Chlorid ½ S. S.	Phenyldrazin Hydrochlorid, ½ S. S.	Tannic Acid, 1.0%	Phosphomolybdic Acid, ½ S. S.	Picric Acid, ½ S. S.
B	ADJUVANT CHEMICAL	None	None	Acetic acid, 30%	None	None	None	None	None	None
C	DILUTION— BLOOD : WATER	1:1 to 1:3	Undiluted to 1:3	Undiluted	1:1 to 1:4	1:1 to 1:5	1:1	1:4 to 1:10	1 : 1	1 : 1
	AMOUNTS, A, B & C USED IN TESTS	A = C	A = 4 to 5 cc. C = 1 cc.	A = 7 cc. B = 1 cc. C = 7 cc.	A=1 to 3 drops C=4 cc.	A = C	A = C	A = 3 cc. C = 1 cc.	A = C	A = C
	PERSISTENCE, RED COLOR WHEN TEST IS POSITIVE		Increases on standing. Lasts few hours, sometimes longer.		Few minutes to 2 hours.		Few days	Many months		Several weeks
	SOURCES OF ERROR	Dilution must be below 1:10	Color, faint at 1:15. Undiluted, best.		Not use too much $CuSO_4$. Low dilutions best.	Must use low dilutions. 1:10 spoils test.		Keep within dilutions mentioned above.	Higher dilutions give poor results.	Higher dilutions give poor results.

Curative Treatment.—The chief features of the immediate treatment in acute cases are, (a) removal from contaminated air, (b) artificial respiration, and (c) insufflation of carbon dioxid. The value of the first step is self-evident. Artificial respiration is of great importance and should be kept up for a long time in desperate cases, for recovery ensues sometimes when apparently there is no hope. The inhalation of oxygen alone is of little or no avail; but carbon dioxid is of great value in stimulating the respiratory center and in restoring the patient, as has been shown by Haggard and Henderson.*

PERSONAL EXPERIMENTS

It occurred to the senior author that the substances used to intensify and fix the colors in staining bacteria and tissues might serve as favorable reagents to demonstrate the presence of carbon monoxid in the blood. The most common of these mordants are phenol, alum (aluminum-potassium sulphate), and anilin (oil). The methods of procedure were as follows:

PHENOL TESTS

Phenol Alone.—1. Undiluted. To undiluted blood in test tubes add 95 per cent phenol in the proportion of 2 to 6 drops to each cubic centimeter of blood and mix thoroughly. Carbon monoxid blood turns a brilliant pink and normal blood, a very markedly contrasting dark chocolate. The immediate results are a little better with the larger proportions of phenol. The colors usually become a little more prominent on standing a few hours to a few days and they persist strikingly for many days. Less than 2 drops of phenol to each cubic centimeter of blood give uncertain results; 8 to 10 drops yield an immediately brilliant reaction but the colors may fade; the pink of the CO blood sometimes disappears completely in three to five minutes with this larger proportion of phenol. The drops in this, as in most of the other tests, were measured with an ordinary medicine dropper held at an angle of about forty-five degrees. This test may be done by means of blood diluted with half as much or an equal quantity of water. The results seem to be about the same except that the colors develop a little more promptly; but our best tubes have occurred with untreated blood. It is interesting to note that normal blood coagulated less promptly in this test than CO blood, in spite of the usual tendency of the latter to maintain its fluidity.

The mixing of undiluted (or slightly diluted) blood with coagulating reagents is accomplished best by holding the top of the test tube between the thumb and the first two fingers of one hand and striking the side of the tube near the bottom against the palm of the other hand, maintaining the tube in an almost horizontal position during the procedure. This is better than shaking the contents throughout the entire tube because the latter method leaves most of the mixture clinging to the sides of the container, spoiling the appearance of the tube and rendering observations difficult; and mere stirring with a rod does not allow the degree of aeration that seems to be necessary in some of the tests. Sometimes, however, a little stirring is necessary to break up coagulated masses which are adherent to the bottom of the tube. We have observed this phenol test to turn out entirely negative when the mixing was accomplished exclusively with a stirring rod; and when repeated with no other change except that the mixing was done by the method recommended above, it was beautifully positive.

Diluted Phenol Test.—Equal parts of 5 per cent aqueous solution of phenol and undiluted blood yield a very satisfactory result. The CO tube turns a marked red and the normal one, a blackish brown. The reaction is immediate and persists many days to several weeks. The CO blood coagulates incompletely while the normal blood becomes entirely solid. In the tests in which the blood is well diluted either directly or by the addition of diluted re-

*Haggard, H. W., and Henderson, Y. The Treatment of Carbon Monoxid Poisoning. Jour. Amer. Med. Ass'n., lxxvii, 1065-1068, 1921.

TABLE II—CONDENSED DESCRIPTION OF TESTS FOR CO IN THE BLOOD, MADE BY MEANS OF CERTAIN BASES AND OTHER MISCELLANEOUS SUBSTANCES. For further details, see text.

CHEMICAL GROUPS		BASES		MISCELLANEOUS					
NAME OF TEST		SODIUM HYDRATE Salkowski's	SODIUM HYDRATE Hoppe-Heyler's	PYROGALLOL	DEXTROSE	HYDROGEN SULPHIDE	AMMONIUM SULPHIDE	HEAT	SIMPLE DILUTION
A	CHIEF CHEMICAL SUBSTANCE	Sodium Hydrate 26.8%	Sodium Hydrate 26.8%	Pyrogallol ½ S. S.	Dextrose Powder	Hydrogen Sulphide, aq. sol. S. S.	"Orange" Ammonium Sulphide*	Heat in water bath	Water
B	ADJUVANT CHEMICAL	None	None	Potassium Hydrate 5%	Potassium Hydrate 5%	None	Acetic Acid, 30%	None	None
C	DILUTION—BLOOD : WATER	Undiluted	1 : 20	1:1 to 1:10	1:3 to 1:20	1:2 to 1:50	1:1 to 1:50	Undiluted	1:2 to 1:50
AMOUNTS, A, B & C USED IN TESTS		A = C or ½ C	A = C	A = 5 drops B = 5 drops C = 2 cc.	A = 0.1 gram B = Alk. react. C = 2 cc.	A = 1 to 3 cc. C = 2 cc.	A = 0.2 cc. B = 0.2 to 0.3 cc. C = 10 cc.		
PERSISTENCE, RED COLOR WHEN TEST IS POSITIVE		Several hours	Few hours	Few minutes	Many hours	Few hours		Many weeks	Several hours
SOURCES OF ERROR					Do not use too much alkali			Over 80° to 90° C. usually spoils test	Use white reflected light with higher dilutions

*Orange ammonium sulphide is prepared by adding 2.5 grams of sulphur to 100 cc. of colorless ammonium sulphydrate, or 2 grams of sulphur to 100 cc. of yellow ammonium sulphydrate.

agents, it is well to make the observations both by transmitted light and by light reflected from a white surface, if or as long as the contents remain fluid.

Another good test is accomplished by mixing 20 per cent phenol in 95 per cent ethyl alcohol, and untreated blood in equal parts. The blood may be diluted with an equal amount of water. These diluted phenol tests all maintain their colors at least several days.

Phenol and Acetic Acid Test.—We have tried various strengths of this acid and find that a one per cent aqueous solution is best. To a chosen quantity of blood add half as much or an equal amount of one per cent acetic acid, and 6 drops of 95 per cent phenol to each cubic centimeter of blood. The contrasting dark chocolate and bright red colors of the normal and the CO tubes respectively appear at once, become intensified a little during the first few days, and persist many days or even weeks. The results are about the same if an equal quantity of water is added to the blood. An amount of acetic acid greater or less than the proportions stated above detracts from the success of the test. If the quantity of phenol is reduced to 3 drops, the color of the CO tubes becomes a cherry red. A larger amount, 5 to 10 drops, produces a light bright red, or pink color. If still larger proportions are used, a brilliant red color appears in the CO tube but disappears in a few minutes. A quantity of phenol equal to that of the blood may be used but the color fades in a few seconds.

A good method to determine the most favorable amount of phenol to use is to put it in drop by drop after the other substances have been added, shaking the tubes after each one or two drops. The CO tube soon becomes a cherry red changing to a bright pink which finally fades completely if enough phenol is used. The normal tube shows a dark chocolate color at first; this passes through increasingly lighter shades of brown and finally a whitish color appears in spots if enough phenol is added.

ALUM TESTS.

Alum Alone.—To a selected quantity of undiluted blood add an equal amount or one-half as much of a saturated aqueous solution of aluminum potassium sulphate (alum) and mix thoroughly. The blood coagulates, solidifying the contents of both tubes in a few minutes. When the test is first made, the red color of the CO tube is but little different from that of the normal; but on standing a few minutes to an hour, the positive tube turns a cherry red color and the normal one, a dirty blackish brown. The contrast is very marked. Do not expect this test to show positive results at once. It requires a few minutes to an hour for the red of the normal tube to fade sufficiently so that the red in the other tube will stand out by contrast. If, however, a quantity of water is added equal to the amount of blood used, the contrast between the two tubes appears almost at once; but it is not quite as marked as that which is seen ultimately in the tubes with undiluted blood. It is interesting to note that the tubes to which this amount of water is added, solidify as promptly as those without any water (except that which is included in the alum solution.)

Alum and Potassium Bicarbonate Test—Foam Test.—To a given quantity of blood undiluted or mixed with an equal or a double amount of water, add a volume of saturated solution of alum equal to the amount of blood (not including the dilution); then 4 to 6 drops of a saturated solution of potassium bicarbonate. We have found that dilution with 2 parts of water gives appreciably better results than with one part or with undiluted blood. It makes no difference whether the bicarbonate is added before or after the alum. Various other carbonates and bicarbonates will serve as well as the one mentioned in this connection. The tubes begin to foam profusely while the last reagent is being added. The foam of the CO tube is a bright pink color; the fluid at the bottom, a bright red. The foam in the normal tube is a purplish red and the fluid at the bottom a dark red or almost black. On standing a few minutes the fluid in the normal tube loses entirely any shade of red it had at first and acquires a blackish brown hue, which contrasts still more sharply with the brilliant pink of the CO

tube. These colors persist usually for many days or even weeks. The blood does not coagulate in this test unless undiluted, and then rather slowly.

Alum and Acetic Acid Test.—Take equal portions of undiluted blood, saturated aqueous solution of alum, and one per cent acetic acid in water, and mix by shaking. Better results are obtained by adding each reagent to the blood quickly and then agitating at once or by mixing the reagents before adding, than are obtained by putting in either alone and then shaking before the other is added. The CO tube turns a deep red; the normal one, a dark chocolate. The contents of the tubes become solidified within a few minutes and the color increases in intensity on standing a few hours to a few days. The blood may be diluted with one or two parts of water; also, smaller amounts of the one per cent acetic acid may be used or a few drops of stronger solutions, for example, 20 per cent. There do not seem to be any very likely sources of error in this test.

ACID AND BICARBONATE FOAM TEST

Mix with a given quantity of blood an equal amount of saturated aqueous solution of sodium bicarbonate. Profuse ebulition of CO_2 occurs at once. The foam of the normal blood is purplish red; that of the CO blood a bright pink. The color of the liquid at the bottom of the normal tube is almost black; at the bottom of the CO tube, a deep red. Various other carbonates and bicarbonates besides those of sodium may be used with about the same results. The display of reaction and colors in this test are very vivid and are precisely similar to those of the alum foam test. The colors persist for several days.

METHYL ALCOHOL TESTS

We have tried this substance with many variations and recommend the following combinations: 1. Blood one part, methyl alcohol two parts. 2. Blood one part, water and methyl alcohol each one-half as much. 3. Blood one part, one per cent acetic acid one part, methyl alcohol one-half of one part. With all of these mixtures normal blood turns a reddish black and CO blood a pure deep red. These colors persist for several days. The one in which acetic acid is used we found to be the most satisfactory.

Tests with ferric chlorid alone, with potassium bicarbonate alone, and with analin alone and in combination with other substances are not satisfactory.

In regard to the new tests just described, we desire to call attention to the following features: 1. Most of them are made easily, results appear at once (with the exception of the first alum test) and persist a considerable time, and errors are easily avoided. 2. We recommend especially the phenol and the alum tests. 3. We find that acetic acid (preferably weak solutions) is in general of more value than alkaline bases, bicarbonates or carbonates, either alone or in combinations with other chemicals.

SUMMARY

1. The diagnosis of carbon monoxid poisoning rests mainly upon (a) history of possibly exposure, (b) presence of carbon monoxid in the blood either before or after death, and (d) at autopsy (1) preservation of the body from decomposition, (2) a bright red color of the organs and tissues of the body including the blood, and (3) the fluidity of the blood.

2. The most frequent error in the diagnosis of CO poisoning is the mistaking it for various other diseases. This is due chiefly to the fact that the physician usually forgets to place this malady in his list of possibilities in connection with a diagnosis.

3. For the demonstration of CO in the blood we recommend especially of the older tests those with potassium ferrocyanid, mercuric chlorid, zinc chlorid, ammonium sulphid, lead subacetate, tannic acid, picric acid, heat, and simple dilution; of writers' tests, those with phenol and with alum are the best.

4. More than one test should be made on each unknown specimen.

5. Each test should be made several times with different amounts of the reagents and various dilutions of blood.

NEISSERIAN URETHRITIS AND PROSTATITIS.

CHARLES E. VERDIER, M. D.,
NEW ORLEANS.

The poor ye have always with you, so too, the man with gonorrhoea, poor in health, poor in recuperative powers, poor in his ability to help himself. One should consider the economic factors involved along with the disease acquired, an ambulant poorly controlled patient with a possible symptom complex as intriguing as it is dangerous, more than often casually prescribed for and just as often casually treated, allowed to adopt the contemptuous attitude that is generally assumed toward a malady that is no worse than a bad cold. You will say, we have heard all this before, get to your subject, tell us something new, some remedy, and I will admit that our patient some and pestiferous disease, for most of us would rather not have the patient with gonorrhoea, he is a lot of trouble and is notoriously bad pay. Alas, I have but little new to offer, certainly no magic remedy and I will admit that our patient with gonorrhoea is a lot of trouble, but his is a special kind of trouble and unless you are prepared intelligently to advise him would it not be better for all concerned not to accept the case? One not in daily contact with venerealogy as a special endeavor might at first thought be influenced to believe that the incidence of gonorrhoea is on the wane. Much propaganda of all sorts has appeared, many statistics have been compiled, new agencies have taken the field, municipal clinics, charity clinics, federal aids and so on; and yet Neisserian infection takes first rank among the diseases of men. Why is this disease so hard to control? The answer is obvious. Then how shall we treat these patients?

I will assume that my audience is well acquainted with the anatomy of the parts primarily involved in gonorrhoea in the male, though it is not too much to say that one frequently sees many cases in which there is either a total ignorance of the anatomical make up of the urethra and prostrate or a deliberate intent to ignore what the writer believes to be a fundamental point upon which treatment must be carefully built if one is to achieve success in a craftsmanlike manner.

We have to deal then with a mucous membrane and a glandular structure intimately blended with a musculature which is highly sensitive. It goes without saying that we must carefully individualize each case, though it will appear later that our choice of therapeutic aids is remarkably narrow. I regard the individualization of each case as of paramount importance, one must know the status of his patient absolutely, for upon his position in this world depends his ability to aid you in your attempt to cure, and success or failure often hinges on this very point.

Is the man married? If so during treatment he must sleep alone.

What does he do for a living? Most of us have quite a bit to do, and the following occupations are obviously risky when one considers the liability of complications: Motor mechanics, chauffeurs, engine drivers, those who must stand constantly, those who must use a motor car constantly, those engaged in any occupation which is physically fatiguing, all energetic sports. Do I hear you say, "You have covered everybody"? Exactly the impression I desire to convey, we must temper the wind to the shorn lamb and eliminate every possible thing which may militate against our success and yet we fail. Why do we fail, because of one factor, lack of control of the patient; our treatment, no matter how skillful, no matter how potentially effective, will fail unless we have control of the patient himself and that we have not, so we fail. Yet we do relieve but to say we cure is different. We do not, we never have and we never will, at least until our present methods of treatment are

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immeasurably improved upon. How then does the patient get well? for some get well, apparently well, you say. Go back to your anatomy. What does the gonococcus of Neisser do to the squamous cell lining of the urethra, what form of epithelium succeeds the destroyed squamous cells, what happens when this squamous epithelium is succeeded? The patient recovers. What then has the doctor done? I will tell you. He has either intelligently aided the reparative process or he has unintelligently retarded it. Remember this point, all of the treatment of your patient with gonorrhoea is by no means the treatment applied directly to the urethra or prostate, one must look carefully to the general health of his patient.

With these more or less illuminating ideas before us what shall we select as a line of treatment for the average case.

We must instruct as to diet. This must be supportive but free from acids and highly seasoned foods. We will insist upon the proper elimination. Here it might be well to speak of the diabolical custom of advising copious drinking of water especially in the acute stage of a specific urethritis. A part that should be at rest cannot be at rest if constantly used to pass an unusual amount of urine over a highly inflamed and very sensitive mucous membrane; for reasons which will appear when therapeutic measures are discussed it is well to restrict liquids.

Rest, physical, and if possible, mental, is imperative especially in the initial stages of the infection. It is my firm conviction that if the average individual suffering from urethritis could be confined to bed from the onset of his infection, he would recover within a thirty day period as a general rule.

It will be noticed that the title of this paper couples prostatitis with urethritis and this for the very apparent reason that despite our best efforts but for the reasons already outlined, prostatitis in either mild or severe degree is a complication in about ninety per cent of cases. Hunner of Baltimore has suggested the advisability of an occasional prostatic massage even before the prostate is actually involved with the idea of promoting as much active immunity as possible for this all important gland. I have found this to be good practice. It is truly astonishing, to those unaccustomed at least, to find the gonococcus in a centrifugal specimen of prostatic fluid when the casual examination of a loopful of the expressed discharge may not show their presence. Hence always centrifuge your prostatic secretions. The Johns capillary tube method is perhaps the most exact, though an ordinary well tapered test tube properly whirled will do admirably. Assuming then that we have arrived at a definite diagnosis and properly classified the pathology of our patient we will discuss the local treatment to be used. As before stated our therapeutic effective range is limited, myriad though the advised remedies may be.

During the late unpleasantness of the Hunnish attempt to regulate the world I sought to do my bit with the colors thinking that my services might be limited to something at least embraced by red, white and blue, but it soon transpired that this was to be but a magnified endeavor closely patterned after my professional work in civil life. With abundant material, *carte blanche* as to applied effort and asked only to produce results as quickly as possible, it was a rich experience. The time tested remedies were given first call, then newer and still newer plans were tried and out of it all came a simple technic with a remedy that fulfills the qualifications which a drug must have to achieve results. Here let us ask the question: what qualities must a drug possess in order that it shall have first rank to consideration; I list the following: 1. It must kill the organism against which it is directed; 2. It must be unirritating to the tissue to which it is applied; 3. It must, in the malady which we are discussing penetrate mucous membrane and glandular structures; 4. It must

stay put, and thus exert an action over a period as long as is possible. A drug which answers these qualifications is neutral acriflavin. Used in a jelly like preparation of karaya gum with a slight addition of sodium bicarbonate and in a strength of 1-1000 it will be found to meet the above requirements. The writer is indebted to Abbott Laboratories for their assistance in perfecting neutral acriflavin jelly which, with the following technic, I have found to be a first class routine local treatment for gonorrhea in the male. I give internally one grain doses of neutral acriflavin at six hour intervals with a restriction of liquids to the point of just satisfying normal thirst. Locally, I employ the following technic: Have your patient report for treatment with a full bladder; if the disease is limited to the pendulous urethra, after the urine is voided, pass a small olivary tipped Guyon flexible instillator down to the cut-off muscle and carefully and very gently instill from Luer glass syringe about two drams of the neutral acriflavin jelly, gently withdrawing the syringe as the instillation is made. A small pledget of cotton over the external meatus or a light bandage and cotton complete the treatment and the patient is requested to refrain from urination until pressed to the act. It will be found that patient can and will carry such a treatment very comfortably up to five hours at a time.

In the case of anterior urethritis alone an occasional massage of the prostate with an examination of the centrifuged specimen is done to anticipate extension as well as to promote prostatic resistance.

In the face of an established prostatic involvement the prostate gland is massaged on a full bladder on alternate days and the instillation of the jelly is made directly to the gland each day after the bladder is evacuated. In my experience with the above technic I have found that the factor of gentleness is of the greatest importance. with your instillator well lubricated with the jelly but very little discomfort is experienced by the patient. Chordee is a rare occurrence and testicuar complications are kept at a minimum. A word as to the removal of the acriflavin stains; there is a soap called lava soap largely used by automobile mechanics to remove grease stains which will at once remove the stains of acriflavin.

Results from treatment as to a time limit will vary largely with the class of patient, the pathology produced and last but not least the gentleness of the operator. Suffice it to say, that in my experience the simple uncomplicated anterior urethritis has responded to the above treatment within a period of four weeks, while the prostatic case has gone to an outside limit of six months. Urethras endoscoped after a successful restoration to approximate normal always taking into consideration nature's substitution in relation to the mucous membranes involved, show no evidence of stricture formation as is so frequently found when other methods, particularly the astringent ones, are used.

DISCUSSION.

Dr. W. A. Reed (New Orleans): The subject brought up by Dr. Verdier is extremely interesting to me. In the issue of Feb. 12th, of the J. A. M. A. there appeared an article by Drs. Harrold and Culver of Chicago, in which they gave a summary of their results in the treatment of gonorrheal urethritis with acriflavin incorporated in gelatin. The article was almost dogmatic in stating that their results were without failure. They used a mixture of acriflavin and gelatin in strength of 1-400 and even as strong as 1-250. The acriflavin was mixed with a 10 to 15 per cent solution of gelatin. The mixture was used three and four times daily and injected with an ordinary urethral syringe. They reported complete cures in anterior cases—in from four to five weeks, and in posterior cases, in eight weeks at the outside. This seemed so good to me that I became enthused and started using it. I followed their direction very carefully with regards to its preparation. I took the liberty of using it on my private patients rather than in the clinic in order to have complete control of the cases and avoid giving the treatment in any haphazard fashion. I started with the mixture of acriflavin 1-400 in a 15 per cent gelatin. I soon found that this was irritating and it became a case of either losing my patients or

change my methods—consequently, the strength was cut to 1-500, 1-800, 1-1000 and even to 1-2000. The results were more or less the same, regardless of the strength—irritation being produced in practically every case after a shorter or longer period of time. About 50 cases were treated in all before I decided to discard it for old and recognized methods. Perhaps it was due to faulty technic, but I was unable to obtain the beautiful results claimed by Drs. Harrold and Culver. Four or five years ago, Dr. Nelken and I worked along these lines with acriflavin. The results in some instances were good, cures being obtained in from ten to fifteen days in some cases, while in the majority, there was so much reaction that we were compelled to resort to our old method of treatment. Again, let me state that it is possible that my poor results were due to errors in the technic of using acriflavin.

Dr. Charles E. Verdier (closing): The preparation mentioned in my article is a jelly-like substance resembling our various lubricant jellies. It is absolutely non-irritating. Acriflavin is irritating in solution—as Dr. Reed says; there is no question about it. To begin with, these patients have a highly inflamed and exceedingly sensitive mucous membrane. There are cases that we all see in which our best judgment dictates that we use hydrotherapy, sometimes as long as forty-eight hours, before any method other than the application of hot water be tried. This jelly that I speak of has no irritant properties whatsoever, it is not oily, and when applied dissolves, leaving the drug behind. The addition of a small amount of soda bicarbonate is of further aid in neutralizing the irritating quality of acriflavin. I have had patients tell me how comfortable they felt after treatment. A man comes in complaining of pain and burning during the urinary act and there is evidence that he is suffering from discomfort. He is treated and goes out carrying this preparation in situ; in a very short time relief is experienced. Now, if the preparation was irritating the patient would certainly not report such a satisfactory result.

We get results—it helps to cure gonorrhea. I give it to you for what it is worth.

EXTENSIVE COLONIC POLYPOSIS.*†

REPORT OF THREE CASES.

A. L. LEVIN, M. D.,
NEW ORLEANS.

The subject which I am presenting for your consideration is of great clinical significance. The failure on our part to recognize early an existing colonic polyposis leads to a very grave prognosis. Coffey makes the statement, "that there is probably no benign process in which there is a higher incidence of malignancy than colonic polyposis." Struthers in a report of twenty cases observed at the Mayo Clinic between Feb. 1, 1920, and January 1, 1923, concludes his remarks with a pessimistic view thus: "Multiple polyposis of the gastro-intestinal tract is a serious disease from the standpoint of morbidity and mortality. The cause of intestinal polyposis is not known, although chronic ulcerative colitis appears to be a prominent factor. There is no specific medical treatment and early operation undoubtedly offers the best results in all cases."

The closing paragraph of an article by Erdmann & Morris offers but slight hope in the way of cure. It follows: "Indications for treatment are the depleting hemorrhage and diarrhea and the high malignancy incidence. Non-radical palliative treatment comprises cecostomy, appendicostomy, irrigations and radium therapy. Excision of the polyp-bearing area is limited by technical difficulties and the inability to predict, pre-operatively, the extent of the process."

The above quotations from the pen of leading authorities in medicine and surgery are emphatic enough to impress upon us the two practical problems when we are confronted with a consideration of such cases: the advantage of an early diagnosis and the danger of malignancy. It is surprising to me that our most modern textbooks, with the exception of Gant and Stevens, have nothing or very little to say about the subject. The three cases which I am reporting came under my observation in the past ten months, all in young males between the ages of 21 and 32. Their complaint was a chronic dysentery with blood and mucus in the stools; the duration of illness was from about six months to five years. Protoscopically, they showed a chronic ulcerative colitis of an unknown

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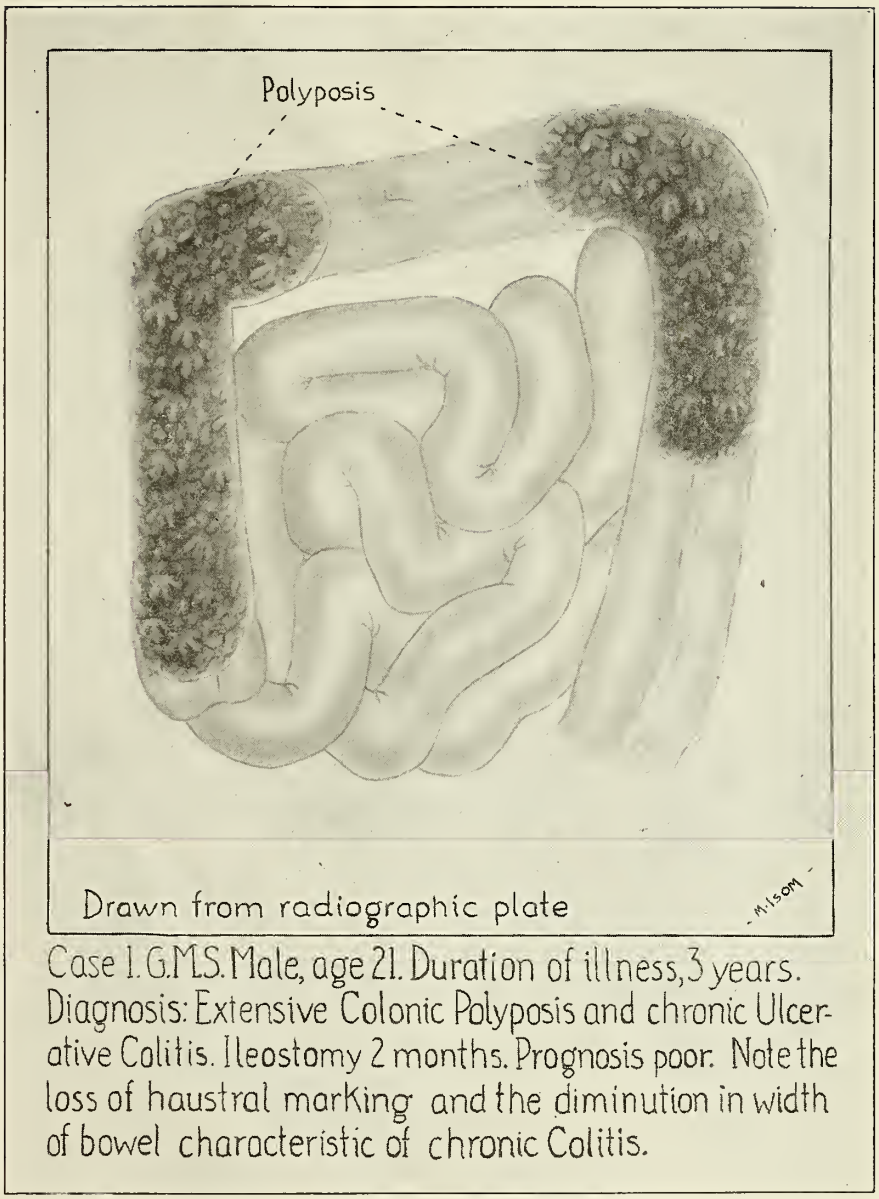
†From the Graduate School of Medicine, Tulane University.



Case I. G.M.S. Male, age 21. Duration of illness, 3 years. Diagnosis: Extensive Colonic Polyposis and chronic Ulcerative Colitis. Ileostomy 2 months. Prognosis poor. Note the loss of haustral marking and the diminution in width of bowel characteristic of chronic Colitis.

etiology; one had polypi in the rectum. Their symptoms are vague abdominal pains, rectal tenesmus, mucus, pus and blood in the stools, a variable degree of anemia and loss of weight. Of the three cases: the first one is in a serious condition, the second one died and the third one has not improved in spite of heroic medical measures. He refuses surgical intervention so far. The diagnosis of the first one was made by a proctoscopic examination and roentgen-ray visualization of the colon; in the second case, the proctoscope did not reveal any polypi in the rectum and the roentgen-ray failed to demonstrate the presence of polypi, but the post mortem revealed the true nature of the polyposis; in the third, the roentgen-ray demonstrates clearly the existing polyposis. The roentgen-ray plates and artist's drawings will clearly demonstrate to you the extensive nature of the colonic polyposis.

Multiple polyposis of the intestine, or polypoid colitis, is considered a comparatively rare disease. Personally, I do not

entertain such a belief. The fault lies at the door of our teachers and text-books; we failed to recognize the disease because very little was said about it. This is one of the objects of this paper, to call your attention to the frequent association of colonic polyposis with chronic ulcerative colitis.

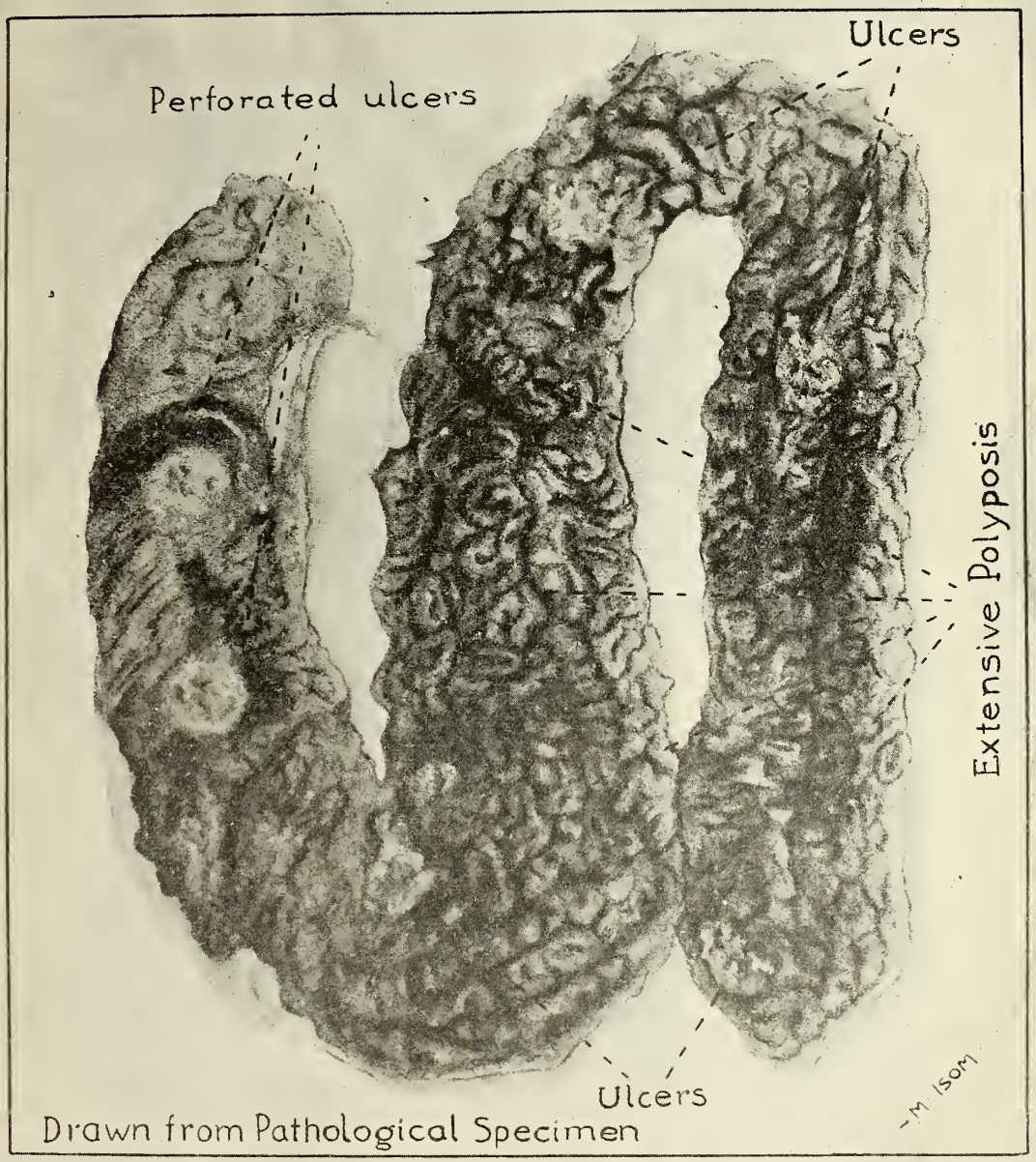
Polypus is a term used to designate, without reference to its histological characteristics, any benign tumor that is pedunculated. Almost all innocent tumors in the intestines, even if sessile at the beginning, become pedunculated owing to the downward pressure of the intestinal contents.

Gastro-intestinal polyps have been carefully studied by various observers from the histological, morphological and anatomical standpoints; no agreement has been reached as yet with regard to a uniform classification. Histologically, they can be adenomata, fibromata, lipomata, myomata or angiomata. The adenomatous type is the commonest histological form and is usually found in the large bowel in multiple or disseminated form. An attempt has been made by some authors to make a classification according to the associated pathology and apparent etiology. Erdmann and Morris suggest a compromised classification, namely:

1. Adult acquired type.
2. Adolescent (congenital, disseminated) type.

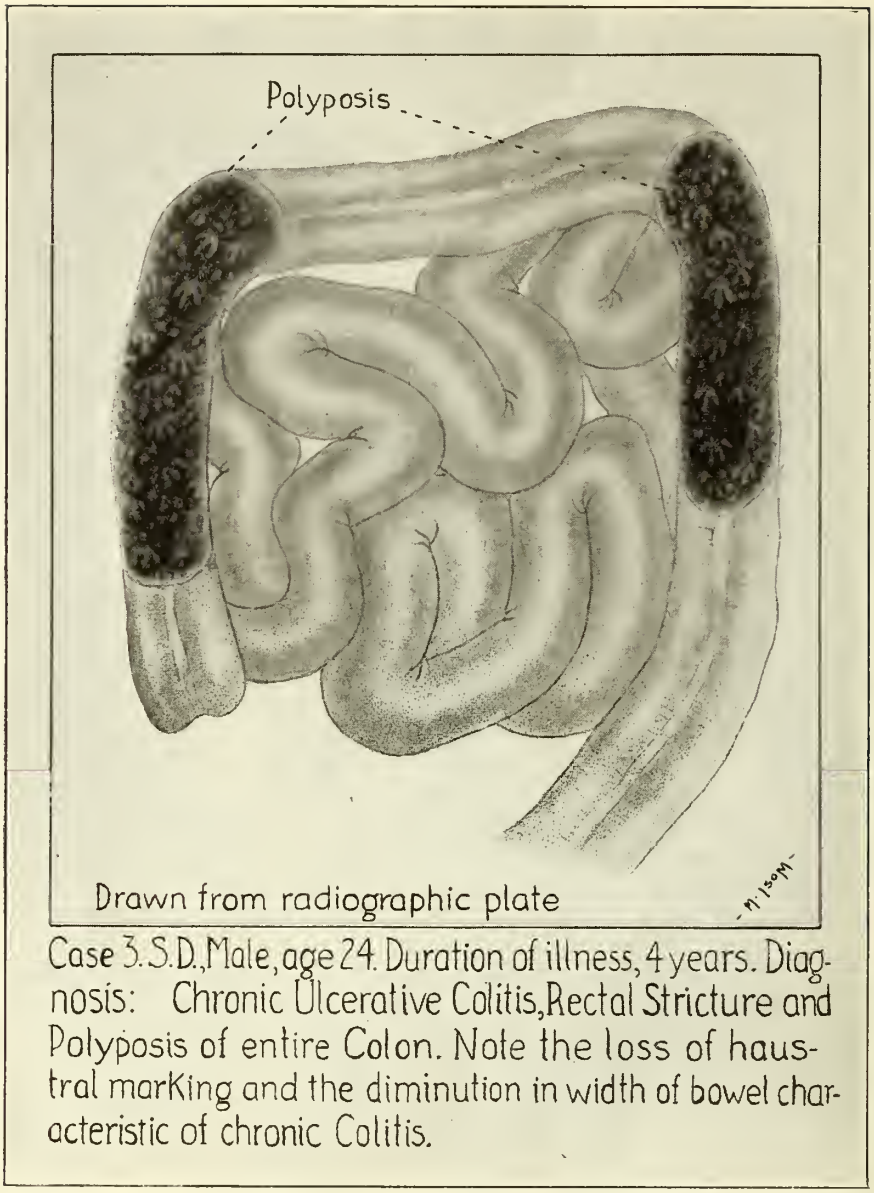
The first, as the name implies, is acquired during adult life from irritation of mucous membrane, such as hemorrhages, erosions, ulcerations, strictures, etc. Usually there are but a few scattered tumors and it may be symptomatically silent throughout life. The second type is usually encountered among young adults. The mucous membrane of the gut, usually the colon, from ileo-cecal valve to anus is thickly and uniformly studded with multiple adenomatous polyps; as a rule other members of the same family are affected; symptomatically, they suffer from dysentery, rectal bleeding, anemia, and loss in weight.

It might be of interest to give a brief historical review of this disease. In 1721, Menzel described a case in which there was a general inflammation of the intestinal tract, and in the colon there were a number of wart-like excrescences. In 1832, Wagner, in his description of the manner of healing of dysenteric ulcers, noted that sometimes on the margins of the scars and on the healed surface of the smooth cicatrix of the healed ulcer, tiny polypoid excrescences were found. In 1839, Rokitansky confirmed Wagner's observation and claimed that these small polyps had their origin from islands of the mucous membrane that remained after the ulcerative process had ceased. Later on he described the formation of polypoid growth from the ragged margins of the ulcers. In 1861, Lebert described a case in a young woman who had suffered for years from an obstinate diarrhea. At section, the mucous membrane of the colon was found beset with hundreds of little polypi, varying in size from a lentel to a bean, some pedunculated, others sessile. He described these polyps as consisting of fibrous tissue containing ramifying blood vessels but no glands. Glandular tubules were however to be found surrounding the base of the polyps. These tubules appeared normal. In the same year, Luschka described a colon containing on its mucosa thousands of polyps from the ileo-cecal valve to the anus, varying in size from a hemp seed to a bean. Microscopically, they consisted of glands resembling those of Lieberkuhn, except that they were longer, many of them more or less branched and some of them dilated into cyst-like spaces. The mucous membrane between them was apparently normal. The patient was a young woman of 30 years who suffered for many years from a bloody diarrhea. In 1863, Virchow described a case and called it "Colitis polyposa cystica." In 1882, Cripps described three cases occurring in the same family (three brothers). The picture of the specimens described by Cripps is the same as described above by others. He concludes



Case 2. H.S.S. Male, age 31. Duration of illness, 6 months. Diagnosis: Extensive Colonic Polyposis and chronic Ulcerative Colitis. Cause of death: Intestinal Perforation with Hemorrhage.

that the multiple disseminated variety is extremely rare; that it seemed most common in early youth, it has a definite familial tendency, and is probably intimately related to intestinal cancer. Hanford, in 1890, reported a case of a woman 34 years old who died as a result of an acute intestinal obstruction. The autopsy



Case 3. S.D., Male, age 24. Duration of illness, 4 years. Diagnosis: Chronic Ulcerative Colitis, Rectal Stricture and Polyposis of entire Colon. Note the loss of haustral marking and the diminution in width of bowel characteristic of chronic Colitis.

revealed a colon studded with adenomatous polyps, one of which produced a stricture. Niemack reports a similar case of a girl of 12 years of age, also with a familial tendency. Daring, in 1907, collected from the literature 52 reported cases. Hewitt and Howard, in 1915, reported two cases representing the very early and the comparatively late stage of this disease. Murphy, in 1916, reported one case, and remarks, "the etiology of intestinal polypi—like that of the common wart — is shrouded in mystery: whence they come, why they go, is like the riddle of the Sphinx." Soper collected eight additional cases in 1916. In 1919, cases have been reported by Lockhart-Mummery. Struthers reports 20 cases from the Mayo Clinic in 1923. Pennant, in 1925, reports three cases occurring in one family. Erdmann and Morris in 1925, give a most detailed review of the whole subject and report two cases. Gant has treated 68 cases of recto-colonic-polyposis. Wheeler, in 1926, reports two cases.

McKenny, in the same year, reports one case. Coffey, in 1926, also reports a case and describes his detailed surgical treatment.

Benign neoplasms of the large intestines are comparatively rare, met with more frequently in men than women, seldom in infants, but not uncommon in children. Helmholtz reported five cases in children, the average being under ten years; he says that he has failed to find a single article on the subject of ulcerative colitis and polyposis in childhood. In young adults, the age period is between 20 and 35, though they may occur at any age; in size they vary from a wheat grain to that of an orange; they may be singular or multiple, soft or firm, pedunculated or sessile, the surface may be smooth or ulcerated, may be isolated or disseminated.

The etiology of non-malignant growths of the colon is not definite, but in many cases, they seem to be caused by chronic, catarrhal, tuberculous, luetic, entamebic, bacillary, balantidic or gonorrheal, cholproctitis; the constant smearing of the mucosa with an acrid, irritative discharge which usually excites cell proliferation, is probably the main factor in polyposis.

The neoplasms have been located in all segments of the small and large intestines, but they are more common in the rectum, colon and ileum. The common forms we mentioned in the beginning of this paper. The rare forms are: teratoma, myxoma, angioma, actinomycoma, gummata, tuberculoma, neoplasm, lymphadenoma and parasitism.

Adenomas may persist for years without undergoing malignant changes, but the majority degenerate into cancer in from one to seven years, depending on the patient's vitality, degree of irritation, and character of tumor; soft polyps more often undergo malignant changes than dense or fibroadenomas.

The predominant symptoms in these cases, I described early in my paper. I wish to add that in the course of the disease, there may be periods of improvements, but sooner or later, the result is progressive anemia, depletion, emaciation, intestinal malignancy or intestinal obstruction.

Treatment—Here I wish to lay stress on an early diagnosis. Bear in mind that a chronic ulcerative colitis is a potential colonic polyposis and the latter is a potential malignancy. Proctoscopic and sigmoidoscopic examinations are essential. Visualization of the colon by roentgen-ray should be made in every case of chronic ulcerative colitis, no matter what the etiologic factor might be. The radiologist should make two views of the colon, filled with the barium and after partial escape of barium. An early ileostomy will give the best results. Do not wait until the patient is in a moribund condition. Yield the ground to the surgeon early in order to do justice to yourself and your patient. When you wait until the polyposis becomes disseminated, it is as hopeless as a disseminated malignancy. Then surgery, roentgen-ray and radium therapy have all received their scars and met their Waterloo on this battle field.

REPORT OF CASES.

Case 1. The patient is a young man, 21 years of age, a student in the department of engineering, Tulane University. The history in brief is as follows: He was well until 4 years ago. At that time he was employed in an iron shop around the Industrial Canal. Of necessity, he was compelled to eat food and use milk from the negro shops in the vicinity. Shortly afterwards he noticed bleeding from the rectum. He consulted a physician who told him he was suffering from bleeding hemorrhoids and advised operation. A hemorrhoidectomy was performed. The result of the operation was a frequent discharge from the rectum of a thick, offensive, glairy, blood-tinted, mucoid substance which was responsible for tenesmus and dysenteric stools. He was treated with irrigations, stovarsol, and finally creosote by mouth in heroic doses, beginning with drops and reaching teaspoonful doses. Weakness, exhaustion and loss in weight followed without any improvement of the dysentery. He then followed the round of consultations. He came under my observation in August, 1926, and was admitted to Touro Infirmary. Stools were examined for ova or para-

sites with negative findings. On physical examination, the outstanding features were anemia, marked cachexia and emaciation. Bacillary dysentery, tuberculosis and syphilis were ruled out by negative laboratory findings. Proctoscopic examination was made which revealed the true nature of the trouble. About two and one-half inches from the anal margin numerous polypoid-like structures varying in size, and bleeding easily could be noted. The mucous membrane in spots was ulcerated. An roentgen-ray visualization of the entire colon was made and a most interesting radiographic picture of the colon was obtained. There were definite evidences of an extensive chronic colitis when the colon was filled with barium. The radiologist suggested making another visualization a little later when part of the barium had escaped from the bowel. The second radiograph revealed the honey-combing of the entire ascending, transverse and descending colons down to the midportion of the sigmoid, due evidently to extensive colonic polyposis. The entire colon was narrowed down to the size of the small intestines with complete loss of haustrations. At the spleenic flexture, the colon in width was about the size of a finger. Surgical interference was advised, but unfortunately the patient refused. Various remedies were tried without result; the use of suprarenal extract was suggested on the basis of similar treatment in cases of Von Recklinghausen's disease. Six grains per day were given, the patient seemed to improve for a short period and gained two and one-half pounds in weight, stools became normal and blood and mucus disappeared. This intermission was of short duration and a remission of the former trouble soon ensued. On January 13, 1927, another roentgen-ray of the colon was made and the same condition as previously described was found. At this examination, there was some extension of the polypoid growth, as it appeared to be more extensive than when previously examined. The patient at last realizing the hopelessness of palliative medical treatment, consented to an operation. An ileostomy was performed. The patient seemed to rally very quickly after the operation, he began to gain in weight rapidly and his general condition improved greatly. But even this ray of hope soon vanished, abdominal pain developed and frequent bloody rectal discharges reappeared. His hemoglobin at this time was around 25 per cent and a blood transfusion was done. For a few days after the transfusion, he seemed to sink very rapidly, was not able to take nourishment on account of abdominal pain which would come on immediately after solid or even liquid food and the bloody rectal discharge was very exhausting to him. Reasoning that the upper abdominal pain was probably due to a reflex pylorospasm, he was put on belladonna and bromids and the use of suprarenal extract was again instituted. His improvement under this plan was rapid; he is able to take five meals a day and sit up in a chair. A specimen with a snare through the proctoscope was obtained for pathological examination. The laboratory report reads: "Benign adenomatous type." The prognosis in this case is poor; the surgeon does not believe that the next radical step, that is colectomy, can be undertaken unless the patient regains a fair state of health.

Case 2. Mr. S. The patient was admitted October 6, 1926, and died December 20, 1926. Three months before admission to hospital, the illness began with diarrhea, bloody stools, cramps, tenesmus. He has been having 12 to 15 stools daily, each mixed with bright red blood; blood clots were often passed; often passages consisted only of blood. He was treated previously with various medication, but nothing was found to check the diarrhea or loss of blood. He has lost 15 pounds; appetite was good; no cough or other respiratory symptoms were noted; there were no chills or night sweats.

Examination: The patient was emaciated; there were depressed supra-clavicular spaces, dullness over right apex, no rales, no abnormal breath sounds. Barium enema showed narrowing of lumen and faulty arrangement of haustral markings with some irregularity. "These are changes commonly associated with ulcerative colitis." Proctoscopic examination showed extensive ulcerated areas with fibrotic changes, no polyps. No ameba were found. During his stay in hospital his temperature was septic, with afternon rises and marked drops in the morning. Temperature fluctuated between 102° and 97°, pulse between 100 and 120. There were no sweats or chills. He became progressively worse, diarrhea continued, blood in stools was present almost constantly, he lost weight considerably, emaciation and anemia became marked. Roentgen-ray of chest showed evidence of infiltration. Dr. Lyons who saw the patient in consultation reported that he considered this as evidence of an old, probably inactive, pulmonary lesion. Three weeks after admission the patient developed multiple inflammatory fistulae; smears from fistulous tracts were negative for acid fast bacilli. Dr. Maes believed fistulae were suggestive of tuberculosis. Surgical intervention was considered and appendicostomy was performed. Aside from a few enlarged mesenteric lymph nodes, the region explored (ascending colon), showed no involvement. The wound did not heal and a fecal fistula formed. Evidence of sepsis became marked; transfusion of 500 cc. of whole blood was given. Within a few days the patient began having hemorrhage, with blood es-

caping from wound and anus, becoming progressively worse, and died.

Pathologist's report: Post mortem examination revealed the following outstanding features: Apices of both lungs were adherent, there were no definite evidences of pulmonary tuberculosis. Heart was normal, liver was enlarged with definite evidences of fatty degeneration. Kidneys and spleen showed some secondary changes. Gastro-intestinal tract — the large bowel was found extensively ulcerated with a large perforation of one of the ulcers in the upper part of the descending colon. The ulcers were undetermined, typical of amebic ulcers; smears were made from the ulcers and stained specimens were examined for ameba with negative findings. The ulceration was not tuberculous nor luetic. The entire mucous membrane was studded with masses of polypoid tumors, some as large as a grape. Dr. Lanford states that a smear from the ulcer and a stained specimen showed a fungus, possible trichophytic; this would be a most unusual causative factor and opens up a new field for study of chronic ulcerative colitis.

Case III. F. D., aged 19, was admitted February 17, 1926, and discharged October 29, 1926. The patient has been having loose bowels for past three and one-half years, stools were watery, averaged 10 to 14 in 24 hours, some mucus and blood in the stools. He did not have a solid stool since onset of illness. His condition became progressively worse. For a period of three years numerous drugs were tried without any relief. Ipecac pills, stovarsol, emetin and irrigations, were of no avail. Proctoscopic examination showed a well organized stricture about two and one-half inches from the anal margin; above the stricture, the mucous membrane was ulcerated and very friable. Examinations for ameba were negative. Tuberculosis, syphilis and bacillary dysentery were ruled out by negative findings. Physical examination was negative. Gastric analysis showed free HCL 28, total 44. Blood picture showed secondary anemia. Urine was negative. Radiological report of colon reads as follows: "Entire colon is converted into a smooth walled tube, no evidence of haustration visible at any location." Diagnosis: Chronic colitis of long standing. During his stay in the hospital, numerous remedial measures were tried without any satisfactory results. Among measures tried were:

Milk diet; acriflavin irrigations (3 gr. to the gal.), mercurochrome irrigations (1 per cent), large doses of bismuth sub-nitrate, mixed treatment, neo-salvarsan, treparsol, and finally an attempt was made to isolate the bargan diplococcus and autogenous vaccine was given, with very little improvement. He left the hospital on Oct. 29, 1926, still having from 6 to 8 stools in 24 hours. He returned to the clinic on January 10, 1927, almost in the same shape as he was a year ago. Roentgenogram of the colon was made and the following is the radiologist's report: "Colon has lost its haustral markings throughout and very pronounced evidence of colonic polyposis is visible. This involves the entire colon from caput coli to rectum. There is also an incompetent ileocecal valve. This patient is of unusual roentgen interest." He was advised to re-enter the hospital and submit to surgical intervention. So far he has steadfastly refused.

The radiologist of the Touro Infirmary was kind enough to show me a radiogram of a fourth case in which the greater part of the ascending colon is evidently studded with polypoid growth.

A fifth case is under my observation at Touro Infirmary. This patient is suffering from chronic amebic ulcerative colitis. Every form of treatment for amebic dysentery was tried without any relief; appendicostomy was recently done, but the escape of blood and mucus from the bowels continued. Proctoscopic examination made by me three days ago reveals a definite beginning of polyposis of the rectum.

I am indebted to Dr. B. G. Efron of the Interne staff of Touro Infirmary for his collaboration in working up these cases and to Miss Isom for the drawings.

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REVIEWS

DISTURBED PHYSIOLOGY IN NEPHRITIS: A REVIEW.

HYDER F. BREWSTER, M. D.,
NEW ORLEANS.

The term nephritis being, in itself, a rather vague noun, a definition is necessary to make clear and to render limited, its application in this paper. In the discussion which follows, nephritis will be understood to mean a diffuse, but not necessarily universal, progressive, degenerative or proliferative lesion involving the renal parenchyma, the interstitial tissues or the renal vascular system. Both degenerative and proliferative lesions are usually seen but one type will predominate more or less over the other and thus justify such nomenclature. Also, parenchymatous, interstitial and vascular lesions are present in the same specimen, but the predominance of one type of lesion justifies such pathological divisions.

However, in spite of the enormous amount of very careful work which has been done, we cannot as yet correlate disturbances of renal function with the observable anatomical and pathological changes. The greatest changes do not always correspond to the locality of the greatest impairment of function; these facts lead to the belief that there are less conspicuous but more important intracellular and intercellular changes which are as yet unrecognized.

For the clinician, then, it is far better that he should, with our present knowedge, study and think of nephritis in terms of disturbances of renal function, *i. e.*, in terms of disturbances in the excretion of substances normally eliminated by this organ. The basis for such a point of view is readily found when we recall that all rational therapy and certainly all prognoses of value are based upon the functional status of the kidneys.

Besides disturbances of physiology directly and immediately associated with disturbed renal function there are by-effects or secondary disturbances of normal physiology which must be considered in their proper places.

Among students of medicine there should be no necessity of emphasizing the importance of nephritis as a disease. N. B. Foster[1] places it fourth among the causes of death in the United States, being excelled only by cardiac disease, pneumonia and tuberculosis respectively. In fact, as defined in this paper, nephritis is a definite clinical entity of such common incidence and such grave potentialities that, no matter what branch of medicine one may enter, he will always be confronted with its problems.

HOW THE KIDNEY FUNCTIONS.

The mechanism or method by which the kidney is enabled to excrete an acid urine of much greater molecular concentration than the alkaline blood plasma, and with a modified ratio between its various crystalloids, and which does not contain sugar nor plasma colloids, has been a subject of much speculation and experimentation. The more recent work by Wearn and Richards[2] seems definitely to establish as a fact

Cushny's hypothesis of this mechanism; that is, at the glomerulus there occurs a simple filtration of all substances of the blood except the formed elements and the plasma colloids, and in the tubule there occurs a differential absorption of all threshold bodies as water, glucose and sodium chlorid up to certain physiological or threshold requirements; the urea, uric acid, creatinin, creatin, phosphoric acid as sodium acid phosphates, etc., continue the journey from the glomerulus as constituents of the urine. There is evidence that certain solid substances as hemosiderin pass through the tubular epithelium to reach the uriniferous stream. Also there is some suspicion that uric acid and phosphoric are further added to the urine by passing through the tubular epithelium.[3]

KIDNEY FUNCTIONS AND THEIR DISTURBANCES IN NEPHRITIS.

The functions of the kidney (4) are:

I. To eliminate nonprotein nitrogenous wastes.

II. To maintain a proper fluid balance.

III. To secure a proper salt balance, especially sodium chloride.

IV. To assist in maintaining alkalinity of the body fluids.

V. Possibly to eliminate certain toxic substances as yet little known.

I. THE NITROGENOUS WASTES.

Catabolism of ingested proteins or of body tissues results in the production of non-protein nitrogenous bodies as urea, uric acid, creatinin, creatin and certain unknown nitrogenous bodies at present called residual nitrogen; the percentage proportion of the latter rises in nitrogen retention and the significance of this will be discussed later. These substances are present in the blood of the normal person in relatively fixed or constant quantities and are excreted by the kidney in quantities proportional to their amounts present in the blood. It is thus seen that these nitrogenous bodies are not threshold substances and are, therefore, not reabsorbed by the tubules.

In nephritis these substances may be excreted normally or their excretion may be slightly impaired, moderately impaired or there may be almost total retention. Since there is knowledge to explain only those types of retention due to oliguria or anuria (most frequent in acute nephritis), the purely theoretical explanations offered for other cases will not be discussed. Nitrogen retention may or may not occur in any form of nephritis; in acute nephritis it is absent or slightly present unless more or less anuria obtains or uremia supervenes; in subacute nephritis with edema, the retention is usually slight; if retention occurs in hemorrhagic nephritis it is moderate; in chronic nephritis it is usually small in those cases with edema; in chronic nephritis with hypertension and no edema there is nearly always, sooner or later, marked retention, the total non-protein nitrogen going up from its normal level of 28-30 mg. to 200-300 mg. or more; in essential vascular hypertension leading to nephritis, retention is slight until relatively late; in the arteriosclerotic kidney, retention is rarely a factor of note. In the more fulminating or terminal stages of these types of nephritis, the above statements may not hold.

Normally the urea nitrogen forms 50 per cent of the total non-protein nitrogen, but in retention this level rises to 60-85 per cent or more. Urea, being readily diffusible throughout the body, probably gives some of the symptoms of uremia.

What is the relation of nitrogen retention to other renal functions? There are no constant relationships. There may be marked albuminuria, edema and retention of chlorides with no retention of nitrogen. There may be marked nitrogen retention and little or even no albuminuria, edema or chloride retention. The relation to high blood pressure is inconstant; if there be

much retention the pressure will usually be elevated; there may be high blood pressure with no nitrogen retention. As nitrogen retention goes up phthalein excretion decreases; there are a few exceptions to this but where the parallelism is markedly altered, always suspect and look for cardiac insufficiency.

II AND III. WATER AND SALT BALANCES

Both water and sodium chloride are threshold substances and are reabsorbed from the tubules until the physiological or threshold levels are reached. If an increased quantity of these substances be ingested by a normal person there occurs an immediate proportional increase in their output; also if greatly reduced quantities be ingested there occurs a proportional decrease in output; thus a delicate and constant balance is maintained.

In Christian's[5] classification of nephritis those forms showing edema are the types in which the equilibrium of water and salt is disturbed. This is not invariably true as there are a few cases in which there is rather marked salt retention without any edema; in these cases the salt is thought to be combined in the tissues as the latter may contain twice the normal amount. Chlorides tend to be retained in acute nephritis with edema but the salt retention is much more marked in subacute and chronic nephritis with edema; thus it is seen that water and salt balances are very closely related. The usual type of nephritic edema is that in which there is primary retention of sodium chloride with secondary retention of water. No satisfactory explanation of primary sodium chloride retention has been found; suggestions have been damaged renal cells, increased permeability of vessel walls, abnormal tissue affinity.

Water retention from whatever cause practically always initiates secondary salt retention which may further augment the edema. Those minority edemas in which water retention appears primary have many proposed explanations. Two of these merit mention here as they have experimental and clinical evidence in their support. Leo Loeb[6] and others have shown that lesions of the glomeruli may be sufficiently severe and universal to give rise to diminished total glomerular filtration; it must be remembered, however, that there is no constant clinical relationship between apparently severe glomerular lesions and renal edema. Epstein,[7] early disputed by some but more recently confirmed by Van Slyke, states that especially in chronic nephritis with edema, where albuminuria is frequently heavy, the blood colloids are greatly reduced by loss of serum albumin through more permeable glomeruli; the globulin being held back, its relative proportion in the plasma rises. The refractometer in these cases reveals greatly reduced serum or plasma colloids and experiments show that the normal reserve colloid osmotic pressure of 30 to 35 millimeters of mercury is greatly reduced; this diminished osmotic pressure in the blood vessels is supposed to allow the water to escape into the tissue spaces. An increase in the permeability of the vessel walls is a third explanation offered to explain so-caled primary water retention.

Of course in some cases of acute nephritis and in acute exacerbations of chronic nephritis the whole kidney swells to such an extent and the capsule becomes so tense that the circulation of blood through the kidneys is greatly reduced with a resultant marked diminution in the urinary output. These are the cases in which decapsulation or nephrotomy may be of value.

Albuminuria occurs in nearly all cases of nephritis but the largest quantities usually occur in subacute nephritis with edema and in chronic nephritis with edema. Whether there is any significance in this coincidence other than that suggested by Epstein remains to be proven. Mayrs[8] states that the protein of ordinary nephritic albuminuria is largely serum albumin de-

rived unchanged from the plasma by its passage through the glomeruli.

Other features of the water-salt complex will be considered under renal function tests.

IV. THE ALKALI BALANCE.

The carbonic acid formed by the combustion of carbon containing compounds and the organic acids formed in normal but especially in abnormal metabolism, as in diabetes, do not concern the present discussion. Here sulphuric and phosphoric acids, formed by the oxidation of protein compounds containing sulphur and phosphorus in organic combination, chiefly concern this paper; of these, only the latter in the form of acid phosphates need be thought of as it is the chief offender in nephritic acidosis. Until recently this conception has not been seriously contested; of relatively recent date, however, Bulger[9] has, by his experiments, raised the contention that an increase of undetermined acids plays a very important part in the genesis of nephritic acidosis. Whether this be true or not, it is known that in nephritis, especially in chronic nephritis without edema and in chronic nephritis with edema if uremia supervenes, a retention of acid phosphate takes place; why, no one can say. With retention of phosphates there occurs a decrease in plasma calcium; this latter factor may play a part in the convulsions and tendency toward hemorrhage observed in many of these patients.[10]

Acidosis in nephritis tends to parallel nitrogen retention and therefore diminished phthalein excretion; this is not invariable as was shown by Denis and Minot.

Nephritic acidosis does not often become severe, though sometimes the condition may be demonstrated by a decrease in alveolar carbon dioxide tension and in carbon dioxide combining power of the plasma as well as by the appearance of air hunger. Sellard's[11] clinical test will be mentioned later.

V. THE UNKNOWN TOXIC BODIES.

The fact that in many cases of nephritis, especially in cases showing nitrogen retention or those in which uremia threatens or develops, there occurs an increase in the proportion of residual or undetermined nitrogen; the suspicion has long existed that in some cases of acute nephritis but especially in chronic nephritis more particularly without edema, there appears in the blood certain toxic nitrogenous substances which play a part in the genesis of uremia and possibly in the hypertension of nephritis to be mentioned later. Evidently these substances may originate in normal metabolism and are not excreted or may be formed in a perverted metabolism and not excreted. In different cases of uremia varying proportions of the symptoms are given by edema of special organs, by urea or its kindred bodies. All the symptoms of uremia cannot, however, be explained on the above basis.

Following similar lines of reasoning, N. B. Foster[12] defined uremia as an intoxication manifested by psychomotor disorders, which is apt to supervene in nephritis; and classified his cases of uremia on a symptomatic basis as follows:

1. Convulsive or epileptiform type.
2. Cases with gradually deepening coma with no psychic disorders or signs of motor irritation.
3. Cases showing psychic disorders, hallucinations and paranoid delusions.

In all twenty of his cases[13] of convulsive or epileptiform uremia he isolated a toxic base from the blood which when injected into laboratory animals reproduced the symptoms of motor irritation and in many cases killed the animal. In the convulsive type of uremia there may often be little or no retention of known nitrogenous bodies. Uremia most frequently supervenes, however, in cases of rather marked nitrogen retention and in these caess there is decreased phthalein

excretion and acidosis is most apt to occur here. Uremia may occur in cases with little or no retention of known nitrogenous bodies and still not fall in the convulsive group.

OTHER DISTURBANCES OF PHYSIOLOGY.

Basal Metabolism.—Basal metabolism is rarely changed in acute nephritis. In subacute and chronic nephritis with edema it is usually low but may be normal; while in chronic nephritis with hypertension the basal metabolism is usually high, though it may be normal but never below normal. The causes of these changes in basal metabolism have not been satisfactorily explained. The above is sufficient, however, to emphasize the fact that nephritis is usually more than a local affection at least after it is well estabished.

Hypertension.—Blood pressure is often elevated in chronic nephritis, less often in acute nephritis. Where an elevation of blood pressure occurs in acute and chronic nephritis with edema it is very likely due to a generalized vasoconstriction resulting from the action of some toxic agent as the pressure resumes its former level when the nephritis abates. Increase in blood pressure is more frequent and more marked in chronic nephritis without edema, and in these cases it is very likely due to a general and very fundamental causative process which itself may be responsible for the nephritis.

Secondary Anemia.—Secondary anemia is a frequent finding in nephritis. It is usually mild in acute nephritis, but may be severe in chronic nephritis, especially chronic nephritis without edema. This anemia cannot be accounted for on the basis of hematuria; it is the result of a toxic action on the hemopoietic system by substances not well known.

Hyperglycemia.—The not infrequent increase in blood sugar and less frequent occurrence of glycosuria in some cases of subacute and chronic nephritis would be explained by O'Hare on the basis of vascular sclerosis in the pancreas giving rise to inadequate function of the isles of Langerhans.

DETECTION OF DISTURBED RENAL FUNCTION.

Blood Pressure.—Blood pressure should never be neglected in nephritis or those suspected. Some early cases may be first detected by this method when no other signs or symptoms have occurred.

Weighing the Patient.—This is important when it is recalled that a patient may gain 12 to 15 lbs. in weight before clinical edema becomes evident. Weighing is also important in determining the success or failure of therapeutic measures.

The Phenolsulphonphthalein Test.—This test is sufficiently familiar to all. A decrease in the excretion of this dye usually parallels the increase in total non-protein nitrogen of the blood, though there are a few exceptions. No single test is of much importance—the general trend is valuable. It must be remembered that the excretion of this dye is greatly decreased by passive congestion of cardiac origin, and unless the above parallelism obtains, suspect this condition. Cyanosis of whatever origin, results in low phthalein readings due to alterations in the dye itself. In chronic nephritis with this test constantly below 15 per cent a bad prognosis is justified. There are rare exceptions to this statement.

Sellards' Test for Acidosis. — Five grams, or slightly more, of sodium bicarbonate will, when given orally, render the urine of a normal person neutral or alkaline. If more be required, then acidosis is said to be present though no thought need be directed to this unless 10 grams or more be required.

Determination of Total Non-Protein Nitrogen of Blood.—This is the most valuable single test of renal function. Not only is it diagnostic, when retention due to congestion of cardiac origin is ruled out, but it is of the greatest value in determining therapeutic measures to be employed. By it the obstetrician performs his thera-

peutic abortions, the internist initiates special diets, while the surgeon determines his operative risks. The greater the retention of nitrogen and the more refractive it is to dietary methods, the worse the prognosis.[14]

It is only in connection with this test that I claim to have done any personal work in the preparation of this paper. Following the method introduced by Hench and Aldrich,[15] it is found that the normal titratable mercury combining power of 100 c.c. of deproteinized blood is 70 to 100 c.c. of 5 per cent aqueous bichloride of mercury. This titration value varies directly as the quantity of total non-protein nitrogen. More work is necessary before a mathematical formula, for calculating the nitrogen in milligrams, can be introduced. With the present state of development, one can in 15 to 20 minutes, determine whether there is mild, moderate or marked retention of nitrogen. Obviously this test is well worth learning. It can be carried out with almost the same facility with which we determine the quantity of sugar in urine.

There are various types of concentration and diuresis tests with and without special diets that should be employed in suspected earlier cases.

SUMMARY.

The disturbances of physiology in nephritis cannot yet be correlated with the most obvious pathological and anatomical changes found in the kidneys. These changes or alterations of physiology concern, primarily, defects in the excretion by the kidney of substances normally eliminated by this organ by a process of filtration at the glomerulus and of differential absorption in the tubules. There is no orderliness in association of these defects of function. Besides these primary alterations of function there are other disturbances of normal physiology such as an increase in blood pressure, anemia, hyperglycemia and changes in the basal metabolism, all giving to nephritis an atmosphere of a general as well as a local affection.

There are several methods for detecting the various departures from normal function; each possessing its own application and value in particular instances.

Some problems, as reduction of plasma colloids, and ordinary or special toxic bodies, are still under dispute.

CONCLUSIONS.

1. The clinician must study nephritis from the standpoint of altered functions and not from the point of view of the pathologist.

2. There are no constant relationships between alterations of different functions.

3. Each case must be handled on its own merits as revealed by tests of renal function.

4. Some therapeutic measures may be suggested by determining the quantity of plasma colloids by the refractometer.

5. In some instances nephritis takes on the aspects of a general affection.

6. An inevitable conclusion is that there are many things encountered in a study of nephritis concerning which little is known.

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CASE REPORTS AND CLINICAL SUGGESTIONS

SOME POINTS IN THE MANAGEMENT OF LABOR.*

ELLIOTT KIBLINGER, M. D.,
New Orleans.

I have but two points to which I desire to call your attention, and I feel they are of sufficient practical importance to you for the time and attention required to tell you.

A PRACTICAL AND INEXPENSIVE METHOD OF HAND STERILIZATION.

For a dime or a quarter a can of ordinary bleaching soda or chlorinated lime can be purchased. This is easily obtained, easily carried, and is a rapid, sure disinfectant and sterilizing agent. The way it is used is as follows: Place a tablespoonful in the palm of the hand and then pour sufficient water on to form a thick paste. Rub this paste all over the hands and leave in contact with skin surface a few minutes. Chlorinated lime and water generate pure chlorine gas. Of course, it is presumed that before applying this lime paste the hands have been given a thorough scrubbing with soap and water, using a nail brush.

Obstetrical surgery differs from other surgical procedures in that we can not always elect the place to operate. Many labors must necessarily be attended under adverse aseptic conditions; hence, any method of hand sterilization which is sure and easy to secure is worth while. I do not claim anything original in this method for I learned it from Dr. Alexander B. Johnson of Columbia University, New York, but I do claim that years of trial of this method have proven all one could wish in that it prevents sepsis and practically does away with the enormous morbidity of child birth.

A METHOD OF RELIEVING PAIN CONNECTED WITH CHILDBIRTH WITHOUT ANY UNTOWARD EFFECT ON THE MOTHER OR CHILD.

This suggestion consists of a modification of the old twlight sleep to which is added the use of pituitrin.

I dissolve 1/100 grain (.65 mg. of hyoscin hydrobromid and ¼ grain (.015 gm.) of morphin in a hypodermic syringe full of distilled water, then I fill another syringe with the contents of one ampule of pituitrin. At intervals of 30 minutes to one hour, some patients responding more readily than others, I inject 0.3 cc. from each of the syringes. After the third dose of each of the hyoscin and morphin solution and the pituitrin I find the patient having regular and strong pains, and as soon as the pain passes, the patient immediately goes off to sleep to be awakened by the next pain. The sleep between the pain is peaceful, natural and sound. In the past the mistake has been to use too large doses of both hyoscin and morphin and pituitrin, resulting in the mother's pulse going up to 140 or 160 beats per minute and a blue or dead baby. This brought twilight sleep, so-called, into merited disrepute. But if the drugs are given in doses as suggested they are harmless and do away almost entirely with hours of suffering, fretfulness and loss of courage which most women in labor experience.

The patient receives only about 1/24 grain (.0015 gm.) of morphin every one-half hour and only 1/600 of hyoscin (.1 mg.). I regulate the dose of each according to the effect I obtain. The pituitrin produces regular and strong pains and the hyoscin and morphin solution a practical, safe and sane pain relief.

The only objection I have found is that it requires on an average of two hours longer time to complete the labor. But is this time not well spent if we can secure for our patients practically a painless labor? Also, this extra time allows nature time to prepare the parts for the passage of the head without a tear of the birth canal.

506 Medical Building.

*Read before the Orleans Parish Medical Society, May 23, 1927.

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DR. THOMAS E. WRIGHT.

Dr. Thomas E. Wright died at his home, "The Cedars," in Monroe, Louisiana, July 5, 1927. While an attack of influenza last spring had left him with lowered vitality yet he had fulfilled all the obligations of his large practice and continued to give generously of time and service to the many civic movements in which he was interested.

Dr. Wright, a native of Lincoln Parish, was born September 8, 1876, near Choudrant and as a youth attended a small college at that place. He was graduated from the State Normal College and was principal of the high schools at Simsboro and Boyce.

Dr. Wright entered Tulane Medical School in 1906 and received his diploma in 1909. Soon after his graduation he became associated with the State Board of Health in the hookworm survey then being made in many parishes of Louisiana. In 1917 he became a member of the State Board of Medical Examiners appointed by Governor Pleasant and served as Vice President of that Board from 1917 to 1923. In 1925, he was appointed by Governor Henry L. Fuqua a member of the State Board of Health. Dr. Wright was identified closely with the purposes of the Board and at all times was an enthusiastic supporter of its activities. During the meeting of the Legislature in 1924, Dr. Wright gave unselfish, intelligent and constructive effort for needed health legislation. He worked for the passage of the tax on kerosene with the understanding that the income derived from this source would be used by the State Board of Health for the most outstanding features of public health work including the extension of full-time health service for the parishes, the payment of losses incurred by individual owners of tubercular cattle reactors and the tuberculosis programs of the Board. He believed strongly in all of the Board's efforts for public education.

Dr. Wright had a keen interest in certain phases of research and was a pioneer in experimentation with the intravenous use of quinine in acute malarial conditions. In this original field he was successful and the method he advocated is now used by physicians throughout the continent. He was honored with a medal for original research by the Fifth District Medical Society and was presented with another medal for research work by the Tri-State Medical Society of Louisiana, Arkansas and Texas.

Dr. Wright was an earnest and faithful member of the American Medical Association, the Southern Medical Association, the Louisiana State Medical Society, the Ouachita Parish Medical Society and the Fifth District Medical Society.

On June 29, 1902, Dr. Wright was married to Miss Claudie Trussell of Simsboro.

A few years after their marriage Mrs. Wright died leaving one son, Edwin Gordon Wright. Later Dr. Wright married Mrs. Robert Layton, who survives him.

Dr. Wright stood steadfastly for the high ethical ideals of the medical profession to which he was devoted. He was a man of firm faith and kindly deeds; he was active in all plans and movements which implied civic development and greater opportunity for the individual. He believed that health is fundamental to civic and personal progress. Dr. Wright will be missed by his confreres, his other friends and by the community and State. His deeds need not be graven in stone for they will live in the hearts of men.

HOSPITALS AND CLINICS OF NEW ORLEANS.

The Central Council of Social Agencies is to be congratulated upon the very efficient study that has been made of the fifteen hospitals and clinics in New Orleans. The reason for the study lies in the fact that of the five and a half million expended for social welfare in New Orleans, nearly seven-tenths of this amount was spent by the hospitals and out-patient departments. The administration of development of these hospitals and clinics presents a community problem. Sometimes it is extremely difficult to elucidate and at best to secure the proper spending of this large sum of money.

In presenting this report, the Committee is able to contrast studies which have been made in fifteen other cities, and to compare them with New Orleans. It might be well to mention some of the outstanding features of the report. It has been found that in New Orleans approximately one-third of the hospital patients are non-residents. Of these non-residents, the majority of them come from the surrounding country, but a certain few are brought in by ships from foreign ports. The study of the finances of the hospitals is of some interest. New Orleans spends per capita $4.91 and of this money over sixty per cent of it comes from the self supporting income of the hospital. Thirty per cent comes from governmental funds, and ten per cent is contributed by private subscription. The resident population of the City of New Orleans has available 6.38 beds for every thousand of population. There are only two large cities showing larger proportionate number. New Orleans stands fourth in the per capita number of patients served. In the days of care New Orleans is fifth. However, when it comes to degree of the use of beds, New Orleans is away down the list, only 62.4 per cent of the hospital beds being occupied at any one time. There are 2,667 hospital beds for use in resident service in New Orleans, of which 1,666 are entirely free and 840 which are free for pay beds in whole or in part. In the percentage of free work done in New Orleans hospitals as contrasted to hospitals of other cities, it is found that this city stands first. Over seventy per cent of the total days of care in New Orleans are given free.

It is frequently said that there are not sufficient beds for colored patients in the city. But this is not so, as shown by the study which proves that the number of beds per thousand available for the colored population is 6.06; that of the white 6.48. However, there are practically no pay beds for the colored race in the city.

The study of the clinics deserves particularly to be accentuated. New Orleans ranks second in per capita dispensary expense. The number of new patients cared for in the out-patient departments in New Orleans far out-ranks any other city from which figures are available. The same thing applies to the per capita clinic visits.

The conclusions drawn from this work should be studied carefully by every physician and everyone interested in economic and social problems. It shows definitely that the general hospital beds in New Orleans are over-supplied, although there is

a tremendous need of beds for tuberculous patients, for communicable diseases for which there are only some thirty available, and for maternity cases. This observation is of tremendous importance. It is talked from time to time the formation of additional hospitals in the city. Certain special hospitals may be needed, but it would be a waste of money to build and construct additional general hospitals. One of the outstanding developments of the study is the exceedingly high rank of the city in clinic dispensary service. The goodly part of this comes from the high percentage of free work given to the colored. However, one can not deny that a great deal of the service given at clinics is given to individuals who have sufficient means to pay for the services and yet are willing to accept the services of the physician and to pauperize themselves by accepting generously of contributions to hospital funds.

It is impossible to give all the salient features of this valuable and interesting report. Only those which are particularly interesting to the medical man have been accentuated. However, it would be advisable for the medical profession to acquaint themselves with the details of the study.

POST-FLOOD HEALTH MEASURES.

We note with considerable pleasure the timely, important and urgent warning embodied and published in the New Roads "Parish Courier Journal" of June 9, 1927, a resolution adopted by the Pointe Coupee Parish Medical Society in joint conference with the Parish Board of Health.

The resolution urges prompt vaccination against smallpox and typhoid, offering to vaccinate free of charge where necessary. It stresses the necessity of careful attention to the sanitary conditions in the recently inundated areas, advising drainage of all stagnant pools, whitewashing, and a general clean-up campaign. Then the importance of a proper supply of drinking water is stressed; boiling of all water except that from artesian wells being considered absolutely essential. Finally, a suggestion that all cases of chills and fever have a blood smear made before any quinine is given; and a warning against charbon and rabies.

The necessity of such medical advice and warning is perfectly apparent, and we feel sure that the Parish Society has acted wisely and well. The Society and the committee is to be congratulated upon its efficient handling of such a matter. This program as outlined, if followed carefully and thoroughly, will do much to preserve the health of the population of the entire State, and prevent the dreadful scourge of epidemics, which are certainly very likely to occur unless preventive measures, such as these, are observed.

TEN YEARS OF BOVINE TUBERCULOSIS WORK PUTS CAMPAIGN ON POPULAR BASIS.

While more than 1,000,000 dairy cattle, out of 30,000,000 head tested for tuberculosis, have been destroyed, the industry is in better condition today than it was ten years ago when the campaign against the disease was inaugurated. Such was the opinion expressed by Dr. John R. Mohler, chief of the Bureau of Animal Industry, United States Department of Agriculture, at the recent Eastern States Tuberculosis Conference.

Fear expressed by many people in the beginning that the campaign would turn the public taste against milk consumption has proved to be unfounded, according to Doctor Mohler. On the other hand, he said, the annual consumption of milk in the United States has increased more than 49 quarts per capita since 1918. During 1926 the public consumed 56 billion pounds of milk and cream, an increase of 2 billion pounds over the quantity consumed in 1925.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

July is the beginning of the summer recess of the Society.

Aside from the regular meeting of the Board of Directors the Society has held but one meeting in the form of a Second Quarterly Executive Meeting.

The questionnaire relative to group insurance for members of the Society has been coming in very slowly. To date only 175 members have signified their intention of subscribing to this insurance. A second questionnaire has been sent out to the members which they are urgently requested to fill out and return to the office of the Secretary so that at the first Fall meeting this question of group insurance may be definitely disposed of.

The Board of Directors has recommended the holding of a Memorial Night sometime in the early Fall in memory of the late Dr. Frederick W. Parham. Full details of this meeting will be furnished the membership as soon as completed.

A dinner in honor of Dr. Rudolph Matas on his return from his tour of Europe is to be held. A special committee, with Dr. Paul J. Gelpi as Chairman has been appointed to complete arrangements.

The Board of Directors and the Society in open meeting have approved the plans of a Committee on Crippled Children of the Central Council of Social Agencies. This Committee is composed of all of the Orthopedic Surgeons in this city and many of the Social Service Workers under the Chairmanship of Mr. Nicholas Bauer, Superintendent of the New Orleans Public School System. This Committee plans to develop a program whereby a complete census of crippled and physically defective children in the Parish of Orleans will be obtained, and through publicity it is hoped to impress the parents of those children who have had no medical attention with their responsibility. Through the facilities now available it is hoped that these children will receive proper treatment.

Drs. Clifford J. Vedrenne and Leonhard E. Devron were elected to Active Membership in this Society.

Drs. Henry Laurens and Henry L. Meyer were elected to Associate Membership in this Society.

At the Quarterly Executive Meeting an interesting paper was read by Miss Mary Louise Marshall, Assistant Librarian, on her recent visit to the Annual Convention of the Medical Library Association which was held in Washington, D. C.

Dr. M. F. Wilson showed interesting moving pictures on the preparation of vaccines and serums in the Parke-Davis & Company Laboratories.

Dr. B. R. Heninger and Dr. L. W. Alexander have resigned from the Society on account of changes in their residence to another State.

The following resolutions proposed by the Condolence Committee, Dr. Daniel J. Murphy, Chairman, were adopted at the quarterly Executive Meeting:

"Whereas, God in His Wisdom saw fit to remove from us by death Dr. Percival Butler McCutcheon, Dr. Frederick William Parham and Dr. Florena Gates Rich, Members of this Society,

"Be it Resolved; that the Society extend to the families of the deceased its condolence and profound sympathy in their bereavement.

"It is further recommended that a copy of these resolutions be sent to the families of the deceased."

All members changing their addresses will kindly notify the Assistant Secretary so that the mailing files may be corrected.

There will be no further meetings of the Society until the first meeting in October, which will be Monday, October 10th, 1927.

The Membership of the Society is 482.

REPORT OF THE TREASURER.

Actual Book Balance, 5/31/27	$ 988.58
June Receipts	551.73
Total Receipts	$1,540.31
Expenditures	513.81
	$1,026.50
Outstanding Checks	30.00
Actual Book Balance, 6/30/27	$1,056.50

REPORT OF LIBRARIAN.

The Library has been in constant use during June—in spite of the warm weather. Most of the calls were for immediate Reading Room use.

One bibliography has been added to our files, on Surgery of the Mitral Valve.

Gifts have been received from Montefiore Hospital, New York; Iowa State Medical Library, California University Medical School Library, St. Louis Medical Society, T. J. Dimitry, Jefferson Co. and University of Louisville Medical Library.

94 books have been added to the Library during June. Of these 49 were received by binding, 28 by gift, 7 by purchase and 10 from the New Orleans Medical and Surgical Journal. A notation of titles is appended.

New Books—June.

Annals of Medical History, v. 2-8, 1919-26.

Levinson—Examination of Children, 1927.

Einhorn—Duodenal Tube, 1926.

Assn. for research in nervous and mental diseases.—The Human Cerebrospinal Fluid, 1926.

Cushing—Studies in Intracranial Physiology and Surgery, 1926.

Graham—General Surgery, 1926.

Rieux—La Tuberculose Pulmonaire Latente, 1926.

Fenton—Shell Shock and its Aftermath, 1926.

Fitch—Mineral Waters of the U. S. and American Spas., 1927.

Perry—Manual of preliminary dietetics, 1926.

Bishop and Nielson—History of Cardiology, 1927.

A. M. A.—New and non-official remedies, 1927.

A. M. A.—Council on Pharmacy and Chemistry. Annual Reprint of Reports, 1926.

A. M. A.—Council on Pharmacy and Chemistry. Investigations of the Therapeutic Research Committee, 1926.

Amer. Pediatric Society Transactions, v. 35, 1923.

Philadelphia—College of Physicians, v. 48, 1926.

Rockefeller Foundation—Methods and Problems of Education, v. 7, 1927.

Carnegie Foundation for advancement of teaching—Dental Education in U. S. & Canada, 1927.

U. S. Army—Medical Department in World War—Surgery, v. 11, pt. 1, 1927.

SEALE HARRIS CLINIC.

The Seale Harris Clinic announces to the medical profession of Birmingham that Seale Harris, Jr., B.S., M. D. (Johns Hopkins '26), has been appointed resident physician to the Gorgas Hospital.

The Gorgas Hospital has been accepted unqualifiedly as a Class A hospital by the American College of Surgeons. The physician who inspected it said: "The standards of the Gorgas Hospital are far above the requirements of the College of Surgeons." The Gorgas Hospital has also been passed upon favorably by the American Medical Association as "an approved hospital for internship." An interne will be appointed later.

PREPARED MEDICINES.

The United States is the world's largest producer, consumer and exporter of prepared medicines, a report issued today by the Commerce Department's Chemical Division reveals. According to the last census the value of patent medicines and druggists' preparations manufactured in this country in 1925 was nearly $320,000,000. During the same period our exports of this class of commodity had a value of nearly $20,000,000.

There is no country, the report states, where the American drug salesman has not penetrated, and the rapidly increasing volume of our export trade indicates that his efforts have been fruitful of results. The United States has only three competitors in the international trade in prepared medicines—the United Kingdom, France and Germany. In 1925 British exports were 66 per cent of those of the United States; French exports were about 60 per cent while German shipments amounted to approximately one-half.

French exports of medicines and pharmaceuticals are distributed throughout the world and enjoy no distinct advantage in any particular region. Germany is the chief supplier of prepared medicines to continental markets, her largest business being with contiguous countries.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

DR. PERCIVAL BUTLER McCUTCHEON.

Dr. P. B. McCutcheon, a member of the State Board of Health and Honorary Vice President of the Board during the strenuous Yellow Fever seasons of the late nineties, died May 12th, at his home in New Orleans, after a long illness, leaving to his family the heritage of a name honored by a lifetime of good citizenship and unswerving devotion to duty, both in his profession and to the public. He was born at Pass Christian, Miss., February 7th, 1852, so that he was just a little more than seventy-five years old at the time of his death. He was a graduate of the Virginia Military Institute, where he served as Assistant Professor of Latin, coming later to New Orleans to take up the study of Medicine. He was a Resident Student of the Charity Hospital and received his degree as Doctor of Medicine in the Medical Department of the State University in 1879, in which institution he served a number of years as Assistant Demonstrator of Anatomy.

With the creation by Congress of the National Board of Health, represented in New Orleans by Drs. S. M. Bemiss and Stanford E. Chaille, Dr. McCutcheon was personally chosen as one of the Federal Sanitary Inspectors, a position of great responsibility on account of the friction then existing between the local Health Authorities and those of certain interior States, and one which he filled with tact and ability from 1879 to 1883.

Dr. McCutcheon was one of the most earnest and faithful coadjutors of certain other leading physicians of Louisiana in maintaining the State Medical Society, a body of men devoted to upholding the highest ideals of the profession, and during a number of years his untiring efforts in the capacity of Secretary of that organization undoubtedly kept it alive when otherwise it might have expired through sheer indifference of the profession at large. That was in the days antedating the work of the American Medical Association.

When the State Board of Health was reorganized under Act 192 of 1898 it became necessary to select two other New Orleans physicians to serve under Dr. Edmond Souchon, named by the Governor as President, and in view of conditions then existing, it was a signal mark of distinction that Dr. McCutcheon, with Dr. Arthur Nolte, were the two men chosen for that responsible and thankless service, entirely without emolument and constantly exposed to hostile criticism. It was also a mark of distinction that Dr. McCutcheon was honored by his colleagues by being made honorary Vice President of the Board, in which capacity he had to deal with an emergency arising from the report of a case suspected of being Yellow Fever, but fortunately in error, during the absence of the President.

Although a very busy physician, Dr. McCutcheon found time to devote to his full share of benevolent work in the city of New Orleans. He was physician to the Protestant Episcopal Home on Jackson Avenue for forty years, and to the Waldo Burton Memorial Home for thirty years. During the time that the public Clinic of the Orleans Anti-Tuberculosis League was located on Tulane Avenue near Elk Place, Dr. McCutcheon served quite a while as one of the volunteer staff of Examiners, doing faithful and efficient service in that great humanitarian work, with its resulting saving of human lives.

Dr. McCutcheon was identified in religious association with Trinity Episcopal Church, in which his wife, who was Miss Annie Salkeld Davis, was an active worker. She and their grown children, two sons and a daughter, survive him. The doctor was, perhaps, not as well known to the younger generation of physicians as to those of his fellow workers whose numbers are being called from time to time with distressing frequency in recent years, but his name will long be a household word among the people of the Garden District, so many of whom he helped to bring into the world, and to the poor of the city who never called on him in vain for help in time of need, and especially to the orphans who grew up in the asylums so faithfully attended by him.

REPORT OF COMMITTEE ON HOSPITALS.

To the Chairman and Members,
House of Delegates, 1927,
Louisiana State Medical Society.

Gentlemen:

In addition to some correspondence between the members and the Chairman of the Committee on Hospitals, a meeting was held, with a quorum present, at which various topics pertaining to hospitals were discussed. As a result, it was decided to present a report in the form of resolutions which are submitted for your consideration and final action.

"Whereas Act No. 62 was passed by the legislature of 1926 with the view of diminishing the

abuse of the services of the New Orleans and the Shreveport Charity Hospitals and of limiting said services, apart from emergencies, to the worthy poor, which legislation had been endorsed by this society,

Be it resolved that the action of the legislature be heartily commended and that the authorities of the New Orleans and the Shreveport Charity Hospitals be urged to do all in their power to enforce the provisions of the law both in their letter and their spirit.

Be it further resolved that all the other hospitals in the State having free or charity departments be requested to adopt an analogous course which would follow the spirit of the law."

"Whereas the latest list of hospitals of fifty beds and over published by the American College of Surgeons shows that 19 such hospitals have been approved out of a possible 23 in Louisiana.

Be it resolved that, while this society feels gratified at the showing made by the hospitals of the state, the few remaining as not yet approved be requested and encouraged to attain the minimum standard in order that the State of Louisiana may show 100% of approval for its hospitals."

"Whereas persons are sent frequently to the various hospitals without any history or data concerning their case and such information would often be of great value, especially for the patient's own sake, to the attending physician on the staff,

Be it resolved, that this society suggests to the physicians of the state the advisability of sending with the patient all the data available on the case,

Be it further resolved that the hospitals be requested, in return, to inform the doctor having referred that patient as to what was done and as to any further treatment that may be indicated."

Respectfully submitted,

Chas. Chassaignac, Chairman,
J. L. Scales,
A. J. Comeaux.

INTER-STATE POST GRADUATE ASSEMBLY OF NORTH AMERICA.

We have received a program of the next meeting of this organization, to be held in Kansas City, Mo., October 17-20, 1927. One is greatly impressed with the amount of material to be covered in the manuscripts that are to be presented during this three-day meeting, and by the prestige and reputation of the men whose names appear on the program. Undoubtedly this is to be a wonderful scientific assembly. Many foreigners are included on the program, from Germany, Italy, Belgium, Canada, England, etc. The days are to be full ones, as outlined, with sessions beginning at 7 a. m., 1 p. m., and 7 p. m. All branches of medicine are included. Certainly this should be an extremely profitable meeting for any of us who are able to get away at that time. Dr. G. W. Crile of Cleveland is in charge of the program, and states that pre-assembly clinics will be held on October 14 and 15 as well. The program has been posted on the bulletin board in the office, 1551 Canal Street.

CLINICAL CONGRESS OF PHYSICAL THERAPY AND SIXTH ANNUAL MEETING AMERICAN COLLEGE OF PHYSICAL THERAPY.

The American College of Physical Therapy announces that plans have been completed for its 1927 Clinical Congress of Physical Therapy and 6th Annual Meeting, to be held at the Hotel Sherman, Chicago, October 31st to November 5th.

The program is extraordinary in character. The first three days are to be devoted to a school of instruction. For this purpose the country's most prominent clinicians and teachers have been selected and intensive fundamental and clinical training will be given. There will be one day of sectional meetings, the following distinct sections being represented: (1) Medicine, Diagnosis, Pediatrics and Endocrinology; (2) Surgery, Gynecology, Urology, Orthopedics; (3) Eye, Ear, Nose, Throat, Oral Surgery.

The fifth day of the Congress will be devoted to a Joint Session. Numerous special addresses by some of the foremost leaders in medicine will be offered. These will be of general interest to all whether in one specialty or another. The closing day will be given over to hospital and dispensary clinics.

Inasmuch as physical therapy has made such rapid strides in the past few years, a gathering such as this is of vital interest to every practitioner and specialist. The program in itself is attractive but additional features in scientific and commercial exhibits, demonstration clinics, small group conferences, etc., will help to make this congress an unusual event.

Physicians in good standing in their county societies are eligible to attend as are also technicians and doctor's assistants properly vouched for.

Those contemplating attendance are urged to enroll by mail as early as possible. The fee for the instruction classes is $10.00 payable by all whether fellows of the college or not. Non-fellows of the college must pay in addition a registration fee to the assembly of $5.00. Send for program and information to Chairman, Convention Committee.

American College of Physical Therapy,
Suite 820, 30 N. Michigan Ave.,
Chicago.

164,002 PHYSICIANS IN NEW AMERICAN MEDICAL DIRECTORY.

For more than twenty years the American Medical Association has been publishing a directory of the medical profession. Ten editions have appeared, the last one (1927) being just off the press.

The first edition (1906) contained 128,171 names of physicians in the United States, its dependencies and Canada. The new Tenth Edition includes 164,002 names. There is an increase of 2,644 over the previous edition. If the Directory were merely a list of names and addresses of physicians it would not have great significance. That information is valuable, but of far greater value is the fact that the Directory gives proof of the right of each physician listed to practice medicine—namely, time and place of graduation and year of license. In addition, society membership, specialty and office hours are included. Capital letters indicate those who are members of their county medical society, and a special symbol follows the names of those who are Fellows of the American Medical Association.

The information concerning hospitals and sanitariums of the United States is another valuable and extensive feature. Descriptive data appears following the names of 7,816 hospitals and sanitariums such as type of patients handled, capacity, and name of superintendent or director.

The list of physicians in each state is preceded by a digest of the laws governing medical practice in that state; members of licensing board; state board of health; names of city, county and district health officers; officers of constituent state associations and component county and district medical societies. The book, in short, is one vast source of reliable data concerning the personnel of the medical profession and the institutions and activities closely related to it. It contains 2,575 pages and is sold for $15.00. Published by the American Medical Association, 535 North Dearborn Street, Chicago.

HISTORY OF MEDICAL PRACTICE IN THE STATE OF ILLINOIS.

The Illinois State Medical Society announces the completion of the first of two volumes of this history, which has been prepared under the supervision of its committee in commemoration of the Society's seventy-fifth anniversary. The second volume is to be ready soon.

The first volume of the work records events from the earliest available knowledge of the conditions in the Illinois county up until the year 1850. The second volume brings the narrative up to date. The material has been obtained from historic documents, personal letters, and diaries, and the addition of rare maps and old portraits is of considerable interest.

It is planned to extend the work in future years, so to honor the men and institutions instrumental in the progress of medical thought in that great state. The edition is limited and will not be reprinted. Orders may be sent to Committee on Medical History, Illinois State Medical Society, Medical and Dental Arts Building, 185 North Wabash Avenue, Chicago, Illinois, Charles J. Whalen, M. D., Chairman.

Dr. Randolph Unsworth, after completing a two year intensive course in psychiatry at St. Elizabeth's Hospital, Washington, D. C., has returned to New Orleans to practice his specialty.

DIED: J. E. Mumford, Pleasant Hill, La.; Louisville (Ky.) Medical College, 1875; aged 74; died May 17 of angina pectoris.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The South Mississippi Charity Hospital at Laurel reports for the year 1926 treatment of 6,500 patients with 2,000 operations. Dr. R. H. Foster is superintendent and has as his assistants Drs. H. J. Mixon and T. R. Beach.

The East Mississippi Medical Society at its meeting June 16th at Newton, Missisippi, presented the following program:

"The Value of Cystoscopic Examination in Bladder Diseases"—Dr. J. T. Bailey.

"Cases That Need Early Diagnosis"—Dr. S. H. Hairston.

"Tonsils and Adenoids in Children"—Dr. A. G. Touchstone.

"Functions of the Gall-Bladder"—Dr. Leslie V. Rush.

The next meeting will be held in Meridian, August 18th.

Dr. Leslie V. Rush and Dr. Chas. G. Wright have recently located in Meridian.

The section on Eye, Ear, Nose and Throat of the Mississippi State Medical Association at the Jackson meeting adopted a resolution of sympathy for the flood victims. Dr. Montgomery was chairman of this section but was unable to be present.

The Issaquena-Sharkey-Warren County Medical Society presented the following program at the meeting in Vicksburg, July 12th:

"Intestinal Infections in Children"—Dr. O. C. Knox.

"Prognosis in Kidney Disease"—Dr. Leon S. Lippincott.

"Medical Ethics"—Dr. E. F. Howard.

Dr. Thomas R. Beech, who for the past twelve months has been resident physician at the South Mississippi Charity Hospital in Laurel, has resigned and will resume private practice in Ellisville, August 1st.

Drs. B. L. Newell of Houlka and W. F. Hand of Lumberton have been appointed resident physicians at the South Mississippi Charity Hospital.

Dr. H. J. Mixson, Assistant Superintendent of the South Mississippi Charity Hospital, is spending his vacation in Florida.

The Staff of the Vicksburg Sanitarium presented the following program at its meeting, July 11:

"Meningeal Hemorrhage in a Child"—Dr. G. M. Street.

"Catharsis in Acute Appendicitis"—Dr. A. Street.

"Epilepsy"—Dr. L. J. Clark.

"Malignant Lymphoblastoma of the Inguinal Region"—Dr. W. H. Parsons.

The Tri-County Medical Society met in Tylertown, June 14th. The program was devoted to infant feeding and infectious diarrhea in infants. Papers were presented by Drs. R. E. Sylverstein, D. T. Brock, and J. T. Brumfield.

The next meeting will be held in Brookhaven, September 13th. President John Darrington is expected to be guest of honor.

The King's Daughters Hospital at Brookhaven is standardizing and has asked for inspection. Its staff officers are: Dr. H. R. Fairfax, President; Dr. O. N. Arrington, Vice-President; Dr. R. E. Higdon, Secretary-Treasurer. Miss M. A. Brunner is Superintendent of Nurses and Miss Boones, technician, is in charge of the laboratory and x-ray.

COUNTY HEALTH OFFICERS FOR MISSISSIPPI.

County	Name	Address
Adams	Dr. W. H. Aikman	Natchez.
Alcorn	Dr. M. W. Robertson	Rienzi.
Amite	Dr. D. F. Stubblefield	Liberty.
Attala	Dr. J. W. Comfort	Kosciusko.
Benton	Dr. Frank Ferrell	Ashland.
Bolivar	Dr. R. D. Dedwylder	Cleveland.
Calhoun	Dr. Eli Powell	Vardaman.
Carroll	Dr. J. P. T. Stephens	Vaiden.
Chickasaw	Dr. J. Rice Williams	Houston.
Choctaw	Dr. J. James	Ackerman.
Claiborne	Dr. W. N. Jenkins	Port Gibson.
Clarke	Dr. J. T. Googe	Quitman.
Clay	Dr. J. C. Ellis	West Point.

Coahoma—Dr. R. R. Kirkpatrick—Clarksdale.
Copiah—Dr. W. L. Little—Wesson.
Covington—Dr. G. T. Cranford—Seminary.
DeSoto—Dr. A. L. Emerson—Hernando.
Forrest—Dr. W. D. Beacham—Hattiesburg.
Franklin—Dr. C. E. Mullins—Bude.
George—Dr. R. F. Ratcliff—Lucedale.
Greene—Dr. M. M. Magee—Avera.
Grenada—Dr. T. J. Brown—Grenada.
Hancock—Dr. C. M. Shipp—Bay St. Louis.
Harrison—Dr. Dan J. Williams—Gulfport.
*Hinds—
Holmes—Dr. B. D. Blackwelder—Lexington.
**Humphreys—
**Issaquena—
Itawamba—Dr. N. W. Nanney—Fulton.
Jackson—Dr. John M. Kittrell—Pascagoula.
Jasper—Dr. C. E. Burnham—Bay Springs.
Jefferson—Dr. W. H. H. Lewis—Fayette.
Jefferson Davis—Dr. G. C. Terrell—Prentiss.
Jones—Dr. W. B. Harrison—Laurel.
Kemper—Dr. C. T. Bell—DeKalb.
Lafayette—Dr. E. S. Bramlette—Oxford.
Lamar—Dr. R. G. Lander—Purvis.
Lauderdale —Dr. W. W. Reynolds—Meridian.
Lawrence—Dr. B. S. Waller—Silver Creek.
Leake—Dr. I. A. Chadwick—Carthage.
Lee—Dr. C. St. C. Guild—Tupelo.
Leflore—Dr. C. P. Coogle—Greenwood.
Lincoln—Dr. W. H. Frizell—Brookhaven.
Lowndes—Dr. J. W. Cox—Columbus.
Madison—Dr. A. P. Durfey—Canton.
Marion—Dr. A. D. Simmons—Columbia.
Marshall—Dr. Ira B. Seale—Holly Springs.
Monroe—Dr. J. M. Ackers—Aberdeen.
Montgomery—Dr. J. O. Ringold—Winona.
Neshoba—Dr. Claude Yates—Philadelphia.
Newton—Dr. W. G. Gill—Newton.
Noxubee—Dr. J. D. Green—Brooksville.
Oktibbeha—Dr. H. L. Scales—Starkville.
Panola—Dr. G. H. Wood—Batesville.
Pearl River—Dr. J. W. Shackelford—Poplarville.
Perry—Dr. B. T. Robinson—New Augusta.
Pike—Dr. W. S. Lampton—Magnolia.
Pontotoc—Dr. R. P. Donaldson—Pontotoc.
Prentiss—Dr. W. H. Anderson—Booneville.
Quitman—Dr. A. C. Covington—Marks.
Rankin—Dr. J. B. Ainsworth—Florence.
Scott—Dr. W. C. Anderson—Forest.
Sharkey—Dr. A. K. Barrier—Rolling Fork.
Simpson—Dr. R. E. Giles—Mendenhall.
Smith—Dr. W. R. Ward—Raleigh.
Stone—Dr. S. E. Dunlap—Wiggins.
**Sunflower.
Tallahatchie—Dr. W. E. Jenkins—Charleston.
Tate—Dr. J. S. Eason—Coldwater.
Tippah—Dr. W. M. Murry—Ripley.
Tishomingo—Dr. T. P. Haney, Jr.—Iuka.
Tunica—Dr. W. H. Williams—Tunica.
Union—Dr. C. M. Roberts—New Albany.
Walthall—Dr. B. L. Crawford—Tylertown.
Warren—Dr. S. Myers—Vicksburg.
Washington—Dr. A. J. Ware—Greenville.
Wayne—Dr. O. A. Lomax—Waynesboro.
Webster—Dr. W. H. Curry—Eupora.
Wilkinson—Dr. C. E. Catchings—Woodville.
Winston—Dr. E. L. Richardson—Louisville.
Yalobusha—Dr. R. J. Criss—Coffeeville.
Yazoo—Dr. W. E. Noblin—Yazoo City.

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*Dr. J. B. Black, Director of the Hinds County health department, has accepted a position with the American Child Health Association for work in Tennessee. Dr. Black will leave on July first. Dr. C. C. Applewhite, Director of County Health Work for the Mississippi State Board of Health, will be in temporary charge until Dr. Black's successor can be selected.

**It is planned to establish full-time co-operative health departments in Humphreys, Issaquena and Sunflower counties within thirty days, at which time full-time county health officers will be selected by the Board of Health and the Board of Supervisors. The present Health Officers will serve until they are succeeded by full-time men.

The Homochitto Valley Medical Society met in Natchez, July 14th, and presented the following program:

"Post-Operative Ileus"—Dr. R. D. Sessions.

"A Case of Unusual Temperature Disturbance"—Drs. W. R. Brumfield and W. J. Grady.

"Treatment of Quinine Idiosyncrasies"—Dr. J. S. Ullman.

RESULTS OF MISSISSIPPI STATE BOARD OF HEALTH EXAMINATIONS, JUNE 21-22, 1927.

The following physicians were granted license to practice medicine in Mississippi after passing the examinations:

H. E. Austin, Meridian; S. L. Brister, Greenwood; McOyd Currie, Magee; J. F. Eckford, Starkville; J. G. Locan, Natchez; L. B. Moseley, Jackson; T. J. Parks, Brooksville; Richard H. Walker, Jr., Hattiesburg; R. B. Zeller, Yazoo City; R. J. Peterson, Greenwood; J. J. Savell, Bailey; H. T. Beacham, Hattiesburg; R. C. O'Ferrall, Jackson; Wm. F. Hand, Barth; Sam L. Hutchinson, Tupelo; Ellis C. Moore, Carthage; H. D. Robinson, Canton; Norman E. Applewhite,

Jackson; L. V. Rush, Meridian; R. B. Ray, Kosciusko.

The following physicians were granted license to practice medicine in Mississippi through reciprocal agreement with other states:

E. A. Canada, J. P. Evans, J. E. Garrison, P. M. George, H. I. Gosline, J. F. Lucas, C. H. Harrison, F. R. Maskrey, R. T. Smith, Hyman Tucker, J. W. Pafford, DeWitt Hamrick, and M. F. Atwood.

The following students in medicine were successful in passing the examinations on the first two years in medicine:

E. M. Anderson, W. E. Anderson, J. D. Biles, Jr., Geo. H. Butler, T. B. Butler, Jr., H. F. Garrison, Jr., Geo. L. Kaiser, Stirling S. McNair, F. J. Martin, W. L. Slaughter, J. D. Roberts, Jr., J. P. Ward, Geo. E. Riley, Chas. W. Emerson, M. B. Ware, H. B. Goodman, N. B. Lewis, J. W. Lipscomb, Jr., Paul Jackson, W. M. Coursey, James A. McCallum.

Dr. John A. Mead, for past year and a half connected with the Finkbein Lumber Co., of D'Lo, Miss., has returned to Logtown, Miss., where he formerly practiced and has resumed practice.

DIED: Henry Lee Crook, Jackson, Mississippi; Louisville (Ky.) Medical College, 1891; member Mississippi State Medical Association; formerly county health officer; aged 58; died May 5 at a local hospital of pulmonary embolism following a prostatectomy.

DIED: Frank T. Carmack, Iuka, Mississippi; Vanderbilt University School of Medicine, Nashville, Tennessee, 1880; member of the Missisippi State Medical Association; aged 70; died April 12, of paralysis.

DIED: Benjamin J. McCleskey, Atlanta, Mississippi (licensed Mississippi, year unknown); aged 81; died May 11 of heart disease.

DIED: Charles Clifton Wells, Darbun, Mississippi; Memphis (Tenn.) Hospital Medical College lege, 1908; aged 46; died May 8.

DIED: Nathan Lytle Clark, Meridian, Miss.; Louisville (Ky.) Medical College, 1883; formerly Professor of Theory and Practice of Medicine, Mississippi Medical College, Meridian; aged 70; died May 17, of hemorrhage, due to gastric ulcer.

MEDICAL SCHOOL AND HEALTH CENTER IN PEKING.

"In spite of disturbed conditions in China the Peking Union Medical College, a modern teaching and research center, built, equipped and maintained by the Foundation, continued its work without interruption during 1926. In the medical school there were sixty-four undergraduate students and eighty-two physicians doing advanced work. The school of nursing enrolled twenty-three pupils and twelve graduate students. Of the eighty-two teachers, forty-three were Chinese and thirty-nine were foreigners.

"The large proportion of Chinese teachers reflects a policy which was adopted when the institution was planned in 1916. The aim has always been to develop a wholly Chinese teaching staff and ultimately to transfer the college and hospital to Chinese auspices. This plan has been so consistently followed that the first step could be taken safely in the early future.

"Even now, should an emergency arise, there would be enough Chinese staff members to constitute more than a skeleton organization without any foreigners at all. The plant could be operated and the hospital kept in service. Even the instruction of students could be creditably continued in almost all departments, in a few on quite the present basis. For the hospital superintendent, the superintendent of mechanical operation, the heads of two departments, the second men in others, promising juniors in the rest, a large group of the nurses, many of the secretaries, practically all the typists, and the subodinate personnel are Chinese. A competent Chinese director for the whole institution could probably be found either from within the present staff or from a group of well-trained Chinese doctors who have had administrative experience elsewhere. A premature and hasty transfer to Chinese control would no doubt be unfortunate for the institution, but it need by no means be disastrous, provided the Chinese staff was permitted to carry on without interference from political intrigue or public disorder.

"For obvious reasons China has offered no opportunity for public health work of the kind which the Foundation is prepared to undertake. There has been no stable government with which to enter into relations. The Peking Union Medical College has, however, co-operated with the Metropolitan Police Department in creating a health center, which during 1926 had its first full year of operation. The activities have included sanitation, the gathering of vital statistics, the control of communicable diseases, and medical service through a clinic which does both curative and preventive work. Doctors, laboratory workers, sanitary inspectors, and visiting nurses have constituted the staff."—Reckefeller foundation.

BOOK REVIEWS

General Surgery: Ed. by Evarts A. Graham, A. B., M. D. (Practical Medicine Series). Year Book publishers. 1926. 726 p.

This little volume represents, briefly but fully, an abstract of all the important writings in surgical literature that were published during the year 1925. It is a very successful effort to bring to the attention of the profession, especially the general surgeon, all the improvements, inventions, discoveries, and advancements that have been made in sugery within very recent times. In several instances the writer adds a note or two to emphasize a certain subject, or present some criticism of the subject at hand.

The general plan of presentation is excellent. The general surgical subjects, such as roentgen-ray, anesthesia, asepsis, etc., are first explored and discussed. These are followed by a presentation of the latest thoughts, ideas, and experiments on the surgery of the various parts of the body. The presentation is quite systematic and the writer has made ample provisions to make it interesting. The book affords a very simple way in which the general surgeon may keep up with the latest advancements in surgery without having to read through lengthy articles.

FRANK L. LORIA, M. D.

The Human Cerebrospinal Fluid: By the Association for Research in Nervous and Mental Diseases. New York, Paul B. Hoeber, Inc. 1926. 568 p.

After reading through this text, I can only repeat what the editorial committee has written about it in the preface, "It is a complete and comprehensive survey of the human cerebrospinal fluid."

The methods used, that is, the discussion and the questioning of the author, after each of the subjects discussed, is unique and is a wonderful way to impress the subject upon the reader.

A. V. FRIEDRICHS, M. D.

History Taking and Recording: By James A. Corscaden, M. D. New York, Paul B. Hoeber, Inc. 1926. 78 p.

This book is divided into two parts:

1. The General Principles of Taking and Recording Histories.
2. A List of Terms Employed in History Taking.

I suppose that it is the intention of the author that this book should be used as a reference outline, and if that is his object, it serves an excellent purpose. The volume contains some very good suggestions and it is certainly of value to the medical reader, especially students and young practitioners. I recommend it highly.

HAROLD A. BLOOM, M. D.

Ophthalmic Year Book: Volume 2, ed. by William H. Crisp. Chicago, Ophthalmic Pub. Co. 1926. 315 p.

Most of us read too much and think too little. We disconnect our brains, open our eyes, and then read; because it is the easiest way.

There are in this country probably several hundred ophthalmologists who have by hard work trained themselves to read with their eyes and their brains at the same time. They know what they know and retain what is worth while when they read. Of these, at least twenty-five are directly or indirectly connected with the American Journal of Ophthalmology and its first cousin, the Ophthalmic Year Book. They force themselves daily into the rather arid desert of medical literature with its occasional oasis of new thought to gather the few worth while ideas which must be reassembled to be palatable and helpful for you and me.

Volume 23 is a worthy member of the family. Better than any other publication, it tells you what is being done in the entire ophthalmic world. It represents the greatest value in our specialty.

No ophthalmologist can give patients the best chance to get well without knowing what others are doing under similar conditions. The most practical way of accomplishing this is to read the Ophthalmic Year Book and refer to it often.

Abstracts help us gain a better general knowledge of progress in any field, tell us the source of technical and specific information if desired, and above all, aid us in the better understanding of the individual patient, thus facilitating recovery. If the abstracts were about twice their present length these fundamentals would be more easily accomplished as compared with the longer though less accurate abstracts in the German Centralblatt. The additional cost would be more than justified by the increased usefulness and value.

The chapter on Retina was not written this year by Dr. Feingold. From a sentimental standpoint, that made a big difference to me.

We owe the men who created and who perpetuate the Year Book a debt of gratitude.

CHARLES A. BAHN, M. D.

Birth Injuries of the Central Nervous System: By Frank R. Ford, Bronson Crothers and Marian C. Putnam. Baltimore, Williams & Wilkins Co. 1927. 164 p. (Medicine Monographs.)

The book is in two parts, the first part written by Ford on cerebral birth injuries and the second part by Crothers & Bronson on spinal cord birth injuries. Ford, in his introduction, states that substantial agreement has been reached by most authorities on the immediate effects of cerebral birth injury but that there is little exact information on the late results; and that all types of congenital paralysis, athetosis, epilepsy, amentia and even hydrocephalus have been attributed to birth trauma, often without the slightest evidence. The purpose of his paper is, he states, to attempt a more exact definition of the group of true cerebral birth injuries. His studies were made of cases from the pediatric and obstetrical records of Johns Hopkins Hospital. He gives a comprehensive review of the work that has been done for birth injuries. He discusses the pathological anatomy of birth injuries; the cause of injury; the results of cerebral injury; the relation of injury to spastic paralyses, to hydrocephalus, to epilepesy, and to mental defect. From his studies he draws the following "tentative" conclusions:

1st. Congenital diplegias are not to be attributed to meningeal hemorrhage at birth but are the result of various pathological processes of intra-uterine life.

2nd. Cerebral birth injuries are rare rather than common and the great mass of infantile palsies can no longer be lightly attributed to faulty obstetrical procedures.

3rd. No final statement can be made about the relation of intracranial birth injury and chronic hydrocephalus.

4th. The common diffuse meningeal hemorrhage which is not large enough to cause death apparently leaves no residuum in the majority of cases. The real birth injuries to the brain are caused by the rarer intracerebral hemorrhages, by depressed fracture, by some encapsulated meningeal hematoma.

5th. That the true cerebral birth palsies are represented by congenital hemiplegias, the monoplegias and the unequal bilateral spastic paralysis. This would mean that about six per cent of all infantile cerebral palsies are due to birth injuries.

6th. About two or three per cent of all epilepsies are due to birth injury. Severe grades of mental defect are probably not related to birth injury with the exception of that type which develops with frequent convulsions.

In part two of this book Crothers and Putnam report twenty-eight cases of birth injuries of the spinal cord with comments on each case. They then give a brief summary of the articles that have been published on this subject. They state that a study of the literature and a review of their own cases lead to the definite conclusion that most of the cases reported are due to the imposition of the unphysiological force of traction. They suggest that an important source of disability might be avoided if obstetrical text books laid stress upon the danger of traction in delivering the infant.

RENA CRAWFORD, M. D.

Clinical Neurology: Largely based upon the book by Prof. Dr. Hans Curschmann: By Edward A. Strecker, A. M., M. D., and Milton K. Meyers, B. S., LL.B., M. D. Philadelphia, P. Blakiston's Son & Co. 1927. 410 p.

The authors, who have largely followed the book by Professor Curschmann, state in their foreword that they have attempted to give a short, concise work which could be readily referred to by the busy general practitioner or by the student. In this object they have admirably succeeded.

The description of the cases are short, concise and well arranged. Their method of giving a paragraph at the beginning of each condition, with a short synopsis of the cardinal points to be looked for, will make it most convenient for the men who are checking on particular cases.

It would seem in some instances that more detail would be desirable, but on the whole the book is well written and gives sufficient to serve as a guide for further reference and study of a case, and would be an addition to the library of the neurologist as well as the general practitioner. It would seem to the writer that a book of this sort is timely and should be a great boon to those physicians who are making an effort to give their patients the best that is in them, and it should stimulate to a considerable extent the interest in neurological conditions, which is so often lacking, and should prevent their being dismissed with a shrug.

E. McC. CONNELY, M.D.

Shell Shock and Its Aftermath: By Norman Fenton, Ph.D. St. Louis, C. V. Mosby Co. 1926. 173 p.

Shell shock is a term not American, borrowed from a neighbor, much perverted, misunderstood and its interpretation is confusing. The title of the book would read much better were it of

the "War Neuroses" rather than the title assigned to it. The consensus of opinion in the neuropsychiatric world during the War was that the term "Shell Shock" should not be used in its strictest meaning. In fact, in some Conferences it was "taboo".

The book is well written, containing much statistical data and shows painstaking research which will be more valuable in the next twenty years than it is at present for the peak of neuropsychiatric reaction in our ex-service men has not yet been reached.

The data is chronological and sequential with minute description of the workings of Base Hospital No. 117—the only hospital assigned in the A. E. F. for War Neuroses. The reviewer of this book is well acquainted with the work done at that hospital having been on duty there during the War.

A description of the treatment of cases should be used as a text by physicians who have not the time to delve into neuropsychiatric fields, as an aid in helping their own patients. The post-war follow-up method of these neuropsychiatric cases by the author is a work most essential to mental health. This system is also being followed in the U. S. Veterans' Bureau in their Regional Office and as the reviewer of this article is also connected with the Veterans' Bureau in the Neuropsychiatric Division, it is interesting to note in going through folders the result of treatment of some patients as related to whether they had been treated by neuropsychiatrists who were intensively or extensively trained,—that is whether the cases had been badly handled, so to speak, from their onset, later filtering through the various hospitals then to Base Hospital No. 117 with continued hospital excursions to discharge and later becoming problems for the U. S. Veterans Bureau to handle.

The foreword by Dr. Thomas W. Salmon is a comprehensive descriptive abstract. The book should be quite an aid to students of social psychology, normal as well as abnormal, likewise to those who had the good fortune to be assigned to Base Hospital No. 117 during its existence.

WALTER J. OTIS, M. D.

History of Cardiology: By Louis Faugeres Bishop, M. D., Sc.D., F. A. C. P., and John Neilson, Jr., B. S., M. D. New York, Medical Life Pr. 1927. 71 p.

This is a delightful, concise monograph. The history is divided into three periods, namely,—"Prescientific period," The period of scientific investigation," and "The period of scientific application." Under each heading outstanding figures and opinions are dealt with in an interesting and entertaining manner. In the concluding pages, a brief summary of modern conceptions and aspects of cardiology are discussed.

I. L. ROBBINS, M. D.

A Manual in Preliminary Dietetics: By Maude A. Perry, B.Sc. St Louis, C. V. Mosby Company. 1926. 146 p.

This book, though small, is filled with many interesting facts and practical suggestions and numerous recipes. It is a useful book.

I. L. ROBBINS, M. D.

Mineral Waters of the United States and American Spas: By William Edward Fitch, M. D. Philadelphia and New York, Lea & Febiger. 1927. 799 p.

There has been a great need of a book which will deal with the subject of hydrology and hydrotherapeutics in the United States. This has not been done adequately either in reference to the various forms of treatment by water applied externally, nor in reference to medical waters is there anywhere an accurate book concerning the various mineral springs throughout the United States.

This book will give, and does give, a tremendous amount of information to those who are interested in the subject of treatment by baths, and the treatment of disease with naturally medicated waters. The tremendous spas of Europe are indicative of the value elsewhere attached to the treatment of many diseases and disorders with mineral waters. There are few such spas in this country. The total of them does not begin to measure up to the large number in Europe. It is hoped that this book will stimulate a valuable form of treatment, which has been in the past frequently disregarded, where it might have been of great assistance.

J. H. MUSSER, M. D.

La Tuberculose Pulmonaire Latente: By J. Rieux. Paris, Gaston Doin & Company. 1926. 247 p.

A treatise on the early symptoms and signs of tuberculosis, which endeavors to call attention to the necessity of making an early diagnosis, and to make an accurate diagnosis. The author uses the term latent tuberculosis to imply to the stage which we frequently speak of in this country as pre-tuberculous. He uses this term advisably,

and uses it in preference to pre-tuberculous, threatened tuberculosis, the suspected bronchitis and so on.

The book is divided into six chapters, the first of which deals with the various stages of pulmonary tuberculosis in man, and elaborates on just what the author means by latent tuberculosis. The second chapter deals with symptomology of the condition, the history, the physical examination, and the signs in other organs. The next chapter deals with the roentgenological evidence of latent tuberculosis, including the hilar and pleural changes upon which the author lays great stress. The fourth chapter deals with skin reactions, complement fixation and agglutination reactions. The fifth chapter discusses the several types of latent tuberculosis, as for example the hilar type. The last chapter deals with the differential diagnosis and prognosis of this particular type of tuberculosis. Following this is a series of clinical observations and case reports, while the last pages are devoted to very excellent photographic reproductions of roentgenograms of the chest of normal and diseased individuals.

The book is a sane and sensible exposition on a type of tuberculosis which is often difficult to recognize and hard to appreciate.

J. H. Musser, M. D.

Examination of Children by Clinical and Laboratory Methods: By Abraham Levinson, B. S., M. D. 2d edition. St. Louis, C. V. Mosby Company. 1927. 192 p.

This book represents the gist of bedside lectures; it is practical and well illustrated. The matter is carefully selected and presented in a clear way easily available to the general practitioner as well as the laboratory worker.

The author lays stress on the extreme value of simple methods of inspection and palpation, and gives good advice on how to reach the young patient to be examined. Many report-forms accompany the text, some extremely valuable.

In the estimation of the reviewer, the most salient sections of the book are the following: The chapter on roentgen-ray, which, besides being clearly illustrated, is exceedingly well arranged, and the chapter on blood and urine examination. The chapter on food tests and examination of stools could be profitably enlarged and better illustrated.

Narcisse F. Thiberge, M. D.

City Health Administration: By Carl E. McCombs, M. D. New York, The Macmillan Co. 1927. 524 p.

McCombs' recent publication, "City Health Administration," is a remarkably fine and complete dissertaton on the subject. The subject matter is divided among twenty-two chapters under three main divisions. Only an author with an enormous amount of material at his command could cover the many phases of the subject so thoroughly.

One is gratified to note that the author of this excellent work regards venereal disease prevention as the most vital problem, though he handles the subject rather too briefly. The same may be said of his recognition of the increasing necessity for coping with the gradual, but significant increase in the mortality from heart disease.

City Health Administration is not a book that one would select to read as a diversion. It is essentially a volume of reference based on McCombs' experience with Municipal Bureaus of Research and his own reflections; doubtless this is what he intended it should be.

Oscar Dowling, M. D.

Malarial Psychoses and Neuroses: By William K. Anderson, M. D., F. R. F. P. S. (Glas.). Lond., Oxford univ. pr. 1927. 395 p.

This book presents the author's experience with mental and nervous conditions supposed to have arisen from malaria, along with that of many others selected as representative examples. It will be found most interesting and instructive to students of malaria who are well informed about the nature of malaria and the great variety of symptoms it can produce, and especially the frequency of malarial infection associated with other diseases, in regions where it is prevalent.

On the other hand, those who know little about malaria and accept the observations and opinions without reservation are likely to be misled by the tendency on the part of the author and of many others whose observations are quoted, to attribute conditions to malaria merely because parasites are found present and improvement or recovery follows administration of quinine.

Cases of practically every known syndrome have been attributed to malaria without any convincing evidence being present that malaria, when present, was anything more than merely a complication of nervous and mental conditions which may have been due to other causes.

There are chapters on the history of malaria and on race degeneration, alcohol and surgery in relation to malaria. There are also 34 pages of references, which indicates that the author made extensive researches into the literature.

C. C. Bass, M. D.

Hospital Housekeeping and Sanitation: By Nora P. Hurst, R. N. St. Louis, C. V. Mosby Co. 1926. 155 p.

The subject is presented with the view of offering teaching material for Training School Instructors and is admirably arranged for this purpose.

The book is unique in that up to this time, Training School instructors have had to obtain their subject matter by reference to various text books and current literature on the subject. The subject matter is somewhat elementary and many authorities would perhaps disagree with methods suggested.

JOHN D. SPELMAN, M. D.

American Illustrated Medical Dictionary. 14th ed. rev. & enl. Philadelphia and London, W. B. Saunders. 1927. 1388 p.

The last two years have made necessary a new edition of this standard medical dictionary, with the addition of 2000 new words. Dr. Dorland is a member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association. Special features worthy of mention are its valuable anatomic tables, chemical formulas and symbols, signs and symptom treatments, operations, dosage, tests, reactions, medical biographies and 487 illustrations, 107 of which are in color.

MARY LOUISE MARSHALL.

Chronic Rheumatic Diseases, Their Diagnosis and Treatment: By F. G. Thomson, M. A., M. D., F. R. C. P., and R. G. Gordon, M. D., D.Sc., M. R. C. P. Lond., Oxford University Press. 1926. 202 p.

This book a treatise on a group of joint diseases which is responsible for a greater percentage of our physical disabilities is written by two British physicians, the one a fellow and the other a member of the Royal College of Physicians.

The introductory after describing the appalling disabilities and loss of work hours makes a plea for more correct diagnosis and better treatment of the acute joint conditions so as to curtail their development into the chronic stages.

The book is divided into three parts. The first dealing with the etiology of chronic joint diseases and a description of each type. The second part treats the question of differential diagnosis and the third presents treatment. The section on treatment is quite complete, and in the order drug, hydrology, climatic, physiotherapy, orthopedic, vaccine and dietary treatment is fully discussed.

While there is nothing new or original in any of its phases, it would well be worth the time of not only the orthopedist but the general surgeon and physician to carefully peruse this work.

H. THEODORE SIMON, M. D.

The Health of the Child of School Age: By Various Authors; with a foreward by Sir Thomas Oliver, M. A., M. D., F. R. C. P., LL.D., D. C. L. Lond., Oxford univ. pr. 1927. 204 p.

A series of ten lectures on various disorders of childhood and how properly to take care of them. It is written for the use of parents and teachers by men well known in the medical profession and therefore able to bring to bear upon the theme of their addresses, expert knowledge of the subject.

JOHN H. MUSSER, M. D.

PUBLICATIONS RECEIVED.

W. B. Saunders Company, Philadelphia and London: "A Text-Book of Medicine," by American authors, edited by Russell L. Cecil, A. B., M. D. "Collected Papers of the Mayo Clinic and the Mayo Foundation," Volume XVIII, 1926. "Text-Book of Bacteriology," by William W. Ford, M. D. "A Text-Book of Pathology," by Alfred Stengel, M. D., Sc. D., and Herbert Fox, M. D. "The American Illustrated Medical Dictionary," by W. A. Newman Dorland, A. M., M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York: "Practical Lectures," second series, 1924-1926. "Pioneer Medicine in Western Pennsylvania," by Theodore Diller, M. D. "Hernia and Hernioplasty," by Ernest M. Cowell, D. S. O., M. D., B. S.

Physicians and Surgeons Book Co., Brooklyn, N. Y.: "Disorders of the Nose, Throat and Ear, problems of Deafness," by Aaron Roth, M. D., F. A. C. S.

The MacMillan Company, New York: "The Cause and Cure of Speech Disorders," by James Sonnett Greene, M. D., and Emilie J. Wells, B. A.

The C. V. Mosby Company, St. Louis: "Heart and Athletics," by Felix Deutsch, M. D., and Emil Kauf, M. D.

The Williams & Wilkins Company, Baltimore: "Evolution of Preventive Medicine," by Sir Arthur Newsholme, K. C. B., M. D., F. R. C. P. "Anatomical, Phylogenetical and Clinical Studies on the Central Nervous System," by B. Brouwer.

J. B. Lippincott Company, Philadelphia and London: "International Clinics," Volume II, Thirty-Seventh Series, 1927. "Lippencott's Pocket Formulary," by George E. Rehberger, M. D.

REPRINT.

"Essai de Dynamometrie Humaine et D'Evaluation du Tonus Musculaire," by Dr. Gabriel Bidou.

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THE PROTEAN MANIFESTATIONS OF DISEASE OF THE CORONARY ARTERIES.*

FREDRICK A. WILLIUS, M. D.,

Section on Cardiology, Mayo Clinic,

ROCHESTER, MINN.

The identification of various forms of heart disease is still shrouded by considerable uncertainty owing to the lack of an adequate and acceptable classification. An ideal classification of heart disease not only necessitates an accurate statement of lesion type but the incorporation of the etiologic process.

The term chronic myocarditis is still commonly used to denote a variety of affections of the heart muscle. In its correct sense this term of course indicates an inflammatory and therefore an infectious disease of the myocardium, which in reality is relatively rare except in association with endocardial valvular disease. In order to justify the diagnosis of myocarditis the pathologic changes must be irrevocably linked with an infectious cause, and they must conform to those resulting from the invasion of micro-organisms. These changes comprise interstitial lymphocytic or polymorphonuclear infiltration, abscess formation, Aschoff nodules and parenchymatous changes. In most cases in which the clinical diagnosis of chronic myocarditis has been made, necropsy fails to substantiate the diagnosis. Most of these cases in reality are disorders of the myocardium dependent on coronary sclerosis, hypertension or hyperthyroidism.

In this paper I shall limit myself to diseases of the coronary arteries and attempt to show the diversity of clinical types that result. Patients with these lesions are frequently said to have chronic myocarditis.

This study is based on seven hundred unselected cases of coronary sclerosis and the data accumulated are based largely on clinical observations and also on necropsy findings when available. The necropsy data are based on one hundred seventy-five cases, not all of the cases occurring in this series.

SEX INCIDENCE.

The predominance of males is rather striking. There were five hundred seventy-six males and one hundred twenty-four females in the series. The predominance of males is probably due to the fact that they, as a group, are subjected to greater stresses and strains in their journey through life than are women. If one thinks of the great burden assumed by the heart during the span of life of an indivdual it is readily appreciated that the coronary vessels are subjected to imponderable stresses. It is also probable that severe acute infections or chronic foci of infection may play a part in arterial injury. This presumption, however, still requires expermental verification.

AGE INCIDENCE.

Coronary sclerosis is notoriously a disease of middle and later life. Eighty per cent of the cases in this series occurred

*Read before the Louisiana State Medical Society, New Orleans, April 26-28, 1927.

in the sixth and seventh decades; two hundred sixty and three hundred one cases, respectively. However, we have records of three patients in the third decade in whom marked coronary sclerosis existed. In one case death occurred from coronary thrombosis with attendant myocardial infarction. The clinical diagnosis in all instances was verified by necropsy.

CLINICAL TYPES.

It is not uncommon for the terms coronary sclerosis and angina pectoris to be regarded as synonymous; yet clinical and pathologic correlation of a large series of cases of coronary sclerosis has revealed the association of anginal attacks in only 40 per cent.

Angina pectoris type.—Before discussing angina pectoris it is necessary to define my interpretation of this term, since it is used to denote different conditions. It is sometimes used to designate a definite disease with a clinical syndrome and characteristic pathologic lesion, or it may be used to designate a syndrome that may occur in many diseases.

Heberden was the first to describe angina pectoris. His description, published in 1768, stands as a classic in medicine. In his original treatise he says: "There is a disorder of the breast marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, which deserves to be mentioned here at length. The seat of it, and sense of strangling and anxiety with which it is attended, may make it not improperly be called angina pectoris.

"They who are afflicted with it, are seized while they are walking, (more especially if it be up hill, and soon after eating) with a painful and most disagreeable sensation in the breast, which seems as if it would extinguish life, if it were to increase or to continue; but the moment they stand still, all this uneasiness vanishes.

"In all other respects the patients are, at the beginning of this disorder, perfectly well, and in particular have no shortness of breath, from which it is totally different. The pain is sometimes situated in the upper part, sometimes in the middle, sometimes at the bottom of os sterni, and often more inclined to the left than to the right side."

With the passing of time other observers deviated from Heberden's classical description and such terms as "false angina" or "psuedo-angina" were, regrettably, introduced into medical literature. These terms mean absolutely nothing. Eventually further subdivisions were made and the terms "hysterical angina," "toxic angina" and "vasomotor angina," led to such confusion of types that the true issue was almost hopelessly submerged. During the last decade, however, some degree of order has been restored, chiefly through the efforts of Mackenzie and Allbutt. Although these observers did not agree as to the anatomic lesions responsible for angina pectoris, each attempted to revive the original definition of Heberden and to limit the term to the disease which he had so clearly described. The diagnosis of angina pectoris does not present problems greater than those encountered in any disease, in fact they are often much less perplexing, and it is absolutely necessary to abolish irrevocably such terms as false angina or pseudo-angina pectoris.

Jenner first associated angina pectoris with diseases of the coronary arteries, while Huchard believed that involvement of the coronaries or the aorta, particularly if the coronary orifices were encroached on, were the anatomic causes. More recently Allbutt formulated his concept that angina pectoris is due to disease of the thoracic aorta, particularly of the root of the aorta and with involvement of its outer investment. He even stated that the coronary arteries and the myocardium had nothing to do with the pain of angina pectoris. Mackenzie, contrary to this view, held that in angina pectoris the symptoms were produced by fatigue of the heart

muscle and he emphasized the rôle of coronary and myocardial disease.

In the careful analysis of these opinions and the addition to them of experience based on clinical and pathologic correlations, it is impossible to relinquish the hypothesis of coronary disease in the production of angina pectoris. This view gains material support by a consideration of the characteristic syndrome, dominated by the severe pain, that ensues following the sudden occlusion of a coronary vessel. Mackenzie's theory of the production of cardiac pain has great breadth and perspective and is, in fact, the only theory thus far submitted that explains cardiac pain under all known pathologic conditions.

In this series of cases there were two hundred eighty-two patients (40 per cent) with angina pectoris, two hundred forty-seven males and thirty-five females. A detailed description of the symptoms of these patients would be a mere repetition as the majority presented the classical syndrome so vividly as described by Heberden. In some cases, however, the radiation of pain was bizarre, at times extending into the next, head, back, or abdomen. The abdominal pain offers considerable diagnostic difficulty, as the attacks may at first appear to be due to some surgical abdominal disease. The importance of correct diagnosis is apparent.

A general idea of the mortality from angina pectoris is afforded by the fact that 47 per cent of a series of patients with this disease died during a period of five years. In another group, in which the data were based on necropsy findings, death had occurred suddenly in 83 per cent of proved cases. Death from angina pectoris may occur in several ways. It may occur suddenly in the first attack, without antecedent symptoms; such a death is still quite generally ascribed to "acute indigestion" or "ptomain poisoning," although in reality it is usually the result of acute obstruction of a coronary artery by an embolus or thrombus. Death may result from progressive myocardial failure after several months or years of anginal attacks, and not infrequently the terminal picture is that of congestive heart failure. The attacks of angina pectoris may be supplanted by paroxysmal seizures of severe dyspnea, frequently nocturnal, and death may finally result from myocardial failure. Occasionally the angina attacks cease spontaneously and death occurs from some disease unrelated to the cardiovascular system.

The limit of time precludes a discussion of acute obstruction of the coronary arteries, the result of embolism or thrombosis, an unusually interesting and significant phase of coronary disease.

Myocardial failure type.—The syndrome of progressive myocardial failure occurs in about 53 per cent of the cases of coronary sclerosis. In the milder forms the syndrome is manifested by dyspnea on exertion, and in the more severe forms by congestive heart failure. This group does not include angina pectoris. Such cases have been and still are, to a certain extent, diagnosed chronic myocarditis, which is obviously fallacious since the pathologic process is not inflammatory but the result of chronic and usually progressive impairment of circulation of the myocardium. As a group the patients show less marked sclerosis of the coronary vessels with much less tendency to obliteration of the lumen than do those who suffer from anginal seizures.

Two factors apparently definitely influence the heart muscle in coronary sclerosis: the degree of arterial obliteration, and the length of time that the circulatory impairment has existed. The resulting pathologic picture is a rather diffuse or patchy myocardial fibrosis.

Three hundred sixty-eight cases of coronary sclerosis presented the myocardial failure syndrome. Two hundred eighty-

nine of the patients were males and seventy-nine were females. The course of the disease was variable. If the disease is recognized early, before considerable damage has been done, and if a proper cardiac regimen has been instituted and strictly adhered to, the chance of realizing a normal life expectancy is reasonably good. The more advanced cases invariably progress. Experience in the Mayo Clinic has shown that death from progressive heart failure occurs in about 64 per cent of the latter, while it occurs from sudden heart failure in about 36 per cent. Occasionally these patients have attacks of angina pectoris but these are more infrequent than the attacks of paroxysmal dyspnea, the so-called cardiac asthma; the latter phenomena are of sufficient importance to discuss more fully.

Embolic phenomena occurred during the terminal stages of heart failure in 13 per cent of the cases, as proved by necropsy. In comparison, embolic manifestations in chronic endocardial valvular disease, particularly with mitral stenosis, occurred approximately twice as often.

Paroxysmal dyspnea type.—In a certain group of cases of coronary sclerosis the dominant symptom is paroxysmal dyspnea, frequently nocturnal, that is precipitated when the patient is at complete rest. This syndrome is often, and justly, referred to as cardiac asthma. It occurs not only with coronary sclerosis but apparently also with other forms of cardiac disease. Pulmonary edema is not a constant accompaniment. Pratt has recently published a comprehensive discussion of cardiac asthma.

In the present series this group comprised fifty cases. Forty of the patients were males and ten were females. Thirteen were in the sixth decade of life, twenty-four in the seventh, and thirteen in the eighth. There was an early high mortality in this group, the paroxysms of dyspnea occurring with advanced cardiac disease.

Occult type of coronary sclerosis.—In this group of cases there is little or no diagnostic evidence of coronary sclerosis during life. For want of a better term these are referred to as the occult type. They are usually identified by the pathologist. Osler called attention to the fact that in a certain proportion of these cases the heart sounds are clear-cut, the pulse is good, and there are no obvious signs of cardiac disease in spite of extensive disease of the coronary arteries. Data in the Clinic bearing on this group are based entirely on necropsy findings. Most of these patients were in the later decades of life, and had outstanding complaints referable to other parts of the body, such as nephritis, diabetes mellitus, carcinoma, hepatic cirrhosis or prostatic hypertrophy. It may be that we, as physicians, are overzealous regarding the patient's outstanding disease and are somewhat negligent in our appraisal of the body as a whole. It was shown at necropsy that the patients in this group all died from causes unrelated to the heart.

SUMMARY.

This series comprises seven hundred unselected clinical cases of coronary sclerosis. Additional data with regard to this disease also were obtained from one hundred seventy-five necropsies, although all the cases coming to necropsy were not considered in this investigation.

There were many more males than females, the ratio being approximately 5:1. Eighty per cent of the patients were in the sixth and seventh decades of life.

The cases were divided into types according to clinical manifestations: (1) angina pectoris, two hundred eighty-two cases (40 per cent): (2) myocardial failures, three hundred sixty-eight cases (53 per cent): and (3) paroxysmal dypsnea, fifty cases (7 per cent). There were also a group of cases which presented little or no diagnostic evidence of coronary sclerosis, referred to as the occult type.

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DISCUSSION.

Dr. A. E. Fossier (New Orleans): I am very sorry that I did not have the opportunity of reading Dr. Willius' paper, so in justice to myself, I must state that it is very difficult to discuss intelligently such a broad and protean subject unless it is known beforehand, which of its many phases will be presented by the essayist.

Our concept of the etiology and pathology of cardiac disease is gradually changing. The classical symposium on angina pectoris by Wenckebach, Allbutt and Mackenzie, the works of Danielopolu of Bukarest and Gallavardin in France, have greatly contributed to the present knowledge of angina pectoris.

I wish also to give the credit due to our distinguished guest, Dr. Willius, for his electrocardiographic studies on coronary diseases, which have proven to be a valuable contribution to the knowledge of the subject.

Authorities formerly contributed great importance to disturbances of the coronary circulation. Their chief consideration was its effect on the heart muscle. Modern research has opened a new aspect and demonstrated its effect on the conductive system of the heart. We know today that even the slightest circulatory defect, must cause trouble, particularly when localized in the highly specialized centers which are nourished by the terminal arteries of the coronary system. When located in the bundle of His these miopragic accidents immediately assume great importance, but in the myocardium, these little foci (miliary) often remain without clinical significance. In order that coronary diseases should give clinical signs they must invade the larger arterial branches and spread out in the numerous dividing branches.

Large infarcts end rapidly in death, or may terminate in the formation of aneurysm. But the myocardium is progressively weakened by these small foci, or infarcts, which cause a progressive softening of the muscle and finally produce the syndrone of left ventricular insufficiency, which is characterized by a progressive subacute evolution, by the absence of arterial hypertension and by an alteration of the pulse. Whenever these same lesions occur in the auricles, rhythmic troubles ensue.

These small infarcts give an interesting protean manifestation. Among the smaller infarcts, a most interesting form, and that is, the small endocardial infarcts with consecutive cardiac thrombosis. These were recognized by Gallavardin and Destardeau as infarcts of embolism formation. It is known that in aneurysm of the heart as well as in the fibrous spots of that organ, an endocardial reaction results, and the embolism is formed. In certain cases, it is the consecutive following of the embolism by the thrombosis, which dominates the clinical manifestations.

Occasionally myocardial necrosis appears first. It results from the obliteration of an auricular arteriole which terminated in a small sub-endocardial infarct. The same may result from venous or arterial thrombosis.

I wish to call your attention to the fact that every pain in the region of the heart is not due to angina pectoris. Very frequently, among many other causative factors, for some reason or other, vasomotor spasms may occasion these pains. Unless I have definitely positive symptoms, I am careful not to make a diagnosis of angina pectoris, whenever there may be pains in the region of the heart, because I fully realize what it means to a person to think that he is the victim of this treacherous disease.

Dr. G. R. Herrmann (New Orleans): It is a privilege to discuss a paper which embodies such elaborate and very extensive study as Dr. Willius has reported. I am sure his conclusions are much more conservative, perhaps, than mine might be under similar circumstances. The quibbling of terms is a thing that has been popular for the past decade. The term myocardial insufficiency certainly tells the truth as to the limits of our knowledge, but I think while we are revising terms we might just as well revise another term (as confusing and empirical as myocarditis) and consider the term cardiac pain rather than singling out a special group of angina pectoris. The condition discussed as myocarditis may quite possibly be the results of previous repeated infection the degenerative coronary sclerosis resulting from previous injuries similar to the renal lesions which

we call nephritis. With a clear conception of what we are attempting to describe, maybe it would be permissible to use the term myocarditis, although perhaps the other term is much more satisfactory.

I am sorry that Dr. Willius did not speak of his extensive studies of electrocardiographic records in these cases of coronary disease that he has mentioned. I am quite sure that he has figures on the subject and I would like to hear something about these statistics in his discussion. If there is any method that will give us information in these obscure cases, and especially the so-called borderline cases, I think it is the electrocardiographic method. Of course, I am an enthusiast on that subject and statements that I make must be taken with a grain of salt.

The radiation of the pain described in the atypical cases of cardiac pain that Dr. Willius mentioned, and concerning which I had hoped he would say more, struck me as peculiar in that he put abdominal radiation last. Perhaps because it is more spectacular, I have always felt that abdominal radiation was the more prominent one. Having had the opportunity of seeing a couple of cases go through to surgical operation for coronary thrombosis with abdominal pain, I think it was unduly impressed upon me, and I would be glad to hear the statistical ratio as to the various radiations. I think Dr. Willius mentioned abdominal radiation last in his series. Perhaps that was merely a typographic feature, but probably it was from a statistical point of view.

The question of the acute sudden cardiac failure is the one that I think we should emphasize in cardiac disease, because it is in such case that the abdominal radiation is quite common and there is likely to be surgical procedure if it is not kept in mind that coronary conditions may simulate those of acute abdominal conditions, and frequently do. I think in this instance, where there is any doubt, electrocardiographic study should be made. Certainly, an abnormal electrocardiogram would make internists hesitate long before advising operation. I am sure that we all feel our deep indebtedness to Dr. Willius for the data that he has given us on this large series of cases of coronary disease. We would appreciate very much any further statistical data that he has.

Dr. Randolph Lyons: I think we have had a great privilege in being able to hear the paper of Dr. Willius, because the subject of coronary disease is now very much before the medical profession. It seems to me at almost every meeting I have attended in the last year, we have had either a symposium or some papers dealing with the subject of coronary disease in some form. It appears that the condition is far more prevalent than it used to be. I say "appears" because we are not sure that this is strictly true. I think that we are becoming more and more educated on the subject of coronary thrombosis and we are detecting cases of it which we did not recognize before. I know that has been the case with me, and in looking over my past records I have found a number of instances that I put down as conditions of angina that I know now were coronary thrombosis. The milder forms of coronary occlusion, I think, will frequently be overlooked even now without the help of the electrocardiograph, and I certainly hope that, as Dr. Herrmann suggested, Dr. Willius will take up that point and tell us what he thinks is to be gained from the use of the electrocardiograph in helping to detect coronary disease.

Certainly, in a case that I have seen very recently and in which Dr. Herrmann has seen the electrocardiograms, I would have been in some doubt had I not had an electrocardiographic curve taken before the attack occurred, and then one taken subsequently. The curve taken before the attack of coronary thrombosis was practically a normal curve and the one taken since certainly was an abnormal curve. The attack itself was very similar to a type of acute indigestion. It occurred in a physician and he diagnosed it as being acute indigestion. He thought he had eaten something that didn't agree with him and he had a severe pain in his epigastric region with nausea and vomiting. The pain was somewhat relieved by a quarter of a grain of morphia, but not entirely, persisting for twenty-four to thirty hours. Following this he had slight temperature for four or five days and his white count was 9,000 the first day and went up to 13,000 two days later; the fifth day it was down to normal, the temperature was back to normal and the pain had all subsided. He was quite certain that it was a condition of acute indigestion or acute intestinal disturbance of some sort. I was suspicious from the beginning that it was a coronary condition. The blood pressure had in previous years been a little bit high and he had a slight enlargement of the left side of the heart; during the attack the blood pressure dropped 20 points but there was no pericardial rub. I think the diagnosis was correct as the electrocardiographic curves showed.

There are so many aspects of this subject that I think it is one which we can well discuss. I wish to thank the doctor for bringing it up.

Dr. I. I. Lemann (New Orleans): The manifestations of coronary disease are indeed protean. As has been repeatedly stated this afternoon, the accident of acute occlusion may very well be mistaken for some surgical condition in the abdomen. The situation is rendered more difficult by the fact that there are actual surgical conditions within

the abdomen that on their part simulate coronary occlusion. Such cases have been reported in the literature.

It has been my good fortune to be able to follow through a case very similar to the one related by Dr. Lyons where the symptoms were exceedingly mild and where, had it not been for the idea being uppermost in my own mind of a possibility of a coronary occlusion, and for the electrocardiograph study, we should have overlooked the situation. The manifestations were exceedingly mild from a clinical standpoint.

That leads me to say that the old descriptions of angina and of coronary disease in general must undergo considerable change in the light of newer knowledge. Certainly, it is true that patients with very extensive coronary occlusion leading to a fatal issue are not, as we have been told in the past, immobile—that they stay absolutely quiet, that we are not to consider a patient as suffering from angina who is thrashing about in bed. I reported here in the meeting of the Parish Medical Society a few weeks ago some cases. One of these patients, Dr. Lyons will recall very vividly, as he was also associated in the case,—a man who insisted on walking around the room while he was actually pulseless and it took two or three people to try to restrain him and that within a few hours of death.

Nor is the sense of impending death essential to the picture. I saw a few months ago another patient whose case I reported here recently, a man who had no realization of impending death and who all the time attributed his sufferings to acute indigestion.

I think all of these newer observations and particularly the very valuable electrocardiographic studies have contributed to a new conception of angina; that is, new in the idea of putting aside, as Dr. Willius has said, the idea that any angina can be a pseudo-angina; also in putting aside these false notions that a man cannot have angina or a coronary occlusion if he is not in fear of death and if he is not absolutely immobile.

Dr. Willius (in closing): From our experience with electrocardiographic studies in this group of cases, I think I can say the electrocardiogram is positive in from 60 to 75 per cent of cases, that is, if conditions such as bundle branch block, complete and incomplete heart block, are considered.

A great deal of confusion exists with regard to acute coronary occlusion. We should not put too much reliance on the electrocardiograph. For instance, the electrocardiogram may be normal in patients who die within a relatively short time. I have in mind several instances in which the electrocardiogram remained normal for forty-eight, fifty and sixty hours after the occlusion occurred. Yet many times the progress is far more rapid. I remember one man of whom we had normal records in whom a severe attack developed and within a relatively short time after the onset of the attack, I believe fifteen or twenty minutes, the electrocardiogram was normal. Twenty minutes later there was marked abnormality and the patient died within an hour of the onset.

We should train ourselves to be strongly suspicious of a coronary accident even without the aid of the electrocardiograph. Of course, it is extremely satisfactory to secure the abnormal curves in such cases.

The prolonged duration of the attack I think is rather significant; gradual relief from the use of morphine; practically no relief from the nitrites; severe attacks lasting as long as ninety hours. The slight elevation in the temperature, of course, may be misleading; the increase in leukocytes may also be misleading. As we palpate the abdomen of these patients the sense of resistance many times encountered, apparently is a sort of protective mechanism carried out through a semisplinting action of the diaphragm.

A study of the leukocytes, as Dr. Lyons has emphasized, has been valuable to me. You will recall that he says the progressive increase in leukocytes with the high polymorphonuclear count, indicates one of two things: either progressive myocardial necrosis, or the presence of intraventricular thrombus, or both, and it is important to know from the standpoint of prognosis whether or not even at the end of a week you are suddenly going to lose your patient either through a rupture of the heart or the development of an embolism usually cerebral.

ULTRAVIOLET RADIATION.*

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and
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The purpose of this paper is to bring to the attention of the audience one of the newer forms of physical therapy, actinotherapy or ultraviolet ray therapy, and to emphasize by the results of our own experience its value in a very few of its indicated fields of usefulness. We feel that

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our viewpoint may be the more valuable since it represents an about-face from a feeling of utter skepticism to our present feeling of genuine enthusiasm, and it is our desire to help, if possible, the conversion of some of those others who may have been skeptics as ourselves but who have only to give this remedy a fair, honest opportunity to convince themselves of its value.

The initial stimulus to the investigation of the value of light in the treatment of disease was given by the various men using sunlight and outdoor exposure, notably by Rollier. This work consisted in the gradual exposure of the body to increasing doses of sunlight, and the results of this work have been pretty thoroughly disseminated throughout the medical world. Finsen was the pioneer in the application of artificial light to the treatment of disease, and it was his work in the treatment of superficial tuberculosis at Copenhagen which forcibly impressed the medical public with the value of artificial light as a remedial agent. General radiation was begun with the use of the carbon arc lamp inasmuch as this was primarily the only satisfactory artificial source of ultraviolet rays, but following the development of the quartz mercury vapor type of lamp, its use has become more general, owing to its greater convenience and the more desirable character of the rays emitted by this lamp.

Some little consideration of differences between the principal sources of ultraviolet rays will not be amiss. Sunlight is particularly strong in the infra red or heat rays and luminous rays, together with an amount of ultraviolet rays running between 5 and 7 per cent. The output of the carbon arc lamp rather roughly approximates the radiation from the sun. From the mercury vapor lamp we get a quality of radiation relatively rich in ultraviolet, approximately four times the amount ordinarily found in sunlight. There is a correspondingly less amount of infra red and luminous rays. The ultraviolet rays of sunlight again are relatively somewhat longer than those of the mercury vapor lamp, altho the latter also contains these longer rays together with shorter rays, including some to which no therapeutic value is as yet attached.

However desirable may be the character of the combination of rays to be obtained from the sun, they are unquestionably subject to various distinct disadvantages. These drawbacks consist in the fact that ultraviolet rays are easily interfered with by conditions in the air over which we have no control, dust, water vapor, smoke, etc. The time of day as well as the season of the year affect them, noon sunlight being most favorable and, as a general rule, higher altitudes are more satisfactory and this not only because the limiting factors of moisture, dust and smoke may be absent. The necessity for direct, open air exposure owing to the unsatisfactory penetration of ordinary glass by ultraviolet rays is another limiting factor, as at many periods of the year even in this part of the country where climatic conditions are more favorable as regards temperature during the greater part of the year, open air exposure is a thing many of our patients would tolerate rather badly. The recent developments of newer forms of glass which permit the passage of larger percentages of ultraviolet have not been so satisfactory, as there still remain the other distributing factors limiting very frequently the quantity of natural ultraviolet rays in the air. We do not wish, however, to be understood to doubt the probable superiority of natural sun radiation wherever it can be employed satisfactorily, for we realize that the mercury vapor lamp is at best a substitute, differing very materially in the character of its radiation and certainly, if in nothing else, being notably lacking in the undoubted benefits of outdoor exposure.

Turning, however, to the artificial source of ultraviolet energy as affording a certain, routine and more or less exactly controllable and dependable means of therapy, it is primarily to the mercury vapor type

of lamp we would bring your attention. We do not wish to reflect in any measure upon the carbon arc lamp, but our desire is only to emphasize that upon which our experience of about fourteen months is based. Theoretically, convinced as we are of the sun radiation being the optimum, we are impressed by the components of the bundle of rays given out from the carbon lamp as being more nearly comparable to the sun. The one great determining factor in our choice was the fact that we felt that in our comparatively limited office space, the heat emitted by the carbon light would be undesirable and, again, the rather longer exposures necessary were to be considered.

Our interest further, in the scope of these remarks, has been confined to the air cooled type of quartz burner rather than to the water cooled, as we have been concerned with general rather than local radiation. The penetration of the rays from this type of burner is very short, and this has been explained on the score of the screening action of the hemoglobin. The longer type of ray which is obtained from this burner is readily absorbed and has the faculty of stimulating the metabolic processes of the entire organism. This is in general contrast to the rays of the water cooled lamp, one of whose especial properties is bactericidal.

Superficially, the effect of exposure of the body to the lamp varies with the time, distance and also somewhat with the complexion of the individual, blondes being distinctly more susceptible than brunettes. The skin reaction may vary from a slight erythema to a distinct burn of the first degree.

We have been particularly interested in the treatment of rickets by ultraviolet radiation, and we have now treated some 150 cases with practically uniform success. The value of this means of therapy was first brought out by Hess who initiated the hypothesis that there was an activation of cholesterol which is contained in considerable quantity within the epidermal portion of the skin and it is thence carried through the circulation to other parts of the body. Animal experimentation was shown to demonstrate conclusively the value of radiation, and the irradiated animals were readily protected from rickets even though upon a diet which quickly produces this affection. The value of actinotherapy in the cure and prevention of rickets is confirmed by the very distinct relation of its incidence to the ultraviolet content of the sun rays at varying times of the year. The peak of rickets incidence is noted in the late autumn and winter, gradually decreasing till it is almost absent during the period of abundant sunlight.

The cases of rickets which we have treated have been very carefully selected as definite cases, and practically all have been radiographically controlled in addition to the clinical diagnosis. A rather uniform technic of treatment has been adopted, continuing every other day for a period of 15 treatments. The initial exposure has been in all cases 45 seconds with a gradual increase to 5 minutes, after which, this length of time is maintained during the remainder of the course. The distance has been 30 inches. This initial dose may seem to some extremely conservative, but we feel that with young infants it is unwise to risk an erythema as they are difficult at the best to control and additionally, it is a problem at times to explain to the mothers that no possible damage to her child can have arisen from a transient erythema. The so-called "roentgenphobia" is becoming so prevalent of late that there is hardly a day that some patient does not inquire about the danger of a burn or require assurance that there can be no possible relation between the ultraviolet and roentgen-rays. The amount of pigmentation has been extremely variable, and has not seemed to bear any relation to the benefit received. In administering the treatments, we have entirely abandoned the use of protective goggles for the patient in favor of screening the eyes by means of a folded towel.

The child usually requires restraint and the towel can readily be held over the face and is much more sanitary than the goggles. Needless to say, during the treatment the patient is stripped and as a rule treatments are confined to the anterior surface of the body. One particular caution should be emphasized, the necessity of impressing thoroughly upon the mother or nurse accompanying the patient, the danger of looking directly at the unscreened lamp. We have had two annoying cases of conjunctivitis resulting from a neglect of such caution.

Improvement following the beginning of the treatments is usually rapid. The appetite improves, the color is better, weight is gained and a general sense of well being observed. One frequently noted symptom of improvement is the remark of the mother that the child rests so much better at night. This has been so frequent that it is felt that the treatment would be justified on this score alone. Beginning deposit of bone can be readily noted radiographically at an early date. As a rule only one series of treatments is required although there is no contra-indication to repetition in case there seems any need.

We have further noted remarkable improvement in some exaggerated cases of malnutrition, with progress taking place so rapidly and uniformly as to be almost unbelievable. The improvement here has been due to the stimulation of metabolism, it would seem, and the general building up of the patient's resistance has accounted also for the noteworthy results accomplished in some cases of furunculosis which have been treated. Certainly with children there seems to be no contra-indication of any consequence, and it is our feeling that any individual will receive definite benefit from a course of ultraviolet therapy.

We have in the quartz mercury vapor burner an agent for the satisfactory and dependable application of these rays which is not subject to any atmospheric or climatic conditions, and which can be safely applied by anyone who will give proper attention to a few small details. We have an agent which in numerous conditions will give us wonderful results and to whose use there seem few, if any, contra-indications. We feel that anyone who will give this means of therapy a fair trial in conditions within its scope will be as quickly convinced of its efficacy as are we.

DISCUSSION.

Dr. Ludo von Meysenbug (New Orleans): In my work with children I feel that I can endorse very strongly what Dr. Bowie has read in his paper. There is no question but that the ultraviolet ray from whatever source, whether from arc light, mecury vapor lamp or the sun, is a rickets cure. This has been proven, not only clinically, but experimentally.

A factor that must be considered in conjunction with the ultraviolet light and that cannot be overlooked in the successful treatment of rickets, of which we also have clinical and experimental evidence, is the diet. In a group of experimental rats used to demonstrate the value of the ultraviolet light and diet in rickets, separately and combined, it was found that if you give a rat a diet that will just protect it and remove the rat from the sunlight, it will develop rickets. Give the ultraviolet ray and the same diet and no rickets will develop. Give a rickets-producing diet with sunshine, the rat has rickets; give both, sunshine and an adequate diet, it is protected against rickets. This shows the interrelationship between light and diet—they act together.

Of a baby, the same thing is true. If you have a baby with rickets and treat it with ultraviolet light, making no attempt to protect it by diet, your results will be disappointing; you will get improvement, but not of the same character that you will if the diet is entirely suitable.

Another interesting feature Dr. Bowie touched on is the theory advanced by Dr. Hess, that is, the results produced by ultraviolet rays: activation of the cholesterol that is present under the skin and transportation through the body of this activated cholesterol by way of the circulation; he states that cholesterol under the arc light and ultraviolet produces a ricket-protecting substance in the perfectly inert cholesterol; this has been demonstrated with other inert substances, such as linseed and cottonseed oils. A very interesting experiment in that connection is one in which the skin of the cadaver was irradiated and fed to rats; it was found that the irradiated skin

was a protection against rickets, while the non-irradiated skin failed to protect against rickets.

As far as the use of the violet light is concerned, in my hands, I have been somewhat disappointed. In treating the mal-nourished baby, giving the ultraviolet light to improve the nutritional state, I have not been enthusiastic about the results. The ultraviolet light will give the baby a better color, increase the hemoglobin and the red blood count, but I have not seen it do much else. Perhaps my cases are too few and I cannot reach conclusions, but I have been a little disappointed in the light in that respect.

Dr. R. S. Crichlow (New Orleans): During the past four years in the U. S. Veterans' Bureau Dispensary, we have been using the ultraviolet light mercury vapor lamp, air cooled and water cooled, and while we have not tried it on patients suffering with rickets, we have had success in treating other conditions, especially erythemas of the skin. Pompholyx responds readily to treatment and so does eczema. On two different occasions we have used it on patients suffering with hydrocele. One of the cases I recall. The hydrocele was first aspirated and the patient subsequently subjected to a series of exposures, the initial exposure one minute, building up day after day until the maximum radiation of fifteen minutes was reached. We have been able practically to control the condition of hydrocele in this patient: I do not know how it would act in other cases, but in this instance the result is good. With the water cooled lamp in the treatment of ulcers we have gotten splendid results. In this condition you have almost to produce a burn to cure, pressing your lamp against the ulcer to get the desired effect. I have had wonderful success with ulcers of the legs and hands and ulcers which refuse to heal on other parts of the body.

We have also treated asthma with violet radiations. Quite a few asthmatics come to our clinic from time to time for treatment, and in several instances we have had very good results through the use of violet radiations. With asthma we have exposed the patient's chest thirty minutes to one hour. Good results have been obtained by daily treatment, from seven to fifteen consecutive treatments.

Dr. Guy A. Caldwell (Shreveport): I am interested both in the question of rickets and ultraviolet therapy in connection with these cases, therefore I have been watching the orthopedist and the pediatrist with these cases for some little time. We see mild cases at best, with mild deformities from rickets, and a few cases in the acute or active state.

I am so glad to hear that sunshine is best and that the nearer we approach that the better. It is our experience, working together, the orthopedist and the pediatrist, that there is ample sunshine to take care of these cases. We have established a routine which we give to the parents for administering sunshine to these children, and the results in the mild cases we see are excellent; however, in the more severe cases we would have to adopt a more intensive treatment. The treatment is similar to that of tuberculosis. Simply start the children out for five minutes at a time, three times a day, exposing the lower limbs only; let them play in the sunshine for that length of time without clothing. You cannot force a child to remain in one position—you can simply put him out three times a day. This is done for two days, on the third, fourth and fifth days you take off the garment; on the sixth and seventh days (depending on whether the child is frail or husky) roll up the shirt under the arms, but on the last days simply let them have a hat and play in the sunshine for increasing lengths of time until they get from an hour and a half to two hours in the open. Now, children take to that very well summer and winter; despite the fact that they do not get the sunshine every day, the results are good. It is perhaps more ideal if we can give it regularly, but in the country, where people cannot avail themselves of these things, I think we should give sunshine whenever possible, with the diet, which is as important as the heliotherapy. Both are important.

Dr. W. A. Lurie (New Orleans): I believe we are missing one point if we do not recognize the difference when treating the patient with solar rays. We are giving them an additional dose of ray force which, whether they get the actinic ray force in addition may or not, make a difference. It is distinctly the ultraviolet actinic ray that produces reactions when these rays are used. Just how it does it is a matter of conjecture and just what it does to each person is uncertain. With the lamps we have on hand we can obtain the result. Or we can do it with the light from the sun, under a proper technic.

I was interested in listening to Dr. Bowie's technique, and it brought to my mind forcibly that an overdose of actinic force is a disastrous thing. In his paper Dr. Bowie did not have time to tell of the possibilities there were with ultraviolet radiation. In the years I have used the ultraviolet lamps, air cooled and water cooled, I find they are indicated in every condition, if you understand the basic pathology behind the condition and you know what you want to do with your lamp, you will succeed in doing it.

It is a matter of technique. I have not treated as many cases as Dr. Crichlow, but I have been surprisingly successful in a series of ultraviolet radiations, in a great many refractive cases of trifacial neuralgia which I hope to report tomorrow. In these cases it is a matter of technique, the matter of dosage of ultraviolet ray. A patient may not respond because of an overdose, then again, may just as well not respond because of an ineffectual dose. There is one danger we must recognize, that is, if we have the apparatus, that fact does not give us the knowledge of the dose that is needed in special cases. I should perhaps have confined my remarks to rickets, or the subject of the paper, but this subject was brought up by others and I thought I would add a word to what had gone before.

I notice no mention was made of the raising of the calcium index. Some two years ago I had a series of patients in whom I tried to raise the index by means of diet, another series that I tried by means of ultraviolet radiation, and a third series, a combination of diet and ultraviolet rays. I found that the patients on diet alone did not do as well as the patients on diet plus radiations, and I found too that under radiation alone I did not build the index perceptibly over the series of control cases. This shows the wide range of possibilities and indications for treatment with the ultraviolet ray. As we understand the mechanism of these treatments and note results, we become more and more enthusiastic over the work.

Dr. A. J. Thomas (Shreveport): This is a subject that can bear discussion many times and from many angles. The ultraviolet, or actinic ray, is a form of energy, and as such is capable of transformation into other forms of energy. It is not necessary to have elaborate equipment; you can, with proper technique, probably get the same results with the air cooled generator as with the water cooled, but of course it is best to have both apparati. It a question in the final analysis of wave-lengths; it reverses itself from roentgen-ray radiation where the short rays produce the greatest effect, whereas in ultraviolet radiation the long wave-lengths have greater penetration. Use your short wave-lengths where you desire local or dermal effects, and the long wave-lengths for systemic effects. With proper technique this is easily accomplished. The uviarc of the ultraviolet apparatus generates both short and long wave-lengths while operating, for which reason during treatments it is necessary to filter off the short wave-lengths if systemic results are wanted. A metallic filter such as copper or aluminum cannot be used as this would filter off all actinic rays. Atmospheric air acts as a satisfactory filter, as air absorbs the short-wave lengths but does not arrest the progress of the long wave-lengths which reach the area to be irradiated. Using a tube-generator skin distance of forty inches, sufficient air space is interposed to filter off the short wave-lengths and the exact therapeutic dose is controlled by varying the time exposure. When treating dermal lesions it is essential to correlate your dosage of actinic ray with the pathology and the desired results. This is regulated by the time exposure and the focal distance, a working average being a distance of from three to fifteen inches from the actual applicator contact to a tube-generator skin distance. For practical clinical uses there are three doses: Erythema Prima, Erythema Seconda, and Erythema Tertia, the first is stimulative, the second is regenerative, and the third is destructive. In the treatment of Lupus Erythematosus and Lupus Vulgaris, screen off the unaffected part of the skin with two layers of towels, using about a ten-inch tube-generator skin distance with 90 volts across your generator, this will give sufficient actinic rays for a destructive dose, providing the time factor is correct. Before giving this treatment it is advisable to tell your patient that there is going to be a severe local reaction that will require from two to four weeks to clear up. The average case requires from two to five such treatments to produce a clinical cure, the rule being a recurrence of the lesion. Regarding the systemic actinic ray therapy it is not necessary to mention to you its indications, bear in mind diabetes and syphilis are contraindications. All other diseases should respond to this radiation with favorable results.

Dr. E. R. Bowie (closing): I have nothing to add in closing except to thank everyone who has taken part in these discussions and helped to stress the important points in this widely used therapy.

HEADACHES DUE TO REFRACTIVE, ACCOMMODATIVE AND MUSCULAR ANOMALIES.*

W. S. SIMS, M. D.,

JACKSON, MISS.

The problem of refraction and accommodation was worked out during the years of 1850 and 1858 by Donders. Up to this time there was very little known about this subject, and very little more up to the

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present day than was given to the world by Donders. Donders was a Dutchman, born and reared in Holland, receiving his medical education in Germany.

In presenting this paper I wish to say first of all that I have nothing new or unheard of, and my only excuse for this paper is to emphasize the importance of this common affection and the adoption of proper measures for its relief.

Headaches of an ocular origin may be classified as refractive errors—as hyperopia, myopia, astigmatism, accommodative and muscular anomalies.

Eyestrain has many and various symptoms, but the one that causes the patient to seek relief is usually headache. Headache caused by eyestrain is usually frontal or frontotemporal and may, and often does extend to the occiput, and is sometimes accompanied by all kinds of nervous manifestations. The most characteristic distinguishing feature of ocular headache is that it comes on while using the eyes, and gradually grows worse as the use of the eyes is persisted in, and gradually ceases after a few hours rest, and, as a rule, is never present upon waking in the morning. There are a few exceptions to this rule, particularly if the eyes have been subjected to strain the night before up to a late hour. Vertex headache, or a feeling of weight on the top of the head, has been "Pre-empted by the Gynecologist", and is not usually classed as ocular In fact all headaches have some distinguishing features.

Treatment consists in prescribing such lenses as will make vision distinct and enable the patient to use the eyes without pain or discomfort.

It must be remembered that the existence of a refractive error is no indication for glasses unless the patient is suffering more or less discomfort as a result, except for the cure of a squint or to prevent the further progress or increase of myopia. When distant vision is perfect and comfortable, and the patient does not suffer from any symptoms except when engaged in near work, glasses may be omitted except for near work.

The proper treatment is to refract the eyes under a cycloplegic, especially in children and young adults. It is the only means at our command to do efficient work in a majority of cases. Of the many cycloplegics, atropin and homatropin are in general use and the two supply a means to meet every indication. Why are cycloplegics absolutely necessary in a majority of cases to do efficient refractive work? First, it gives the eyes a much needed rest, and gives the retina and choroid an opportunity to recover from irritation and congestion incident to eyestrain. Second, it puts an over-active ciliary muscle at rest and enables us to estimate the exact amount of error possessed by the patient. Third, in astigmatism, we are not only able to estimate the amount, but the axis of the cylinder as well.

The next structure that calls for a a very careful examination is the ciliary muscle or the muscle of accommodation. If the test is found to be below the normal limit for the age, there must either be a latent refractive error or the accommodation must be actually subnormal. This deficiency in accommodation may itself be the cause of the symptoms which had been ascribed to the refractive error and had not been relieved by its correction. These patients are as a rule physically and mentally depressed. In these cases it is best to have the advice of the family physician as their physical and nervous condition claims equal, or more, attention than treatment directed to the eyes.

A most interesting case of ciliary breakdown came under my observation only a few months ago. A lady, aged thirty, suffered greatly during the first few months of her pregnancy from nausea. She had a long and tedious labor, leaving her completely exhausted. Her physician prescribed a suitable diet and rest in bed; but

he overlooked the all important matter of giving her eyes also absolute rest. Without this advice she read a good part of every day, and about the ninth day her eyes gave down and she was able to read but a few minutes at a time without suffering greatly with her head. I saw her about this time and prescribed absolute rest of the eyes and full doses of strychnin, and the ciliary muscles are now regaining strength and an early and complete recovery is expected.

One other, and a very common condition that we must always look for is a want of equilibrium or balance of the extrinsic muscles. The eyes have a constant tendency to deviate, and it is only by force or increased innervation that binocular single vision is maintained. It is easy to make a diagnosis of this condition when we bring into use the screen, prism and Maddox rod test.

Treatment consists in correction of the error of refraction, if found, as error of refraction is the usual cause. We do meet with cases of this kind sometimes that do not yield to this treatment. We then resort to prisms and prism exercises, and as a last resort, operation. We must not be too hasty to operate for this condition, as operations are often disappointing.

The three abnormal conditions of the muscles are known as heterophoria. The principal subdivisions of this condition are known as exophoria, tendency to deviate outward; esophoria, tendency to deviate inward; hyperphoria, tendency of one eye to deviate upward—right hyperphoria, when the right eye tends to deviate upward—left hyperphoria, when the left eye tends to deviate upward.

In exophoria, the symptoms are more pronounced after using the eyes for near work; in esophoria with distant vision.

In hyperphoria we may suffer both from near and distant use. Three patients that recently came under my observation will serve to demonstrate this muscular anomaly:

Case 1. Mr. C., aged 28, said he had been fitted twice with glasses, but had not received any relief from his headaches. He said he suffered no discomfort except when he attempted to read, and that he had given up reading altogether on account of his eyes. I found on examination that this patient was suffering from exophoria, or a tendency of the eyes to turn outward. I gave him his full correction under the influence of a cycloplegic and followed with prism exercises with perfect relief of his muscular asthenopia.

Case 2. Miss M., aged 17, found no difficulty when engaged in her school work, but when out in the open or at a picture show or church, she suffered greatly from headache. I have never been able to get results from prism exercises for esophoria. I have of late, if the ametropic correction does not give relief, prescribed prisms for temporary use, when using the eyes for distance.

Case 3. Mr. B., aged 40,—suffered more or less with his eyes for a great number of years, and had never been able to get glasses to suit. On examination I found his trouble to be right hyperphoria. Prisms combined with his ametropic correction gave him great relief.

It is a regrettable fact that this important branch of medicine is not recognized and appreciated by the general public as its importance deserves. We are not in possession of anything that serves us better than our eyes, and certainly they should receive our very best care and attention.

I want to call special attention to two conditions that are often seen among children, namely, squint and myopia. Squint in most cases is due to refractive errors, and a certain line of treatment carried out until the child is old enough to wear glasses will usually correct the defect. This treatment to be effective must not be delayed beyond the sixth year. Beyond that age nothing less than an operation will relieve the condition.

Myopia, in most cases, is an acquired condition, and usually makes its appearance early in life. Statistics seem to prove that the full and early correction of myopia tends to check the progress of a condition that too often leads to blindness.

The following is largely copied from Fuch's text book on ophthalmology, and has the endorsement of all who have given this subject special attention.

"First the excess of work which many pupils have to struggle with should be reduced to the proper standard. The way in which pupils are overtasked both in school and at home is prejudicial not only to the eyes but also to the child's whole mental and physical development. Instruction ought not to begin too early, not before the completion of the sixth year. And more time should be allowed to bodily exercises especially in the open air. That amount of work which absolutely has to be done should be done under the most favorable conditions. Good illumination of a sufficient strength and falling upon the work in the proper direction, mainly from the pupil's left side. By observing these precautions we lessen the tendency to eyestrain, and as a result headaches as well as the development of myopia. Books having too fine print, and also fine fancy work for girls, should be banished from schools forever."

The delicate child that is forced to sit at a piano two to three hours after school hours, too often terminates in a real tragedy. I say this advisedly as I have had ample demonstration in the past to warrant me in making the above statement. A brief report of the following case is one of the many that has come under my observation.

A young girl in the ninth grade whose mother was very exacting was required on her return from school to practice at a piano two hours. A short interval was allowed for rest, and then she had to prepare her lessons for the following day. This girl had a complete breakdown and was put under the care of her physician. I saw her about this time with her physician and found her very nervous with every appearance of a very delicate child. She gave a history of almost constant headaches when engaged in her work. I suggested to her attending physician that we refract her eyes, which was immediately done under a cycloplegic. She now finds perfect relief from her headaches, and together with the care of her physician she has fully recovered her health.

As I have said, I have nothing new and my only object in presenting this paper is to emphasize the importance of a careful examination of the accommodation and muscular errors in every case of refraction.

DISCUSSION.

Dr. B. S. Guyton (Oxford): My experience with school boys and girls seems to be that the most frequent cause of headache is hyperopia or astigmatis. I think we have that type much more frequently than we do headaches from pathological changes. I find a good many cases where I think they need prisms. I do not use prisms a great deal, not as much as I used to, but I think you can use comparatively weak prisms in some cases and get a great deal of good from them, especially in cases of exophoria and hyperphoria. Somehow I have never gotten much good from muscle exercises. This is a very important paper and I am glad to have heard it read.

Dr. W. S. Sims (closing): I do not know anything that I can add to the discussion. I thank Dr. Guyton for his expressions.

SOME OBSERVATIONS WHICH MAY HELP IN A BETTER UNDERSTANDING OF THE PROBLEMS OF OUR MENTALLY ILL.*

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Believing that the problem of our mentally ill is a gradually increasing one; that it is a vital problem in the minds of most physicians; that it is not as well understood as it might be; that it is a problem for the state to a large degree; that its causes are many and that their understanding requires a knowledge of almost everything which modifies human existence, and that a theory based upon accurate observation may bring us as near the truth of the situation as any means we have at the present time, especially as the mind is not capable of being demonstrated satisfactorily through laboratory methods and that some preventive measure is the only remedy by which we may hope for

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much relief, I have set down some of the results of these observations.

In order to make these remarks as clear as possible, I believe we may divide mental illness into three general groups: first, those mental diseases which we find in association with organic conditions, as cerebral arterio-sclerosis, pellagra, endocrine disturbances, syphilis, chronic alcoholism, etc.; second, those mental disturbances for which we know no organic association, the so-called "functional psychoses," as dementia praecox, maniac depressive insanity and the psycho-neuroses; and, third, those conditions which are classified as mental deficiencies.

It would seem that the mere knowledge of the fact that a mental disease is brought on by associated organic disease would, by that very fact, suggest a remedy for its prevention, and this is probably true. However, these conditions are on the increase as are other mental conditions. This fact would seem to indicate that we probably have not given the serious thought to these organic conditions that we should have. For instance, it is well known that the cause of syphilis is infection by the spirochete. This being true, we should be able to find some method of preventing it, and I believe this method could be found if the proper steps were taken. The elimination of this one disease alone would cut down our hospital admissions quite a noticeable degree. Pellagra, I believe, is considered to be due to a lack of a balanced diet, or at least an improper diet. If this is true, does it not seem reasonable that this disease should also be prevented? This would also eliminate from the admission to state hospitals quite a percentage of cases. The same may be said of many other of the associated physical diseases. Of course, some of these physical illnesses are not well enough understood for us to do very much in the way of prevention, but it seems to me that we could do more than we are doing in the way of preventing almost all of them. Any method of preventing these physical conditions which I have named suggests at once quite a variation of endeavor. For instance, if we are to prevent pellagra, it must be done through the individuals affected. This of course would lead us immediately to the homes and schools, the immediate environment of the individuals, and finally, in some instances at least, a remedy would have to be found for the economic conditions. This method of attack would of course apply to most of the other diseases in this group. So it is at once observed that the remedy for the situation in these conditions would necessarily mean the coöperation of many agencies, and would become in the last instance a problem for the entire state. This work could, it seems to me, be best carried on through and by the State and local Boards of Health. When we realize that approximately 18 per cent of such cases are shown in the first admissions to state hospitals it will be seen that it would be worth while to consider some method of eliminating as many as possible from our institutions. It would be economy in the end, besides the fact that it would add a great deal of useful human activity to the world. So much for the organic cases.

What may be done in the way of a prevention or cure of the functional psychoses? These are probably the least understood of all mental troubles and comprises approximately 50 per cent of our first admissions, and a still larger per cent of our daily population. It may be stated with accuracy, I believe, that there is very little to be hoped for in the way of a cure for most of these cases. Some of them can be helped and seem able to adjust themselves to a certain degree, but very few are ever entirely cured once this condition has progressed to the degree where they have to be institutionalized. From this statement, it seems that if anything is ever to be done which will materially help, it will have to come through prevention. I believe we can better understand the situation if we look at these mental conditions in a comparative way, that is, try to compare the so-called

abnormal mental reactions with the normal.

If we think of this kind of a psychosis simply as a method of reaction to life's problems, just as conduct is the method of reaction of the normal individual to the problems of life, I believe we will be able to see considerable likeness. For instance, the normal individual has periods in which he is grief stricken, angry and acts on the impulse. He has doubts, uncertainties, hates, loves, suspicions, happiness and despondencies. He reasons, reaches conclusions and acts. He has beliefs, and these beliefs are a result of all of his knowledge and past experiences. Many of his conclusions are wrong. Many of his acts are erroneous; many of his beliefs are false, because they are founded on improper knowledge, or because they are colored by an unconscious prejudice. Many of them cannot be supported by sound logic or facts, yet he holds fast to them, even to the peril of his existence sometimes. The fact is that none of our lives are logical. We are governed to a very great extent by the emotional values which we give to the circumstances of life. This is as it should be, for if we were cold, logical beings, all people and all things would have the same value. Our conclusions and reactions depend upon the value we give to the facts or circumstances which go to make up the material from which these conclusions are reached. The deviation from normal will be in direct proportion to the difference in our own evaluation, and that of society in general. Furthermore, the normal mind is capable of imagination, fancies, and day dreams. It has wishes and desires, and many of these are satisfied temporarily by these imaginations and fancies. Many of us have thoroughly defeated our enemies by such processes of the mind. Many of us have felt the presence of our loved ones by the same mental processes. While these mental processes are taking place, we manifest their presence by our peculiar reactions. Usually there is evidence of it in the facial expressions, in the vaso-motor reactions, and sometimes by actual gestures with our hands, and occasionally by laughing aloud or talking to ourselves. In many people these things become a habit, and therefore a part of the personality of the individual, and, to his close friends, this individual is considered very peculiar and sometimes quite amusing. Of course, in the normal mind this condition is temporary, and the individual is able to bring himself back to reality when the occasion demands. Nevertheless, it is our method of accomplishing a desire, or wish, or ambition, which, if accomplished in fact instead of fancy, would lead us into difficulty. The fact is, these reactions take place because we are inclined not to want to face the actual fact at the time. It is nature's method of letting us realize our desires without causing trouble. Another thing which should be mentioned in this connection is that one normal individual may be successful in one particular line of endeavor, while another who has just as much intelligence may be a total failure in that particular work; while the one who fails in that particular work may be eminently successful in another line of endeavor. In other words, no two individuals are able to adjust themselves to the same thing, or to the same way of living, in an equal degree. There is that same difference that we find in different human beings. Life from birth to the grave is made up of adjustments, and the population of our state hospitals is composed of those individuals who failed to properly adjust themselves.

If, now, we think of the natural reactions of the mind as outlined, above, and which we know as temporary phenomena, and consider what the result would be if any or all of these peculiar phenomena should become chronic and fixed, I believe we shall be able better to understand the functional psychoses. For in reality that seems to be what takes place. These individuals are in a chronic mental state of fancies, imaginations, laboring under doubts and uncertainties, have chronic

beliefs founded on fears, improper perceptions or perceptions colored by insufficient or misleading information or profound prejudices, or they have taken advantage of some of the primitive methods of reactions, because they cannot or will not face the facts of life. The thing that causes these individuals to seem so peculiar and unreal is that the chronicity of this condition brings about a lack of normal interest in the outside world, and they become mentally deteriorated, simply because the mind is occupied in one channel only. In other words, almost all the abnormal reactions which I have observed in these individuals, have their miniature duplicate, temporarily, in the normal individual. Certainly we react as we do because of one of two things or both. Namely: instincts are the inborn qualities of the mind, or those qualities of the mind which are obtained through our perceptions. That is to say, nothing, except our instinctive reactions, ever come out of the mind that has not previously gone into the mind through our perceptions. If, then, this conception of the situation is correct, can we not conceive of a remedy which will at least help in lessening the number of such individuals? A training which would teach them very early in life to face and overcome the facts and realities of life in a civilization such as ours. Their failure is a failure of proper adjustment. Anything, then, which may be done that will help the individual to a better adjustment to life's problems will tend to prevent these chronic mental conditions. Such a conception as this, of course, will lead to a very wide field of endeavor. It will lead directly to the home, the school, the social condition surrounding the individual and the economic condition. It may also lead us to change some of our own ideas, for we must, as scientific men, keep our minds open to the point of acceptance of what our observations show us to be correct, but if it will help in solving the difficult problem of these individuals I believe it will be worth our effort.

We know that the minds of children are very capable and very apt in accepting training. It is extremely difficult for any mind completely to get away from its early training. A habit of any kind once formed is difficult to get rid of. This being true, it seems reasonable to believe that many of these minds, even though they are somewhat peculiar, could profit a great deal in the business of living if they were properly trained, and formed the proper habits of life early. It also seems reasonable to believe that they could be helped in many instances by directing their peculiarities in such a way that they would not lead them into later difficulties. It is only necessary for us to read the lives of some of our great men to be convinced that many of these great men were extremely peculiar, but in some way they directed these peculiarities in a way which did not lead them into trouble with the social customs of their day. Another thing which I believe we cannot overlook is the fact that, as civilization has advanced, it has thrown increased restrictions around human nature, and these restrictions are always more or less repellent to nature's laws, so it might be well for us to consider just how far these restrictions should go. It is quite possible, that natural human instincts can be restricted to the degree where nothing but harm can result so far as society is concerned. Sometimes, it seems, that our restrictions have come faster than society in general has been able to understand and react to them intelligently.

While I am convinced that a great many of these individuals can be helped through some sort of early training, I am just as much convinced that there are many of them that will never be able to adjust themselves to the social customs of the present day, no matter how much early training is given them. A great many of them simply seem to be born with a lack of that quality of the human mind which enables them to absorb enough through training to compete properly with the

difficulties of living. The final outcome is always a life in our state institutions.

I cannot understand how anyone who is acquainted with the population of state institutions, and the records of these individuals, can help being convinced that mental disease runs in families. These records show case after case with a history of mental abnormalities in one, two and three generations, and it is my opinion that these instances would be still greater if we could always get the proper information concerning the family history. As the record stands, this evidence of mental abnormality in the families of these individuals runs approximately 50 per cent or 60 per cent. I do not know any other way to account for this condition of affairs except by heredity. But about heredity I shall have a little more to say when I take up the feebleminded. That it plays a large part in the functional psychoses I think there should be no doubt. If this is true it seems reasonable to me that the only way in which we will be able to prevent the psychoses which are the result of such a condition is by stopping the propagation of such individuals.

I believe that it is unnecessary at this time to say very much regarding the feebleminded group, as it is apparently quite well recognized by almost everyone that the problem of the feebleminded is one of the greatest problems with which we are confronted. There has been considerable written recently regarding this subject and the only thing I wish to do is to make a very brief comment.

This group, as is well known, is comprised of those individuals who are intellectually incapable of training to the extent that they become useful citizens. Their mental qualities, for one reason or another, are arrested at different levels of growth, always somewhere below normal. Because of this lack of growth they are incapable mentally of competing with life's difficulties. In this class of cases, as with the phychoses, it seems that the only relief that we may intelligently hope for must come through prevention.

This brings us again to the subject of heredity. It may be said here that the writer has no intention of going into the many theories regarding heredity, however, if we are willing to accept facts as observed in hospitals for our mentally abnormal, we must concede that a very large per cent of these cases are due directly to heredity. It seems to me that it would be impossible for anyone who has had experience in observing the records of these cases in our institutions to escape the conviction that at least 50 or 60 per cent are due directly to hereditary influences.

We realize of course that some of these conditions are brought about by injuries and diseases in very early childhood, or at birth. The prevention of these injuries and illnesses, of course, would aid in the elimination of just that percentage of the feebleminded. This fact is undoubtedly well recognized by the obstetrician and those engaged in general practice, and through them we may logically hope for methods which will lead to the prevention of such conditions. Therefore the thing that interests us most at the present time is the hereditary influence.

I believe that it is unnecessary for us to expect to have proof for all of our convictions by laboratory methods. With our present day knowledge a great many things which we believe concerning many human ailments cannot be proven by laboratory methods. In this connection I believe it is well to call attention to what might be considered the great human laboratory which is constituted by these institutional cases. Personally I cannot see why we hesitate to base a belief or a conviction upon sound observation of these cases over a long period of time. It seems that such a conviction would be just as sound as if it were supported by so-called laboratory facts.

We know that both the physical and mental characteristics come from the same germinal cell. I think that no one would doubt that physical characteristics, normal and abnormal, are transmitted directly through hereditary influences. If this is true, then, why should we hesitate to apply the same principle to the mental qualities? The problems resulting from the abnormal mind probably will never be capable of lending themselves to laboratory procedure, so it seems that we should be able to find some other method upon which to base our convictions, because the remedy for some of these conditions must be found. Aside from the literature in support of such a position I believe that we are fully justified in accepting this theory of heredity regarding this particular class of patients. The records of the state institutions will show, I believe, to any unprejudiced mind the direct influence of heredity in the majority of the cases which come to these hospitals.

It is unreasonable for me to believe that the offspring of two feebleminded individuals could possibly be normal. I cannot conceive of how this could take place. If I am correct, then, in these conclusions, a remedy is at once suggested for their elimination. It is to stop the propagation of such individuals. If this could be done thoroughly I have no doubt but that with in the course of a few generations we would see wonderful results. If we do not take some steps to prevent the increasing number of such a class of individuals the only thing that we can logically expect is a great financial burden in taking care of them. I have personally tried to look at this question from an unprejudiced viewpoint, and when I study the records and histories of these cases and observe them as we observe them in hospitals I cannot escape the conclusion that the only remedy which will be of any great benefit is prevention and I know of no other method of prevention than that outlined above.

In conclusion I wish again to say that if we expect to progress in the elimination of our mentally deficient individuals of all classes we must approach the question with unprejudiced minds and be willing to accept any solution which has for its basis sound observation. I seriously doubt if we shall ever be able to adjust these conditions to laboratory methods as these methods are understood today. As stated, mental conditions simply do not lend themselves sufficiently well to these laboratory experiments to enable us to get very much benefit in that way.

THE TOPICAL APPLICATION OF COCAIN IN THE NOSE.*

E. F. HOWARD, M. D.,
VICKSBURG, MISS.

Last spring, in reply to an inquiry regarding methods of using cocain in nasal surgery, I had a letter from Dr. Emil Mayer of New York, chairman of the A. M. A. committee on Toxic Effects of Local Anesthetics, that concluded as follows:

"Some day a cocain user will have a fatality, will be sued and if the lawyer knows his business, the defendant will be mulcted in damages that will teach some of the obstinate ones more than I and a dozen others can by directing their attention to the danger."

It is with the hope of doing something towards preventing this lawsuit from being staged in Mississippi that I am presenting this subject to you today.

The committee of which Dr. Mayer is chairman has laid down very definite rules for the use of local anesthetics. Cocain, no matter how weak the solution, nor how small the quantity, must never be injected into a patient. In the nose, by topical application, not more than 1½ grains may be used, and this in solution not to exceed 10

*Read before Mississippi State Medical Association, Jackson, Miss., May 10-12, 1927.

per cent. Since epinephrin increases the toxicity of cocain, not more than 1 mgr. of this drug may be added to cocain solution. This means that the operator relying on 10 per cent solution to produce anesthesia for his nasal surgery is limited to fifteen drops and, if he wishes to use the permissible mgr. of epinephrin, he simply dissolves his cocain in stock adrenalin. Most operators—and all patients—will be apt to find that, as ordinarily applied, this gives a very unsatisfactory anesthesia for anything but the slightest procedure.

Of course we understand, and I freely admit, that each one of us as a physician, has a right to his own opinion as to what does or does not constitute a dangerous dose or a dangerous method; but we must also admit that few, if any, of us have ever made any real investigation of the toxicity of cocain, or any other drug for that matter, and that the men who constitute the committee know a lot more about the subject than we do, probably more than any one of us will ever know, unless he happens to have a fatality. Their conclusions are based upon much investigation and honest endeavor, and may be taken as the most authoritative statement yet made on the subject. And it means that any man who exceeds the prescribed dosage and has an accident had better settle the case out of court, for not only have the committee's recommendations been officially approved by the A. M. A., but many of the leaders in our profession have publicly announced their acquiescence. You may remember that this was one of the reasons why Beck began to study synergistic analgesia.

Just to get a bird's eye view of our chances in Mississippi, I have endeavored to find out how much cocain, per operation, we are using. I have found one man who does not use cocain in nasal work. Of the other 25 who replied to my inquiries:

11 use weak solutions—less than 10 per cent.

10 use 10 per cent or stronger.

3 vary, sometimes strong solutions, sometimes weak.

1 uses paste consistently.

4 of these men use paste for nerve blocking in connection with weak solution.

Four add no epinephrin, the others use it in the stock adrenalin solutions, or a dilution, the amounts of solution varying from 2 minims to 1 or more drams.

Three measure the amount of cocain solution used. Others, when asked to estimate, guess at it, and the answers run to wide variations:

"Try not to exceed 2 or 3 grains."

"Most of 5 grains."

"About 7½ grains."

"10 grains on the average. Rarely over 12."

"Try to use not more than 3 drams of 20 per cent solution."

Now just fancy what would happen to one of these men defending a damage suit based on a cocain death. A friendly juror would be his only salvation.

There can be no question that we have been decidedly reckless in the use of cocain for nasal work. And it is so entirely unnecessary. Synergistic analgesia, novocain injections, and nerve blocking will do all that one needs, or if a man cares to rely on cocain, the preliminary use of adrenalin plus a high concentration of the cocain will bring him well within the margin of safety. Personally I prefer to use the condemned paste; but I have it from Dr. Mayer that the amounts I use are entirely safe. It is the quantity of cocain absorbed that constitutes the danger, and since I have been accurately estimating the amounts I use, now some two years, I find that I can do a simple septum resection with an average of approximately 65 mgr. and this in cases where no synergist is employed. By giving a preliminary dose of morphin this may be frequently reduced.

The trick of getting good anesthesia with small cocain dosage is, I believe, to be found in the preliminary application of epinephrin. As Dr. Dan McKenzie expressed it (Lancet, May 30, 1924):

"Let the surgeon paint the mucosa first of all with pure adrenalin solution alone and undiluted, in order to induce the local anemia that minimizes absorption, and, at the same time denudes and exposes the sensory nerve endings." If you will do this, whether you work with weak or strong concentrations, you will need less cocain.

For the past two years, for a simple septum resection, I have a measured 15 drops of adrenalin and a weighed 100 mgr. of cocain put on the tray and I never fail to send back part of the latter to be weighed out by the laboratory.

In other operative procedures the matter is not so simple. The anatomic conformation of the septum especially lends itself to topical cocainization, we get at it from both sides. Elsewhere other methods, or a synergist, are used. But whatever this may be, if the topical application is to be a part of the anesthesia, I find the preliminary shrinking is a great help.

DISCUSSION.

Dr. L. S. Gaudet (Natchez): Mr. Chairman and Gentlemen: Dr. Howard's paper has drawn quite a number of merited remarks from different journals. If I remember well I have seen his work commended and complimented in three journals. The problem of the amount of cocain to be used is an important one, and a paper such as his is timely, I think, because we have been working a great deal in the dark in so far as the application of cocain is concerned, and as he says, some bright morning we will wake up with a lawsuit on our hands if we do not know what we are doing.

Some four or five years ago I was in a hospital and saw some of the work done under local anesthesia, and the way they dumped out cocain on a piece of paper and put the wet swabs in it and put it to the nose, looked to me criminal, because I am sure they had thirty-five or forty grains of cocain—that amount of course is unnecessary.

Dr. Howard brings out a point which I am glad to say I have used in three cases of sub-mucus with good results, applying the adrenalin first and then applying cocain powder or paste or granules to the mucous membrane and keeping the cocain on one side of the swab. Certainly you use much less and a less dangerous amount. In my experience for many years in the use of cocain, I am glad to say I have only had the symptoms of cocain poisoning in one case, and we promptly stopped it. The patient was on the operating table, and we promptly administered an antidote. This case we were preparing to operate for a radical antrum. I had 30 drops of a 5 per cent solution of cocain measured out in a little glass. I took a little piece of cotton, dipped it into this cocain solution and stuck it under the lip, preparatory to injecting some novocain to complete the operation. That was done on the operating table when he arrived in the operating room. This case had been gone over physically, and was pronounced in good condition for an operation; in fact, his family physician sent him over for operative work. About ten minutes after the application of this cocain he began to groan, his pupils became dilated, he broke out in a cold sweat, and his skin became clammy and he had a little convulsion. He said: "I feel mighty bad." I said to the nurse: "Give him a little ether." We did that and his symptoms promptly went off. That was a little bit before I got Dr. Howard's correspondence and we caught it in time. Fortunately I had always been measuring my novocain or cocain for that same reason. Some day some lawyer might ask me how much cocain I used and I would not be able to tell him. I look at the table and the glass and the nurse and the cocain solution when it is put on the table. It is all measured out and I think it is a mighty wise thing to do. Dr. Howard's paper deserves a great deal of merit because he is bringing facts to us which we fortunately have not had to face, but some bright day we might, and so let us measure our cocain when we go home.

I may not agree with the committee on local anesthesia of the A. M. A., though they are very wise and brilliant men, but the older we get, and the longer we practice medicine, we work out ways and means of our own that prove more satisfactory in our hands than they do in the hands of others. You will not be able to get very good results with the quantity the committee permits. If you have a pretty straight septum, you might be able to get good anesthesia, but if you have a very crooked septum, with considerable amount of connective tissue, you might have to use something else, or you might have to use a little more cocain, which is justifiable from a legal standpoint because that is the patient's trouble and not yours.

In so far as tonsil work is concerned, we confine ourselves to the topical application of just a certain amount of cocain and no more, and we go along with our novocain injections and get good results. That brings up the question with many men as to whether the topical application of cocaine in tonsil work is good or not. We do not know, but that is a little bit irrelevant to this paper. The great thing that faces us is to take recognition of the fact that we ought to know the amount of this toxic poison we use, and if we use three grains it is not all absorbed, probably one grain, or one and a half, which goes into the circulation, so I consider from my own standpoint this one of the valuable papers before this section. I thank you.

Dr. E. Leroy Wilkins, Clarksdale: I enjoyed Dr. Howard's paper. I had read it before I came here, and about a year ago he sent out a questionnaire on this subject. I had been going along using as little cocain as I could in my work, as I was just a little bit afraid of it for one thing, and of course it was cheaper, but I had not paid any attention to just how much cocain I was using. I was using a relatively small amount, but when I got Dr. Howard's questionnaire, I began to think and think much more seriously than I had ever before about how much cocain I was using. I am frank to say I have cut down my over-head some more. I am using less and being more careful with it. In about three cases since I got Dr. Howard's communication last year, I have tried to use his method, but in each one of these I had a very severely angulated septum with scar tissue and I had to use more cocain, but it has been surprising to find how well I have gotten along with less cocain. I have, of course, not been getting a great deal of absorption because a part of it I have used in my swabs remains in the swabs. It is impossble to tell how much, but I used a whole lot more than the limit, and I want to thank Dr. Howard for putting the scare into me.

Dr. D. H. Anthony (Memphis): I appreciate this paper very much, and I rise to get some information from him. I would like to know his method of how he applies his cocain. I have always thought that in the application of cocain, if you want it in one spot in the nose, that you get a cocainization radiating about one-half inch from the topical application of the cocain, and I would like to know if this is right, and if the time permits and he could give us a little more on how he uses it, I would appreciate it.

Dr. E. H. Jones (Vicksburg): When I began this work one of the men that I learned a good deal from, started me off using 10 per cent cocain in 33 per cent adrenalin, and before I knew any better I have several times resected septums, using as much as two drams of that solution. After going into the practice, I preferred the cocain paste method but do not know how much I used, and do not yet. When Dr. Howard started out on this work, I, perhaps, saw a little bit more of it and I got just as scared as the rest of these gentlemen; I feel quite grateful to him about it, and since then I have conformed to his methods entirely; in fact, at the Vicksburg Infirmary, it is routine for the cocain to be weighed out in 100 milligram charts, and when you call for cocain that is what you get. Dr. Howard sends his back to be weighed. I usually just estimate the amount I use and I find I generally use around 65 milligrams. In two cases I tried to see how little I could use. These cases had a preliminary half grain of morphin—one was a charity case and one a private case—I was able to resect two septums on 25 milligrams of cocain each. I think that was rather noteworthy.

Dr. Howard left out one point in his modesty that I happen to know. He stated that it isn't how much cocain you use, but how much the patient absorbs. From a series of cases he had his swabs sent down to the laboratory and had them work out the percentage; he will be glad to tell you the percentage that was returned.

There is one thing I am mentioning, not to throw a monkey wrench into the works, but if anybody does get into trouble, this is a point that might be worked out. Dr. Howard says flatly that the A. M. A. Committee states that cocain in any solution whatever should never be injected, yet one of my friends visited at Mayos last year and he found them using 0.1 of 1 per cent by injection for removal of tonsils. We know we should not use so much cocain, but Ballenger says that 20 per cent cocain is always necessary, and at times it will be necessary to use pure crystals of cocain to get anesthesia. What are you going to do? Stay in the limits or get anesthesia? Dr. Shea uses a 2 per cent solution of novocain by injection. It works very nicely. I never have found in sinus work that it will remove all the pain, but the injection of novocain has another possible advantage, when you use cocain you have to wait for it to be absorbed, but when you use novocain you get it right now. I use the cocain paste, and when it does not give relief I use a 2 per cent of novocain by injection, and I keep account of how much I use.

Dr. H. L. Arnold (Meridian): This is a very fine paper that Dr. Howard has read, and I know you have changed up in the last few years on the use of cocain. I started out to use it freely. I used the paste. I do not use cocain in tonsil work at all. In septum work I find it is not

necessary to use a stronger solution than 10 per cent, but I also elevate the mucosa with one-half to 1 per cent novocain, so I do not rely on the cocain. I have never had any trouble in getting a deadening of the turbinates with 10 per cent solution of cocain, if you place it well up in there and leave it long enough, and by that I mean fifteen or twenty minutes. I find the secret of using small amounts of cocain is to use small swabs of cotton and place them right where you want them and leave them, and in that way I can get along with much less than I could a few years ago.

Dr. E. F. Howard (closing): When it comes to the question of using a local anesthetic and the question of time, there invariably occurs to my mind a remark I heard made once before a group of doctors who had just been discussing the question of local anesthetics in general surgery, and one pompous old individual got up and said, "Well, I have never bothered much about local anesthesia because it takes up so much of my time"; and he being one of the leading members of the local profession, a number of the doctors in discussing the paper brought out the same point, and the gentleman who had read the paper, in closing, said: "Regarding the question of time saved, I think that if you will find just how to handle the anesthetic, and know what you are doing, you will get along quicker than you will with general anesthesia; but even if you do not, the doctor who will sacrifice his patient or subject him to a greater danger simply to save a little time for himself, isn't fit to practice medicine."

When it comes then to the question of using a method, if that method takes a little bit more time than another method, I think we had better sacrifice the time for the good of the patient. Frequently we have to wait for absorption.

The question was brought up regarding the waste. When we use cocain in solution we put that swab wet with the solution up into the nose. If the nose be at all tight, or if we press the swab against the septum ever so lightly, some of that solution runs down on the floor of the nose, and if the patient is lying down, may go back into the pharynx, where it is both wasted and absorbed. In the old days, before I learned to use the paste, I frequently had patients spitting and complaining of the bitter taste. I do not use the crystals, I use the flakes. It gets in better by the use of the flakes. I can control the application of the cocain to the area I am going to operate on, and it does not go spreading all over the face of the earth to be absorbed somewhere else and to waste, which I try to avoid because I have gotten to the stage where I count my milligrams of cocain as if they were so much radium, because I want to know the exact quantity. I have my cocain in flakes, get a little adrenalin on the swab, squeeze the swab nearly dry between the thumb and finger, and then apply one side of it to the cocain, very lightly; frequently when I put the cocain in the nose there will be a flake of it blown off by the breath of the patient. It is practically pure cocain and there is enough moisture already on the septum to hold it. I really believe if you could put it up there entirely dry and paste it on, it would be the best way, for it would stick even if the nose had been partly dried out by your preliminary adrenalin. Sometimes one application of cocain flakes is all that is necessary to do a septum resection. Take the swab, slip it up with the side of the swab carrying the cocain next to the septum, wipe it on, turn it over and go up the other side. I put on the adrenalin and then I just chat with the patient; here is where I am apparently wasting time; in fact, when I am operating on a septum I am frequently keeping up a string of conversation, keeping the patient's mind off it. I talk to that patient after the application of the adrenalin—may stroll around the room, but I am not wasting any time. I am simply giving time for this to act, and then, after two or three minutes, I go ahead with the cocain.

When it came to the question of how much cocain the patient got, by running alternate cases, one with 10 per cent solution and the next with the paste, we found there was very little difference in the amount of cocain actually left on the swab by either method, and that it would vary between 10 and 15 per cent; so if you use 100 milligrams in doing an operation you can say that the patient got 85 or 90; that represents the waste, the amount remaining in the swabs. I do not know the method that the laboratory man used in extracting this cocain from the swabs. I do know he had an awfully hard time doing it, and that it was several weeks before he got a method to suit him, and even then I think it took something like twenty-four hours to get it all out. I remember with some amusement that he wrote to several chemists of some reputation, asking how to get it out, and one man, who was at the head of the laboratory of a pharmaceutical house of some reputation, wrote him he did not think it was worth while to fool with it, that he would find it more expensive than to go ahead and buy more.

The question of cocain idisyncrasy is an interesting feature in connection with this. I had one right lively cocain knock-out in a patient on whom we used something like 50 milligrams and when the laboratory man went up to the chart room to make a note on the chart of the amount

of cocain I had used, and he saw the rest of the history, he said: "My God, what would have happened if you had gone ahead and used it like we used to in the old times?"

When I say cocain under any circumstances must not be injected, that is a quotation from the committee of the A. M. A. Whether we agree with the committee or not, if it comes to a lawsuit and the lawyer on the other side gets hold of the fact that we have injected cocain, and lawyers are pretty wise these days, he will say: "Doctor, you injected cocain and you know, don't you, that the committee of the A. M. A. says you must not inject cocain?" "Yes, I know." What are you going to do? I am putting this up simply as a question of safety.

Dr. B. S. Guyton: Has that been recognized as the action of the committee? Has it been published in the Journals?

Dr. E. F. Howard: Yes; spread all over the face of the earth.

Dr. B. S. Guyton: How do you apply that cocain when you are going to do a sphenoid?

Dr. E. F. Howard: That is another question—I am referring to topical applications only.

COMPARATIVE RESULTS OF THE CAUTERY VERSUS THE STURMDORF OPERATIONS IN CERTAIN LESIONS OF THE CERVIX.*

D. I. HIRSCH, M. D.,

MONROE, LA.

The question of results obtained by the use of the cautery and the operation of Sturmdorf resolves itself into the consideration of chronic endocervicitis.

It is not my intention to go into details regarding the etiology and pathology, I will speak in generalities, only touching the high spots and pass on to the question before us: Which is the better procedure in the treatment of these chronic cervices?

Chronic endocervicitis is a low grade infection of the cervical mucosa. This inflammatory process may be confined to the mucosa of the cervical canal or may extend to the deeper tissues causing a cervicitis. Uterine and cervical mucosa differ greatly in their structure, the uterine mucosa being fairly immune to these chronic infections.

*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

Etiology—The predisposing cause is usually a laceration, which becomes infected, the infection spreading until it involves the entire cervical mucosa. Gonococci, staphylococci, streptococci and colon bacilli are all causative factors; also the lowered resistance caused by diphtheria and scarlet fever in children. No doubt many of these infections originate in childhood.

A most recent paper by Dr. C. Jeff Miller in the November 20th, 1926, number of the Journal of the American Medical Association gives in detail the etiology, symptomatology and secondary pelvic manifestations of chronic endocervicitis, and from his paper I will take literally the pathology and symptomatology and incorporate it into this paper.

The gross picture of endocervicitis may differ in intensity, but is for the most part typical. The cervical mucosa appears red, swollen and more or less everted, and there are circumscribed areas of glandular proliferation about the external os. The columnar epithelium of the canal may have pushed itself out on the vaginal aspect of the cervix and it may have overgrown or completely replaced the stratified epithelium normally present, producing the so-called erosion, which, as has been repeatedly pointed out, is in no sense an ulceration, but merely new cell formation resulting from the proliferation of the lymphoid tissue within the canal. Hypersecretion of the cervical glands, which results both from the prolonged vaginal contact and from the distorted structure, results in turn in hyperplasia of the cervical connective tissue. The occluded glands, which may be actually plugged by tenacious mucus as well as by the overgrowth of squamous epithelium, or by hyperplasia of the periglandular tissue, and the cyst formation, which is not infrequent, added to the hypertrophy, so that the cervix may be several times its normal size. The microscopic picture, which concerns us as clinicians only incidentally, will vary from mild inflammatory changes in the stroma and excess of glandular tissue to marked cystic

changes and even to multiple abscess formation.

SYMPTOMATOLOGY.

The symptomatology of the disease is varied and is often complicated by the fact that, when the patient reaches us, we are dealing not only with endocervicitis, but also with associated or resulting pathologic change that may entirely overshadow the original lesion. The most constant symptom is a leukorrheal discharge, usually odorless, varying in quantity and varying also from a thin, mucoid secretion to a highly colored, purulent one, as is nearly always the case in gonorrhea, but always characterized by its tenacity. Menstrual derangements are not uncommon, being the result of a secondary hyperplasia, a circulatory stasis, or a secondary ovarian involvement. Backache and dyspareunia are not ordinarily present unless there are associated displacements or parametrial involvement, particularly posterior cellulitis, with extension to the uterosacral ligaments. Sterility is a frequent complication, owing to the plugging of the cervical canal by tenacious mucus or the thickened cervical mucosa, or the destruction of the spermatozoa by purulent secretions. Constipation is frequent and systemic manifestations will vary according to the severity of the disease.

Since the leukorrheal discharge and the gross cervical picture are in most instances pathognomonic, diagnosis does not ordinarily present many difficulties. Tuberculosis and syphilis of the cervix, both comparatively rare conditions, may be differentiated by the history and the general physical and laboratory examinations, as well as by the fact that normally in both the tendency is toward destruction of tissue rather than proliferation. Smears should always be made, and cultures if necessary, in an endeavor to identify the infecting bacteria, and in suspected malignant diseases laboratory studies are essential for a differential diagnosis, which is imperative in view of the radically different treatment necessary in each instance. It goes without saying that infections of the lower genital tract, and of the upper pelvis, should be carefully differentiated also.

THE CERVIX AS A SOURCE OF FOCAL INFECTION.

There has been considerable work done to establish the cervix as a focus of infection. Much work has been done by Laura Monech, Sturmdorf, Langstrath and Rosenow. My personal experiences have been very interesting and would tend to show that an infected cervix can become a focus of infection. This is borne out by the very interesting fact that seven of these cases treated with the cautery developed general malaise and vague pains which lasted from four days to six weeks. In two of these cases temperature as high as 102 was observed. There is no doubt that the temperature, malaise and pains developed from absorption from the infected points of cauterization. In two other cases these patients were entirely relieved of aches and pains, which were not relieved by removal of the teeth and tonsils.

TREATMENT.

We will only consider the linear cauterization as advocated by Hunner and Russell, and the operation of Sturmdorf. The technique of these procedures will be demonstrated by lantern slides. The ideal cases for the cautery are those in women with a slight cervical involvement without much eversion of the cervical mucosa. In those cases in which there is a profuse mucus discharge without eversion, in women that are sterile and want children, the cautery should be given a very thorough trial. I have treated 31 cases with the cautery, 23 of which were known to have had gonorrhea, 12 have been observed recently and are well, 8 have been too recent to form any conclusions. Of the remaining 11, 3 I have not been able to see, and in 8 it was

found necessary to do a Sturmdorf. To recapitulate:

Cured	12
Operated	8
Recent	8
Unknown	3
	31

Of the 8 cases operated, 1 was a young married woman never pregnant, with a profuse mucus discharge which necessitated wearing a protector; negative for gonococci. Cauterization was resorted to twice at intervals of six months, with no results. The others were in cases which were badly selected for the cautery and needed operation as the treatment of election.

I cannot pass from this subject without mentioning that from four to six months is as early as results can be expected following cauterization, and that immediately following cauterization the discharge is more profuse. Patients should be informed of these facts so that they will not become discouraged. The objection to the treatment by the cautery is the fact that it is nearly impossible to destroy all the infected mucosa. Sometimes it is necessary to repeat the cauterization. In my cases there were eight failures or 30 per cent. In 17 cases, in which the Sturmdorf operation was performed, all have been cured except one, in which too little cervical tissue was removed. All of these cases have been relieved of leukorrhea, backache, and concomitant symptoms. Two have had normal deliveries following the operation, and are still free from any infection.

CONCLUSIONS.

The cautery has its place in the treatment of endocervicitis, but it is limited to those cases in which only part of the cervix is involved. It should not be used in cervices that have been lacerated, those that have a typical rosette appearance. It can be tried upon any case with the understanding that should it fail a cure can be assured by following the technique of Sturmdorf. The cure of an infected cervix will, in a great many cases, result in a cure of the pelvic inflammations which are so commonly seen accompanying chronic endocervicitis.

DISCUSSION.

Dr. P. Graffagnino (New Orleans): The subject chosen by Dr. Hirsch for his paper is certainly an important, widely discussed, and an intensely interesting one from a gynecological viewpoint.

I have always been an ardent advocate of cauterization in the treatment of endocervicitis and know of no procedure that gives a better result or more lasting satisfaction. In reviewing the reasons why we have been impressed with cauterization, we find they are many. First, you get rid of infection. If you consider the peculiar anatomy of the cervix with its gland bearing epithelial lining so susceptible to infection and which is the seat of latent gonorrheal infection, the reason is at once apparent. Any topical application, such as the medicated tampon of silver nitrate or mercurochrome is worthless.

I believe that cauterization, to be effective, should always be done in an institution under general anesthesia, as the necessary exposure of the cervix can be accomplished in no other way. The cervix should be thoroughly treated with a limited number of linear cauterizations, leaving small bridges of tissue between the cauterizations to permit of subsequent epithelization. In many of our infected cases, we split the cervix anteriorly and posteriorly so as to reach and entirely remove all the infection bearing lining and prevent recurrence due to reinfection of the glands above.

Now, what to expect from the cauterization? In lacerations of the cervix the injured cervical mucosa, constantly exposed to the acid vaginal secretions, becomes infected wth resulting congestion and eversion, which, in turn, produce hypersecretion. This profuse leukorrheal discharge, with its attendant discomfort and the necessity of changing clothes, is one of the most distressing conditions for which the patient seeks relief. Following cauterization there is retraction of the cervical mucosa, the eversion is corrected and the discharge cured.

There are two things to remember, the first, that it is impossible to get a hemorrhage from cauterization. We sometimes have cases of severe hemorrhage subsequent to cauterization when the sloughing occurs, but the simple application of a tampon and pack will control the bleeding. The second, is the possibility of blocking your cervical canal by retraction of tissue when cicatrization takes place. Have your patients return so as to avoid this possibility.

We use the cautery in all cases of cervical infection in the child-bearing period and have practically given up the knife in this type of case, limiting the Sturmdorf amputation to women past child-bearing. But where the radical procedure is definitely indicated we do a high amputation so as to eliminate the possibility of carcinoma.

Dr. David I. Hirsch (closing): I want to thank Dr. Graffagnino for his very liberal discussion, the points that he brought out and the reasons why we affect a cure with the cautery are well given. But I do think that the operation of Sturmdorf has its place in the treatment of some of these cervical infections, if they be selected. Other treatments, radium, etc., I did not mention.

When you consider the fact that the majority of women seeking relief from the gynecologist have cervical infections, when they reach you if you will employ these simple procedures and then keep them under observation a sufficient length of time to know they are cured, that time will be well spent and you will have accomplshed a great deal of good.

THE CONTROL OR CURE OF PERNICIOUS ANEMIA BY THE MINOT-MURPHY LIVER DIET.*

SEALE HARRIS, M. D.,

BIRMINGHAM, ALA.

Minot and Murphy's astounding results in the treatment of pernicious anemia with the liver diet and the confirmation of their work by a number of clinicians, make it appear almost certain that the clinical cure of one of the most fatal maladies known to man has been discovered. When we remember that every text-book on medicine in existence, unless some have been published or revised in the last few months, classified pernicious anemia as a hopelessly incurable disease, its conquest by so simple a method of treatment is one of the most remarkable achievements of this or any other age.

Minot and Murphy have not asserted that the liver diet will cure pernicious anemia. They only publish the fact that the blood of 90 patients with the disease, when given a liver diet, had increased from an average of 1,480,000 red blood cells per cubic centimeter of blood to more than 4,000,000 in one month; and that the symptomatic improvement in all cases, except those with demonstrable cord changes, was equally marked. In 45 of Minot and Murphy's cases the blood count had been practically normal from 1 to 3 years and these patients had remained free from symptoms referable to pernicious anemia so long as they continued the liver diet. It would seem that if pernicious anemia cases have been clinically well for 3 years, and that if no patient who kept up the liver diet had a return of symptoms, the disease may be classed as among those for which a specific remedy is available. To say the least of it, the assertion can be made without fear of contradiction, that pernicious anemia can be controlled and the patient remain free from symptoms so long as he will eat liver, just as diabetes treated with insulin combined with the proper diet, need not shorten the diabetic's life or interfere in any way with his efficiency or happiness.

The liver diet does not remove the cause of pernicious anemia, whatever that may be, and it therefore cannot be called a complete cure. Nevertheless, as in scurvy, the patient can be cured of that disease by eating fresh fruits and vegetables, but when he leaves off food containing vitamin C the scurvy returns; so can the pernicious anemia patient be restored to health and continue normal in every way on a liver diet. Considering all the established facts regarding the results in treating pernicious anemia by the Minot-Murphy method, one cannot be regarded as over enthusiastic in stating that the pernicious anemia patient may be promised restoration to health if he will eat a sufficient quantity of mammalian liver.

RESULT IN FOUR CASES.

Among the most dramatic and the most thrilling results that I have witnessed in thirty-three years of practice have been the restoration to health of four patients with pernicious anemia for whom we had no hope a year ago. We had exhausted

*Read by invitation before the Mississippi State Medical Association, May 10, 1927.

every method of treatment known to us that offered hope of relief with only temporary remissions in symptoms. These four patients had rested in bed for months. They had been on a high protein, rich vitamin diet, including liberal quantities of red meats, milk, cream, vegetables and fruits; they had been taking dilute hydrochloric acid one of them for eleven years —six years before he developed pernicious anemia; they had had arsenic in various forms, orally and intravenously; they had been given many transfusions, one of them twenty-one times with only temporary benefit; irradiation with the quartz-mercury light had not improved two of them; and it seemed that they were doomed to long drawn out ill health, and death in from a few months to a year or two. When we learned, in May, 1926, of Minot and Murphy's work these four patients were given about 250 grams of liver a day, and in from one to two months their red blood counts went up from an average of 1,500,000 to 4 500,000, their symptoms disappeared and they have been clinically well since, though all of them except one has continued to eat liver regularly.

One of these four patients, a farmer, has been splitting rails, cutting crossties and working as a laborer on a farm for six months though he has not been able to get liver most of the time. His red blood count on May 9, 1927, was 4,450,000 and he said he felt as well as he ever did in his life, though he had not regained completely his former endurance.

It has occurred to us that the results obtained in this case are analogous to that following the use of insulin in certain diabetics who have discontinued the insulin and are able to metabolize a sufficient amount of glucose forming foods to maintain their normal weight and attend to their regular work. In the diabetics this improvement in carbohydrate metabolism is accounted for by the fact that after periods of rest to the islet cells of the pancreas they are able to secrete enough insulin for the patient's normal needs. Might it not be that in this case of pernicious anemia the use of liver has given rest to the liver cells concerned in stabilizing red blood destruction and that the liver diet may be discontinued without a return of the anemia? However, we advised this patient to return to the liver diet, because we are unwilling to experiment with the bread winner of a family.

While one of these patient's blood count on May 10 was 4,860,000 and she had no symptoms referable to pernicious anemia, since taking the liver she has had a return of bronchial asthma from which she had been free for 13 years before taking the liver diet. She prefers to eat liver and suffer from asthma rather than leave it off and run the risk of a return of pernicious anemia. It is possible that this may be a case of food allergy in which the patient is sensitized to liver protein.

THE LIVER DIET.

The liver diet in pernicious anemia is simple, since it merely consists of adding 180 to 240 grams (6 to 8 ounces) of liver to an otherwise well balanced daily menu. Calf's liver is usually given, though beef, hog, sheep or other mammalian liver may be used. Western guides believe that deer and bear's livers have health giving properties, and there is a popular impression that chicken livers are good for the complexion. The East Indians regard goat's liver both as a delicacy and as a remedy in malnutrition and Eskimos eat the livers of fish and various polar land animals. It is entirely possible that the basis for these homely observations was the improvement following their use by anemic individuals. It seems probable that liver from any source may be efficacious in the treatment of pernicious anemia, provided a sufficient amount is eaten.

The liver may be prepared in any way to suit the taste of the individual. Most of our patients prefer it fried, though we caution them not to use too much grease and not to cook liver too long. It may be broiled or made into a stew, and onions

or peppers may be added to vary the flavor. Some believe that the liver is more potent when given raw, but our clinical results with cooked liver lead us to believe that heat does not destroy the substance that controls red blood cell destruction. In patients who do not like liver and cannot or will not eat it cooked, Bierring's method of administering liver may be tried. He has the fibrous part removed and the liver substance finely ground giving one-third an ice tea glass of liver pulp to two-thirds of orange juice. This mixture is said to have an agreeable taste and is given between meals. Since many patients do not like the idea of eating raw liver and it is disagreeable for them to make this mixture for themselves, someone else should prepare it and serve it to them.

Pernicious anemia patients frequently have capricious appetites and it is best for such patients to begin with small quantities of liver added to a light diet of fruits and vegetables. After four or five days they are usually able to take a full diet including liver two or three times a day. Other patients will take the full amount of liver from the beginning of treatment.

Minot and Murphy give lean meat (beef or mutton) 120 to 240 grams in addition to the liver. We believe that this makes a too high protein diet, and that 240 grams of liver, which will yield about 60 grams of complete protein and which added to the casein in two or three glasses of milk is enough animal protein for the daily nutritional needs of an average individual. Add to this the protein in bread and vegetables, the pernicious anemia patient, taking 240 grams of liver a day, is getting a high protein diet without using any other form of meat.

Minot and Murphy formerly restricted the fats to 40 grams a day, but they since have decided that more fats may be used. There seems no reason why 75 or 100 grams of fat a day should not be used with an underweight pernicious anemia patient.

A high carbohydrate diet is the great nutritional sin of the American people; and on general principles we prefer giving the minimum amount of bread, potatoes, sugar, and other glucose forming foods.

The following is the diet we give to our pernicious anemia patients. The quantities are reduced for the first week but after that the full amounts are used and the diet varied as much as possible except in the use of liver.

DIET LIST.

BREAKFAST

One Fruit: ½ grapefruit, orange, ½ canteloupe, baked apple, prunes, grapes, berries, peaches, or any other fruit in season.

One Cereal: Small portion of thoroughly cooked oatmeal, corn or wheat breakfast food, or 1 shredded wheat biscut, with milk or cream, no sugar.

Fried calf's liver (3" x 3" x ½", 90 grams or 3 ounces) and two thin slices breakfast bacon.

Bread: 1 slice whole wheat bread toast; or 1 small graham flour biscuit, 1 pat of butter, 1 tablespoon honey.

Milk: 1 glass sweet milk.

DINNER

Soup: Chicken, celery, vegetable, barley or puree of peas or beans.

Large portion liver stew, with peppers, or liver hash, containing 90 grams or 3 ounces liver (weighed before cooking).

One Protein Vegetable: i. e., baked beans, butterbeans, lima beans, field peas or English peas.

Green Vegetables: (one or two varieties) Large serving of spinach, turnip greens, mustard greens, tender string beans, cabbage, squash, egg plant, okra, corn, carrots, cauliflower, brussel sprouts, onions, etc., cooked without much grease.

Bread: 1 slice whole wheat bread or dry toast or small piece of country ground corn meal bread, or 1 small corn muffin, 1 pot butter.

Dessert: Peaches, baked apple, banana, or other fruit or berries with cream—no sugar. One small piece of watermelon, or fruit dessert. Ice cream or sherbet once or twice a week.

SUPPER

Broiled liver with onions (3" x 3" x ½", 90 grams or 3 ounces).

One Uncooked Vegetable: Large serving of lettuce, cold slaw, tomato, grapefruit, or Waldorf salad. (Mayonnaise or French dressing). Celery or radishes.

Bread: 1 slice whole wheat bread or dry toast, 1 or 2 pats butter.

Milk: One glass sweet milk or buttermilk.

Dessert: Orange, canteloupe, baked apple or banana and cream without sugar. Fresh pineapple or other fresh fruit desserts without sugar.

Note: The liver may be cooked to suit the patient's wishes. Very little salt should be used on food—not more than ¼ teaspoonful a day in addition to the minimum amount needed to flavor cooked foods.

GENERAL MANAGEMENT.

It is not strictly necessary to weigh and measure the food for the pernicious anemia patient, though it is desirable for it to be done for two or three weeks until he can be taught the amounts of liver and other foods he needs at each meal. It is unquestionably best for the pernicious anemia patient to rest in bed for three or four weeks until his red blood count has returned to nearly normal. We therefore agree with Minot and Murphy that it is best for such cases to be hospitalized for the first three or four weeks of treatment. Finally, every organ in the body of the pernicious anemia patient should be thoroughly studied, because it often is a part of a process affecting various tissues. Particular attention should be given neurological symptoms indicative of cord lesions. If cord changes have occurred the patient should not be promised relief from his neurological symptoms by the liver diet. Experience has shown that improvement in cord symptoms does not occur in pernicious anemia patients even though the blood count has returned to normal and the patient's general condition excellent after a few weeks on liver diet.

A PREVIOUS HEPATITIS PROBABLY THE ESSENTIAL ETIOLOGICAL FACTOR IN PERNICIOUS ANEMIA.

The results in the use of the liver diet in the treatment of pernicious anemia seem to place it among the increasing number of nutritional diseases. McCollum thinks that it may be a vitamin deficiency disease, while Peabody suggests that it may be due to hypofunction of the bone marrow and other blood forming organs and makes the analogy to hypothyroidism. The control of pernicious anemia by the addition of liver to the patient's diet resembles very closely the control of diabetes, or hypoinsulinism, by the use of insulin. In diabetes the most frequent cause of the hyposecretion of insulin is a previous pancreatitis which has destroyed the islet cells of the pancreas, so might not a hepatitis destroy a large proportion of the particular cells of the liver which stabilize red blood cell destruction and which also maintain hemoglobin equilibrium? In other words, pernicious anemia seems to be essentially a disease of the liver, though the spleen which has been called "the cemetery of the red blood cells" may also be involved in its pathogenesis.

The theory that pernicious anemia may follow, or be a sequel of, a hepatitis seems borne out by the fact that autopsies on pernicious anemia patients have shown hyaline and other degenerative changes in the liver. It may not be possible always to demonstrate the destruction or degeneration of liver cells in pernicious anemia any more than pathological changes can always be found in the islet cells of the pancreas in autopsies on diabetics; yet in the latter case, we know that dysfunction of the islands of Langerhans is the cause of diabetes. Allen was unable to find evidence of islet changes in animals recovered from a pancreatitis which he had produced experimentally, yet they showed a lowered carbohydrate tolerance. Might not a hepatitis destroy or disturb the function of the liver cells concerned in controlling red blood cell destruction without leaving any demonstrable lesions?

NOMENCLATURE OF DYSFUNCTIONS OF THE LIVER ENDOCRIN CONTROLLING ERYTHROCYTOLYSIS.

With our present knowledge regarding the liver endocrin which controls red blood cell destruction, the nomenclature of its dysfunction is difficult; but the substance

formed in the liver which controls the hemolytic function of the reticulo-endothelial cells might be called hepatarin until something definite is known of what the substance is or of which hepatic cells produce it. If there exists a deficiency of this substance, a condition which for the want of a better word might be called hypohepatarinism, the secretion of the hemolysin by the reticulo-endothelial cells would be uncontrolled and pernicious anemia would result. Feeding liver, or the administration of a liver extract containing the substance would supply the needed endocrin for controlling hemolysis, thus attaining the desired stabilization of the number of red blood cells in the circulation.

An excessive secretion of this substance, hyper-hepatarinism, would inhibit red blood destruction, thus producing polycythemia. If this hypothesis is correct the excessive ingestion of liver would produce polycythemia. In one of our patients the blood count went from 1,200,000 to 5,000,000 when he was advised to reduce the amount of liver which he had been eating, whereupon his red blood count went down to 4,500,000. He resumed the liver and in a week his count went up to 5,100,000, and in three weeks, June 9, 1927, his red blood count had gone up to 5,210,000. We believe that if he continues to eat large quantities of liver he will develop polycythemia.

It is said that in Strassburg, Germany, where liver sausage and pate-de-fois-gras make up an important part of the diet of its inhabitants, pernicious anemia is unknown, while polycythemia is of frequent occurrence. Since polycythemia occurs in persons who have not eaten an excess of liver it would seem to be due to a dysfunction of the liver, a hypersecretion of the substance controlling red blood cell destruction.

We have been able to demonstrate that in certain persons there was an excessive production of insulin, which we called hyperinsulinism. They had hypoglycemic reactions similar to those following the administration of an excessive dose of insulin in diabetics, their blood sugar readings having been below 70 milligrams per 100 cubic centimeters of blood. If there is both an excessive production of insulin by the pancreas (hyperinsulinism) and a deficiency of the secretion of insulin (hypoinsulinism or diabetes) it would seem probable that the liver may secrete an excess or a deficiency of the substance that controls erythrocytolysis.

DISCUSSION.

Dr. W. A. Dearman (Gulfport): Dr. Harris' paper is very illuminating, especially since we take into consideration the seriousness of pernicious anemia. We have to admit it is rather a rare situation coming up in the practice of any individual physician; it is, however, prevalent enough and distributed over wide enough areas to have importance attached to it. It is not worth while to go into the diagnosis of primary anemia or its differentiation from secondary anemia, because close inquiry into the history and the blood findings will usually set you right. The spleen is not always enlarged, though quite frequently it is. It can not usually be palpated in dorsal decubitus but can usually readily be palpated in the standing position or in right dorsal decubitus. I have been practicing for twenty-nine years and have in my files now the records of seven or eight cases of outspoken pernicious anemia. I have seen red counts ranging from 900,000 down, with the color index high (which is diagnostic of pernicious anemia) and every evidence of a blood storm, all kinds of torsion and twisting of the red blood cells, some large, some small, some round, some irregular, some spindle-shaped, poikilocytosis, anisocytosis, and everything that goes with it, especially fatigue, exhaustion on the slightest exertion, irritability, and after cord changes come on, numbness from the knees down.

Dr. Harris has had patients on the Minot-Murphy liver diet only since last June, I believe; and it may be from a statistical point of view we have to be on our guard. It may be that a pernicious anemia case will come to you just on the high tide of remission. I had that happen to me a year ago. The man had every evidence of pernicious anemia and on top of that had acute parenchymatous nephritis, the urine loaded with albumen and casts, and a high non-protein nitrogen. I forecasted a fatal result and sent him back home with a very unfavorable prognosis. I warned him that he might get better. He went

back home, changed doctors several times, and got much better. The next I heard of him, was the terrible mistake I had made, that I made a wrong diagnosis in the first place and gave a bad prognosis, etc. The man now is in a hospital, I understand, and very ill.

Dr. G. W. F. Rembert (Jackson): It is always a pleasure to hear Doctor Harris and to have him with us and his endorsement of any plan of treatment at once insures its merit.

The present status of the treatment of pernicious anemia is well described by Evans in his recent monograph on that disease, namely: "The treatment of pernicious anemia is discouraging. No patient with true pernicious anemia has ever been cured. However successful any therapeutic procedure may have been at first, there comes a time when the patient does not react to any treatment, he gradually grows worse, and death ensues."

It might well be said that the Minot-Murphy diet, as outlined, has been one of the greatest contributions offered in the treatment of pernicious anemia, and it has also served to bring about a better understanding of the possible underlying causation of this disease than has existed before.

Richards has reported his results (which have been favorable) with a diet similar to that of the Minot-Murphy but with a larger fat-intake and of a higher caloric value. However, it can be safely said that the Minot-Murphy plan offers more than anything heretofore known.

Doctor Harris' results in the cases presented have certainly been very gratifying and I feel that he is to be congratulated thereon.

Dr. Otis S. Warr (Memphis, Tenn.): Just another word of testimony in favor of this diet. At the meeting in Dallas last year of the American Medical Association, in the discussion of pernicious anemia by Dr. Barker of Baltimore, Dr. H. A. Christian referred to the work in pernicious anemia then in progress under Drs. Minot and Murphy. It happened that we had a patient with pernicious anemia, who had had a number of transfusions without much benefit. As soon as we returned home that patient was started at once on this diet, a period now of thirteen months. He improved more rapidly on the diet in thirty days than after several transfusions. We have had several other cases that responded equally well. Nevertheless, I think it is rather early to speak of this treatment in terms of a *cure*. It is well to remember that as yet no one has offered a satisfactory explanation for this disease. Various treatments have from time to time been suggested. In 1914 I was in Eppinger's Clinic and saw him present a patient at that time, on whom a splenectomy had been done. This patient, following the splenectomy, had gone five years without a remission. He pointed to that patient with a great deal of pride and felt that splenectomy was the cure for pernicious anemia. You recall that splenectomy fell into disrepute, and I think no one now would suggest that as a treatment for pernicious anemia. Another treatment which has also fallen into disrepute, due to the great risk, was the surgical drainage of the ileum, first suggested by Syderhelm.

As Dr. Harris pointed out, we have in this treatment at least a method that offers no danger and there is no harm in trying it. The greatest difficulty we have found is in getting these patients to take the liver, in what we feel, would be adequate quantities, and we have only had one patient as yet who has been willing to keep up the use of *raw* liver over any length of time. I would like to ask Dr. Harris to tell us just how he prescribes the liver—what preparations, and, if he prescribes raw liver, just how he is able to get his patients to take it.

Dr. Seale Harris (closing): I think it is more than a coincidence that in Minot and Murphy's 45 cases every one of them showed marked improvement, increasing from 1,400,000 red blood cells to an average of more than 4,000,000. The fact that results are uniform, in reports from all over the country by a number of different men, seems to indicate that we really have found a method of controlling and, I am inclined to believe, of curing pernicious anemia.

As to the question of cooking the liver and the kind of liver and its preparation, we use calf's liver. It may be fried, with onions or peppers, insisting on not using much grease. Minot uses a very low fat diet, and we have been using a moderately low fat diet. We start with small quantities of the liver first, usually fried or broiled, not cooked too hard—lightly cooked. Cooking does not seem to destroy the substance in the liver that brings about the improvement. It may be used as liver stew or liver ground up in something like thickened soup. One patient, a farm laborer, has left off liver a good deal of the time because he lives away out in the country where there is no market and he can not get liver. The people in his neighborhood, however, are giving him chicken livers and chicken gizzards, and he is eating a good deal of that sort of thing. In China fish liver is used in curing xerophthalmia. That is probably, however, due to absence of vitamin A. As I say, it does not make much difference; any form of liver is useful. Start with small quantities, 20 to 30 grams, and

increase up to 50 or 76 grams two or three times a day, cooked in any way it seems to give results.

Dr. Joseph C. Bloodgood (Baltimore, Md.): Dr. Minot and Dr. Murphy have just made their report at Atlantic City, and their experience from their last report confirms everything Dr. Harris has said.

One other thing: if you take the liver and cut out the fibrous part and chop it up very fine and mix it with orange juice or with coffee, they can take it in that way. I have had a very large experience with it, because I see so much anemia in malignant disease. I give all my patients with anemia this treatment, because it saves blood transfusion and because it makes them much more comfortable and is much cheaper than blood transfusion. I understand that liver is the essential gland and should be used, if possible, every day; then kidney, then pancreas, then calf's brain. We may come to the point of having to ask well people in the community not to buy liver. Then we must have publicity. I have just returned from a great cancer campaign in Illinois. Every day an article appeared on the first page of the daily papers there. I had written forty-two articles on cancer, and we exhausted all our articles. I got tired of talking on cancer and talked on public health. When I got back to the university there were turned over to me one hundred letters (of course I had given no address) from people who said they had pernicious anemia and were under the care of doctors and were trying this diet. If I should have a case of pernicious anemia reported to me, I should telegraph that man to go on the liver diet at once; I think it would be a very Christian thing to do.

THE WASHINGTON MEETING OF THE MEDICAL LIBRARY ASSOCIATION.*

By MARY LOUISE MARSHALL,

Assistant in Charge Library of the Orleans Parish Medical Society.

Someone has remarked that specialism to a high degree in any given field must of necessity lead to a relative professional loneliness. And so it is in the field of medical libraries. There are perhaps fifteen thousand persons engaged in library work in the United States. Of this number not more than three hundred, or 2½ per cent are connected with the specialized field of medical library activities. About half of this number is represented in the institutional and personal membership of the Medical Library Association. Thus, considering this very limited field, a gathering of over sixty persons to discuss technical problems current in medical libraries is of inestimable value in the opportunity it affords for the interchange of ideas.

The sessions of the Thirtieth Annual meeting of the Medical Library Association were held in the Army Medical Library, Washington, D. C.,—that mecca of medical research in this country. The reception and registration of members on the opening morning showed representation from Denver to Boston, from Montreal to New Orleans and Galveston. The exhibition cases in the library rooms were filled with rare books drawn from the wonderful collection of incunabula. Lt. Col. James M. Phalen, librarian of the Army Medical Library, opened the meeting, welcoming the association to Washington and outlined in brief the work of the library. The collection now contains over 830,000 volumes and pamphlets, 7000 portraits of physicians, 740 medical engravings and prints, 443 medical caricatures and 495 incunabula. Exclusive of the transactions of societies, the library subscribes for 1925 periodicals of medicine and its closely allied subjects. Of particular interest to doctors all over the country, is the loan service which makes immediately available the greater part of the library resources. Photostat processes further extend its advantages for material which cannot be loaned. The value of the service which the Army Medical Library offers to the profession is incalculable and cannot be too highly appreciated.

Dr. John Ruhrah, of Baltimore, president of the association, next addressed us. Dr. Ruhrah has for years been an enthusiastic worker in behalf of medical libraries, and has always lent his efforts to the advancement of the work of the association.

*Read before the Orleans Parish Medical Society, July 18, 1927.

Following Dr. Ruhrah's address, Miss Jeanne Cameron, representing Dr. Charles F. Wylde, of McGill University, explained the operation of a self-owned bindery from experience in their own library. Their records show that commercial binding was costing them an average of $2.36 per volume for ½ leather and buckram binding. The style of binding was changed to ½ buckram and marble paper and the last five years with their own bindery have shown the average cost per volume to be $1.27. Equipment (cutting machines, presses, etc.) amounted to $616.45. All book-keeping and record making is done in the library. Liberal discussion brought out advantages and disadvantages of the idea. For our own use the innovation is impracticable, since our binding in full buckram — better material than ½ buckram and marbled paper,—is costing us on an average only about $1.40 per volume including freight one way to bindery, to say nothing of the cost of bindery equipment and the extra labor cost necessitated in the book-keeping, which would surely amount to more than 13 cents per volume. Furthermore, labor in Canada is cheaper than with us, which would increase bindery overhead here.

Next Dr. Archibald Malloch described for us the new building of the New York Academy of Medicine. Photographs and floor plans made his explanation more graphic. This library now comprises over 141,000 volumes, and Dr. Malloch gave an interesting account of the problems confronting them in moving into their new quarters. It is noteworthy to mention that there are in this spacious new building fifteen small cubicles for private study on the three upper floors of stacks, which may be engaged by Fellows through the librarian. In addition, there are seven still quieter study rooms on the third mezzanine floor, which may be rented at fifteen dollars per month for not longer than three consecutive months for continued literary research. A bibliographical department has been inaugurated. For the preparation of a list on any subject a charge to Fellows is made of 50 cents per hour, and to the public of one dollar per hour. Translations can be secured at 75 cents per hour to Fellows and $1.50 to the public. A photostat room in the basement cares for the work of this nature at the usual costs per page. I mention the charge noted here for preparation of bibliographies because we have endeavored to do all this work in our library without any cost to the doctor, whereas the New York Academy of Medicine deems such specialized work worthy of a charge sufficient to help the department to self-support.

Monday afternoon we were privileged to witness the ceremony of the decoration of Dr. John S. Billings' portrait in the Army Medical Library. Lt. Col. Fielding H. Garrison spoke of Dr. Billings as he had known him and of his work for the Army Medical Library. He introduced Dr. William Sydney Thayer of Baltimore, who delivered an impressive tribute to Dr. Billings and placed the beautiful wreath beneath his portrait.

Following this, Lt. Col. Garrison explained for us the conjunction of the Quarterly Cumulative Index and the Index Medicus. The two series have combined with the beginning of 1927 under the title of Quarterly Cumulative Index Medicus. The entries given formerly only in the Index Medicus are still prepared in the Army Medical Library and forwarded to Chicago for combination with the ones included in the Quarterly Cumulative Index. All publication work is done in the A. M. A. office. Foreign entries are given under subject in English and under authors in the original language. This combining of forces marks a distinct advance and will aid reference work materially. The checking of index with index was of necessity a laborious process and this co-operative step should be highly commended.

Mr. Charles Perry Fisher, of the College of Physicians, Philadelphia, next lead a discussion on the Importance of Incunabula, Early Printed Books and Classical Texts. Mr. Fisher showed us that the appreciation of the Incunabula of Medicine is a field too often overlooked in medical library circles. It is the cultural phase frequently neglected in the rush of practical affairs. He brought out the fact that the two fields are not competitive—the persons who might be interested in helping to build an historical collection would never give money for current texts, and vice versa. The College of Physicians has one of the best collections of medical incunabula in the United States, and Mr. Fisher's long and enthusiastic interest in this subject is in large part responsible for the position of his library in this field.

In this connection, I am glad of the opportunity to bring this subject before our own Society. In the accumulation of books and journals needed for current research, we have had no time to stress the historical side. The fact was brought home to me a number of times, while in Washington, that New Orleans is one of the oldest cities in the country and has a wealth of medical history of its own. There are doubtless many old tomes of medicine hidden away in New Orleans libraries which should be in our historical collection, and which we might have for the asking. I should be glad if the members of the Society would interest themselves actively in this idea. The library is glad to receive any and all medical material which you may be able to secure for us, old or of current interest, books or journals. If it is duplicate in our collection we can use in exchange with other libraries. Seach your own collections—inquire among your patients, particularly where it is known that there have been doctors in the family and let us start an historical collection of our own.

Monday night was the annual dinner of the Association, the only social function of the meeting. It was a real pleasure to talk medical books and libraries with others who meet day by day the same problems as myself.

On Tuesday morning, Mrs. Alice H. Holmes, of the Montefiore Hospital, New York, read a most illuminating paper on Periodical Deficiencies. This subject is of never-failing interest to librarians, as it is one of our most constant problems. Medical journals, particularly of the specialized type, have a comparatively small circulation and issue, hence the supply is quickly exhausted, and efforts to complete files for libraries are often most discouraging. It is for this reason that we are always glad for gifts of journals from private libraries. If they are duplicate in our collection, they may fill a long felt need in another library, and can thus be used in exchange for material which we do not have.

Following this, Mr. James F. Ballard, of the Boston Medical Library, presented the subject, Information, Reference and Bibliographic Service. Information service was designated as those questions which might be answered in hurry calls or by telephone—by directory, etc. Reference service is that requiring more exhaustive search, more complete data. Bibliographic service, the highest type, is that requiring painstaking and complete collection of references. Mr. Ballard's dissertation was illustrated throughout by examples of calls received in the Boston Medical Library. Valuable suggestions for the improvement of service in its various phases made the presentation most practical to every medical librarian. Discussions brought out special forms of service being offered in different libraries.

Tuesday afternoon we were taken on a tour through the Library of Congress, personally conducted by Mr. H. H. B. Meyer, ex-president of the American Library Association and Director of Legislative Reference Service in the Library of Congress. This collection of three and one-half mil-

lion volumes is today the third largest library in the world and considering its rate of growth, will doubtless be first within a comparatively few years. The 1926 appropriation approximates a million and a half dollars. In addition to books, the library contains almost a million maps and views, more than a million volumes and pieces of music and about 500,000 prints. The personnel of the staff and for building administration is about 500. While the primary service of the library is for legislative reference, its collections along diverse lines rival those of specialized libraries. In spite of the fact that the Army Medical Library receives first choice of medical material, the Library of Congress Medical Division contains over 60,000 volumes. The collection of books for the blind contains over 3,000 volumes in five styles of raised type. An effort is being made through local agencies to co-operate in furnishing the books in the styles of type most needed. A union catalog is in preparation which is already of incalculable value to research workers. Entries are here made of books, manuscripts, etc., not in the Library of Congress, noting where in the United States the book may be consulted—a veritable clearing house of reference information. A bibliographic division furnishes references to inquirers, by letter as well as in personal call. In the manuscript division are to be found the State papers of the early Presidents, and a huge collection which comprises source material for research workers and authors. Locked shelves are provided for the invaluable collection of rare books which may be consulted only under supervision, bespeaking the irreplaceable nature of the material. A Trust Fund Board has recently been founded by law, whereby bequests to the Library of Congress go directly to the care of this board, thus doing away with the red tape of passage through various governmental channels, necessitating a shrinkage of the funds. It is thought this will prove of great value in encouraging gifts to the library. In a beautiful music auditorium, funds for which were received in this manner, free concerts are offered for the enjoyment of music lovers. During 1926 there were daily 2,930 persons who visited the Library of Congress, showing in some degree the appreciation of the people of the United States for their National Library.

Tuesday evening I was privileged to hear the address of the President of the United States to the American Medical Association, followed by the address of the President of the Association.

I was invited by Miss Noyes, of the Medical and Chirurgical Faculty, Baltimore, to drive on Wednesday with about eight librarians to visit the Walter Reed Hospital. In this tour we were guided by two librarians of the hospital. I was particularly interested in the work in the field of occupational therapy and the newer field of book therapy, for the librarians make ward visits each week and are trained in the psychology of book selection as a means of therapy. Nothing has been done in the field of Hospital Libraries in New Orleans and I wish some of the hospital staffs might investigate the advantages offered in this innovation. I shall be glad to furnish informative material along this line to anyone interested.

Reference work in the Library of Congress and Memorial Continental Hall, and visiting the publishers' book exhibits at headquarters, completely filled the remainder of my time in Washington, except for two hours which I saved for a trip to that mecca of Americans—Mount Vernon.

In closing might I say just a word concering the work of the Medical Library Association. The value of the papers read at the Annual Meeting is evident. Of even greater value to libraries is the Magazine Exchange, maintained by the Association throughout the year. Lists of duplicates and lists of wants of library members, are broadcasted, checked and returned to the

Manager of the Exchange. This service has been of very great value to us in completion of magazine files since our reorganization began, seven years ago. Each year we receive many times the value of the annual fee of ten dollars for dues in the journals sent us through the courtesy of the Exchange. The Medical Library Association should have the enthusiastic support of all who are interested in medical literature, for libraries are the most potent factors in the encouragement of medical authorship and research, constituting a continuation school of medicine for the practicing physician.

THE BANANA AS A FOOD FOR INFANTS AND CHILDREN.*

L. VON MEYSENBUG, M. D.,
NEW ORLEANS.

Those of us who learned the science of infant feeding in the medical schools a decade or more ago must have been impressed with the monotony of the diet allowed the baby during its first year or two. Milk, either from the breast or bottle, formed the basis of the dietary (as it still does), but there existed a great fear of giving solid foods, to the extent that milk alone was given during the first twelve months of life.

In retrospect, we now see how groundless this extreme caution was, and as our knowledge of the physiology of the infant gastrointestinal tract broadens, we become ever bolder and more rational in our feeding of babies. Then, too, we have gained much valuable information from the careful chemical and biological analysis of our food stuffs, supplemented with animal feeding experiments. We think largely of foods in terms of their individual components: the number of calories per given weight, the percentage of fat, carbohydrate and protein, the mineral content and the vitamin coefficient. Finally, we group the various foods together and refer to certain standard diets such as the low protein diet, the carbohydrate diet, the antiketogenic diet and the ketogenic diet.

During the past year I have been using the banana as a supplementary food in infants and young children with a view to establishing its value as a suitable article of the diet in the normal child, as well as in certain diseases. This paper is intended as a preliminary report of this study.

Let me digress for a moment and refresh your memories as to the chemical composition and biological characteristics of the banana. We have available in the literature many analyses during all the stages of ripening of this tropical fruit. Pease and Rose[1] give these percentages: Carbohydrates, 22 per cent; protein, less than 1 per cent; fat, negligible. Of the total carbohydrate during ripening, Bailey finds the following: In the green banana, glucose 1.2 per cent; total sugars (glucose and sucrose), 7.7 per cent; total carbohydrate (starch and sugar), 21.5 per cent; in the green-yellow banana, glucose, total sugars and total carbohydrate as for the green fruit; in the yellow banana, glucose, 6.4 per cent; total sugars, 17.5 per cent; total carbohydrate, 22.1; in the yellow-brown fruit, glucose, 11 per cent; total sugars, 19 per cent; total carbohydrate, 20 per cent. Thus, we see a gradual splitting of the starch into simple sugars during the ripening process. Buignot[3] found that when the banana ripened on the tree, the glucose content was lower than when ripening occurred after picking. He failed to find the presence of amylase or other enzymatic activity in the banana to account for this conversion. Bailey,[4] however, found during maturation of banana, amylase, sucrase, raffinase, protease, lipase and peroxydase present. This same author likewise found the inner portion of the banana pulp

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to be sterile, the inner coat of the peel very sparsely inhabited by bacteria.

As regards the ash constituents, Sherman[5] gives us these percentages of the edible portion: CaO, 0.01; MgO, 0.04; K_2O, 0.50; Na_2O, 0.02; P_2O_5, 0.055; CL, 0.20; S, 0.013; Fe, 0.0006. Compared with other common fruits, such as the orange and lemon, it is low in calcium, high in magnesium, high in phosphorus, and has an iron content higher, small as it is, than any other fruit eecepting strawberries. There is approximately one calorie per gram of ripe banana pulp, or 447 calories per pound. Cellulose forms about 0.8 per cent of the total edible portion.

The presence of certain vitamins in the banana has been reported from many laboratories. With respect to the vitamin A or fat-soluble factor, Jansen and Donath,[6] Sopp,[7] Eddy and Kellogg,[8] and others, have found that the banana provides a good source of this vitamin, such that 0.5 per cent of banana added on a dry basis is sufficient to supplement a vitamin A free basal diet and prevent xerophthalmia in rats. Sugiura and Benedict[9] noted a deficiency in the water-soluble B factor in bananas. They secured growth and reproduction in rats but not lactation. Eddy and Kellogg,[8] however, demonstrated that, while the banana is not rich in this factor, it has about the same vitamin B value as tomato juice. That the fruit is a good source of Vitamin C or the antiscorbutic factor, all are agreed. Experimental and clinical scurvy has been cured by banana feeding. Lewis,[10] Givens and McClugage,[11] Hess and others, as well as my own experience in treating a case of scurvy, which will be reported elsewhere in detail, have found banana a good source of this vitamin.

The meager evidence at hand indicates that the banana is deficient in anti-rachitic properties. Evans and Burr[12] have recently reported the presence of vitamin E, though the report suggests that it is not very rich in this factor.

It is safe, therefore, to class the banana as an excellent source of vitamins A and C, a good source of B, deficient in D, and showing the presence of E.

We have in the literature several reports of banana feeding in children. Pease and Rose[1] report eleven cases in which it was used, the youngest child being two years of age. Irish[13] reports a case of celiac disease in a child 4½ years old successfully treated with banana diet. It is in this condition that banana seems of particular value. Haas[14] outlines a dietary regime for celiac disease, using banana as the principal source of carbohydrate. He reports in detail seven cases so treated with curative results. His youngest case was thirteen months old and received six bananas daily.

I have been unable to find any reports showing the use of banana in the young infant. During the past year I have fed banana to ninety infants ranging in ages from four months to two years. All of these were well infants, though many had not gained satisfactorily and several suffered from marked constipation. Various methods of preparing the fruit were tried out. These included mashing the banana with a spoon, mashing and pressing through a wire sieve, baking with and without the skin, and emulsifying the mashed pulp in the formula. I found the most satisfactory of these to be fruit pressed through the sieve.

It is necessary to explain in detail to the mother what is meant by a ripe banana. The skin must be entirely yellow, without green tips, and there should be brown or black spots. An all brown skin banana may be used if the pulp is not mushy or brown. Where the pulp is brown and has a transparent appearance, fermentation is taking place and such a fruit should be discarded. For baking, the banana need not be entirely

ripe. It is further necessary to explain to the parent why the traditional fear of the banana for the young child is without foundation, that it is not indigestible if ripe and suitably prepared. I have met with only one refusal to give it.

My records show that of these ninety babies to whom banana was given, only two could not tolerate it because of its laxative effect. The stools of these two became very soft, numerous and foul smelling. An examination of these stools showed an increase in fat and many small black threads which were fibres from the fruit. When beginning the banana feeding to a young infant of four or five months, only one teaspoonful of the mashed pulp is given for the first few days. If it is well borne it is increased cautiously up to about six or eight teaspoonsful. Very seldom does the infant refuse to take it—for the most part he cries for more. It is usually given at the 12 or 2 o'clock afternoon feeding hour, before the breast or bottle. If the infant refuses to take the banana the first day, it is offered again on subsequent days, and the dislike invariably changes to a desire for more. I have no record of any baby vomiting the banana.

It is in the constipated babies that some interesting results were obtained. Some were completely cured, others greatly benefitted. A single instance to illustrate:

Baby G. L., age 6 months, weighing 14 lbs. 10 oz., was breast fed from birth. She was normal except that she was underweight. Orange juice had been begun at one month, and cod liver oil, ½ teaspoonful twice daily, at six weeks. The mother stated that she thought she had sufficient milk, as she felt the breasts fill, become tense, and they leaked. However, the fact that the baby was underweight and markedly constipated, indicated that her supply must have been deficient quantitatively as well as qualitatively. Banana pap was begun at 6½ months in teaspoonful daily amount. On the third day the baby had its first natural bowel movement in two months and continued to have a daily action. Complemental bottle feedings brought about a good gain in weight.

That banana may cause rapid gain in weight when other food is not sufficient is shown by the following case:

Baby J. S., age 8½ months, weighing 16 lbs. 14 oz. He had been under observation since two months of age, at which time his weight was 9 lbs. 6 oz. He was breast fed exclusively up to four months, when complimentary feeding became necessary because of stationary weight and constant crying. His gain from then on was only fair, averaging not more than 10-12 oz. per month. At 8½ months banana pap was started and increased rapidly, so that at 9 months he was getting one whole medium sized banana daily. His bowels were regular and he took the fruit with zest. In two weeks he had gained 1 lb., no other changes having been made in his diet.

The character of the stools changes when banana is given. They assume a grayish color, are soft in consistency and show small grayish-black threads. These threads may alarm the mother, simulating pin worms except in color; under the microscope cellulose fibres are seen. Unless a diarrhea ensues there is no increase in the fat demonstrable with Soudan 3 stain. The threads referred to above are entirely harmless.

Of the diseases in which banana would seem to be especially indicated, I have treated one case of celiac disease in a child 2½ years of age, three cases of acute and subacute hemorrhagic nephritis and one case of scurvy in a baby nineteen months old. These cases are to be reported in detail elsewhere.

The banana is a fruit that has been referred to as the "poorman's fruit" because it is plentiful and cheap, is a dietary offering that nature has packaged in an almost sterile container. The fat and protein factors are negligible, the chief food constituents are the carbohydrates, which amount to about 22 per cent. In addition to the easily assimilable carbohydrates of the ripe fruit, it is a good source of lime and iron, and offers abundant vitamins, excepting the antirachitic factor. As an antiscorbutic it is second only to orange juice. Its caloric value is high—much higher than

that of any of the common fruits, and, pound for pound, its energy value is greater than that of the white potato, and cheaper. Infants as young as four months tolerate ripe banana perfectly; give the older children ripe banana instead of candy and you will have no cause to regret it.

DISCUSSION.

Dr. Charles Chassaignac (New Orleans): The essayist has handled his subject well and is to be congratulated. Aside from the general interest of the paper, the topic, to me, is one of particular interest, because it takes me back a good many years (I won't say how many) in the days of my general practice. Guided by an elder practitioner of that time, Dr. Shepard, whom very few of you remember, I was led to the feeding of bananas to infants in the manner described, and with the same good results spoken of tonight.

Two points which have already been brought out are well worth stressing: the ripeness of the banana and its preparation. The so-called ripe banana is a beautiful fruit, nice and yellow and decorative, but it is not what the fruit should be; the truly ripe banana is thoroughly mottled with little brown dots over the yellow skin. Never err by feeding the banana not quite ripe. The truly ripe fruit has an analysis quite different from the so-called ripe banana, nor does the difference between them end there, for the deliciousness of the former is not approached and the assimilation differs to the same extent.

As the doctor brought out, for the infant and the small child, the banana ought to be well crushed and well broken up. The danger is when the child is a little older and starts chewing; if given a banana, even though fairly ripe, he is apt to bite into it, but not knowing enough to chew well, swallows pieces of the unmasticated fruit, with resulting indigestion. Most of us have had experience from bananas eaten that way. These are the two things that have brought the banana into disrepute, one that they are not thoroughly ripe when eaten; the second, that the child is given the banana before it is able to masticate.

Dr. J. Birney Guthrie (New Orleans): Dr. von Meysenbug's paper is of very considerable interest, not only to the dietitian, but to the internist. Heretofore, the feeding of bananas to infants and children has not been done to any great extent.

I have little to do in the way of ordering diets for infants. Some of my colleagues are good enough to take this work off my shoulders. Much of our information regarding the handling of digestive disturbances in the adult comes to us through the pediatrist. It seems to me that we can use this information in the handling of diseases of all types in which this food is suitable where we are dealing with the child. For instance, as the doctor spoke, it occurred to me that the banana might prove to be a good supplementary food from a standpoint of carbohydrate richness and vitamin content for the typhoid patient.

Sunlight acting on vegetable cell is the origin of the vitamin, the only origin. We lose sight of that fact in the study of tissues like liver, which we know is a storage for vitamins, but the ultimate source, we believe, is always the vegetable cell. The liver of the cod acts only as a storage place.

The question of vitamins is not so acute with us in a short illness, or in infant feeding, if the mother and cows can get plenty of green foods, but it is a matter of vital importance to children in regions where the winter is prolonged and where we find in the food of the mother and the cow a vitamin deficiency. In proving the digestibility of the banana, Dr. von Meysenbug has given us a point of approach which should be exceedingly valuable in the feeding of sick adults as well as children.

Dr. Roy E. de la Houssaye (New Orleans): Aside from the ripeness of the banana, I think it would be well to emphasize that the fruit should be cut from the bunch and put aside to ripen. Never choose a loose banana that has been lying on a banana stand or any banana unless the skin at both ends is intact; this is the only way you can insure against contamination.

Dr. Ludo von Meysenbug (closing): I thank you, gentlemen, for your kind discussion of my paper.

Some of my friends sitting near me, have asked: "What is celiac disease?" Celiac disease is a chronic intestinal indigestion, inability on the part of the infant to digest fat and carbohydrates, with ability to digest proteins. Hence, the feasibility of the banana carbohydrate, since the baby, who is unable to tolerate even a fraction of carbohydrate in the form of milk-sugar or glucose, can digest, absorb and utilize with particular ease the carbohydrate of the ripe banana, which is largely composed of split-carbohydrate (in the ripe fruit 22 per cent), that the celiac infant can utilize perfectly.

I am glad that Dr. Chassaignac emphasized the points of ripeness and preparation, which I touched on in my paper. The unripe banana is spoken of as concentrated essence of stomachache. The young child is often given a banana at home, or

grabs it off the side-board and no attention is paid to the manner in which he bites off big pieces and swallows them before they are thoroughly masticated.

In the adult diet of which Dr. Guthrie spoke, I see no reason why the banana should not prove very valuable, particularly in nephritis. There is less than one per cent (1%) protein, and the carbohydrate is certainly as essential to the adult as to the infant and the child.

Dr. De la Houssaye's point is important, viz: that the banana should be taken off the bunch with the so-called "finger" left on so as to avoid oxidation and contamination of the pulp. It should be purchased semi-ripe and allowed to ripen in your own ice box, or outside, or wherever you choose to keep it.

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FOREIGN BODIES IN THE AIR AND FOOD PASSAGES.*

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Although the recognition of foreign bodies in the air and food passages is almost as old as the history of medicine, no considerable headway was made in the removal of these intruders until the advent of esophagoscopy and bronchoscopy. The first direct esophagoscopy was accomplished by Adolph Kussmaul in 1868.(1) The first bronchoscopy of clinical significance was done by Gustav Killian in 1897, who removed a bone from the right bronchus.(1) Work was then taken up by a few hardy pioneers, Ingals, Coolidge, Jackson, Yankauer and others. The tap root of bronchoscopic progress sinks deep in the devoted labors of Chevalier Jackson, to whose teachings is largely due the present widespread interest in the subject. Unfortunately, however, in spite of the teachings of these earnest workers, the endoscopist is often confronted with cases of foreign bodies in the esophagus in which antiquated, ineffective and dangerous methods of removal have been attempted. During one week recently the author saw two cases in which the bristle probang had been used in attempts at removal of sharp pointed foreign bodies of the esophagus with the production of dangerous traumatic esophagitis and failure to remove the intruder. The bristle probang, the coin catcher and the bougie have no place in the modern treatment of foreign bodies of the esophagus.

In this paper are reported twenty cases of foreign body of the esophagus, and a fatal case of organic foreign body of the right bronchus.

FOREIGN BODY OF THE RIGHT BRONCHUS

Case 1. B. K., age 2 years, 6 months, referred by Drs. Butterworth and Williamson because of a foreign body (red bean) in the right bronchus for forty-eight hours. While playing with a red bean in his mouth, the baby tipped over backwards on his kiddie car and aspirated the bean. The immediate symptoms were choking, coughing and retching for about three minutes, during which time he was extremely blue. Following this the child had symptomless intervals but spells of cyanosis and choking recurred from time to time during the following forty-eight hours. He was brought to Dr. Butterworth, who made the diagnosis of foreign body in the bronchus. A skiagraph by Dr. W. F. Henderson showed complete collapse of the right lung. There was absence of breath sounds, dullness and limitation of expansion, all on the right side.

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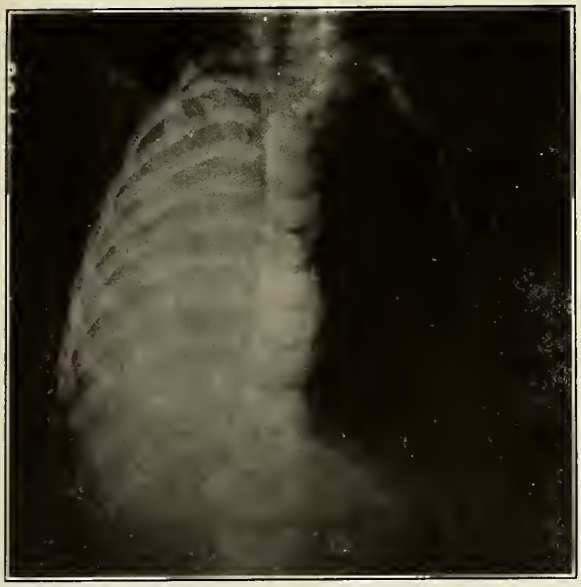


Case 1. Foreign Body (red bean) in right bronchus. Note deviation of trachea to right.

At 11 A. M. bronchoscopy with the 4 mm. Jackson tube was done without anesthesia on account of dyspnea. A marked tracheo-bronchitis was present and the cough reflex was very much diminished. The soft, friable and swollen red bean was encountered in the right bronchus, completely closing it, and was removed with side curved forceps.

For about six hours the condition continued bad, with respiration rapid, labored and shallow; oxygen was given. At 5 P. M. the color was better and the respiration was much improved. During the next five hours the condition was good, but the respiration gradually became obstructed from subglottic edema, until at 11 P. M. there was marked difficulty in respiration and pronounced indrawing of the supraclavicular and intercostal spaces on inspiration. Tracheotomy, done at 11:30 P. M., gave immediate relief from the respiratory obstruction. The condition continued good until 10 A. M. the following day, when there was a rather sudden and startling devlopment of inspiratory obstruction. Aspiration of the bronchi with a small catheter suction passed through the tracheal tube was of no benefit. The child's condition rapidly became desperate and he was hurried in an unconscious and apparently dying condition to the operating room, where bronchoscopy revealed thick sticky secretions of about the consistency of half dried glue lying at the carina and almost completely obstructing both bronchi. This was removed and the baby gradually improved until his condition appeared good. The picture changed from that of a child on the verge of death and unconscious from asphyxia, to that of a child playing happily with the electric light by his bedside. This gratifying condition continued for nearly twelve hours when it again became evident that bronchial obstruction was developing. Respiration became extremely labored. Bronchoscopy, which was plainly imperative to save the child from immediate death, was done and a plug of inspissated mucus about the size and consistency of a raisin was removed with forceps from the left bronchus. Remarkable improvement resulted and persisted for several hours, but the interval between periods of bronchial obstruction became shorter and bronchoscopy, which was done only as a last resort to save the child from immediate death from asphyxia, became necessary more frequently. Accessory measures used in efforts to improve the child's condition were steam inhalations under the croup tent, oxygen, expectorant mixtures (which apparently had no effect on the thick sticky secretions), and hypodermoclysis. At various times when he was in extremis, atropin, camphor in oil and adrenalin were administered. The author remained constantly with the child after the second bronchoscopy, but his efforts were unavailing and the little patient died on the fourth day after the removal of the foreign body. At the last bronchoscopy just before death the walls of the larger bronchi were somewhat edematous, but no obstructing secretion was visible; evidently the smaller inaccessible bronchioles were obstructed. At this time ephedrin was applied directly to the larger bronchi, but produced no improvement and apparently had no effect other than a blanching of the mucosa where it was applied. Just before death breath sounds could be heard only over the right upper lobe, which it will be remembered was on the side of the original massive atelectasis. Culture from the bronchi showed staphlococcus.

The dryness of the tissues, the absence of cough reflex, the lack of liquid discharge and the evidence of mechanical obstruction to respiration in the lower tracheobronchial tree, show the striking similarity of the tracheo-bronchitis in this case to the cases of infective laryngotracheo-bronchitis which simulate diphtheria. T. R. Gittens,[2] in describing tracheo-bronchitis says: "In those instances where there seemed to be a decided lack of liquid discharge and a dryness of the tissues, accompanied by evidence of mechanical obstruction to breathing below the

tracheal cannula, measures which helped to liquefy the scanty discharge and allow of its removal by suction played a prominent part in determining the outcome. In this relation adrenalin, one to ten thousand, in two to four minim amounts, dropped into the tracheal cannula, seemed of value in making the discharge thinner and stimulating cough reflex. * * * *In two or three cases the bronchoscope was used for the removal of semisolid masses. The use of the bronchoscope following tracheotomy takes the same place as an emergency measure as the insertion of the tracheal cannula does earlier in the disease." Gittens,[2] reporting an autopsy in a case of infective tracheo-bronchitis dying of obstruction of the small bronchi, found scanty sticky discharge in the trachea and large bronchi, but in the smaller bronchi and bronchioles the brown semisolid discharge practically blocked the lumen, accompanied by edema of the mucous membrane; confirming his belief that the serious symptoms were due to mechanical obstruction rather than toxemia.

There is marked contrast in tracheo-bronchial reaction to metallic foreign bodies and to those of vegetal nature. As pointed out by Jackson,[3] non-obstructive metallic foreign bodies afford few symptoms and few signs for weeks or months, while vegetable organic foreign bodies as peanut kernels, beans, watermelon seeds, etc., cause at once violent laryngo-tracheo-bronchitis, with toxemia, cough and irregular fever, the gravity and severity being inversely to the age of the child.

FOREIGN BODIES OF THE ESOPHAGUS

Case 1. Miss B. R., age 18 years. At dinner the day before she swallowed a chicken bone which she felt lodge in the throat. A radiograph showed no evidence of foreign body. At esophagoscopy under ether anesthesia with the Mosher esophagoscope the chicken bone was found in the thoracic esophagus, and was removed with forward grasping forceps. The recovery was uneventful and the patient was discharged the following day.

Case 2. Tom Q., age 3 years, 6 months. At dinner he had been given a bite of fish by an older child and had immediately choked and gagged and complained of pain at about the region of the suprasternal notch. A skiagraph was negative for foreign body. At esophagoscopy, with the esophageal speculum, about two hours after the accident, a fish bone was removed with alligator forceps without anesthesia. The baby was discharged the following day.

Case 3.,Victor P., age 14 years. At dinner the previous day while eating soup, he choked on a bone. Following this he was unable to swallow solids and had pain at the supra-sternal notch with every swallowing movement. At esophagoscopy under ether anesthesia, a flat triangular piece of beef bone was found at the cricopharyngeus, and removed with alligator forceps. Recovery was uneventful.

Case 4. Mrs. M., age 82 years. Since swallowing a chicken bone the previous day she has taken only liquids and has had pain at the suprasternal notch on swallowing. At esophagoscopy with the esophageal speculum under ether anesthesia the bone was found just below the cricopharyngeous. The intruder was grasped with the alligator forceps and brought up to the cricoid region where it slipped out of the grasp of the forceps and so rapidly descended to the stomach that another opportunity was not offered to grasp it. Recovery was uneventful.

Case 5. Miss G. C., age 32 years. Had had a chicken bone in the esophagus for three days. On admission, the temperature was 100.2; the patient had been taking only liquids and complained of pain above the suprasternal notch. Blind attempts had been made in her home city to force the object down with a bougie. Under ether anesthesia, esophagoscopy with Jackson's 10 mm. tube revealed a mass of meat in the cricopharyngeal region covering a large irregular chicken bone, which was removed with side curved forceps. The bone was of such shape that it could not be turned in any position in which points would not present laterally. Consequently the blind attempts elsewhere at forcing the bone down had not only not been successful, but had been associated with the great hazard of perforation of the esophagus with the sharp points of the foreign body.

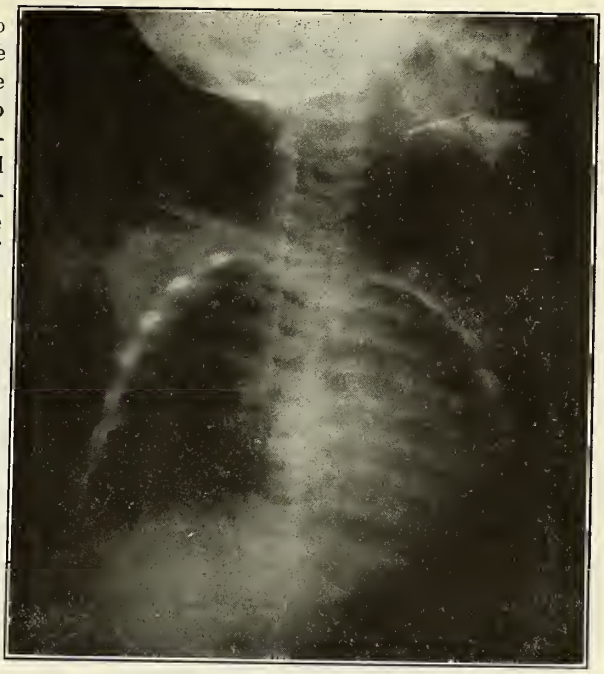
Case 6. Miss L. H., age 82 years. Four days before admission the patient had swallowed a chicken bone, since which time she has had a sticking sensation in the region of the suprasternal notch and has been able to swallow only liquids. Under fluoroscopy a ten-grain barium capsule was seen to be arrested in the esophagus at the suprasternal notch. The temperature on admission was 100.6. Esophagoscopy revealed

the cricopharyngeal region of the esophagus to be edematous and with small varicosities of the mucosa. Two small masses of white meat were removed from this region immediately, but no bone was found in a search of the entire esophagus. The shrivelled up barium capsule was found in the middle of the thoracic esophagus and removed. The patient was discharged from the hospital in seven days, after gradual subsidence of fever and dysphagia. Evidently her symptoms were due to esophagitis from trauma produced by a foreign body which had passed on.

Case 7. Mrs. M. G., age 45 years. Referred by Dr. Maes. Had had a goose bone in the esophagus for six days. Since the accident the patient had had pain at the suprasternal notch on swallowing. There was a history of three attempts to remove the bone by indirect methods, occupying about three hours, in her home city; on one of these attempts the bristle probang was used. Under ether anesthesia, the foreign body was removed from the cricopharyngeal region of the esophagus in less than two minutes with the esophageal speculum and alligator forceps. The patient was discharged the following day.

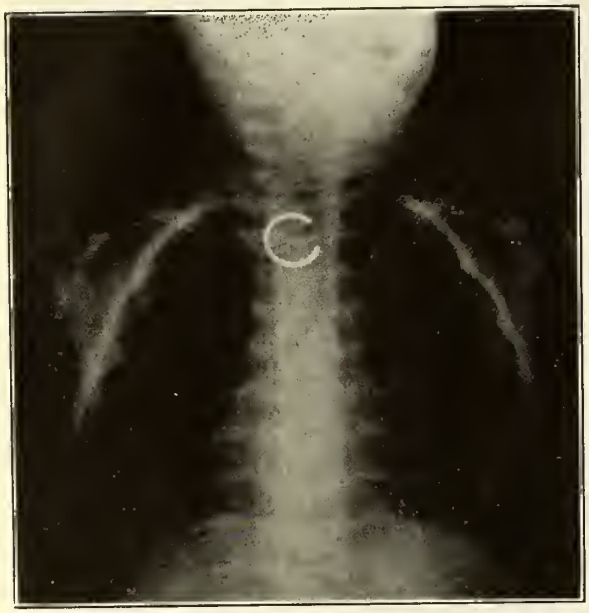
Case 8. Frank B. J., age 1 year. Referred by Dr. Loeber. Had had an open safety pin in the esophagus for one hour. A skiagraph by Drs. Samuel and Bowie showed the pin open and the point up in the cricopharyngeal region of the esophagus. With the 7mm esophagoscope and Tucker tack forceps, the pin was removed at esophagoscopy by the point sheathed method, under ether anesthesia. The child was discharged the following day.

Case 8. Open safety pin, point up, in esophagus. Baby aged one year.



Case 9. Pin in pharynx. The entire shaft was buried in the tissues of the neck; only the head was visible.

Case 9. Doris A., age 11 months. Had had a pin in the pharynx for one hour. The baby had put an ordinary straight pin in the mouth and during the grandmother's digital efforts to remove it, had presumably swallowed it. The skiagraph by Drs. Samuel and Bowie showed the pin at the level of the hyoid bone with the point forward. An examination under ether anesthesia with the direct laryngoscope failed to reveal any foreign body in the region indicated by the skiagraph. The entire throat from the nasopharynx down to the pyriform sinuses was carefully examined, but no evidence of foreign body was found. Esophagoscopy was done down to the crossing of the arch of the aorta. The region of the cricopharyngeus was particularly thoroughly examined. There was no evidence of foreign body in any of these locations. Another skiagraph was made which showed the foreign body still in the same location. Anesthesia was continued and the child's pharynx was then palpated with the finger and after some little search, what seemed to be the head of a pin, was felt to the left of the glosso-epiglottic region. Then a glimpse of the pin head was finally obtained and immediately lost. After several minutes more search the head of the pin was again seen, grasped with forceps and removed. With the exception of its head, the pin had been completely buried in the tissues of the child's neck by the efforts of the grandmother to remove it. Tetanus antitoxin was given and the patient was discharged the following day.



Case 10. Broken ring in the esophagus.

Case 10. Sarah M. S., age 2 years, 6 months. Referred by Dr. W. F. Henderson and Dr. L. C. Spencer. Broken ring in the esophagus. The baby swallowed an incomplete ring, broken from a toy, four hours before admission. A skiagraph by Dr. Henderson showed the foreign body in the cricopharyngeal region of the esophagus. Under ether anesthesia the object was removed with the esophageal speculum and alligator forceps, the ring being turned to let the open part trail, thus avoiding entangling the walls of the esophagus wth the points. The baby was discharged the same day.

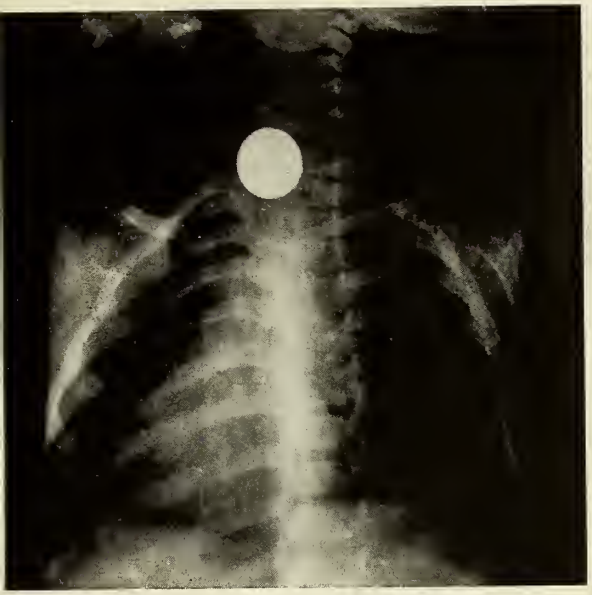
Case 11. Mr. Gerard H., age 78 years. Meat in the esophagus. Four days prior to admission he choked on a piece of meat, after which he was unable to swallow solids or liquids. Fluoroscopic examination, without barium, showed no evidence of foreign body in the esophagus. At esophagoscopy with the Jackson 10mm. tube under ether anesthesia, a large, partially decomposed and very foul mass of meat was removed from the neighborhood of the arch of the aorta. No esophageal pathology was found and deglutition was normal after removal of the meat. The patient was discharged two days after esophagoscopy.

Case 12. Mrs. J. M., age 33 years. Referred by Dr. A. F. Hebert. Meat in the esophagus. While convalescing in the hospital from a laparotomy, the patient, while eating, suddenly became unable to swallow anything, even saliva. Fluoroscopic examination by Drs. Samuel and Bowie showed an impermeable obstruction to the barium mixture at the level of the arch of the aorta. At esophagoscopy with the 10mm. Jackson tube under ether anesthesia, a foreign body consisting of a very large bolus of meat was found in the region of the arch of the aorta. Part of this mass was picked out with the side curved forceps and the remainder was dislodged and followed into the stomach with the esophagoscope. This patient had an indefinite history of esophageal stricture, but direct inspection through the esophagoscope in this case served a double purpose by showing conclusively that no stricture existed. The patient was discharged two days after esophagoscopy.

Case 13. C. R., colored female, age 40 years. Orange seed between two excentric esophageal strictures. The patient had swallowed lye thirty-seven years before, but had had no dysphagia until she choked twenty days ago while eating an orange, since which time she had been able to swallow only very small amounts of liquids. She had lost twenty-five pounds in twenty days and felt very weak. Fluoroscopic examination by Dr. W. F. Henderson showed an almost impermeable esophageal obstruction to the barium meal at the level of the aortic arch. At esophagoscopy, without anesthesia in the out patient department of Touro Infirmary, a stricture just too small to pass the 7mm. tube was encountered twenty-three centimeters from the upper incisor teeth; about five centimeters beyond this a foreign body could be seen lodged in a second stricture. The intruder (an orange seed) was removed and the patient immediately drank a glass of water without difficulty. She was cautioned about having her food finely divided, and when seen four days later was swallowing without any trouble.

Case 14. Victor B., age 2 years. Referred by Dr. Loeber. Coin in the esophagus eight days. The mother had found the baby choking and gagging shortly after she had given him a nickel eight days before admission. The baby either refused or regurgitated solid food, and occasionally vomited clear fluid. Skiagraph by Dr. W. Henderson showed the coin in the esophagus at the level of the suprasternal notch. The object was removed, without anesthesia, with the alligator forceps and esophageal speculum.

Case 15. William B., age 2 years. Coin in the esophagus eight days. Skiagraph by Drs. Samuel and Bowie showed coin in cricopharyngeal region of the esophagus. The nickel was removed, under ether anesthesia, with the esophageal speculum and alligator forceps. Uneventful recovery.



Coin, five-cent piece, in the esophagus.

Case 16. Leona H., age 1 year, 6 months, colored. Had had a coin (penny) in the esophagus for eighteen days. Since swallowing the coin the baby has taken only liquids, and had been very fretful. Skiagraph by Dr. Henderson showed the coin in the cricopharyngeal region of the esophagus. The coin was removed in the out patient department of Touro Infirmary, without anesthesia, with esophageal speculum and alligator forceps. Recovery uneventful.

Case 17. Baby Jane A., age 2 years. Referred by Dr. DeBuys because of a coin (nickel) in the esophagus for six days. The child had been unable to take solid food, very fretful and had moist rales over both lungs. Skiagraph showed the coin in the esophagus at the level of the suprasternal notch. At esophagoscopy, without anesthesia, the coin was removed from the cricopharyngeal region of the esophagus with alligator forceps and esophageal speculum. Uneventful recovery.

Case 18. Louis P., age 20 months. Had had a penny in the esophagus for four days, with dysphagia for solid food. Fluoroscopic examination showed the penny in the esophagus at the level of the suprasternal notch. At specular esophagoscopy, without anesthesia, no foreign body was found at this point, and an immediate second fluoroscopic examination showed that the penny had descended in the esophagus to the level of the arch of the aorta, from which location it was removed by esophagoscopy under general anesthesia. The child was discharged the same day.

Case 19. Alfred D., age 2 years, colored, had swallowed a penny half an hour before. This was removed without anesthesia from the cricopharyngeal region of the esophagus with alligator forceps and esophageal speculum. Uneventful recovery.

Case 20. Ralph McD., age 3 years, with a penny in the esophagus for one hour. Fluoroscopic examination showed the coin in the esophagus at the level of the suprasternal notch, from which location it was removed at esophagoscopy under general anesthesia. Uneventful recovery.

CONCLUSIONS.

1. Indirect and blind methods of removal of foreign bodies from the esophagus are not only highly ineffective, but are exceedingly dangerous.

2. The removal of foreign bodies in the air and food passages is best accomplished under direct vision with endoscopic means.

3. Symptoms of choking and gagging in a child call for the exclusion of foreign body in the diagnosis, and the possibility of foreign body should be considered until physical examination, roentgen ray and possibly endoscopy have proven negative.

4. Dyspnea in a patient wearing a clean tracheotomy tube and not relieved by the suction catheter calls for bronchoscopic examination. The obstruction may be in

the bronchi, and may be relieved through bronchoscopy.

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DISCUSSION.

Dr. S. M. Blackshear (New Orleans): This paper is of too much importance to go without some discussion. I would like to stress the difference in seriousness of organic foreign bodies and inorganic foreign bodies in the air passages.

Such foreign bodies as peanuts, beans, grains of corn and others which are likely to undergo decomposition are very much more dangerous than nails, beads and such bodies that have no tendency to disintegrate.

I recall a case in which a child had aspirated a red bean and on the fourth day I did a bronchoscopy, finding the bean in the left bronchus. By this time it had become soft and swollen with a tendency to sprout, and whenever it was caught by forceps it broke in pieces. I removed whatever pieces I could see, but was unable to get it all out. Several days later the child died of bronchial pneumonia.

We often see and hear of instances where patients have carried metal or glass foreign bodies in their air passages for months and even years without serious results.

Recently I saw a man who had had a laryngectomy done on him thirteen years before and, having worn out his tracheotomy tube, which had sawed a fistula through the trachea to the esophagus he decided to make a tube for himself. He sawed off a piece of copper tubing from an old boat and bent it to what he thought the proper shape and wrapped fishing line around the upper end of it to serve as a flange to keep it in proper position. However he did not use enough fishing line and the tube slipped down the trachea and into the left bronchus. I saw him about nine or ten hours later and removed the foreign body by lower tracheo-bronchoscopy. He had no bad results from the foreign body in his bronchus, but when I last saw him he still had the fistula between the trachea and esophagus.

Dr. H. L. Kearney (closing): The diagnosis of foreign bodies is usually made by the general practitioner, who generally sees these cases first. Symptoms ordinarily produced by these conditions are very distinct. Among the diagnostic signs of foreign body of the bronchus is asthmatoid wheeze, mentioned by Dr. Chevalier Jackson. It may be absent, it may be heard only with the stethoscope bell held at the patient's open mouth or it may be audible at some little distance from the patient.

The point brought out comparing the urgent symptoms from organic foreign bodies (peanuts, beans, etc.) of the bronchus with the very much milder reaction to inorganic foreign bodies (metallic bodies, etc.) is very important.

REVIEWS

A REVIEW OF THE USE OF MERCUROCHROME IN THE PAST YEAR AND A HALF.

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New Orleans.

HISTORY.

Since the advent of salvarsan, medical men have been hopefully expecting, from their scientific laboratories, the production of an efficient, general antiseptic. In 1919, Young, White and Swartz, at the Johns Hopkins Brady Urological Institute, after an elaborate study of various dyes, in the search of a competent urinary antiseptic, produced what is known today as mercurochrome 220 soluble. It is essentially the sodium salt of di-brom-oxy-mercurifluorecein. The drug contains 26 per cent mercury. It was developed during the war specifically as an agent for the local treatment of gonorrhea.

In November, 1922, Piper of Philadelphia, published a report of the first instance in which mercurochrome was used intravenously in the human body. The cases were of puerperal septicemia, and although the therapeutic effect was not conclusive,

he brought out the possibility of its use intravenously. Hill and Colston at the Brady Urological Institute, in 1923, showed that a transient bacteriostatic effect could be produced in the blood and urine of rabbits, by such intravenous injections of mercurochrome.

Young and Denny studied a series of blood stream infections in the human body, treated by injections of this drug. In 1923, they made such a favorable report, and impressed the medical profession so favorably, that its use was started throughout the country. This announcement was followed by a panicky and almost hysterical optimism as to its value, and everywhere it was used to combat every possible infection, localized, or generalized, accessible or inaccessible, even to conditions where the etiological factor was not established, as in pernicious anemia, in the hope that it was caused by some obscure infection.

This era was shortlived. The discouraging results following this abused use of the drug in a haphazard manner, led many to doubtful interrogation, sober reflection, and in some quarters even to complete rejection of this substance as a useful and safe therapeutic agent.

A survey of the literature reveals innumerable reports of cases and one can rarely read a medical journal without finding someone's opinion on the subject. This mass of evidence is so contradictory in character that it is a difficult problem to make a valid estimate of this rather promiscuously used form of therapy.

In attempting to correlate the different views offered by those who have studied this problem, I have divided this survey according to the various diseases treated with this drug.

DISEASES TREATED WITH MERCUROCHROME.

Local Application.—After seven years' trial it stands established as a local disinfectant. It is now used in a 2 per cent solution, as a prophylaxis of infection, in the minor wounds and abrasions by laymen. It has to a great extent replaced iodine in these cases, as it causes only slight irritation if any, is capable of ready penetration to the deeper tissues, possesses a high germicidal activity, is highly soluble and has but a slight toxicity. In sharp contrast to other disinfectants employed by the laity, its freedom from danger is of importance, since, even if 2 ounces of a 2 per cent solution, the amount usually purchased, be swallowed, only stomatitis or diarrhea would be the worst result. In the preparation of body surfaces for major operations, it is now used routinely in some hospitals.

Septicemia.—It is in this condition that so many controversies have arisen as to the value of mercurochrome. Marvelous cures have been reported, of cases in which the drug was used as a last resort. Many seem to think that the administration of the drug was a coincidence with the recovery of the patient, as it is a well known fact that recovery occurs very rapidly in such conditions. However, cumulative evidence such as has been published, becomes impressive, and must be given due weight.

Young's report, of 1925, states that it is a drug, the usage of which in a great variety of septic conditions seems justifiable. He modifies his previous claims of a high percentage of cures and in this report, which covers 211 cases, 57 of which were septicemias, he admits of 42.3 per cent recoveries, 38 per cent improvement and 24 per cent failures. The septicemia cases were of various origin: urinary, throat infections, sinus infections, osteomyelitis, puerperal endocarditis, transmitted at or following operation, and others of unknown origin. Dudgeon presents 150 cases of acute bacterial infections, similarly treated, with good results. Only 20 per cent received no benefit. No sudden arrest of the process was noted in any of the cases but some required only one or two treatments for improvement to occur.

Hill and Bloodgood, of Johns Hopkins, are of the opinion that streptococci viridans infections never respond to this treatment, while other types of streptococci and staphylococci respond fairly well.

Horsley of Virginia treated 12 cases, of which, only 1 was cured, 3 improved, 6 showed slight improvement and 2 were unimproved. Six of these patients died and the infection in 5 of these was caused by streptococci and one by pneumococci. He is of the opinion that mercurochrome should be given only after all the customary methods have failed or show too little improvement.

Lowenberg claims that the value of the drug has not been shown and has still to be proven. His series includes 3 cases of endo-pericarditis with effusion. Of these, one was cured but the heart was left damaged, five cases of pneumococcal and streptococcal peritonitis, all of which died.

Although none of the above authors used controls in their trial of the drug, there seems to be sufficient evidence that mercurochrome is a valuable drug in this type of case, principally in those due to Gram negative bacilli, streptococci and staphylococci. Many other individual cases have been reported but not included here, in which mercurochrome proved valuable.

One of the mistakes made in the treatment of such cases is that of waiting too long before administering the drug, and then expecting wonderful results, after the patient is in a moribund condition.

Pneumonia.—The most recent and valuable contribution in this type of case comes from Hoppe, Goldsmith and Freeman in Atlanta, Ga. Experimenting on rabbits, they found that after an injection of mercurochrome, the lung tissue juice became inhibitory to bacterial growth. All three types of pneumococci, streptococci hemolyticus and staphylococci were inhibited. Further, no pathological lesions were found in the lung following the injection. The drug was administered intraperitoneally and completely absorbed, leaving no pathology.

They then treated 180 cases of lobar and lobular pneumonia, half of which received the mercurochrome treatment, and the other half the routine treatment, to be used as controls. The average duration of the illness in the control cases was 13.3 days and the duration with the administration of this drug was only 5.9 days. Their mortality rate was decreased from 32.2 per cent to 8.9 per cent.

Previous to this, the medical department of the United Fruit Co., in 1924, reported lowering their mortality rate from 49 per cent to 20 per cent in both lobar and lobular pneumonia. Young in 1925 reported a series of 22 cases in which he obtained an improvement or abortion of the infection in 85.3 per cent of the cases.

These well controlled cases should prove conclusively that this form of therapy is of value in the treatment of pneumonia.

Genito-Urinary Infections.—Previous to the past year it was in this field that the results with this drug was most unsatisfactory. Considerable work along this line has been done lately, with good results. The most interesting contribution comes from Potter and Redwell in California. They used a combination of mercurochrome, foreign protein, and sugar injections in the treatment of gonnorrheal infections, on the assumption that milk and sugar activates the mercurochrome to increase its bacteriostatic power, its power of penetration and its permeability of the tissues. It also stimulates a greater secretion of the dye from the glands. Two hundred cases were treated, with striking results in acute gonorrhea.

In their animal experimentation they showed that this combination clears up a staphylococcus infection faster than when either mercurochrome or foreign protein was used alone, with routine treatment.

Later, in November, they reported a series of 1200 cases of gonorrheal urethritis, and its complications, treated with mercurochrome in combination with sugar only. Their theory is that sugar has properties similar to any foreign protein or non-specific agent. It stimulates a positive and a negative phase in the animal body to increase penetrability of tissue, increase the outpouring of amboceptors and leucocytes as well as activating the action of the dye. Adding the sugar seems to do away with all untoward effects, as anaphylaxis, so that the patients can take this combination treatment with impunity, with the exception of persons suffering from severe nephritis and cardio-vascular diseases.

The most striking results occur in acute gonorrhea and acute rheumatic conditions. In chronic conditions mercurochrome alone seems to be better. An increase of 33 per cent in cures was obtained as well as a shortening of the period required to cure the cases by two to four times. The discharge stops in one-third quicker time than when routine treatment and mercurochrome were given together. It is their opinion that the best results obtainable follow if routine treatment be given, and at 48 hour intervals, 10 c.c. of mercurochrome made up in 50 per cent glucose, is administered, until 10 to 20 doses are given.

Walther of New Orleans believes that a reaction is not necessary for good results and that the drug action is not analagous to that of a foreign protein. He uses very small doses of 2 to 5 c.c. every two to three days in connection with routine treatment and diathermy. He has obtained very good results with 768 cases which include

480 cases of gonorrheal prostatitis	64%	improved
112 cases of non-specific prostatitis	67%	"
66 cases of gonorrheal epididymitis	27%	"
86 cases of gonorrheal arthritis	31%	"
86 cases of pyelonephritis	31%	"

Johnson of Vicksburg obtained good results in 40 cases of pyelitis and in 5 cases of gonorrheal arthritis, while Lowenberg failed to get any satisfaction in 50 cases of vaginal gonorrhea in children and 1 case of arthritis of the same origin.

Young shows similar results as Walther.

Typhoid Fever.—That mercurochrome in typhoid fever and other ulcerative conditions of the intestine has no beneficial, and at times harmful effects is well shown by Bond, Barrier, Foster, Choo and Young. 22 cases were studied by these various men and they draw about the same conclusions, "that it has no place in the treatment of this condition."

Acute Infections of the Central Nervous System. — Hengstler of Minnesota attempted the use of mercurochrome in this type of disease, hoping that similar results would be obtained as in other infections. His trial gave very unsatisfactory results in epidemic encephalitis and meningitis. His opinion was the same as Ayer, Samuel Black, and Lowenberg. They all agreed that it had no value in central nervous infections.

John Vicher obtained improvement in 2 cases of encephalitis but Hengstler seems to think that these cases were not encephalitis or that the strain of organisms was different.

Malaria.—Although Aviston and Koo, in Korea, have reported 14 cases completely cured of malaria, Enbanas, in the Philippines tried the same treatment on 7 of his leper patients without a single cure. Even after two injections, the parasites were still present in the blood. He did note that the fever and chills stopped.

Dundas and Telasey confirmed this finding after treating 6 cases with mercurochrome.

Pernicious Anemia.—Believing that pernicious anemia was caused by a microorganism, McLaughlin of Siuox City, began treating this condition with mercurochrome. He believes that it results from an infection starting in the buccal cavity and that it travels down the esophagus to

the stomach. From there, the toxins find their way to the blood stream, destroying the elements of this tissue. He claims to be able to show the pathological lesions.

He presented 14 cases, most of them over two years duration, which were treated with this intravenous medication. By giving one injection of the dye in 15 to 30 c.c. doses, he claims to produce remissions more quickly and more lasting than by any other known method.

His findings have not been confirmed by any one else.

Tuberculosis.—Hayes has treated 92 cases of tuberculosis with this form of therapy. He is satisfied that it can be used to advantage in connection with other methods of treatment. He has not improved the death rate in his practice but believes that it prolongs life in terminal infections. In the late stages of tuberculosis, when properly used, it relieves the cough, promotes sleep, increases the appetite and causes an improvement in body nutrition. He does not use this therapy in cases that respond to other form of treatment, but only in those persons that have been rested over a long period of time, with no improvement, and are suffering with a severe cough and expectoration, nervousness and inability to sleep, moderate fever and poor appetite. The doses given are less than 1 mg. per kilo, every 4 to 5 days, for about 10 doses and repeating the same in about two months, if necessary. His figures are as follows:

2 early caes	Little change—well now.
9 mod. advanced cases	5 arrested—4 much improved.
34 far advanced cases	30 symptoms—2 no change, 2 made worse, 8 died.
12 terminal cases	9 transient improvement, 3 harmed, 10 died.

Total: 47 improved, 5 no change, 5 harmed, 18 died.

When rest and pneumothorax have failed, merurochrome seems at least to give relief to these unfortunates going through this stage.

Dermatology.—In 1925 Young brought out the possibility of advantageous use of intravenous mercurochrome in skin infections. At that time he presented 32 cases treated in this manner, with 24 cures, 5 improvements, and 2 failures. This report included:

8 cases of erysipelas	100%	cured.
4 cases of furunculosis	100%	cured.
16 cases of cellulitis	65%	cured.
3 cases of psoriasis	1	cured, 2 improved.

Later, in 1926, Young, Hill and Denny published the following results:

24 cases erysipelas	83.3%	cured or improved
11 cases furunculosis and carbunculosis	100.0%	cured or improved
4 cases chancroid ulceration	100.0%	cured or improved
36 cases cellulitis and abscess	83.0%	cured or improved
1 case diabetic gangrene	100.0%	cured or improved
2 cases of gas gangrene	100.0%	cured.
44 cases of leprosy	63.0%	improved. Ulcers disappeared.
4 cases of psoriasis	50.0%	cured. 1 relapsed, 1 showed no new lesion.
3 cases of pemphigus	1	cleared up but recurred, 1 improved.
1 case of eczema	Cleared up except in face.	
1 case of syphilis	8 yr. old lesion cleared up.	

The above results show a 50 to 100 per cent cure or improvement in all. Although obtained from a limited number of cases these figures show the possibility of further development of this therapy in dermatological diseases. The drug seems to be definitely indicated in erysipelas, furunculosis, and cellulitis.

TECHNIC.

It is now a fairly well established fact that the therapeutic effect of the drug is best obtained when an injection of from 3 to 7 mg. per kilo of body weight is administered. Above this amount it is considered dangerous and below this many believe it to be ineffective. However, Walther uses 2 to 5 mg. per kilo in the average case and Hayes uses less than 1 mg. per kilo in his tuberculosis work. When these small doses are given many more injections than usual are required.

The drug is usually administered intravenously in a 1 per cent solution of freshly distilled water, the usual amount varying from 10 to 20 c.c., depending on the size of the patient and the severity of the infection. Young advises 5 mg. per kilo which represents 22.7 c.c. for each 100 pounds of body weight.

It is customary to give one injection, repeating in four to five days, if necessary. More frequently repeated doses can be administered, as shown by Dudgeon, who has given it daily for 5 days, in large doses, without any complications. Hayes has done the same and the only reaction noticed was a slight rise in temperature. Sensitive patients, however, are often seen suffering from stomatitis, nausea and diarrhea, as a result of too frequent or too large doses.

REACTION.

Most of the men working on this subject find that a reaction is necessary for good results, or at least that their best results occurred when a definite reaction followed the administration. This reaction, especially the febrile part seems to play an important part in the elimination of the infection.

This reaction varies with the individual. In some, the average dose causes none whatsoever, and in others, as low as 3 mg. per kilo has caused a severe one. If less than a 3 mg. dose is given, usually a reaction does not follow.

After the administration, there is an immediate slight depression, a feeling of discomfort in the lower abdomen, a slight headache, followed shortly after by nausea, which may be slight or pronounced. Later a bowel movement may take place but this is very often absent. The successive doses do not produce a reaction as severe as occurs after the first injection. In febrile cases as well as in most others, there is a rise in temperature, varying from 1 to 5 degrees, which usually takes place in three to four hours. This rise is followed by a gradual drop not infrequently to normal. There is also an increase in the pulse rate.

There is often a chill which is usually light, but at times severe. Rare instances of fairly profound shock, have been reported. A few cases were so severe that restorative methods had to be resorted to. Dudgeon claims to be able to avoid shivering and true rigors, by keeping the patient warm and by giving about 10 grains of aspirin with hot tea immediately after the injection.

According to Samuel Orr Black, following the administration of mercurochrome there is an increase in the white blood cells of 7000 to 18,000. There is also an increase in the polymorphonuclear leucocytes, of 4 to 18 per cent, as well as an increase in the red blood cells of one-half to one million. The hemoglobin increases 3 to 27 per cent. This change in the blood occurs within four hours and continues through twelve hours, after which a recession sets in.

PATHOLOGY.

Considerable argument has arisen over the question of whether the dye produces any pathological change in the body or not. It is well known that it is very irritant in persons with a low tolerance to the mercurials. It is often followed by diarrhea, vomiting, salivation, and sore gums. Excessive doses will cause a stomatitis as well as a toxic nephritis. Some patients have a high tolerance to the drug or develop this tolerance, as pointed out before, where repeated daily doses were given.

Young views this toxicity with little concern. Although a transient albuminuria and casts are found, he is of the opinion that it does not cause a definite nephritis. Trout of Roanoke states that cloudy swelling of the renal and liver epithelium occurs in doses up to 9½ mg. per kilo. Others including Hagan believe that the damage to the kidneys is proportional to the dose.

One case, at autopsy, showed necrosis and degeneration of the surface of the

colon, with edema and hemorrhage exudate and extravasation deeper. The viscera showed more mercury than in bichloride poisoning. Only two fatal cases have been reported.

Therefore to say that it is safe must be modified both by any supersensitiveness of the individual to mercurials or any specific ability of the individual, to decompose the drug, liberating the mercury in a more toxic form.

ACTION OF THE DRUG.

To attribute the beneficial results of mercurochrome to its bacteriostatic activity alone is erroneous, since experimental workers have proven that in the blood stream a dilution of 1 to 600 was necessary to kill bacteria. This concentration would prove fatal, and since the average case receives a dilution of about 1 to 10,000 after it is dessiminated in the blood, it must have other properties to account for its action. Further, Martin has pointed out that chemicals are thrown out of the circulation in a very short time.

It then seems that besides the bacteriostatic property it possesses, a great deal of its influence in the body depends on the ability of the dye to stimulate the tissues to respond more vigorously, in the production of more immune bodies, leucocytes, to raise the temperature and improve the general body circulation and nutrition, in this manner helping to fight off the infection.

SUMMARY AND CONCLUSION.

1. Mercurochrome is a valuable therapeutic agent in the treatment of certain diseases.

2. The best results are obtained when it is used early in the disease.

3. It is indicated in blood stream infections. It is of the greatest value when the infection is caused by Gram negative organisms, staphylococci and streptococci.

4. Mercurochrome should be tried in all systemic infections when other treatments have failed.

5. The drug is possibly indicated in pneumonia.

6. It can be used to advantage in gonorrheal infections.

7. Its value in erysipelas is fairly well established.

8. In other skin infections and tuberculosis it should be given a more detailed study.

9. It is contra-indicated in typhoid fever and other intestinal ulcerations.

10. Mercurochrome has no beneficial effects in the acute conditions of the central nervous system or in malaria.

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ASTHMA AND ANAPHYLAXIS.

The close parallelism between the manifestations of anaphylactic shock and those of asthma have been responsible in part for the general conception that asthma etiologically is entirely due to protein sensitization. In addition to the clinical similarity of the condition as seen in man and as seen in experimental animal, other factors are responsible for the idea that the two conditions are one and the same. In both conditions sensitization may be either hereditary or acquired. Anaphylaxis is specific as is asthma. An animal sensitized to one protein can be only affected by that protein in asthma and in anaphylaxis; and atropin will relieve both conditions. Another feature which is similar between anaphylaxis and the diseases, which we are accustomed to call the protein diseases, asthma, hay fever, urticaria, is that all show in a stained smear of the blood a marked eosinophilia. This eosinophilia is also seen in sections of the lungs of animals killed by protein, and in Arthur's skin phenomena the swelling is made up largely of eosinophils. With all this data it is not to be wondered at that asthma and similar evidence of protein intoxication were considered to be anaphylactic in origin. The question has not been generally debated. Now Kahn* presents considerable evidence to show that these so-called anaphylactic conditions are proving not primarily anaphylactic. He shows that the demonstration of antibodies to rag weed is extremely variable, whereas in true anaphylaxis this is one of the most striking phenomena of the condition. Kahn brings forth considerable additional evidence of experimental nature, but his thesis is upheld mainly by the result of failure of treatment of individuals who have suffered from asthma. He expresses not only his own ideas, but also those of a large number of individuals who have been interested in the treatment of the protein disorders. His disputation is well presented, and his arguments are well upheld.

Apparently the genus of bronchial anaphylaxis lies in the phenomena of heredity. Protein sensitization is a phenomenon of the disease asthma, but it is not the basic and underlying cause of the disorder. Immunization is almost impossible to obtain a cure. In the study of the genesis of disease, many theories and ideas are advanced which in the course of time are materially altered. It would seem that our idea of the etiology of asthma, an idea which has held sway for the last fifteen years, would need to be revised.

THE WALTER REED MEMORIAL.

The Virginia State Chamber of Commerce announces that work has been started on the rebuilding of Belroi, the birthplace of Dr. Walter Reed, as a

*Kahn, Morris H.: Arch. Int. Med. 39:621, 1927.

Birthplace of Walter Reed.

national memorial to that conqueror of yellow fever. This project has been conducted by the Virginia Medical Society and certainly the effort is most praiseworthy.

All of us know the story of Reed's work with yellow fever in Cuba, and of his heroic assistants, Carroll, Lazear and Agramonte. The four names are linked inseparably in this great achievement of preventive medicine. Their work established the mosquito as the intermediate host, and rational prevention was therefore possible, wiping out the plague of tropical and semi-tropical countries.

We in New Orleans are especially interested and extremely grateful. The progress of our city and state to their present status would have been impossible under the handicaps of yellow fever epidemics. New Orleans suffered greatly from the ravages of this disease. To Dr. Reed we also owe the greater part of our knowledge as to the prevention of typhoid fever.

For the past several years, a committee of the Louisiana State Medical Society has been actively engaged in the work of planning a memorial in Louisiana to Dr. Reed, one of our state's greatest benefactors. Considerable progress has been made and we hope that in the very near future the committee will be able actually to begin work on our memorial to this international figure.

While we pay homage to this scientist, let us not forget the many associates who made his great work possible. Unsung heroes, volunteers to a cause which has benefitted humanity inestimably! We are too apt to forget such obscure, unknown helpers, men who allowed themselves to be bitten by the infected mosquitoes to prove Dr. Reed's theory. Dr. Lazear died following his second voluntary exposure, and four of twenty-five volunteers likewise gave their lives to the cause. Of these four, one was a doctor, one a nurse, and two were Spaniards. Still another physician volunteer was disabled completely and a soldier volunteer was left a helpless paralytic. All honor to those who offered their lives for this experiment.

Another contemplated tribute to Dr. Walter Reed, "Father of Modern Public Health," is the establishment of a research chair at the University of Virginia Medical School.

THE DEPARTMENT OF SURGERY.

Keeping apace with the modern trend of medical education, Tulane University has recently been planning to establish its Department of Surgery more nearly on a full-time basis. Following the resignation of our eminent and beloved Professor Matas last year, a new appointment was necessary, and with the aid of an annual appropriation from the General Education Board of the Rockefeller Foundation, the first steps in such a plan were made possible.

After the most painstaking, careful consideration of possible suitable men for such a position, the Board of Administrators of the Tulane Educational Fund announced the appointment of Dr. Edward William Alton Ochsner as Professor of Surgery and Head of the Department of Surgery. Dr. Ochsner begins his duties with the opening of the coming school year. At present, the doctor is in the city, actively engaged in organizing and planning his work.

Dr. Ochsner is a native of South Dakota. He was graduated from the University of South Dakota with the degree of Bachelor of Arts, and from the Washington University Medical School, St. Louis, with the degree of Doctor of Medicine. He then served an interneship and an assistant residency in the Barnes Hospital, St. Louis, under Dr. George Dock. He also served a surgical internship in Augustana Hospital, in Chicago, under the late Dr. A. J. Ochsner.

Dr. Ochsner has also had surgical training in Europe. He served as surgical assistant under Professor Clairmont in the University of Zurich, Switzerland; and under Professor Schmieden, in the University of Frankfurt, Germany. He has, in addition, visited most of the prominent surgical clinics of Europe.

Following his training in Europe, Dr. Ochsner served as an instructor in surgery and surgical pathology in Northwestern University, during which time he was engaged in surgical practice in Chicago. He then became Assistant Professor of Surgery in the University of Wisconsin Medical School. It is from this professorship that Dr. Ochsner comes to Tulane.

In Dr. Ochsner we feel certain that Tulane University has a man who will do everything possible to further the ever increasing prestige of our great medical school. The Professorship of Surgery is one of the most important positions Tulane can offer. Professor Matas has given to it an international reputation. Dr. Ochsner has already shown his interest in educational and research problems, and we hope that his endeavors will bring progress and added honor to Tulane and to New Orleans as a medical center.

Dr. Ochsner will be fortunate in having a co-worker of known ability and worth. Dr. I. M. Gage, of Tulane, has been appointed full-time Assistant Professor of Surgery, and begins his duties with Dr. Ochsner. Dr. Gage is well known to us all. A graduate of Tulane, he has for the past several years been actively engaged in the teaching duties of the Department of Surgery under Dr. Matas.

We welcome Dr. Ochsner and extend our very best wishes for his continued success. We congratulate Dr. Gage and feel ourselves fortunate to be able to have him continue his capable work.

CORRESPONDENCE.

Amsterdam, Aug. 2, 1927.

The Editors of the New Orleans Medical and Surgical Journal.

Dear Sirs:

It may be of interest to record a few observations made in the course of visits to several of the large London Hospitals and the big hospital of the city of Amsterdam. Such notes as I have made must be considered the result of superficial study, rather than the fruit of extended and deep delving into the subject.

In London I had the opportunity of seeing three of the well known medical institutions—St. Thomas Hospital, St. Bartholomew, and the University College Medical School. At all these hospitals, teaching is conducted. In fact, in London teaching of the undergraduate student is carried on in practically every hospital of any size. In most of them, it is only the last two, or clinical years that are given; in others, and these represent the best, a man may enter and complete his entire medical curriculum under the same roof. Many of the students prefer to take their first two years of training at Oxford or Cambridge and complete their courses where there is an abundance of clinical material. As a result of this, the preclinical classes are materially smaller than the clinical. I will not give a detailed discussion of medical education in London, but I would like to make mention of the remarkable freedom of thought and action allowed the medical student. He is assigned service in one or the other branches of medicine. He completes his time there and moves on to the next, depending on where there is a vacancy. His work is checked up to a certain extent, but unless he completely neglects his more or less perfunctory duties, nothing is said to him and he is allowed to go on as he wills. Final examinations, failure to pass, and flunks are unknown. If he gives his time, that is all that is required of him. As a consequence, when he has completed his requisite hours in the maternity, surgical, medical and specialty wards, he is considered eligible to go up for his licensing examinations. He may or

may not pass these. This seems to be immaterial to the medical school. He can appear before the licensing board as often as he wants. If he fails the first time, he can appear again and again until he passes or gives it up as a bad job. He never has to repeat his systematic training in the wards, but of course it is presumed that he does considerable studying between the examinations. As an exaample of this manner of treating the doctor in embryo, Dr. T. R. Elliott, Professor of Medicine at the University College Medical School, showed me the record of a man who took the board examinations regularly for four years before finally receiving his license.

One is struck, upon entering the wards of the London hospitals, with two impressions: their roominess and their brightness. The beds are not crowded together and there is an attempt to overcome the accustomed meteorological dullness of London by using bright colors. The ward screens are often a brilliant red, bright curtains are at the windows, the blankets are colored, and flowers are often to be found in windows, on mantles and desks, giving an air of cheerfulness to the whole surroundings that the bleak, hygienic wards of our American hospitals frequently lack. Certainly the ill man is more likely to recover in such surroundings than he is in our drab ward interiors. Upon closer observation, it is found that the general ward arrangements are not particularly convenient, but despite this, room always seems to be found for a small, readily accessible laboratory where the minor laboratory examinations, such as urine analysis and blood counts, can be made promptly and with a minimum amount of trouble. The ward histories are complete and well worked up. In fact, there is noted in Europe a punctilious attention to the recording of observations when made, which enhances the value of records immeasurably.

The most vivid medical impression I received was the time and attention the medical man gave to his wards and out-patient departments. I was struck, also, by the enthusiasm for a form of treatment which has been in use in this country with more or less favor for some years, but which is apparently a relatively recent innovation in London: namely, the alkalinization treatment of gastric ulcer. This disorder is particularly rife in England, whether on account of the wretched oral hygiene of the lower classes or not, is immaterial. The fact remains that they see there many cases. In one hospital I was told that in a period of eighteen months not a case of gastric ulcer had been turned over to the surgeon, whereas previous to the use of the Sippey treatment, daily gastric operations were the rule.

In the large Binnengasthuis of Amsterdam, there is conducted one of the best of the Holland medical schools. As in London in the clinical years, the students act as the clerks of the ward. They take histories, make examinations of all kinds and record them. A student does not have his work laid out for him with the same exactitude that is common in the United States. When he enters his clinical years, he has to take whatever service upon which a vacancy exists. As example, one and a half months of service are required in the neurological wards, where eight men are accommodated. If the eight places are filled, he has to wait until one of the men already assigned there has finished his time. The man finishing his service may have to wait a varying time until he can get into, say the medical or surgical departments. As a result of this plan of procedure, the teaching of a necessity, continues steadily throughout the year, but the student, on account of the waiting to get into certain services, requires about two years to complete sixteen months' actual work. He does not have any regularly assigned holiday and practically has to be subject to call, though not working, all the time for the two years of clinical training.

The wards of the City Hospital of Amsterdam are reasonably bright, but spotlessly clean. The cleanliness of Holland is a bye-word, and a myth, but not so in the hospital. The patients are kept immaculately clean; the wards themselves are remarkably free from odor, dust and dirt. The neurologic wards exemplify the general splendid care for the patient. In such wards, with many of the patients incontinent, one would expect to find at times beds soiled with urine or feces, but such is not the case. By means of various ingenious contraptions the patient is kept from soiling himself, and if he does, is promptly changed. Freedom from bed sores is one of the results. I saw a patient in bed for twenty-one years, incontinent for the last ten, who had never had even a transient irritation erythemia of the dependent parts.

I would like to continue more or less in detail, but I fear a more minute account would be of little general interest and, aside from that, this note is intended for only a brief communication.

The death of Magnus, the great pharmacologist of Utrecht, has caused great sorrow in Holland. He was a man universally liked and admired. Next spring a trip to America had been laid out for him which was to cover most of the country. Magnus was to have delivered the Herter Lectures in Baltimore and the Lane Lectures at Stanford University, California, besides lectures at the University of Chicago, the Mayo Clinic and several other places. Unofficial correspondence had

held out the hope that he might visit New Orleans and there deliver a talk or lecture.

The chief medical clinic of Amsterdam is in charge of Dr. Snapper, who will visit America in a few weeks to give an address at Kansas City later in the fall. The Head of the Department of Neurology was in the United States last spring, delivering a Harvey Lecture in New York. The chair of Neurology at Johns Hopkins was tendered him, but he refused, probably due to the fact that a magnificent new neurological institute which will be opened next year, will be in his hands.

The medical service, aside from the surroundings and national differences, is run essentially the same as the Charity Hospital services. It was interesting to observe that the patient who had malaria was receiving the "Standard Treatment," well known in the South; that mercurochrome had been used, and was largely being abandoned on account of severe reactions and invariably diarrhea; that rheumatic fever was common and that subcutaneous nodes were the rule in children and young adults; that aneurysms were rare, one being shown as a great curiosity; that in typhoid fever the absence of eosinophiles in the differential count is considered an important diagnostic finding, and that frequently the weaker dilutions would be positive when the stronger were negative in the Widal reaction; and that in the pediatric ward, despite three weeks' quarantine and the isolation of the little patients in glass cubicles during their entire stay in the hospital, mumps, chicken-pox and German measles occurred quite frequently.

Dr. Snapper is also the director of a large research laboratory where he is concluding perfusion experiments which show the ketone bodies may be destroyed in the kidney alone without the action of the liver, lactic acid being formed. The ketones are fat derivatives, lactic acid a carbohydrate precursor; the first experimental proof that carbohydrates may be formed from fats.

Very sincerely,

J. H. Musser, M. D.

DEMONSTRATIONS IN MALARIA CONTROL.

After satisfactory demonstrations that malaria could be controlled successfully and economically in areas of dense population and high per capita income, the Board withdrew from this activity and attacked the much more difficult problem of malaria control in rural areas where the population is sparse and the per capita income low. General mosquito control is not feasible under these conditions, nor did it even seem possible in many areas to control Anopheles. Further studies have indicated, however, that only one of three common Anopheles of the United States, namely, *Anopheles quadrimaculatus*, is responsible for the transmission of malaria. Since the seasonal prevalence of this mosquito is known and also the preferential breeding-places, it is quite possible to concentrate on the destruction of this one species and to ignore all others, thus securing control of malaria at a reasonable cost even in sparsely settled areas.

It is obvious that malaria control in rural areas will not be so rapid, so spectacular, or so complete as was the case in the demonstrations in municipal malaria control. The program can best be carried forward in counties having a full-time health service which is conducting all phases of health work and featuring malaria control only in those areas where it is of real economic importance. During 1926 the Board formulated a tentative plan of malaria control on the basis of the county as the unit. This program, which is a compilation of the experiences of successful malariologists and of public health administrators versed in malaria control measures, is being tried out in various parts of the Southern States. In the course of the year the Board aided malaria control in the Southern States through contributions to the central health bureaus of seven states where malaria is a problem, and also assistance to twenty-six county health unit budgets. The method of procedure is one of gradual attrition rather than of mass frontal attack; but it is believed that the strategy is sound and, if continued systematically and persistently, is sure to result in a definite reduction in malaria in the rural districts.

The year's malaria program included also cooperation in control demonstrations in Porto Rico; in the province of Tucuman, Argentina; in the state of Rio de Janeiro, Brazil; in Italy; in the province of Caceres in Spain; in Palestine; and in the Philippine Islands.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

PROCEEDINGS OF THE TOURO STAFF MEETING.

On May 4, 1927, at the regular clinical meeting of the Touro Infirmary Staff, the entire program was furnished by members of the Resident Interne Staff. Several interesting cases were presented, and the visiting staff entered actively into the discussion. The cases presented were as follows:

"Cases with Leukemoid Blood Pictures," by Drs. H. L. Weinberger and John Archinard. Under this title two very interesting cases which had been under their observation were presented, followed by several cases from the literature.

"Mastoiditis with Lateral Sinus Thrombosis," by Dr. A. J. McComisky. Dr. McComiskey reported such a case in a child nine years of age, with a hemolytic streptococcal septicemia. A discussion of the diagnosis and treatment followed.

A "Case of Glycosuria," by Dr. C. T. Williams. A glycosuria in a child three and one-half years of age was presented. The interesting point was the fact that the glycosuria disappeared following anti-luetic treatment.

"Essential Thromcytopenia Purpura," by Dr. Bernard Efron. A report of two cases, with a discussion as to classification, diagnosis and treatment.

"Toxemia of Pregnancy," by Dr. H. L. Cohen. A case of nephritic toxemia, discussed from the point of prognosis and therapy.

All the cases were carefully prepared and presented and the Infirmary is to be congratulated upon this successful innovation in Clinical Staff Meetings.

VERNON PARISH FAIR ASSOCIATION.

A medical gathering was held in Leesville last evening, the greatest body of medical men ever assmbled in Leesville.

There were a number of visiting doctors from Alexandria, DeRidder, Merryville, Gandy, Fisher and Many, and most of the Vernon Parish physicians.

A new society was organized under the name of Sabine, Vernon and Beauregard Tri-Parish Medical Society. Dr. W. P. Perkins of Gandy was elected President, Dr. Thos. R. Sarter of DeRidder Vice-President, and Dr. D. O. Willis of Leesville, Secretary-Treasurer.

A very instructive and much enjoyed scientific program was rendered.

Dr. W. P. Perkins called meeting to order and made a talk on the objects and purposes of this meeting, the principal object as expressed to build up better and closer feeling among the profession and to improve their knowledge and ability to treat and handle the sick and afflicted.

Address of welcome to the gathering on behalf of the local profession, by Dr. D. O. Willis.

Then one of Mr. Dunlap's sumptuous Hotel Leesville dinners was enjoyed.

The gathering then went to the Dreamland Theatre where Dr. Wilson with Parke-Davis & Company had arranged to have two very interesting and instructive reels showing the different processes in the manufacture and administration of the various biologic products.

The gathering then re-assembled in the dining room of Hotel Leesville, where the scientific program was rendered.

Dr. A. S. Reisor of Leesville talked on the subject of digestive and intestinal disturbances of children.

Dr. H. M. Foster of Alexandria talked on the subject of drainage of the upper urinary tract, exhibiting many roentgen ray photographs to demonstrate his explanation.

Dr. E. R. Gandy of Alexandria read an excellent paper on the diagnosis and management of superficial eye troubles.

The secretaries of the three societies were made the Board of Directors and it was left with them to fix the time and place for the meeting, with the understanding that meetings would be mobile, different places each meeting.

D. O. WILLIS, M. D., Sec.-Treas.

Any member of the Orleans Parish Medical Society moving his office on or about October 1st will kindly communicate with Secretary, 1551 Canal Street.

Dr. C. A. Weiss has been made Chairman of the Committee on Arrangements for the next meeting of the State Medical Society in Baton Rouge. Active plans are being made for a most successful meeting.

WINDOW VENTILATION VERSUS FAN VENTILATION.

A previous study of the New York Commission on Ventilation which recommended the window system of ventilation rather than the newer fan system required by some of the State laws has caused considerable controversy between hygienic authorities and ventilating engineers. As a result, the commission is conducting special studies in Syracuse and in Cattaraugus County, N. Y., in connection with the urban and rural health demonstrations which the Milbank Memorial Fund is aiding. It is hoped that this investigation will help to determine the relation between the system of ventilation used and the health of school children.

NATIONAL WAR ON RATS SHOWING RESULTS.

Rats are probably decreasing in numbers in the United States, says the United States Department of Agriculture, although their decrease is only beginning to be apparent. The chief factors responsible for any decrease are present-day sanitary requirements and modern buildings, which make it increasingly difficult for rats to find food and shelter; a national urge against all unnecessary waste; and a better understanding generally of the relation of rats to human economy.

Furthermore, as facts relating to the spread of communicable disease have become better known, more general interest in rat control has been stimulated, more effective means of destoying rats have been developed, and information regarding these methods have been widely distributed. Farmers' Bulletin 1533-F, "Rat Control," prepared by James Silvert of the Biological Survey, and just issued by the department, contains many suggestions for the control of rats on the farm and in the city.

Permanent exclusion of rats may be brought about by rat-proofing buildings and other structures commonly inhabited by the rodents; by removing any possible shelter; and by cutting off their food supply. Details on methods of accomplishing these objective are discussed in the bulletin, as well as such control methods as poisoning, fumigating, trapping, and use of deterrents.

Although getting rid of rats is largely an individual problem, rat infestation has a serious effect on the whole community, and organized control effort is highly desirable. A person who allows rats to increase on his property until they menace the entire neighborhood becomes an object of public concern, and a city that permits its refuse dump to serve as a breeding place for hordes of these pests is committing a grave injustice to its population. Ridding a whole community of rats can best be accomplished by organized efforts of all the citizens. The department will gladly assist such organization through the Biological Survey in planning, organizing, and prosecuting anti-rat campaigns by furnishing preliminary plans, general instructions, sample copies of posters, and other publicity material and, where possible, the personal services of a leader.

A copy of the bulletin may be obtained by writing to the United States Depaartment of Agriculture, Washington, D. C.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C. .....Nov. 7, 1927
At Chicago, Ill. .....Nov. 7, 1927
At New Orleans, La. .....Nov. 7, 1927
At San Francisco, Cal.....Nov. 7, 1927

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written, and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. CUMMING,
Surgeon General.

PRODUCTION OF CLEAN MILK REQUIRES ATTENTION TO SANITATION.

The need for using improved methods in producing the public milk supply becomes more and more pronounced as time goes on, says R. J. Posson, associate market milk specialist of the United States Department of Agriculture. As cities grow larger or become more numerous the milk supply must necessarily be transported from greater distances and handled in larger quantities. To withstand such treatment it must be produced under the most sanitary conditions.

Furthermore, says Mr. Posson, there is an increasing demand for clean milk on the part of the consumer, and health officials are requiring that improved sanitary methods be used in its production. Unless care is taken in producing it, therefore, great losses may result from the rejection of milk by dealers or health departments and from the lessened demand for low-grade milk. The responsibility for clean milk at the source is placed squarely on the shoulder of the milk producer.

By observing certain precautions clean milk can be produced with very little more effort than milk which is not clean. These precautions are discussed by Mr. Posson in Leaflet No. 3, Improved Sanitation in Milk Production, just issued by the department. The first requirement for clean milk is a herd of healthy cows. Once it is determined by test that the cows are free from tuberculosis and are otherwise healthy, pains should be taken to clean them thoroughly before they are milked. Wiping the udders with a damp cloth removes the danger of contaminating the milk by falling hair and dust particles. Since bacteria cause milk to sour they should be kept out of it by every possible means.

Further precautions in the production of clean milk require that only healthy people be employed in a dairy, that they wear clean clothing, and that milking be performed with clean, dry hands. The use of small-top pails is recommended as a means of reducing the amount of impurities that fall into the milk.

Every dairyman should be certain that he has a pure, safe water supply. Wells should be located on the highest available ground. A separate dairy house or milk room should be provided. Milk to be sold should never be handled in a dwelling as there is too much chance of dangerous contamination in case sickness occurs in the family.

Milk utensils which are not properly washed or sterilized may be the greatest source of contamination. They should be rinsed inside and outside with lukewarm or cold water as soon as possible after use, then placed in a wash vat, scrubbed with a brush in warm water containing a soda ash or alkaline washing powder (not soap), rinsed, placed in a sterilizing cabinet, and thoroughly steamed.

The best way to prevent multiplication of bacteria which unavoidably get into the milk is to cool the milk as soon as possible after it is produced and keep it cold. Bacteria are tiny single-celled plants, which, like most other plants, require warmth to grow. If milk is cooled to 50 degrees F. or below, and held at that temperature, bacterial development is very much retarded. Milk should not only be kept cold until it leaves the farm, but should also be protected from the sun and warm air while being transported from farm to city.

A copy of the Leaflet may be secured by writing to the United States Department of Agriculture, Washington, D. C.

PHYSICIAN WANTED AT ONCE.

High class physician is desired in a thriving community, 2500 population in rich oil section. Apply for information to the New Orleans Medical and Surgical Journal.

Dr. A. A. Herold, president of Louisiana State Medical Society, has announced, through letters to his executive committee, his intention of appointing the state-wide committee on *Publicity*, at an early date, and issuing a call for a meeting, to outline the program. This is in conformity with the wishes of the conference held in New Orleans, July 25th, called and presided over by Chairman B. A. Ledbetter of Committee on Public Policy and Legislation.

The Shreveport Medical Society held its annual social session at the Spence Flournoy Place, near Shreveport, on the evening of August 2d. A chicken barbecue supper was served to the eighty-five present, after which several talks in lighter vein were made—mostly foolish, some otherwise. Among guests for the occasion were the interns of the various hospitals, Dr. O. O. Hamner of Arcadia, Dr. C. O. Wolff of Haynesville and Dr. J. B. Benton of Minden.

There is much of interest in forthcoming medical society meetings. The Southern Medical will convene in Memphis on November 14th. The Radiological Society and the American College of Physicians are scheduled for New Orleans during the next few months.

Shreveport friends of Dr. Marion Souchon were happy to greet him on July 27th, when he visited that city, for the purpose of attending the agency meeting and banquet of the North Louisiana Agency (Homer S. Smith Ins. Agency) of the Pan-American Life Insurance Co., of which Dr. Souchon is medical director.

Died: James Asbury Sewell, Boyce, Louisiana; Medical Department of the Tulane University of Louisiana, New Orleans, 1905; aged 43; died in July at a hospital in Hot Springs National Park, Arkansas, of acute encephalitis.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The reports of officers for 1926-27 at the June meeting of the Woman's Auxiliary of the Harrison-Stone Counties Medical Society showed an excellent year's work by this group of physicians' wives.

This auxiliary was organized by Mrs. D. J. Williams three years ago and has a present membership of twenty-six, two of whom are women physicians.

At the beginning of the year, this organization set as its objective three lines of work as follows: (1) to try to place the magazine, Hygeia, in each of the public schools of Harrison and Stone counties; (2) to devote more time to the social needs of the nurses in training in the local hospitals; (3) to foster more friendly relations among the families of physicians, with special regard to newcomers. These plans have been carried through satisfactorily. To this regular work the auxiliary has added a record of Flood Relief work of which they are justly proud.

When the call for infants' clothes for flood refugees was sent out by the State president early in May, the Coast organization lost no time in answering the call. Dr. Emma Gay, president of the local auxiliary, appointed Mrs. D. J. Williams and Dr. Margaret Caraway, joint chairmen, and in two days the auxiliary began to ship boxes of baby clothes and other necessities continuing until early in June. The Woman's Club gave the use of their club house for the work, the Singer Sewing Machine Company installed motor driven machines, the daily papers gave unlimited publicity, the merchants donated or made special prices on materials, and the women of the town assisted the auxiliary members in the work of sewing and packing. The end of this month of strenuous work saw over thirty boxes sent to the various refugee camp chairmen of the Medical Auxiliary. In all there were sent from this auxiliary about 5,500 garments, including infants', childrens', and women's clothing, also sheets, pillow cases, and hospital supplies. Besides these boxes sent from Gulfport, there was much work done by the members of the auxiliary in Biloxi through other organizations.

The officers of the Harrison-Stone Counties Auxiliary are: President, Mrs. J. A. McDevitt; First Vice-President, Mrs. C. A. McWilliams; Second Vice-President, Mrs. J. T. Weeks; Secretary, Dr. Margaret Caraway; Corresponding Secretary, Mrs. D. G. Mohler; Treasurer, Mrs. D. J. Williams.

Friends of Dr. Culley, Jackson, are glad to hear that he is convalescent and will soon be out again. Dr. Culley is the nestor of the fraternity at Jackson and is highly respected and beloved by his confreres.

The next meeting of the Central Medical Society will be in charge of the Rankin County doctors, who will have charge of the program and entertaining.

Dr. H. R. Shands has gone to Colorado Springs for his vacation. Dr. Frank Hederman is looking after his practice during his absence.

Dr. Jones, Secretary of the Council, requests the editor again to call attention to the necessity of having requests for defense by the Council, to be made in due form according to the By-laws. Many requests for defense had to be turned down last year because the correct form was not followed. Several doctors filed their requests for defense after the cases were disposed of, and many others after the arrangements for attorney's fees had already been completed. The Council must be consulted in advance of other arrangements if it is to take part in the defense of any suit.

It is rumored that a Sanatorium-Hotel is soon to be erected at Stafford Springs and that a full consulting staff of physicians is to be maintained.

The following announcements regarding staff appointments in the Gamble-Montgomery Clinic in Greenville, Mississippi, were recently made: Dr. John Lucas is in charge of the section on Obstetrics and Dr. R. E. Wilson is chief of the Section on Pediatrics, succeeding Dr. G. H. Spivey, recently resigned.

The Jackson County Medical Society had a very enthusiastic meeting on June 6th. The Society has been having good meetings for several months. At this meeting Dr. Oswald of Mobile read a good paper on "Sacral Anesthesia in Operations in the Pelvis." Dr. Bell, also of Mobile, made a very practical talk on "Intestinal Diseases of Infants and Infant Feeding."

At the May meeting Dr. Babendreer read a most interesting and timely paper entitled: "Concerning the Cause of Our Present Professional Ills."

At the August meeting Dr. Weldon of Mobile read a paper on "Toxemia of Pregnancy." Dr. Bethea of Memphis made an interesting talk on

the subject of "X-raying the Thymus of New Born Infants."

At the regular monthly meeting of the Issaquena-Sharkey-Warren Medical Society held in Vicksburg, August 9th, a paper on "Dental Focal Infection" was presented by Dr. A. G. Tillman, Jr., D. D. S., a paper by Dr. S. W. Johnson and the discussion of Medical Ethics was continued under the leadership of Dr. E. F. Howard.

President Darrington attended the last meeting of the Central Medical Society and addressed that body pleading for a united profession with every man working for the good of Mississippi, support for our health departments, and the welfare of all our institutions. He urged that everyone adhere to the high standard of medical ethics, to aid in every educational campaign and help protect people from charlatans in and out of the cults.

The Children's Summer Health Camp, sponsored by Mrs. Rober Phifer of Jackson, Executive Secretary of the Mississippi Tuberculosis Association, and maintained either through the amount derived through the sale of the Christmas seals or through private donation, is just starting the second month of camp life at Sanatorium, Mississippi. One of the convalescent wards has been given over for the use of the little guests. Small white beds, little desks and other things for the convenience of the children as well as to assist them in learning lessons in tidiness have been installed. A plentiful group of children's books are in easy reach in the attractive recreation room, situated with the matron's office and medicine room just between the porches for the boys and girls. The matron, Mrs. Bouchillon, "Mother Bush" to all the camp kiddies, has been a very wise selection. She is beloved by all the children and yet all respect her authority and are willing to accept her guidance and follow the routine as directed by her and the Director of Games, Miss Sallie Massey of Meridian. Miss McQueen of the Oral Hygiene Department of the state has rendered valuable aid in teaching the children correct care of their teeth as well as careful cleaning and going over the teeth of every child for possible defect. The "Tooth Brush Drill" is an important part of each day's routine.

A swimming pool has been constructed on the Sanatorium grounds and a swimming instructor is in charge of the children for certain hours each day. Almost every child has learned to swim and every child without exception shows a gain bodily and mentally. The average gain in weight for each child has been a little under three pounds even though the real emphasis has been on the strengthening of flabby muscles, developing of little chests, inculcating of right ideas of living and building up a resistance to disease rather than a mere "fattening" process.

Fourteen of the children were retained for a second month at the camp. These are children who either are in contact cases or those who have not made satisfactory gain during the short four weeks of the first month of the Health Camp. Nine other children have been added to this group for the last four weeks of the camp.

That there are literally thousands of children in Mississippi who need the supervision afforded by the Summer Health Camp is self evident when we consider the more than 1,850 deaths from tuberculosis in this state for 1926. We can easily state that for each death there were eight to ten cases of tuberculosis in the state. Each of those 14,864 cases (the lowest possible estimate of cases) was in intimate contact with at least two children. As each child who lives in close association with a case of tuberculosis is apt to receive a heavy infection from that source, we can readily see that each of these children is a potential case of tuberculosis. The need in Mississippi for much greater Summer Health Camp facilities is most apparent. Or better yet, this problem may be handled by adequate Preventorium facilities along with a satisfactory education of the masses who make up the state and especially the great group of Mississippi School Children.

Dr. and Mrs. E. D. Kemp of the Mississippi State Sanatorium have just returned from several days spent in motoring to the homes of relatives.

Dr. Henry Boswell spent a few days fishing at Four Prong Lake and thereby obtained a few days of much needed rest.

Dr. and Mrs. W. A. Toomer motored to points in North Mississippi for a two weeks vacation.

Mrs. Minnie Phelps, primary teacher at the Blind Institute, was a visitor at the Children's Health Camp and while there told the children a number of well selected stories.

Dr. Henry Boswell gave the children of the Health Camp some very instructive talks on "How to Keep Well."

RESOLUTIONS.

Whereas Almighty God has seen fit to remove from our midst Dr. J. C. Jones, our beloved President, and

Whereas Dr. Jones has at all times shown himself to be a man of high professional attain-

ments whose ethical standards were noteworthy and worth of example, and

Whereas he has always exhibited those traits of character which stamp him as a loyal, patriotic, and unselfish citizen, and

Whereas our hearts go out in love and sympathy to the bereaved family,

Be it resolved:

1. That the Harrison-Stone Medical Society and the medical profession have in the death of Dr. Jones sustained an irreparable loss.

2. That the City of Gulfport and the State of Mississippi have lost one of their most useful and valuable citizens.

3. That a copy of these resolutions be placed on the minutes of this Medical Society, that a copy be sent to the family, and that a copy be given to the local press.

(Signed) ISHAM KIMBELL, M. D.
E. H. LINFIELD, M. D.
E. P. O'DENEAL, M. D.

PELLAGRA AND VITAMINS.

Two very timely letters which are self-explanatory have been sent out by the State Board of Health:

Dear Doctor:

I am enclosing copy of letter received from the President of the Vitamin Food Company, Inc. These people have a number of breweries in England and they import large quantities of brewer's yeast from England to this country. Dried brewer's yeast is a food and not a medicine and there is no reason why grocery stores should not stock up with this yeast the same as they would Fleischmann's yeast cakes. It is not necessary to refrigerate the dried yeast as is the case with the yeast cake.

I am informed that in some cases people are paying as much as $2.00 and even $3.00 per pound for dried yeast. It may be purchased on the basis of the price mentioned in the letter to Mr. Schafer.

Dr. Goldberger, of the United States Public Health Service, strongly advises the use of dried yeast—an ounce a day for adults; children in proportion. It can be taken in water or milk—the ounce being divided into three or four doses for the day. Doctor Goldberger also advises that families have a can of yeast on the table along with the sugar bowl. Children can take it as a confection or candy by mixing it with molasses or syrup. Doctors Goldberger and Wheeler feel sure that dried yeast contains the anti-pellagra vitamin and is not only a curative agent, but is also very useful in the prevention of pellagra.

Mr. A. L. Schafer, director of the Red Cross work for Mississippi, has agreed that the American Red Cross will furnish dried yeast, tomatoes, milk and other foods that are deemed important in the treatment of pellagra, to Red Cross charges; that is, indigent cases, in the flood areas. It will be necessary to take this up with your local Red Cross Committee.

Mr. Schafer has written to the chairmen of Red Cross organizations of all of the flooded counties authorizing the purchase of certain necessary above named supplies for indigent pellagra patients.

With best wishes, I am,

Very truly yours,

(Signed) FELIX J. UNDERWOOD,
State Health Officer.

Dear Mr. Schafer:

We have an order for 200 pounds of our dried yeast from Miss Lucy Richards at Dyersburg, Tenn., also orders from several of the public health officials of North Carolina. This product is selected from barley grain brewers' yeast with nothing added or subtracted, and is very high in B. Vitamins as well as in the salts which the yeast gathers from grain. Miss Hart had a recommendation from Dr. Goldberger.

We are supplying this to you at 25 cents a pound, f. o. b. our plant, but we could supply in larger lots if we know approximately the definite quantity needed at a cheaper price, dealing entirely through the Red Cross and Public Health Agencies.

This dried yeast is constantly tested for vitamin and strength, and will retain its potency in warm climates. A ton lot can be divided into a number of packages, and the saving to you would be substantial.

The writer is a Southerner, and was for 16 years food commissioner of Kentucky, and is keenly interested in the work which the Red Cross is doing to bring an end to pellagra in our Southern States.

Very truly yours,

VITAMIN FOOD COMPANY,
P. M. ALLEN, *President.*

The President of the Mississippi State Medical Association announces the following standing Committees:

Budget and Finance—G. E. Adkins, Jackson; W. L. Little, Wesson; E. F. Howard, Vicksburg.

Public Policy and Legislation—Willis Walley, Jackson; F. J. Underwood, Jackson; I. W. Cooper, Meridian.

Medical Education—P. W. Howland, Oxford; G. S. Bryan, Amory; S. W. Johnston, Vicksburg.

Teachers' Association—H. H. Ramsay, Ellisville; H. F. Garrison, Jackson; N. C. Womack, Jackson.

Publication—J. S. Ullman, Natchez; J. W. Gray, Clarksdale; T. M. Dye, Clarksdale.

Necrology—W. A. Dearman, Gulfport; C. D. Mitchell, Fondren; H. S. Gulley, Meridian.

Hospitals—W. H. Anderson, Booneville; H. A. Gamble, Greenville; J. E. Green, Richton.

Chairmen of the various sections are:

Surgery—J. W. Barksdale, Jackson.

Medicine—W. H. Frizell, Brookhaven.

Hygiene—C. M. Shipp, Bay St. Louis.

Eye, Ear, Nose & Throat—G. E. Adkins, Jackson.

J. M. BUCHANAN DEAD.

The members of the Mississippi State Medical Association will be grieved and shocked to know of the loss of one of their leaders, an ex-president of the Association and for years its Treasurer. He was known to all of the members and held in great esteem by them.

The following clipping from the Meridian Star will be of interest:

Dr. J. M. Buchanan, aged seventy, widely known Mississippi physician and specialist in mental diseases, American Red Cross leader and prominent in the business and social affairs of the city as well as a leader in Masonic and other fraternal and benevolent organizations of Meridian and the state, died at his home in this city, 1715 Twenty-third Avenue, Friday night, August 5, at eleven-thirty o'clock following an illness of several weeks.

Although Dr. Buchanan's death had not been unexpected for the past several days, it came as a great shock to all Meridian and will be learned with deep regret over Mississippi and the medical profession throughout the South. He was a man of brilliant learning in his profession and contributed much to medical science, especially in the progress made in the treatment of mental diseases.

Dr. Buchanan was born in Buena Vista, Chickasaw County, Mississippi, his father being T. J. Buchanan, planter and merchant, while his mother was Miss Martin of North Carolina. He was educated at the Buena Vista County School, at Summerville Institute of Noxubee County, the University of Mississippi, University of Virginia, where he finished literary and medical courses, finally completing his medical education in Vienna.

Returning to America he went to Arkansas, where he became assistant superintendent of the insane hospital at Little Rock, remaining there several years, after which he came to Meridian and became associated as assistant superintendent at the East Mississippi Hospital for Insane. Later he was appointed superintendent, which office he held for twenty-five years.

He was grand master of the Mississippi Masonic Grand Lodge, was an active Shriner, being a member of the Hamasa temple. Dr. Buchanan was one of the leading members of the First Presbyterian church.

In the business life of Meridian, he was an outstanding figure, being a director of the Citizens National Bank and also a director of the Meridian Fertilizer Company.

The deceased is survived by his wife, one son, James Buchanan, Meridian; one sister, Mrs. Gardiner of Blue Mountain.

Funeral services were held at the residence Saturday, August 6, at five p. m., conducted by Dr. A. A. Little, pastor of the First Presbyterian church and Rev. J. E. McJunkin."

I. W. Cooper of Meridian is acting Treasurer of the Association since the death of Dr. Buchanan.

Dr. R. R. Fitzpatrick, Director of the Health Department of Coahoma County, has resigned effective September 15, and will spend a year as an interne in an Eye, Ear, Nose and Throat Hospital in Memphis.

Died: William Monroe Wroten, Magnolia, Mississippi; Louisville (Kentucky) Medical College, 1872; Confederate veteran; aged 80; died June 18, of facial erysipelas.

Died: James McConnell Harrison, Hattiesburg, Mississippi; Atlanta (Georgia) Medical College, 1880; aged 71; died June 21 of chronic myocarditis.

BOOK REVIEWS

Principles of Chemistry: By Joseph H. Roe, Ph.D. St. Louis, C. V. Mosby Co. 1927. Illus. 378 p.

A valuable possession: a chemistry which every one can understand! The author in clear words outlines the principles of modern chemistry. After reviewing valence, ions, osmois, etc., of our college days he gracefully carries the reader through the esthers, aldehydes, amines, etc., of the modern chemistry and removes the mystery of the open and closed chains which surrounds the new pharmaceutical preparations.

The book is a short compend and is intended for students, but in the opinion of the reviewer all medical men should own one. The author gives easy methods of classifying hydrocarbons and from theory he brings the reader to practical application of chemistry to commerce and health.

The second part of the book is devoted to practical experiments which serve to remove the haze which usually surrounds chemical processes and crystallizes those principles to every day phenomena in medicine. The chapter on digestion is particularly clear and practical. In a graphic way the protein molecule is followed to its smallest division to the tissues; diets are given and the subject of vitamines is brought to date.

The book is short, clear, up-to-date and makes very interesting reading.

NARCISSE F. THIBERGE, M. D.

The Life and Work of Sir Patrick Manson: By Philip H. Manson-Bahr, D. S. O., M. D., F. R. C. P., and A. Alcock, C. I. E., L.L. D., Aberd. F. R. S. New York, William Wood & Co. 1927. 273 p.

Sir Patrick Manson was one of the great men in medicine. His contribution of the mosquito-malaria hypothesis and its boundless practical application later constitutes one of the greatest contributions to the health and happiness of mankind of all times. This, with many other contributions of Manson's, is the work of a master mind and a master man.

It is interesting and stimulating to read the "Life and Work" of this great man, which has been brought together and presented so well by the authors. It belongs in every medical library in the world and is a necessary part of the reading of every student of tropical medicine.

C. C. BASS, M. D.

The International Medical Annual, 1927: New York, William Wood & Co. 1927. 560 p.

This book is a digest or index of articles contributed by authors of outstanding ability in various branches. It is a compilation of briefs arranged in alphabetical order which makes the book easy to read and very interesting. The articles are splendidly written in a very lucid style and the book in itself is a splendid example of the reduction of voluminous works to small comprehensible articles. I can recommend it most highly.

HAROLD BLOOM, M. D.

Approaching Motherhood: Questions and Answers of Maternity: By George L. Brodhead, M. D. 3d ed. New York, Paul B. Hoeber, Inc. 1927.

A handbook of answers to hypothetical questions which prospective mothers might ask. It is prepared for the use of the prospective mother.

JOHN H. MUSSER, M. D.

Manual of Bacteriology: By Robert Muir, M. A., M. D., Sc.D., LL.D., F. R. S., and James Ritchie, M. A., M. D., F. R. C. P. (Ed.) Rev. ed. no. 8. New York, Oxford univ. pr. 1927. 821 p.

This latest revised edition seems very complete, without being massive. It contains sufficient illustrations, though many could be considerably improved upon.

The subject matter is well handled. About 250 pages of the text consider morphology, methods of cultivation, laboratory methods and immunity. The remainder of the book is a systematic consideration of the causative agents of diseases. The appendix is devoted to the bacteriology of the air, soil, water, sewage and milk.

The bibliography is certainly a very noteworthy feature, furnishing a detailed list of references to the authors mentioned in the text, and to articles in which other information may be found. This is arranged by chapters.

WILLARD R. WIRTH, M. D.

Lippincott's Pocket Formulary: By George E. Rehberger, M. D. Philadelphia, J. B. Lippincott Co. 1927.

A very practical, conveniently sized handbook of modern therapy. Divided into three sections, it contains much useful information, is well arranged and is up to date.

Section 1 presents the treatment of diseases and symptoms in alphabetical order. In addition to the many excellent prescriptions listed under each heading, a general outline of treatment is given where necessary. The prescriptions in correct medical Latin are culled from the many texts on

therapy and diagnosis, with acknowledgments. Both the apothecaries' and metric system are employed throughout. The list of diseases and symptoms considered is most complete, and very well cross-indexed.

Section 2 contains U. S. P. X. drugs and preparations, drugs of the National Formulary, and new and non-official remedies. These are listed as to solubility, dosage, and action and uses.

Section 3 is a compilation of miscellaneous information as to weights and measures, incompatibles and much other useful information which one often finds it necessary to refer to. The book should serve a useful purpose as a handy reference manual.

WILLARD R. WIRTH, M. D.

Evolution of Preventive Medicine: By Sir Arthur Newsholme, K. C. B., M. D., F. R. C. P. Baltimore, Williams and Wilkins Co. 1927. 226 p.

In a short book of some 200 odd pages the author outlines the struggles through which medicine passed before reaching its present almost perfect stage. The preventive feature is emphasized and made attractive by grouping the different epochs around some well-known figure in medical history. Valuable data are given and the book is profusely illustrated.

One is impressed from the perusal of this book with the romance of early desperate struggles towards light and the wonderful developments of modern methods of prevention.

In the second half of the book the author has selected several branches of medicine and around each has traced the different steps of progress made toward preventive methods in each.

The reader is made to realize the deep debt of gratitude and admiration the profession owes to the great men who marked the progress of preventive medicine.

The reviewer is looking forward for another book by the same author on "The Story of Modern Preventive Medicine" which will soon be published.

NARCISSE F. THIBERGE, M. D.

Management of the Sick Infant: By Langley Porter and Wm. E. Carter. 3d rev. ed. St. Louis, C. V. Mosby Co. 1927. 726 p.

This book, which was first published in 1922, occupies a unique niche in the hearts of all pediatricians, for, in the first place, it is the only book of its kind available, and in addition it is far more useful than the average text-book. In it will be found everything that is necessary to know in order to handle the sick infant.

The various symptoms. such as, vomiting, diarrhea, pain, fever, convulsions, etc., are dealt with in separate chapters, as are also the diseases of the different regions of the body.

Perhaps the most valuable part of the book is the chapter on Methods, in which is described the required apparatus, the exact technique, the advantages and disadvantages of every therapeutic procedure that is used in the practice of pediatrics. Formulas and recipes occupy an important part of the book, together with drugs and their dosage.

For the general practitioner who sees a great many pediatric cases this book should be indispensable; no pediatrician can consider his library complete without it.

L. VON MEYSENBUG, M. D.

The Normal Chest of the Adult and the Child: Including Applied Anatomy, Applied Physiology, X-Ray and Physical Findings: By J. A. Myers. Baltimore, The Williams & Wilkins Co. 1927. 419 p.

This is an excellent book and highly to be commended to practitioners as well as to medical students. Its scope is well indicated by its title, as well as by the opening paragraph of the first chapter:

"When one considers the multiplicity of human organs with their parts and relations and the time which elapses between the courses in human anatomy and the practice of medicine, or even the clinical years, one is really not surprised to find that some of the gross structures and many of the details have been forgotten by the upper classmen and men in actual practice. In view of these facts, frequent reviews of the anatomy of the organs and their parts closely related to the study of diseases of the chest are indispensable for the highest accomplishment in physical diagnosis of the chest."

The authors have presented the subject in a most useful and practical manner and one not duplicated elsewhere. In the main, they have adhered to their plan of presenting only the normal. Occasionally, however, a discussion of the abnormal is entered upon and at times therefore the text tends to go over into the domain of the usual text books on physical diagnosis of which there are so many. Numerous references and quotations from modern literature as well as the excellent bibliographies add greatly to the value of the book. No where else is there available in such a compass the information here gathered together. The book is to be especially commended to those who are conducting preliminary courses

in physical diagnosis in the first and second years of the medical curriculum; indeed, the book is the result of a course in the study of the normal chest given at the University of Minnesota.

I. I. LEMANN, M. D.

Practical Otology: By Morris Levine, M. D. Philadelphia, Lea & Febiger. 1927. 387 p.

In looking over this book the reviewer was first impressed by the foreword written by Dr. James F. McKernon, who will be remembered by those of us who did ear, nose and throat work with the A. E. F.. as Colonel McKernon, the kindly and considerate chief of the ear, nose and throat services of the A. E. F.

In this little volume Dr. Levine has condensed his experience as a teacher of otology in a most practical manner for the beginner; and even the seasoned otologist will find here helpful suggestions for treatment, and perhaps a viewpoint of some problems from a little different angle that will be of aid to him in their solution.

The book is essentially a compilation of lectures by Dr. Levine at the New York Post-Graduate Medical School and Hospital and was prepared particularly for the post-graduate student in otology, the undergraduate in medicine, and the general practitioner.

The reviewer commends it warmly.

H. KEARNEY, M. D.

How to Make the Periodic Health Examination: By Eugene Lyman Fisk, M. D., and J. Ramser Crawford, M. D. New York, The Macmillan Co. 1927. 393 p.

"Some books are to be tasted, others to be swallowed, and some few to be chewed and digested."

The latter is certainly befitting this manual, at a time when periodic health examinations are so rapidly growing in favor in both the ranks of the profession and the laity for self-evident reasons, a book of this nature, of whom one of the authors is a pioneer and leader in this great movement, is most timely and welcome.

The book is dedicated to Horace Dobell, M. D., and is followed by an extract from his medical writings of sixty-five years ago giving the first reference in medical literature to periodic health examinations. This guide is the outgrowth of an enormous experience, reinforced by the opinions of leading authorities and an extensive reading of the literature.

The opening chapters have to do with general remarks concerning the subject; taking of history and recording findings, and the necessary equipment and routine procedure.

Nothing is taken for granted. The smallest facts are noted. A perusal of the book impresses one with the outstanding fact that for the best results to be obtained, there must be a routine, which routine must be thoroughly systematized and which must be rigidly followed with every person presenting himself for examination. Only in this way can trivial and apparently unpretentious signs and symptoms be detected and remedied and this type of examination prove of value.

Regional examinations of the entire body next follows. Three important features distinguish this part of the book. First, a comprehensive and concise foreword on each region under discussion by a prominent authority. Second, at the end of each section is a list of supplementary investigations—a guide to the perplexed; and third, a list of reference to the literature concerning the particular region.

Next follows a section devoted to laboratory methods and standards. The indications, descriptions and interpretations of the various tests are dealt with. This subject has been condensed to the point that makes it most practical for the use of the general practitioner.

Following this is a section devoted to counselling. I consider this a most important part of the entire procedure. The very important subjects of hygiene, diet, exercise, constipation, overweight, etc., are dealt with at length and practical lists of instructions are given for the use of the patient.

In the appendix are given the results of statistical study of impairments revealed in average groups of persons apparently healthy. There are also a great many specimen forms to be used in this type of work. They are characterized by thoroughness and pertinent, brief, advisory remarks to the patient.

Tables of weights and heights and the report of a study of blood pressure findings with valuable information bearing on morbidity and mortality statistics is discussed.

A large bibliography on Periodic Health Examinations and kindred subjects is a feature of the book. A satisfactory index concludes the work.

This book should be read by every one interested in preventive medicine. It is comprehensive, clear, authoritative and concise, and is well worth the time spent on a well written subject that merits so much consideration.

I. L. ROBBINS, M. D.

Tropical Surgery and Surgical Pathology: By Karuna K. Chatterji, F. R. C. S. I. New York, Wm. Wood & Co. 1927. 244 p.

Of recent years, much has been written about tropical medicine; however, this publication is probably one of the first that has been brought out on Tropical Surgery and Surgical Pathology.

The chapters devoted to the treatment of the complications of amebiasis are clear, concise and adequate. This, alone, is well worth the time of any surgeon, as amebiasis through mostly confined to tropical and subtropical climates, has been known to be present in the coldest climate as well.

The differential diagnosis between the various forms of hernia and the several ilio-inguinal forms of swelling, in their growth and progress, is clearly expressed. Also, under filariasis, some surgical diseases endemic only in the East are clearly and well described.

The entire book is replete with many very excellent and wonderfully clear illustrations. This is especially true in the chapters on filariasis and tropical granulomata.

The author's discussion as regards the "choice of anesthetics' is rather disappointing and disconcerting, for he states that "chloroform is the standard anesthetic," and generally speaking "it is a good anesthetic and with the usual precautions regarding purity, the preparation of the patient and after treatment it is safe and useful." In this part of the world, it has long been discarded as being entirely too dangerous for routine use.

Major Chatterji's treatise is indispensable in the equipment of every tropical surgeon, and no medical library, especially in our own metropolis, can be complete without it, since it embodies all that is best in the knowledge and thought on the subjects discussed.

PAUL G. LACROIX, M. D.

PUBLICATIONS RECEIVED.

William Wood & Co., New York: "Physical Diagnosis," by Richard C. Cabot, M. D. "Manual of the Diseases of the Eye," by Charles H. May, M. D. 12th ed. rev.

Williams & Wilkins Co., Baltimore: "Standard Methods of the Division of Laboratories and Research of the New York State Department of Health: General Laboratory Procedures and the Methods Used," ed. by Augustus B. Wadsworth.

Harvard University Press, Cambridge, Mass.: "The Care of the Patient," by Francis Weld Peabody.

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PRIMARY INTRA-THORACIC MALIGNANCY.*

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This paper is a clinical study, based on eight cases of primary intra-thoracic malignancy, six primary lung cancers and two primary mediastinal tumors observed at the J. T. Nix Clinic from January, 1920, to August 26, 1926. The subject is one of more than academic interest, and I am sure you will agree with me that it is an important one, and one that is not infrequently neglected. This neglect arises perhaps because the diagnosis is not easy, and the treatment unsatisfactory.

Incidence: "The salutary lessons of the dead house," in the words of Osler, have shown us that primary cancer of the lung is not such a rare clinical entity. The roentgen-ray has done the same. Grove and Kramer state that statistics by various authors indicate an incidence of 0.15 per cent of all autopsies, about 1 per cent of all carcinomas. H. G. Wells says that "in large modern hospitals, necropsies show an error in clinical diagnosis in respect to cancer of anywhere from 20 to 50 per cent, depending on how large a proportion of the cases are of malignancy in the internal organs." This will help us to form an idea of how many cases are missed.

The most frequent location for carcinoma anywhere in the body is the stomach, next the uterus, and after this the breast. Carcinoma of the lung is about seventh in order of frequency. Grove and Kramer quote Barron thus: "It has almost been a tradition that carcinoma of the lung is an extremely rare disease, of negligible importance, and that its antemortem diagnosis is practically impossible." To show that this is not so, a few statistics will be referred to.

In an editorial of the Journal of the American Medical Association, February 13, 1926, we learn that the necropsy records of many laboratories show that from 3 to 5 per cent of all cancers arise in the lungs and bronchi, in some places 10 per cent or more. Stahelin in Basel found an increase from 1.76 per cent of lung cancer among all cases of cancer before 1906 to 5 per cent of all cases from 1912 to 1924; Berblinger in Jena, a rise from 2.2 per cent in 1910 to 1914, to 8.3 per cent in 1920 to 1924. In Leipzig the figures have risen to more than 10 per cent in the same period, and in the first half of 1924, 15.5 per cent of all carcinomas were found to be primary in the lung. In Hamburg, before 1895, less than 1 per cent of the cancers seen at the necropsies arose in the lung, but now it is 9.4 per cent. As these figures are based on comparisons extending over a period of years, there can be no doubt as to the absolute increase of primary lung cancer.

*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

†From the J. T. Nix Clinic.

AUTOPSY TABULATIONS SHOWING INCIDENCE OF PRIMARY CANCER OF LUNG

Sailer and Torrey	87,451	130
Hesse	63,088	99
Von Wiczkowski	58,497	126
Wolf	20,116	45
Lavrinovitch	16,407	61
Briese	12,971	60
Fuchs	12,307	8
Weller	11,093	33
Oerstrom	10,272	32
Passler	9,246	16
Reinhardt	8,716	5
Barron	4,362	13
*Rolleston and Trevor	3,983	0
Cook County Hospital	3,659	21
Playfair and Wakeley	3,183	4
Barron	1,003	9
Moise	375	5
Scott and Foreman	302	3

* 3 Primary Sarcomas.

A letter was addressed to the Bureau of the Census and the following insurance companies: Metropolitan Life Insurance Company, Prudential Insurance Company, Equitable Life Assurance Society, Mutual Life Insurance Company of New York, New England Life Insurance Compance, Life Insurance Company of Virginia, and the Pan-American Life Insurance Company, requesting them to furnish us statistics of the ten most common diseases terminating in death during five years—1921 to 1925—also the number of cases of primary cancer and sarcoma of the lung, as well as primary mediastinal tumors, of which they had records.

I wish to acknowledge my thanks for their prompt reply, giving me all their available information. From their figures you will see at a glance the place of cancer and other malignant tumors among the principal causes of death. Unfortunately, with the exception of the Pan-American Life Insurance Company, figures were not available to answer the question as to the number of cases of primary cancer and sarcoma of lungs and primary mediastinal tumors. The following are the figures from the Pan-American Life Insurance Company: No cases in 1921, 1922 and 1925. In 1923, one primary cancer of lung; in 1924, 2 primary cancer of lung and 1 primary malignant mediastinal tumor.

TABLE SHOWING PLACE OF CANCER AND OTHER MALIGNANT TUMORS AMONG THE PRINCIPAL CAUSES OF DEATH

	1921	1922	1923	1924	1925
Bureau of the Census	5	5	5	4	Not completed
Metropolitan Life Insurance Co.	3	4	4	4	3
Prudential Insurance Company	3	3	4	3	3
Equitable Life Assurance Society	2	2	2	2	2
Mutual Life Insurance Company of New York	2	2	2	4	2
New England Life Insurance Co.	3	3	3	3	3
Life Insurance Co. of Virginia	6	6	7	6	6
Pan-American Life Insurance Co.	Not among first ten	7	8	6	4

DEATHS FROM CANCER AND OTHER MALIGNANT TUMORS—BUREAU OF THE CENSUS

1921	1922	1923	1924
76,274	80,938	86,754	91,138

CHARITY HOSPITAL AT NEW ORLEANS

ANNUAL REPORTS.

From 1921 to 1925 there were 105,330 admissions.

Primary Malignant Mediastinal Tumors: Carcinoma, 1; Sarcoma, 2.

Primary Malignancy of Lung: Carcinoma, 3; Sarcoma, 4.

I am indebted to Dr. Leake, Superintendent of the hospital, for allowing me to look over the above reports.

J. T. NIX CLINIC

From January, 1920, to August 26, 1926:

Primary Malignant Mediastinal Tumors: Carcinoma, 1; Sarcoma, 1.

Primary Malignancy of Lung: Carcinoma, 6.

From January, 1924, to August 26, 1926, 3,923 complete examinations were made and six primary intra-thoracic malignancies were recognized.

1920	1921	1922	1923	1924	1925	1926
1	1	0	0	1	1	4

From January, 1924, to August 26, 1926, there were 146 deaths from all causes. Twenty-four of these were from malignancies of all kinds and four from primary intra-thoracic malignancy. Malignancy accounted for 16 per cent of our deaths, and primary intra-thoracic malignancy for 2.7 per cent. One in six of our malignancy deaths was due to primary intra-thoracic malignancy.

Etiology.—We are as yet in the dark as to the cause of the increase in primary intra-thoracic malignancies. Whatever produces chronic inflammatory changes would seem to be contributory. Menetrier says: "There is no primary lung cancer without a previous chronic inflammation." It is but fair to add, however, that Grove and Kramer are of the opinion that "it would seem more probable that acute inflammatory processes rather than chronic irritations play a strong role in enhancing the formation of neoplasms of the lung." The great pandemic of influenza of 1918, the increased inhalation of irritating gases from automobiles, the dust from roads and streets, imperfect fuel combustion, industrial processes, excessve smoking, are probably factors of importance.

Pathology.—As this is a clinical and not a pathological report, only the most meagre data which will enable us intelligently to understand the subject will be mentioned. Malignant mediastinal tumors arise in the tracheo-bronchial glands, the thymus, accessory thyroid, or in one of the tissues of the mediastinum. They may be lymphadenomas, lympho-sarcomas, endotheliomas or epitheliomas. Our case (biopsy) was a lympho-sarcoma.

The primary carcinomas of the lung are grossly classified as—

1. Infiltrating.
2. Multiple nodular.
3. Solitary nodular.
4. Miliary.
5. Mixed.

Histologically, as—

1. Cylindrical cell.
2. Squamous cell.
3. Mixed cell.

The old authorities, such as Perl, Malassez, Boix, Ausprecht, etc., held that true primary cancers of the lung originated in the alveolar epithelium. Most authors now hold that the majority of these tumors arise from the bronchial epithelium. Our cases belonged to the mixed type (nodular and infiltrating). The one on which we had a biopsy was histologically an epidermoid carcinoma.

Metastases from primary cancer of the lung are common and widespread. Adler, in 374 cases, had metastases in all but 33. As none of our cases died in the hospital, so as to allow autopsy studies, we are unable to speak with certainty on this score. By physical examination and roentgen-ray we recognized mediastinal gland involvement in all, pleural in three, costal in one.

Diagnosis.—Ten years ago, in a paper on Pulmonary Syphilis, I wrote, "A professor of medicine, while delivering a lecture on tuberculosis, remarked that an important point in the diagnosis of the disease was always to keep it in mind. And so it is with syphilis of the lungs." This aptly applies to the diagnosis of primary intra-thoracic malignancy. There are no pathognomonic signs nor symptoms nor easy short cuts by which one can arrive at the diagnosis. This is not surprising, because the signs and symptoms of primary intra-thoracic malignancy are found in the more common thoracic diseases.

That many cases are overlooked is very probable. The mistake made in most cases is one of omission rather than commission. The thinking physician realizes full well how common are mistakes in diagnosis. The Father of Medicine has told us that "Experience (is) fallacious and judgment difficult." Cabot finds 50 per cent of clini-

cal diagnoses in error. A. V. Friedrichs, in a study of approximately 1,300 autopsies at the Charity Hospital at New Orleans, says that a correct clinical diagnosis was made in 40 per cent, and a partially correct diagnosis in 50 per cent. As an interne, I remember Professor Duval, the distinguished pathologist, saying at the autopsy table that the clinician is more often wrong than right in his diagnosis. Osler tells us that of 580 cases all sent by physicians to the tuberculosis Dispensary of the Radcliffe Infirmary, 243 were found not to be tubercular!

The clinician must have his suspicions aroused whenever he meets with any condition which causes intra-thoracic pressure. Pains in the chest, dyspnea, hoarseness, aphonia, dysphagia, distention of the veins, cyanosis and edema of face, neck and upper extremities should put him on the lookout for primary intra-thoracic malignancy. Just as the gynecologist always bears in mind malignancy of the uterus, so also should the internist always think of primary intra-thoracic malignancy. It is only after a careful history has been obtained, a thorough examination made, physical, roentgen-ray, laboratory and sometimes observation of the clinical course of the disease, that a correct diagnosis can be made.

Roentgen-ray is a most valuable aid in the recognition of primary intra-thoracic malignancy. At the present time no chest examination can be considered thorough unless our physical examination has been followed by fluoroscopic, and in many cases, skiagraphic studies. Another important point to remember is that whenever we are suspicious of primary pulmonary malignancy we should avail ourselves of the help and skill of the trained bronchoscopist to help us make an early diagnosis, because if the disease is incipient and localized, surgery offers the patient a chance of cure. Every intelligent physician realizes the value and help of laboratory aids, but understands full well that these can never take the place of physical examination and bedside experience; in a word, the art of medicine.

In the differential diagnosis we must consider secondary intra-thoracic malignancy, tuberculosis, syphilis, aneurism, encysted empyema, pericardial effusion, leukemia, Hodgkins' disease, intra-thoracic goitre, enlarged thymus, cardio-renal asthma, hydatid cysts, benign tumors, etc. Secondary intra-thoracic malignancy is usually easily excluded if the patient has a recognizable primary growth elsewhere in the body, or gives a history of having been operated on for malignancy; tuberculosis, by physical examination, roentgen-ray and sputum examination; syphilis, by serological tests and negative sputum examinations; aneurism, by the characteristic physical and roentgen-ray findings; empyema and pericardial effusion, by physical signs and roentgen-ray; leukemia, by the characteristic blood picture; Hodgkins' disease, by tissue examination of a gland if one is involved, or by the roentgen-ray which gives a definite picture; intra-thoracic goitre and enlarged thymus, by the roentgen-ray; cardio-renal asthma, by physical examination; hydatid cyst and benign tumors, by the roentgen-ray. Benign tumors are very rare and of these dermoid cysts are by far the most common, and the finding of hair in the sputum is diagnostic. F. W. Gaarde reports from the Mayo Clinic, 1918-1922, 158 cases with abnormal findings in mediastinum. In this series were found twenty-six lympho-sarcomas, two primary carcinomas and one lipoma.

The diagnosis of primary intra-thoracic malignancy is one which must be made by exclusion, and which is confirmed by a usually characteristic roentgen-ray picture, and by the clinical course of the disease. Thorough methods of examination, confirmed by autopsy findings, have shown us that intra-thoracic malignancy can be recognized intra vitam; our aim must now be to recognize the condition early if we are to cure cases.

McCrae, in 1916, justly remarked: "It is worth noting that what is usually described as primary carcinoma of the lung is really

DIAGNOSTIC TABLE

	W. A. H.	W. P. F.	R. A. H.	J. S.	E. R.	A. L. B.	L. S.	P. C.
Case	1	2	3	4	5	6	7	8
Preliminary Diagnosis	T. B.	Pressure Spinal Roots	Intra-Thor. M.	Bronchitis Spondylitis	Pericardial Effusion Angina	Tracheo-Bronchitis	M. T.	Chronic Bronchitis Spondylitis
X-Ray Diagnosis	Med. T. M. L. L.	M. L. L.	T. B.	M. T. M. L. L.	M. T.	M. T. M. L. L.	M. T.	M. T.
Final Diagnosis	C. L. L.	C. L. L.	C. L.	C. L. L.	C. L.	M. T.	M. T.	C. L. L.

TABLE OF PERSONAL HISTORY DATA

Case	Sex	Race	Age	Occupation	Months Duration of disease	Venereal history	Wass. test	Tobacco	Cuffee cups a Day	Tea cups a Day	F. H. of Cancer
1	M	W	43	Electrician	4	—	—	?	?	?	—
2	M	W	43	Farmer	14	+	—	?	?	?	—
3	M	W	56	Restaurateur	10	?	—	Excess	12	2	—
4	M	W	44	Bookbinder	6	?	—	Excess	10	0	M. died Breast cancer
5	M	W	65	Letter Carrier	12	—	—	Excess	5	0	—
6	M	W	43	Electrician	18	+	—	0	0	0	—
7	M	W	45	Collector	?	?	—	Moderate	0	1	—
8	M	W	72	Justice of Peace	?	—	—	Excess	1	1	—

TABLE OF SYMPTOMS

Case	Chest Pains	Cough	Expectoration	Hemoptysis	Alphonia	Cyanosis	Dyspnoea	Gastric Disturbances	Weakness	Loss of Weight	Fever
1	+	+	+	+	—	—	+	+	+	+	+
2	+	+	+	—	—	—	+	—	+	+	+
3	+	+	+	+	—	—	+	+	+	+	+
4	+	+	+	—	—	—	+	—	+	+	+
5	+	+	+	+	+	+	+	+	+	+	+
6	+	+	+	—	+	—	+	+	+	+	+
7	+	—	—	—	—	—	+	—	+	+	—
8	+	+	+	—	—	—	+	+	+	+	+

TABLE OF AGE AND DURATION OF DISEASE IN MONTHS

	W. A. H.	W. P. F.	R. A. H.	J. S.	E. R.	A. L. B.	L. S.	P. C.
Case	1	2	3	4	5	6	7	8
Age	43	43	56	44	60	43	45	72
Duration	4	14	10	6	12	18	?	?

Average age of patient ..... 50 Years
Average duration of disease ..... 9.2 Months

secondary in the lung tissue proper, with the primary growth in a bronchus. This is true in the great majority of cases. The practical point about this is bronchoscopy for a certain early diagnosis with surgical intervention and chance of cure after lobectomy."

CASE REPORTS

Case 1. W. A. H., a white male, aged 43, a native of Louisiana and an electrician by trade, consulted us on December 3, 1920, complaining of a severe chest cold. For the past month he had had a severe cold, associated with a smothering sensation. He had expectorated a little blood.

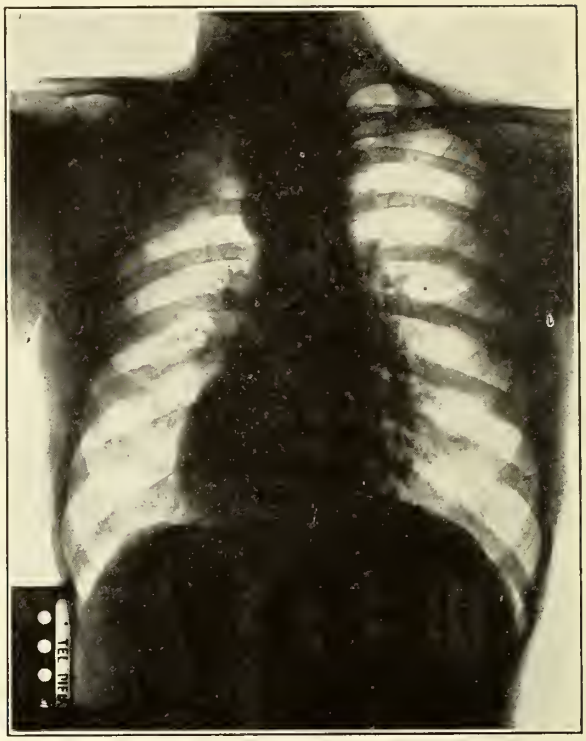
Past History: Except for a susceptibility to respiratory infections he had always enjoyed good health. Six years ago he was operated on for a fistula in ano. This healed in a few days.

The venereal history was negative. He has been married twenty-two years and has six healthy children. His wife has had one stillborn child and one miscarriage. There was no tuberculosis nor cancer in the family.

Physical examination: The general appearance was poor; he was emaciated and dyspneic. Weight: 121 pounds. The skin, mucous membranes and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue and tonsils were negative. The teeth showed advanced pyorrhea alveolaris. Chest: The heart was enlarged to the left. The aortic second sound was accentuated. There was a systolic mitral blow. The blood pressure was systolic 128, diastolic 80. Lungs: There was dullness in the left infra-clavicular space. There was rough breathing scattered in both lungs. Musical and mucous rales were also generally heard. The abdomen and genitals were negative.

Laboratory examinations: The total white count was 10,500, of which 11 per cent were small mononuclears, 3 per cent large mononuclears, and 86 per cent neutrophiles. The Wassermann and Tschurnogobou were negative, and no malaria was found. No tubercle bacilli were found in the sputum. The urine showed no albumin nor sugar; a few hyaline casts and a trace of pus.

Roentgen-ray showed "a huge mediastinal tumor with involvement of practically the entire left lung." (Fortier and Gately). The patient died. Duration of the disease being four months. Preliminary diagnosis: Pulmonary tuberculosis. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Cancer left lung.



Case 2—Increase in density left lung field. 3d and 4th ribs eroded. Epidermoid Carcinoma.

Case 2. W. P. F., a white male, aged 43, a native farmer of Louisiana, consulted us on May 23, 1921, and complained that for the previous six months he had suffered from severe sharp pains in the left shoulder and the left back of the chest, which radiated down the left arm to the back of the elbow. The pains were constant and were increasing in severity. The past history was negative except for a bursectomy twelve years ago. He had had syphilis twenty-five years ago and had received three doses of salvarsan and specific treatment at various times. His wife has one child and had had three miscarriages. There was no tuberculosis nor cancer in the family.

Physical examination: General appearance was fair, though somewhat emaciated. Weight, 120 pounds. The skin, mucous membranes and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue and tonsils were negative. The teeth were false. Blood pressure was systolic 110, diastolic 60. The heart was negative. There was dullness and distant breath sounds at left apex of the lung. The abdomen and genitals were negative.

Laboratory examinations: The total white count was 9,250. The differential count showed 28 per cent small mononuclears, 5 per cent large

mononuclears, and 2 per cent neutrophiles, 65 per cent eosinophiles. The Wassermann and Tschurnogobou were negative. The urine was negative.

Roentgen-ray showed there was an increase in density in the left upper lung field. The third rib posteriorly shows erosion, the fourth rib also. The condition seems to be due to tumor, though tuberculosis and syphilis can not be ruled out. (Fortier and Gately.)

One June 3, 1921, a thoracic decompression was done by Dr. Nix under local anesthesia. The first to fourth ribs were resected and 95 per cent alcohol was injected in the intercostal nerves. Tissue examination was made by Dr. Couret, who reported epidermoid carcinoma.

Result: Died. Duration of disease, 14 months. Preliminary diagnosis: Pressure on spinal nerve root. Roentgen-ray diagnosis: Malignancy left lung. Final diagnosis: Carcinoma left lung.

Case 3. R. A. H., a white male, aged 56, native of Florida, restaurant keeper, consulted us on April 10, 1924, and complained of dyspnea on the slightest exertion, a pressure in the chest over the heart and a sensation as if he could not catch his breath. These symptoms were of three months' duration. He also had a heavy feeling in the epigastrium, a sour stomach, and much gas after eating. His previous health had been good. He drank twelve cupfuls of coffee and two cupfuls of tea a day. Previous to prohibition he took one or two drinks a day. For the past year he had smoked 100 cigarettes a week, before this he had been an inveterate cigarette smoker.

Case 3—Increase in density left mediastinal region with infiltrations in upper part of lung. Trachea displaced to right. Cancer of lungs.

The family history was negative for tuberculosis and cancer.

Physical examination: Showed an emaciated individual whose skin, glands, mucous membranes and reflexes were negative. There was a pterygium of the right eye. The pupils were equal and reacted to light and accommodation. The vision of the right eye was 15/100; of the left eye, 15/40. There were arterio-sclerotic changes in the retina. The tongue was negative. The teeth were bad. There was a chronic granular inflammation of the pharynx. The tonsils were negative. The thyroid was negative. The chest was barrel shaped. The arch of the aorta was dilated. The heart was negative. There was marked peripheral arterio-sclerosis. The blood pressure was systolic, 115; diastolic, 78. There was dullness at the base of the right lung posteriorly. Musical rales were scattered throughout the chest. The abdomen and genitals were negative.

The total white count was 10,000, of which 20 per cent were small mononuclears, 3 per cent large mononuclears, and 77 per cent neutrophiles. The Wassermann was negative. The sputum was negative for tubercle bacilli. The urine showed no albumin nor sugar. P. S. P was 50 per cent, 75 c.c. in two hours.

Roentgen-ray showed "marked increase of density through the entire left lung. The right lung shows irregular areas of increased density. Bilateral tuberculosis. Aorta is enlarged. (Brown)."

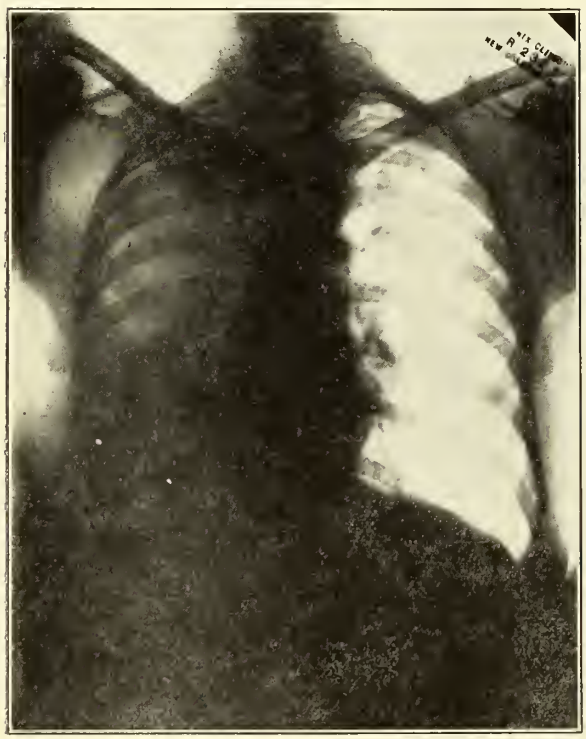
On July 22, 1924, the patient returned for examination. His weight was 128 pounds; one year ago it had been 185 pounds. Since his previous examination he had gone to Hot Springs, Arkansas, and had taken thirty-one baths. While there he had developed an attack of appendicitis. He was expectorating freely a black and green blood streaked sputum. Unless he expectorated at once he became nauseated and vomited. Physical examination revealed a very sick man. The lower half of the right lung was dull and the breath sounds were distant.

Roentgen-ray report was as follows: "The stomach and duodenal cap are normal. After twenty-four hours the cecum was practically empty. The appendix was seen imperfectly filled. There was tenderness on palpation in the right iliac region. The colon was irregularly filled. After seventy-two hours the appendix was still imperfectly filled. The distal portion shows multiple diverticuli. Chest: The left apex and left upper lobe show irregular increase of density."

Result: Died. Duration of disease, 10 months.

Roentgen-ray diagnosis: Tuberculosis. Final diagnosis: Cancer of lungs.

Case 4. J. S., a white male, aged 44, a native of Pennsylvania, bookbinder by trade, consulted us on January 4, 1926, and complained of pains across the lower part of the back of the left side of the chest. These pains began gradually three months ago and were noticed on getting up in the morning and would be less during the day. Two months ago the patient developed a chest cold and since then he had been getting worse. Three weeks ago he had to stop work.



Case 4—Extremely dense mass in inner 2/3 of left chest overlying and obscuring heart and aorta outlines. Some lung markings in outer 1/3 of lung field. Markings on right appear tuberculous. Right side of heart not displaced. Cancer left lung.

He had had malaria in 1895 and ptomain poisoning in 1925. He drinks very little alcohol, ten to twelve cupfuls of coffee a day. He smokes forty cigarettes a day. His mother died of cancer of the breast. There was no tuberculosis in the family.

Physical examination: The general appearance was poor. His weight was 150 pounds, temperature was 100.6. There was pallor of the skin. The lymph glands and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue had a brown coat, the pharynx was injected. The teeth were in poor condition. The right middle turbinate was engorged and hypertrophied. There was slight scoliosis of the lower dorsal spine, the spine being held rigid when the patient attempts to bend forward; other motions of the spine were normal. The sacro-iliac points were sensitive. The left side of the chest was smaller than the right. The heart was negative. The blood pressure was systolic, 130; diastolic, 80. Over the right lung there were scattered high pitched breath sounds and numerous mucous and musical rales; on the left there was dullness throughout, more so at base, where there were diminished tactile fremitus and breath sounds. There were musical rales at the left apex and fine moist rales at the base. The abdomen and genitals were negative. The total white count was 5,000; differential: small mononuclears, 20 per cent; large mononuclears, 2 per cent; neutrophiles, 78 per cent; Wassermann negative. Urine negative. P. S. P. 40 per cent. 100 c.c. in two hours.

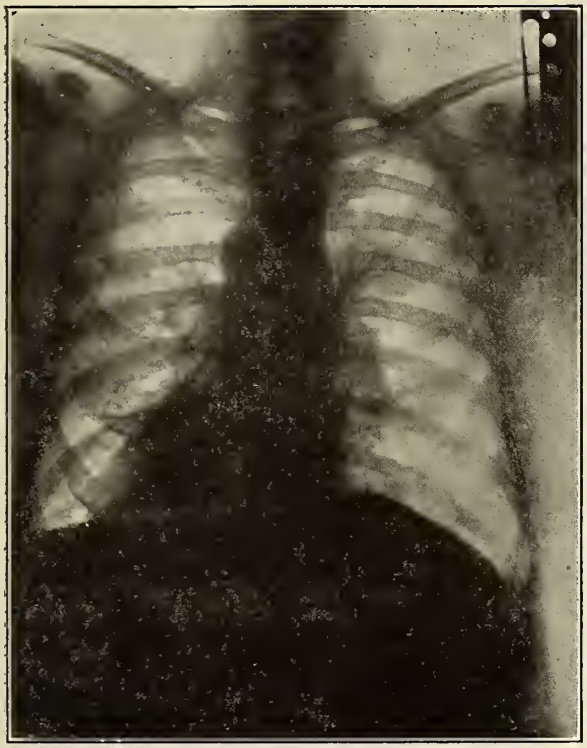
Roentgen-ray showed "a general increase of density over left lung, with loss of diaphragm outline. Right lung shows irregular increases of density and areas of calcification. Tuberculosis with left pleural effusion."

On January 9, 1926, three and a half pints of sero-sanguinous fluid were removed from the left pleural cavity.

Roentgen-ray: January 11, 1926. "An extremely dense mass is seen in the inner two-thirds of the left chest overlying and obscuring the left heart and aorta outlines. Some lung markings seen in the outer third of the lung field. There are in right lung markings which appear tuberculous. The right side of the heart is not displaced. Evidence of mediastinal tumor."

Result: Died. Duration of disease: Six months.

Preliminary diagnosis: Spondylitis, bronchitis. Roentgen-ray diagnosis: Tuberculosis, mediastinal tumor. Final diagnosis: Cancer left lung.



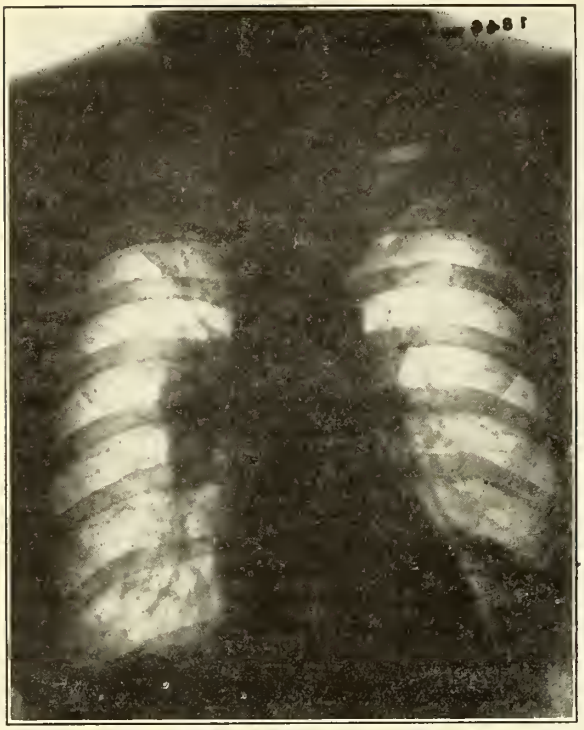
Case 5a—Increase in density right mediastinal region with infiltrations in right lung. Arch of aorta somewhat knobbed. Cancer of lungs.

Case 5. E. R., a white male, 60 years of age, a native of Louisiana, letter carrier, consulted us on February 23, 1926, and complained of shortness of breath for the past twelve months. He became shortwinded on the slightest exertion and had pains under the lower part of the sternum. Sometimes on his route he had to stop, sit down and catch hold of something, and suffered from the sensation of being unable to get his breath. This passed off in a few seconds and he continued his work. For the past six months he had had a severe, usually non-productive cough. The sputum was blood streaked. He had lost twenty-two pounds during the past year. Half an hour after eating he had epigastric pains so that his diet was limited to milk and eggs. He had had rheumatism and dysentery in boyhood. Twenty years ago he had had an attack of jaundice for six weeks. Fifteen years ago he had had typhoid fever, complicated by broncho-pneumonia. One year later he suffered from bronchitis and since then, at various times, he had noticed attacks of dyspnea. Up to three months ago he drank five or six cupfuls of coffee and smoked sixty cigarettes a day. The venereal history was negative. Family history showed no tuberculosis nor cancer.

Physical examination: The weight was 174 pounds. The temperature was 99.4. The skin and glands were negative. The kneejerks were sluggish. The pupils were equal and reacted to light and accommodation. There was marked arcus senilis and xanthomata were present. The vision of the right eye was 15/40, of the left eye, 15/70. The discs were clear, the arteries small, and the veins large. The tongue, teeth and tonsils were negative. The uvula was thickened. The vocal cords were thickened. There was polypoid degeneration of the right middle turbinate. The apex beat was not visible. The heart sounds were distant. There was marked peripheral arterio-sclerosis. The blood pressure was systolic, 100; diastolic, 70. There was harsh breathing over the whole right back of the chest, with all sorts of musical rales throughout. The abdomen was large and flaccid, with epigastric soreness. The liver was sensitive, but not enlarged. The genitals were negative. The total white count was 10,000, differential: small mononuclears, 18 per cent; large mononuclears, 7 per cent; neutrophiles, 75 per cent. Sputum: No tubercle bacilli found. Urine shows much pus. P. S. P.: 30 per cent, 100 c. c. in two hours.

Roentgen-ray: Chest: Two areas of density somewhat rounded in outline are situated in region of mediastinum. Irregular increases of density radiating from these areas especially in upper part of lung. Mediastinal tumor. Gastro-

Case 5b—Shows extension of process in right lung. Mediastinal tumor.



Case 6—Marked increase of right hilus shadow and general increase of density in right lung. Lympho-Sarcoma.

intestinal tract: The stomach and duodenal cap are normal. Twenty-four hour examination: The cecum is filled and somewhat tender. The ascending colon is filled. The appendix is visible, irregularly filled and curved upward.

Result: Died. Duration of disease, one year.

Preliminary diagnosis: Angina, pericardial effusion. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Cancer of lungs.

Case 6. A. L. B., a white male, 43 years, native of Louisiana, electrician by trade, consulted us on June 20, 1925, and complained of a cough of a year's duration. He did not feel badly. There was hardly any expectoration, but the patient coughed so much after meals that he almost vomited. He had had mumps, typhoid fever and malaria in childhood. He had had influenza twice. He had been treated for urethritis and syphilis. He did not drink coffee nor alcohol, and tea but seldom. He did not use tobacco. One uncle had tuberculosis; no cancer in the family.

Physical examination: The general appearance was fair. His weight was 181 pounds, the temperature was 99.2. The musculature was flabby. The skin showed dilated capillaries on the face and lower part of the chest anteriorly. The glands and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue and tonsils were negative. There were many teeth missing and the remaining ones were in bad condition. The heart was negative. The blood pressure was: systolic, 118; diastolic, 80. There were peculiar breath sounds over the chest as if there was some laryngeal obstruction. There were no rales. The abdomen and genitals were negative.

Laboratory examinations: Blood: The total white count was 4,500; differential: small mononuclears, 25 per cent; large mononuclears, 5 per cent; neutrophiles, 70 per cent. Urine: Negative. P. S. P.: 35 per cent, 150 c. c. in two hours.

Roentgen-ray showed: "Marked increase of right hilus shadow and a general increase of density over the right lung. Mediastinal tumor."

On October 22, the patient was re-examined. He stated that four months ago he accidentally noticed a small mass on the left side of the neck above the collar bone. He said that this mass was painless and was growing slowly. He had lost twenty-four pounds, his appetite was good, but his digestion was poor. Under ethylene anesthesia Dr. Nix removed a section from the tumor mass for diagnosis, and Dr. Couret reported lympho-sarcoma with marked degeneration of many of the tumor cells.

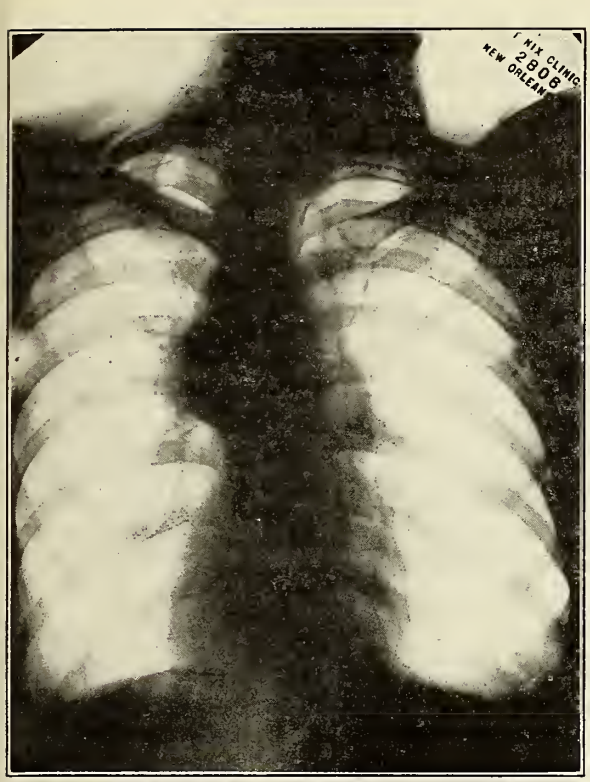
Result: Died. Duration of disease, one and one-half years.

Preliminary diagnosis: Tracheo-bronchitis. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Lymphosarcoma of mediastinum.

Case 7. S. S., a white male, aged 45, native of New York, a collector, consulted us on April 4, 1926, and complained of pains in left side of front of chest and left arm for the past four months. These pains began over the heart and radiated to the left shoulder and down the left arm. He suffered very little during the day, but very much at night. It felt as if the muscles of the arm were being torn apart. Six years ago he had had paralysis of the left side of his face. One and a half years ago he had had a carbuncle on the back of the left knee. One year ago he had pneumonia.

He had had a right inguinal herniotomy twelve years ago and an excision of a carbuncle one and a half years ago. He drank no coffee and one cupful of tea a day. He smoked twenty cigarettes a day. No tuberculosis nor cancer in the family.

Physical examination: General appearance was bad. He was poorly developed and nourished,



Case 7—Shadow in left mediastinal region. Trachea displaced to right. Mediastinal tumor.

weighing 101 pounds. The skin, glands and reflexes were negative. There was a left facial paralysis. The fingers were clubbed. The vision of the right eye was 15/200, of the left eye 15/200. The discs were clear, the veins of the fundus large. There was arterio-sclerosis. The pupils were equal and reacted to light and accommodation. The patient was round shouldered. The thyroid was negative. The nasal septum was deflected, crusts in the left nares There was fetor oris. The tongue was negative. The tonsils were enlarged. The heart was negative. There was well marked peripheral arterio-sclerosis. The blood pressure was systolic, 118; diastolic, 80. Diminished breath sounds were noted at right base posteriorly. There were old infiltrations in both lungs. The abdomen showed a right inguinal scar. The genitals are negative. Blood: The total white count was 7,500; differential: Small mononuclears, 28 per cent; large mononuclears, 10 per cent; neutrophiles, 62 per cent. Wassermann: Negative. Urine: Negative. P. S. P., 50 per cent, 175 c. c. in two hours.

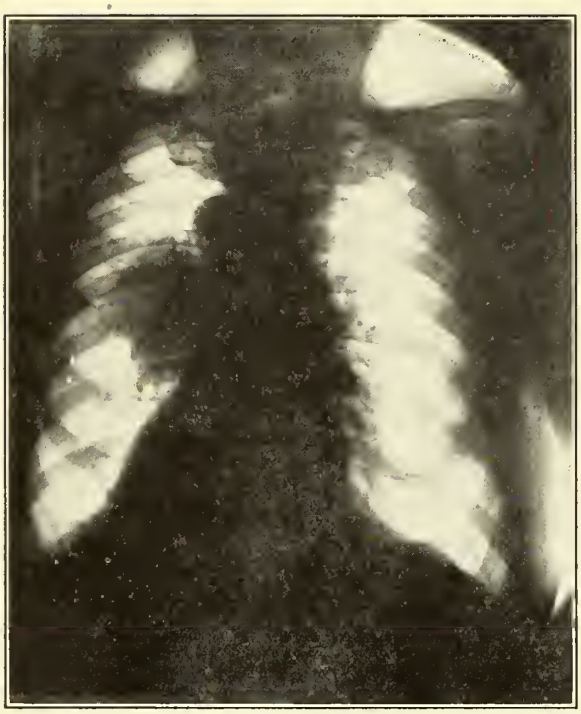
Roentgen-ray report was as follows: "Shadow in upper mediastinal region. The trachea is displaced to the right (Fortier). The left shoulder is negative. Gastro-intestinal: The stomach is ptosed. The duodenal cap is normal. Twenty-four hour examination: The cecum is irregularly filled, not tender. The colon is spastic in transverse portion. The appendix is not seen."

Result: Unknown. Duration of disease unknown (patient no longer under our care).

Preliminary diagnosis: Mediastinal tumor; angina. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Mediastinal tumor.

Case 8. P. C., a white male, 72 years, a native of Louisiana, justice of the peace by occupation, consulted us on August 26, 1926, and complained of pains in the back, shortness of breath and indigestion. For a year he had had pains along both sides of the spine, which began below the shoulder blades and radiated down the lower back and down the thighs to the knees. The patient, while in bed, had constantly to change his position to get some relief, and finally had to get up. After he had been up and about he suffered but little during the day. For the past year he had also been shortwinded, more particularly after his noon meal, when he felt bloated and drowsy. After lying down for a few minutes he felt better. When he walked a little his thighs got numb and felt dead, as if the circulation had stopped. He had yellow fever in 1878 and malaria fever in 1905. There was a history of urethritis when a young man, but no sores. He drank one cup of coffee, one cup of tea and one bottle of home brew a day. Up to a year ago he smoked forty to sixty cigarettes a day. No history of familial tuberculosis nor cancer.

Physical examination: General appearance was fair. The mentality, development and nutrition were normal. The weight was 166 pounds, the temperature was 98.4. The skin, glands and reflexes were negative. The pupils were equal and reacted to light and accommodation. Arcus senilis was present. There was a small epithelioma at the inner canthus of the left eye. The vision of the right eye was 15/50, with glasses, 15/40; and of the left eye, 15/70, with glasses 15/30. There were pigment deposits in the retina above the disc. The veins were large, the arteries small. Retinal arterio-sclerosis, old chorio-retinitis. The ear, nose and throat examination was normal (Meyer). The tongue was negative. The uvula was enlarged. The teeth were false. The heart showed an accentuated aortic second sound. The blood pressure was systolic, 144; diastolic, 88. The peripheral arteries showed moderate arterio-sclerotic changes. Throughout both lungs were scattered sonorous and sibilant rales. The abdomen and genitals were negative. The rectum and prostate, by digital examination, were negative. The total white count, 5,250, differential: small mononuclears, 30; neutrophiles, 70.



Case 8—Large shadow in lung near left mediastinal region. Aorta knoblike at arch and has a sclerotic patch. Heart enlarged to left. Cancer left lung.

Wassermann: Negative. Sputum: No tubercle bacilli found. Urine: Negative. P. S. P. 40 per cent, 75 c.c. in two hours ten minutes.

Roentgen-ray, August 26, 1926, was as follows: Chest: "Heart somewhat enlarged. General enlargement of aorta. No fluoroscopic evidence of lung pathology. Gastro-intestinal tract: Stomach, normal. Duodenal cap, normal. Twenty-four hour examination: Cecum filled, not tender. Colon spastic in transverse portion. Appendix seen filled irregularly in distal portion. Sacro-iliac joints normal. Conclusion: Chronic appendicitis (Brown)."

Roentgen-ray: December 7, 1926: "There is a shadow in left lung. Aorta knob-like at arch and shows a sclerotic patch. Heart enlarged to left. Conclusion: Mediastinal tumor probably malignant with infiltrations in lungs (Fortier and Brown)." (To Dr. Brown is due the credit of having made the diagnosis. At the first examination on August 26, 1926, there was no fluoroscopic evidence of lung pathology, but on December 7, 1926, by fluoroscopy she noticed a lung shadow which was confirmed by the roentgen-ray plate). Gastro-intestinal tract: Stomach and duodenal cap, normal. Twenty-four hour examination: No tenderness in region of cecum which was filled. Colon, normal. Appendix, not seen. Conclusion: Evidence of chronic appendicitis."

Result: February 28, 1927, patient had lost fifteen pounds during the past six months. He complained of constant pains below the lower angle of the left scapula. He said that he coughed and expectorated but little and that he had less dyspnea. On physical examination there was more dullness on percussion and all sorts of sibilant, sonorous and musical rales. The pathology in the lungs was progressing.

Preliminary diagnosis: Chronic bronchitis, hypertrophic arthritis of spine.

Roentgen-ray diagnosis: August 26, 1926: Fluoroscopy negative. December 7, 1926: Fluoroscopy. A shadow in the left lung was seen and confirmed by skiagraph. Mediastinal tumor probably malignant with infiltrations in lungs.

Final diagnosis: Cancer of lungs.

Prognosis.—Up to the present time it is hopeless in the vast majority of cases. The disease is latent in the beginning, usually inaccessible, and the patient generally seeks relief when it is too late to cure him. From a practical point of view, the earlier the disease the harder it is to make the diagnosis. Samuel Robinson says that "the removal of an early localized malignant tumor of the lung is surgically possible and that an exploratory thoracotomy should be a safe performance." However, with very early diagnosis, operative bronchoscopy and refinements in thoracic surgery the prospects for future success appear brighter.

Treatment.—Medical treatment can aim only to relieve pain and to prolong the course of the disease, there is nothing curative about it. Deep roentgen-ray therapy causes striking temporary improvement.

If the disease is recognized early and is localized in a bronchus it can be cured by operative measures through the bronchoscope, similarly to a malignancy of the bladder treated through the cystoscope. Like cancer in any other part of the body, the problem is almost entirely a surgical one. I say almost entirely because we know that radium and deep roentgen-ray therapy can cure accessible and localized malignancies. Perhaps in the near future a chemi-

cal or serological agent will be discovered, which can be introduced into the circulation and which will possess a selective and destructive action on the malignant cells and spare the normal ones and so cure our cases—"A consummation devoutly to be wished for."

Summary.—Primary intra-thoracic malignancy is not such a rare condition as is generally supposed, it is often overlooked, but should be entertained in the differential diagnosis of cases presenting obscure intra-thoracic signs. It can be diagnosed by thorough examination. The roentgen-ray in most cases, and bronchoscopy in some cases, are valuable diagnostic aids. The cause of the increase in primary lung cancer is unknown. Although fully realizing that our series of cases is too small to draw any general conclusions, we have been struck by the excessive smoking of many of the patients, and that all the cases occurred in males. The early diagnosis of this condition and the help of the bronchoscopist and the assistance of the thoracic surgeon will undoubtedly improve the outlook for cure in the future.

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DISCUSSION.

Dr. Randolph Lyons (New Orleans): I think that Dr. Perret is to be congratulated on the demonstration that he has given us of these intrathoracic growths. We have all had the fortune, or, I should say, misfortune, of coming in contact with a certain number of growths in the chest. There is first the difficulty in making a differential diagnosis. The roentgen-ray has probably been of the greatest help to us. I think in a great many instances, without the assistance of the roentgen-ray, we would have a very difficult time in differentiating some of these growths. The condition which has caused me the greatest trouble in differentiating is that of tuberculosis. I say that first, and then secondly, in mediastinum growths, aneurysm from tumor. In other words, the most frequent error in diagnosis of these cases is tuberculosis, particularly where the growth is in the lung proper, primarily, and in the other cases where it is mediastinal, the differentiation from aneurysm.

The mediastinal growths are almost always sarcomata, and the ones that I have seen fairly early had produced very few symptoms. Among the first symptoms, or signs I should say rather, has been that of dullness underneath the sternum.

I remember a number of years ago most of us in the college were interested in aneurysms and we used to teach the students very careful percussion of the upper sternum and particularly to the right and to the left of it, and whenever we would get a dullness extending beyond the sternum, either to the left or to the right, we would immediately suspect an aneurysm and occasionally we would find instead of it being due to aneurysm it was due to a tumor. In this type of growth hemoptysis is usually late, and the symptoms and signs are not very marked until the growth begins to encroach into the lung proper. Then we begin to get pressure symptoms depending upon the position in the mediastinum, whether the anterior or posterior mediastinum is involved.

In the lung tumors, as Dr. Perret showed us, the symptoms of expectoration, fever, possibly a little pain at first, are quite early. In the last two cases I have seen of lung tumor proper, carcinoma originating in the bronchi, hemorrhage was a very early and persistent symptom and frequently these cases were, in the beginning, mistaken, and I mistook one myself, for tuberculosis until repeatedly negative sputums in a case of apparent advanced disease made me very suspicious that we were dealing with something else.

The presence of glands, as Dr. Perret mentioned, above the clavicle and in the other regions, of course, makes us suspicious of a malignant growth and the presence of such a gland may determine the diagnosis. I am very glad Dr. Perret brought this subject up, because I think it is one that can be very profitably discussed.

Dr. A. A. Herold (Shreveport): This is a very important paper because this condition is so often overlooked even with our modern methods of diagnosis. I have in mind right now two cases in which I am not sure, in spite of our use of the roentgen-ray and laboratory facilities, whether or not they were tumors. One was a case of a colored boy who consulted me about having a sputum colored with a little blood, and on physical examination I was shocked at the extent of the lesion in his lung, especially in view of the fact that he said he had lost no weight. So far as he knew he had no fever; he felt well, but he was just a little bit alarmed about having spat some blood.

On the strength of his physical examination I had him have an roentgenogram made and it showed an extensive lesion of his right lung, involving the whole middle and some of the lower. The sputum was positive for tuberculosis. This boy later informed me that in spite of my request he was going West. I warned him that if he went West he should take the same care as if he went East, but he went. He got to feeling worse and came home, had a hemorrhage and died. I didn't see him when he returned and I don't know the details, but I strongly suspect that in addition to tuberculosis that boy had a lung tumor.

Another case was that of a gentleman of fifty with hypotension, loss of weight, and arteriosclerosis. We strongly suspected luetic infection. I understood him to give a negative history and his Wassermann was negative. We had a roentgenogram made of his chest and it showed what the radiologist diagnosed as a lung tumor, probably malignant, not very big, but at the hilus. We gave him deep roentgen-ray therapy and I accidentally learned there was a history of lues. On second questioning he admitted it and I gave him specific treatment. He has improved under the combined treatment with the deep roentgen-ray therapy and the specific treatment, but whether he has a malignancy of the lung I don't know.

I just mention these two cases to show that even with modern facilities it is difficult to make diagnosis in some cases of suspected tumor of the chest.

Dr. Wallace Durel (New Orleans): This question of primary neoplastic growth in the lungs is certainly becoming more and more interesting, more so in the last few months, since one of my dear confreres, a schoolmate of mine, came to me and said: "Well, Wallace, I believe I have what brother had," thinking of incipient tuberculosis. He had spat blood and had been spitting blood for two weeks, had a temperature of 100 and a deep persistent pain. I examined the lung and said: "Charlie, that is absurd. Your lungs are clear, my boy; absolutely free." I gave him a tubercular test and it was negative, a subcutaneous test. I had a roentgen-ray examination made and that is, gentlemen, the main part in your diagnosis—the roentgen-ray skiagraph. That will no doubt determine in the majority of cases the diagnosis.

The round appearance of your lesion, which you do not find in the incipient tuberculosis—I am not talking of late cases of cancer, I am talking now of incipient cases of cancer—is next in importance besides the spitting of blood, and by the way it may not be pure blood. Two cases that I had recently had the real prune-juice sputum. One was in the ward at the hospital, the tuberculosis ward, and with the spitting of cancer patients in the tuberculosis ward the theory is no doubt exploded today that cancer and tuberculosis will not exist in the same individual. That is admitted. Just recently I have seen two cases of very active tuberculosis, with primary carcinoma of the lung. So then the question of carcinoma existing in the tuberculous patient is not so.

In the question of diagnosis, no doubt but the deep pain mentioned by the doctor, a persistent pain, more so at night, a dyspnea, is important. Dr. Coffray, secretary to the office, had a pronounced dyspnea, and yet there was nothing in the circulatory system, nothing in the pulmonary system that could account for the dyspnea. Effusion, and those are the cases that lead us more to err. If the cancer neoplastic growth is in the middle area of the lung or in the apex, where we are not so liable to mistake it, we do not err so often, but when it is, as it was in this confrere of mine, that the neoplastic growth is at the base, I don't know. We were several days consulting in the case, and one of us made the diagnosis of abscess of the lung, and another made the diagnosis of encysted empyema, and another made a diagnosis of unresolved grippe. Now, of course, it took a very short time. This boy died within eight weeks. When the secondary diseases developed, it became a clear case of carcinoma.

The other cases in mind went to autopsy. There is one case, however, that I would like to relate. It puzzled me and has been the cause of quite a bit of criticism. This lady was sent to me and it was diagnosed as tuberculosis. She had bacilli in the sputum and she came to my sanitorium. She was running a temperature of 99.2, but she had a pulse of 100 to 120. The lesions were on the left side and whenever you find neoplastic growth on the left side and a rapid pulse, be on the lookout because you are most likely to have not only a primary carcinoma, but also a mediastinal tumor. That was the peculiar condition in this case. She had bilateral effusion within two months, thinking it was a tuberculous case, the effusion on both sides absorbed, but remained just as near, the deep pain persisting at night and the hemoptysis, this prune-juice sputum. Roentgen-ray showed absolutely well defined neoplastic growths.

So then, in conclusion, when I look back over the last twenty-five years, there were many certificates that I signed pulmonary tuberculosis that I know I should have signed primary carcinoma of the lungs.

Dr. Vaughn (New Orleans): I had no idea of discussing this paper, but I happened to see out here at this roentgen-ray display two pictures of a mediastinal tumor taken at our laboratory at Monroe. It is such a good one that I hope you will be able to see it. I will show it to you in a minute. This case previously was diagnosed as a case of tuberculosis because of hemoptysis. He had been previously treated, and very likely justly so, for malaria, accompanied by temperature, which he likely had. This is a gentleman in his sixth decade who had been condemned and put off to himself to die as a tuberculous individual and the roentgen-ray showed a very distinctive mediastinal tumor. (Dr. Vaughn showed the negative.) This is a very good picture.

Another thing I want to bring out that I have not heard discussed. This patient also has a four plus Wassermann. In looking over the literature I find that the Wassermann plus happens as a rule in fifty per cent of the cases; that is, the literature through which we were able to look. The mere fact of this showing a four plus caused us to decide the best thing to do was to give this individual some intensive mixed treatment. His tumor at this particular time doesn't show any decrease in size, but a considerable improvement in the general appearance of the patient can be seen. He says he is a farmer by profession, and were it not for the fact that he is afraid of the hemoptysis he would return to work this spring.

Dr. Perret (closing): I think that an important fact about the primary intrathoracic malignan-

cies is to bear in mind that they are more frequent than we usually realize. After we have studied the cases thoroughly it is a very good idea to give the patients the benefit of specific treatment just as we do when we have a tumor of the brain or of the liver. Our patients had the benefit of such treatment, but did not respond.

We now know that many cases of primary pulmonary malignancy begin in the bronchial tubes and we now utilize the bronchoscope for diagnosis and treatment, and so we may hope to increase the number of our early diagnoses and offer the hope of some cures.

DENTAL CYSTS.*

CHAS. A. McWILLIAMS, M. D.,

GULFPORT, MISS.

As rhinologists, we are frequently consulted about some dental pathological process which is causing nasal symptoms. Dental cysts, while not common, are met with frequently enough to justify their study. It is necessary that the closest co-operation between the dentist and rhinologist be maintained.

The classification of dental cysts as given by Mallory, is according to origin. The root cysts springing from epithelial cell rest in the peri-dental membrane. They may spring from granulomas at the root ends of devitalized teeth or teeth containing dead pulp, the center of the granuloma breaking down and becoming liquified and the cavity in the bone occupied being lined by epithelium laid down in a fibrous tissue. Sometimes a para-dental or peri-apical cyst is formed by the epithelial mass breaking down by fatty degeneration. The fatty degeneration may become a caseous mass with a very foul odor or a pus cavity may be formed. These are sometimes called radicular cysts. They are very often seen in edentulous mouths.

The sequence of events in a root cyst is then (1) irritation from a devitalized tooth or dead pulp, (2) granulomatous liquefaction of the center and the formation of a cyst.

The cysts usually grow in the direction of least resistance. The cyst fluid is usually straw colored or it may be gelatinous. These cysts develop slowly so they produce no symptoms unless they become infected. They are usually discovered by roentgen-ray examination. Later the symptoms that may arise will depend upon the structures involved.

Small radicular or root cysts very often develop from granuloma in the floor of the maxillary sinuses. These cases give a vague history of pain in the region where the teeth were extracted. There is an increased nasal secretion which drops in the throat. The patient is usually very nervous and undernourished. There has been some temporary improvement in the patient's general health, after removal of the teeth. Roentgen-ray examination shows very little except thickened membrane in the floor of the maxillary sinuses, especially if lipiodol is injected.

Irrigation is negative the first time except for a few flakes and some odor. These flakes will be overlooked unless a black bottom pan is used. Another irrigation in a day or two will reveal some muco-purulent discharge. One small gray ball of mucus irrigated from the maxillary sinuses is enough to make a diagnosis of a follicular or radicular cyst if one or more molars have been extracted or if any pulpless teeth are present under the antrum. These cases are greatly benefitted by destroying the cyst, a radical antrum operation being required.

Operation by the Caldwell-Luc or Denker methods reveals a normal or thickened membrane lining the maxillary sinus, except along the floor over the roots of the teeth. Small cysts filled with a thin dis-

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*Read before the Mississippi State Medical Association, Jackson, Miss., May 10-12, 1927.

*The reading of this paper was followed by the showing of slides giving pictures of cysts and illustrating the use of the Cannula.

charge or caseous material with a foul odor are present there.

A dentigerous cyst is one that contains, or is associated with, impacted or supernumerary teeth. The term is sometimes used to designate cysts arising under normally developed teeth.

Cysts may form as a result of an inflammatory process extending from the root of a tooth which penetrated to the antrum and is covered only by the mucous membrane. Cysts must be differentiated from empyema and growths, more frequently some type of sarcoma and carcinoma.

In regard to the relationship to surrounding tissues, nerve trunks and blood vessels are not destroyed but are gradually pushed to one side until they occupy abnormal positions. The antrum is in some cases practically eliminated by the cyst pressing the antrum floor up almost to the orbital plate. The true antrum remains much reduced in size but not involved.

Evelyn S., aged 13, was referred by Dr. Hopkins. She had a foul discharge from a tooth socket following extraction of the first upper left temporary molar. There had been no pain before or after the extraction. On account of the cavity extending 4 cm. upward it was thought to open into the antrum. Roentgen ray examination revealed an impacted first bicuspid, which was removed. The discharge continued. Roentgen ray examination of the sinuses showed the left maxillary sinus region very cloudy, but irrigation with King's middle meatus cannula showed it to be normal. Lipiodol was injected into the antrum and outlined the displaced maxillary sinus showing the lining to be thin and smooth. Lipiodol was packed in the cyst but on account of its thick walls and polypoid tissue its true size was not shown. It extended almost to the orbit. With a local anesthetic a regular Caldwell-Luc was done. The normal maxillary sinus was not opened and a naso-antral opening was made through which the cavity has been irrigated at frequent intervals. The large cavity has almost closed by granulations but the tooth socket is still open which will probably require a plastic operation to close.

These large dentigerous cysts may rupture into the maxillary sinuses and cause its living membrane to become infected. If the case reported above had been irrigated by using a Douglas trocar under the inferior turbinate the cyst would have been irrigated and possibly mistaken for a diseased maxillary sinus.

Another type of cyst found in the mouth is a retention cyst and is sometimes spoken of as a ranula. These are found on the floor of the oral cavity in either side of the midline. It has been thought by some that these cysts are caused by an obstruction of Wharton's duct. However, in practically every case of ranula this duct has been found open and free. If this duct were obstructed there would be inflammatory symptoms that do not occur in the presence of ranula. In fact the ranula develops similarly to other cysts about the body without untoward symptoms until some important structures are pressed upon. A ranula is usually unilateral. It is a chronic swelling that develops very slowly without pain in the anterior portion of the floor of the mouth. It is bluish gray and is often covered with veins which seem to be lying close to the surface.

Another class of cysts are the multi-locular or adamantinomas. Their location is usually at the angle of the mandible. The treatment is essentially the same as the treatment for cysts in any other part of the body; that is, enucleation of the cystic membrane with its contents.

The presence of a dental cyst should be kept in mind when looking for a focus of infection especially in edentulous mouths. Unless roentgen ray examinations are made these cases will be overlooked.

DISCUSSION.

Dr. George E. Adkins (Jackson): I want to compliment Dr. McWilliams on the very admirable way in which this paper was presented. I shall take up a few points that might come up in a roentgen-ray examination. I think I can really bring out more by that than I could by discussing the paper. These things may not all be cysts that we roentgen-ray and find, and the few little rules we have to go by will decide what we have.

In the first place, all tumors that you find with the roentgen-ray in the jaw would be either bone-forming or bone-destroying, with the exception of cysts and odontomas. That would be a good point in making a diagnosis of the cysts. It is neither bone-destroying nor bone-forming. There are four points that I usually try to bear in mind when I am trying to decide on a roentgen-ray picture of a bone tumor. 1. Its point of origin. Does it originate at the place you find it, or is it a metastasis from a lesion elsewhere, or does it invade the jaw from surrounding structures. 2. The presence or absence of bone production. 3. Is the cortex expanded, thinned out or broken through. 4. Does the new growth invade the adjacent structures. If it simply expands the cortex you might call it a cyst, but if it does one of the other three things mentioned it is very likely not a cyst. Tumors that originate in the jaw would be cysts, odontoma, osteoma, sarcoma, etc.

Tumors that are metastatic are, among others, carcinoma, sarcoma (the melanotic type), hypernephroma and hemiangioma.

Tumors that have their origin in the soft tissue and spread to the jaw are probably carcinomatous.

Tumors that produce bone are osteomata or exostoses.

Tumors that destroy or expand bone are cysts, carcinoma, sarcoma, hypernephroma.

The dental root cyst, epithelial in origin springing from granulomas is more common in the upper incisor and bicuspid region and is seen in the radiogram as a well defined circumscribed mass with no new bone about it. It absorbs the bone by expansion and thins out the cortex. This type of cyst may occur at any age. The dentigerous or follicular cyst usually occurs in the lower jaw near the angle. They usually contain fluid and dental elements. They are really overgrown dental follicles and usually occur in young adults. I noticed that the doctor reported a cyst of the first molar and said that on extracting the last bicuspid it was lost in the cavity. I was just wondering if this would not conform a little more to the rule and really be in the bicuspid region. However, I do not question the accuracy of the docor's report for these cysts are occasionally reported in unusual fields.

Dr. E. H. Jones (Vicksburg): Dr. McWilliams told me about this cannula last February and I have used it very satisfactorily since then. I had one unfortunate case, where due to an anomaly it got into the orbit instead of the antrum. I use them more for children's cases. You can just slip in the ear and syringe and wash it out as clean as can be.

Dr. B. S. Guyton (Oxford): I would like to mention one little thing. Two years ago at the Academy meeting in Chicago, two or three men mentioned the fact that they had had sudden deaths from washing the antrum. I wish to know if any one in this audience ever had anything like that. One man reported two or three cases, deaths he had in his office. I think they claimed that all those cases were cases in which they shot air through the antrum before putting the water through, and they emphasized the point that it is an extremely dangerous procedure. I certainly have enjoyed Dr. McWilliams' paper. It has been instructive to me.

Dr. D. H. Anthony (Memphis, Tenn.): You will pardon me for varying from the doctor's paper to state that the sudden deaths I have heard of were where they used air before they did water. I have never figured out how it occurred. A short time ago I did a radical operation on the antrum and was taking off the nasal wall of the antrum and was about half way back when I wounded a very large artery—it undoubtedly was the descending palatine artery which should have entered the antrum on the posterior wall. He had so severe a hemorrhage that the interne asked me laughingly "Which one of the carotids did you cut that time?" I blocked it with bone wax mixed with cotton. Ten days after the operation everything was all right and the patient was comfortable, when suddenly a hemorrhage began about the middle of the night. The interne had packed the nose well, and I removed it and repacked it. It was bleeding copiously and it continued to bleed, and in thirty minutes after I packed it, I was forced to take the patient to the operating room to stop the bleeding by ligating the external carotid artery. In another case, while irrigating an antrum in my office, I got a little blood, but when I removed my needle the patient had a severe hemorrhage from the nose—it was not just soiling a towel, it was a severe hemorrhage—the point is, that having had these experiences, I believe these sudden deaths are due to needle puncture into the large artery or vein and getting air in them, causing sudden death.

Dr. E. Leroy Wilkins (Clarksdale): I enjoyed Dr. McWilliams' paper very much. It brings out some new thoughts. I do not know much about cysts, but he did mention cysts in the mouth and sub-maxillary duct. It so happens that Dr. Guyton and I saw a case several years ago where a cyst or blocking off of the sub-maxillary duct caused a good deal of swelling. A child about five years old had an enormous swelling of gland under the jaw and some showing in the mouth.

It was Dr. Guyton's patient, and he was brought to me to do what Guyton had been doing to keep it from swelling. When the child opened his mouth he elevated the tongue and I saw a white mass appear and then go back like a mouse into its hole, and I thought it must be pus, so I tried to massage it forward and again it appeared. but it was too large to massage it out of the mouth of the duct, so I made a little slit and was then able to massage out a small stony formation. It was an irregularly shaped stone about 1½ millimeters in diameter and about 4 millimeters long. The last time I heard of the young man he had not had any similar trouble. (He just threw his tongue in the roof of his mouth, and I happened to see the stone. I intended seeing how good a job Dr. Guyton had done and examine his throat; and it was an accident that I saw it.) It was an unusual case to me, and in my own library I have not been able to find anything similar to it.

Dr. B. S. Guyton (Oxford): The case Dr. Wilkins mentions was one that I overlooked. I thought it was a gland swelling in his neck from his tonsils and I took his tonsils out, and when the patient went to Dr. Wilkins he found this little stone.

I had this peculiar experience in another case. A man with a sub-maxillary gland, greatly swollen, had a little discharge under his tongue. You could see a small opening under his tongue far back where the pus was coming out. His gland was greatly swollen and we could not do anything except take the gland out. I got a stone out of that sub-maxillary gland as large as my little finger, and a little more than an inch long, also a smaller stone about one-eighth inch in diameter. I think the largest measured 1⅛ inches long and ¼ inch in diameter. I have not seen anything in the literature in regard to this.

Dr. Chas. A. McWilliams (closing): I have had several cases of stone in Warburton's duct; all my patients have had great pain in the sub-maxillary gland when they have stone in the duct. I had one case which was traumatic in origin. The dentist was filling a tooth and he let his drill slip, and it bored a little place in the floor of the mouth. It bled for a while and he thought nothing would come from it, that it would heal up. About a month after she developed a large cyst right under the roof of the tongue on the side where he caught the tissues with the drill. That cyst was opened and healed up very nicely. I think we overlook a large number of dental cysts in the patient's mouths; in fact in the case of every patient who comes to me with all the upper teeth extracted, I am always suspicious of the small root cysts remaining in the floor of the maxillary sinus, because I have had quite a few in which, when they take a cold, they say they feel like they still have their teeth in, and when they bite down on an apple it seems like there is something up in there, and on roentgen ray you will find hardly anything except probably a thick membrane in the floor. Even at operation you find, as a rule, just a small polypoid tissue right where the teeth were, and as a rule you find one or two pockets of pus right over the roots where the teeth were extracted. It looks like you are running a big risk in not operating on those cases. Sometimes it is hard to get the consent of the patient without any pain in the maxillary sinus; they have an increased secretion that drops into the throat and they call it catarrh, but I think every case that has symptoms of focal infecion, if you don't find any trouble in the tonsils, or any pus in the nose, and she has all of her teeth removed, then you should go into that phase of it. All that is necessary is an operation where you get good results in most cases—it is a very simple thing—just to curette this small root cyst. You find dental cysts are very uncommon, but root cysts are more common than any of us think.

RADIATION TREATMENT OF NON-MALIGNANT DISEASES OF THE FEMALE PELVIS.*

S. C. BARROW, M. D.,

SHREVEPORT, LA.

The use of radiation in certain diseases peculiar to women has been accepted for years by many of wide experience as proper and as the one of choice. While the evolution has been slow, the development has been steady, and today it is the accepted opinion of scientific medicine that radiation in gynecology has a definite place, and at times is essential. With many the question of its selection and the exact indications are still unsettled, but there are few who deny it a necessary place in the treatment of benign pelvic diseases. It is unfortunate that all men using radiation cannot be good surgeons or gynecologists, and more unfortunate that surgeons attempting the use of radiation are not good radiologists, for then the personal prejudice which so often creeps in would hardly ex-

*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

ist. It is interesting to those who have watched the development of radio-therapy in gynecology from the day when it was denied as being of any value to the present time when the question seems to be not whether it will be of help, but rather which will be of more help in a given case, surgery or radio-therapy. This does not imply that radiation is indicated in all gynecological conditions, nor does it suggest that surgery has an unlimited indication. In many conditions one or the other is the invariable agent of choice, while in still other conditions only a most thorough knowledge of the individual case justifies a decision. These are facts which it seems are not at all times appreciated, or at least not acted upon, and a free discussion, without bias, of the indications and contra-indications of radiation and surgery in benign diseases of the female pelvis, can only result in good.

Leaving out of consideration the acute infectious inflammations, the sequellae of aborted or full pregnancies and others which are admitted by all as strictly medical or surgical problems, our attention is called to four classes of conditions in which radiation has proven its value, and in the treatment of which we should be prepared wisely to decide and choose as between surgery and radiation:

1. The menorrhagias or metrorrhagias of the girl and younger women.

2. The fibroid tumor and fibroid uterus occurring at any age.

3. The metrorrhagia occurring in women past middle age or about forty.

4. The chronically inflamed pelvis without pus.

In the menorrhagias or metrorrhagias of the young woman who has never conceived or experienced married life, it is at times exceedingly difficult to determine the cause, and in the majority there seems to be no cause except the inherent tendency of the uterus to bleed. In those cases where a careful examination excludes any blood dyscrasia, or local condition, as the cause of the hemorrhage and there is no constitutional condition, such as the anemias, the case may be classed as myopathic or idiopathic metrorrhagia and safely treated with radium which, when carefully used, promises the best result. The hemorrhage in most of these cases starts with the establishment of menstruation, or comes on within a short time afterwards and as a rule resists the curette and all medical measures. Such cases require the judicious use of radium, as the unskilled use may result disastrously. Gentle doses are used, 4 to 6 hundred mg. hrs., with thorough filtration and the use of an applicator that will cause the least traumatism and irritation. Some radiologists use much smaller doses than this, which is by far a better plan than to overdose. By this method, repeating the treatments at intervals if the hemorrhage returns, it can finally be controlled and a normal menstrual life saved. Care should be taken to thoroughly acquaint the family of the situation and safeguard the patient against discouragement should the hemorrhage return after the first treatment, else a hysterectomy will be their lot. This I have observed and experienced in my own practice.

In the older women, yet in the child-bearing period, we are commonly confronted with metrorrhagia or extreme menorrhagias which have resisted all medical and hygienic measures, and in which a thorough curettment gives only temporary relief. Most generally this condition comes on after, or is first noticed after the re-establishment of menstruation following childbirth. Here we will find as a rule a subacute or chronically inflamed and enlarged uterus in which the blood vessel walls have lost their muscular tonus, the uterine muscle itself being flabby and showing no contractility. A thorough curettement and proper tonic treatment in many of these cases is all that is necessary. In many

others it is ineffective, and a complete cessation of menstruation for a period of a year or more will relieve the uterus and pelvis as a whole of its constant engorgement which constant menstruation produces. The musculature of the uterus regains its firmness, the blood vessel walls their contractility, and later normal menstruation recurs. This can be accomplished only by the proper use of radium, or the galvanic electric current. We prefer radium as its action is quicker and more positive and in careful hands definite results may be expected.

Another type of case found in women of this age is the hard, commonly called fibroid, uterus. There is no distinct well-formed tumor, but the uterine vessel walls are firm and fibrous, rather than muscularly elastic. In this type the curette does no good and medication is ineffective. Radium is our only agent, and an amenorrhea of longer duration than in the preceding type of case has to be established. Larger doses of radium have to be given, and at times repeated. Many of these cases necessitate a permanent menopause, the majority, however yield and can be re-established in a normal menstrual life.

The second class which we wish to consider is the well defined fibroid tumor producing symptoms, you note I say "producing symptoms." The fibroid which is not causing hemorrhage or pressure and is not growing in a uterus which will not likely become pregnant, should be let alone. The question of the treatment of fibroid tumors usually provokes an argument between the surgeon and radiologist. When there is an argument both are wrong, for the indications for both agents seem clean cut, clear and well defined, and surgeons and radiologists should be broad enough and honest enough to admit them. Young women with the subserous, submucus, or any tumor which permits of enucleation without hysterectomy and without too great a mortality risk, should be operated surgically. In skilled hands, many such continue a normal menstrual life and bear children. In a young woman with an intra-mural tumor which would be extremely difficult or hazardous of enucleation, the treatment should be by radium, which if discreetly used can be made to produce a sufficient shrinkage of the tumor without producing a permanent amenorrhea.

Older women who have borne children and in whom the question of more children does not enter and who develop fibroids of the interstitial, or intra-mural type, should receive treatment by means of roentgen rays or radium. In those cases nearing forty years of age in whom a menopause is not undesirable, we invariably advise roentgen radiation. Roentgen-rays are applied with no discomfort and in competent hands, with no danger. The treatment is just as effective, consumes less time and is less expensive. In women of this age who have the subserous pedunculated tumors, or the sub-mucous type with small uterine attachments, surgical removal is preferable. The size of the tumor is frequently used as an argument for surgical removal. The first case treated by us was in November, 1914, and the size of a full term pregnancy. The tumor gradually disappeared and the patient is well today. We look upon a tumor which has existed a long time and which has no tendency to hemorrhage, as a more difficult one to treat than the rapidly growing one with a tendency to bleed, even though quite large.

All fibroids of the pedunculated type whether subserous or sub-mucous call for surgical removal if giving symptoms. The fibroid in the young woman which can be removed without removing the uterus, should be treated surgically. In all others regardless of age or size, radiation is indicated.

Our third classification is the metrorrhagias and menorrhagias occuring in women nearing or past the menopause. This class is the one most familiar to all of us, and the one most commonly met with. I know of no benign gynecological condition which

produces so much economic loss and complete physical breakdown as this class of uterine disease. In many the cause cannot be determined. In the majority a condition of chronic metritis exists, or else a general fibroid or sclerotic condition of the uterine body is present. These women, in the average, are physically disabled for fully half their time to say nothing of their suffering and the tendency of the condition to merge into malignancy if neglected.

The patients generally show a marked anemia, they are underweight, nervous, physically below par and usually have backaches, palpitation of the heart and so on ad-infinitum. A local examination shows a profuse discharge, the cervix is enlarged, congested, ulcerated and boggy, while the uterus is hard and firm and not so much tenderness or congestion exists in the pelvis.

Had radiation done nothing to advance the practice of medicine aside from its service in these cases, it would have fully justified its existence; as the situation exists today it appeals to me that radiation is the first agent to be thought of in the treatment of the menorrhagias of elderly women. Of course some may be tided over with a curettement and general hygienic and tonic treatment, but knowing how seldom the desired result is thus attained, why the loss of so much time? Surgeons in some sections are still doing hysterectomies for these types of metrorrhagias, but without justification in the light of information which is accessible to those who really wish it.

These patients are poor surgical risks, hysterectomy is a major operation, and but few women can be placed in the well column after removal of her pelvic organs, to say nothing of the mortality, the tedious convalescense, the prolonged hospitalization and the disorganization of the home routine as a result. With radiation we subject the patient to no danger, there is a minimum loss of time from home duties and the results are nearly all that could be wished for, while the total expense is hardly half.

Our fourth classification is the woman with a chronically inflamed pelvis. Any inflamed tissue with pus formation calls for surgical intervention, and the female pelvis is no exception to this. But where we have a pelvis which has been chronically inflamed and the products of inflammation have brought about a distortion and fixation of the parts, surgery is hardly indicated unless pus accumulation is present. These cases are made worse by the recurring menstrual congestion of the parts and a cessation of this function, permanent or temporary, according to the age and general condition of the patient, is indicated. If in a young woman, we prefer radium, administered per vagina. By this technique no trauma or irritation of the parts is produced and the dose can be graduated to the production of a temporary menopause. This will allow the parts a rest and sufficient reduction of the inflammatory process follows to relieve the discomforting symptoms.

In the older women we invariably use roentgen radiation, the whole procedure being carried out in the office with no hospitalization.

DISCUSSION.

Dr. Hilliard E. Miller (New Orleans): Dr. Barrow has handled his subject very ably and presents some very splendid reports of his success with radium and roentgen ray treatments of malignant and benign pelvic pathology. As a gynecologist and also as one who has had considerable experience with radium in similar lesions, I must, however, disagree with him on several points.

We have come to recognize definite indications for the use of radium in pelvic pathology, and from experience, have learned to stay within these limitations. I do not believe that there is but very occasional indications for radium for fibroids in women under 35 years of age, as the surgical handling of these cases, especially myomectomy, gives such splendid results and carries with it a mortality not greater than the average abdominal operation. Menopause precipitated in such cases

by the use of radium leads to many disturbances, symptoms and troubles which we are unable to combat. Besides, myomectomy gives fair promise of relieving the sterility which so many of these patients have had.

Fibroids larger than a three months pregnancy, irrespective of type, should be treated surgically as radiation of these growths frequently leads to necrosis and sepsis.

Undoubtedly there are cases in very young girls where a thorough physical examination will reveal anemias, constipation, hypothyroid and ovarian functions, which explain menorrhagia. These conditions should be treated only medically and the general health of the patient taken care of.

There are no conditions which give more splendid response to the effect of radium than the hyperplasias and chronic fibrosis conditions in women around the age of 38 and upwards. It has been the very exceptional case that has had to return for a second radium application.

I believe that the careful post-partal attention to women would eliminate to a large degree the number of chronic hyperplasias and fibroses which occur. Careful attenton to erosions and eversons of the cervix, correcton of uncomplicated diplacements with pessaries after a labor will aid materially to this end.

Under no circumstances should radium or x-ray be used in any cases where there is any suggestion in the history or any evidence in the physical examination of an existing or pre-existing inflammation about the tubes, ovaries, uterus or cul de sac.

Dr. S. C. Barrow (closing): Dr. Miller says something about "bleeding being due to other causes," etc. Of course, that is very true, and I tried to make it plain that the thought in my mind was correct diagnosis before treatment. He speaks of the old condition existing and "if the woman had been properly attended to after the birth of the child"—that is true, but they come to us in that condition and we cannot go back twenty years to correct these things.

In regard to babies. If you radiate the uterus and the patient continues to menstruate afterwards, she can have a baby. I made it particularly clear that radium should not be applied to an old pelvic inflammatory disease. But doctors seem to forget that there is the roentgen ray, from which no flare-up follows, and which is as effective as radium.

In trying to get up some data on this subject I ran across this informatin from Dr. Matas, and will quote some of the paragraphs I have marked off. He says: "The pure technician and laboratory expert and radiologist are likely to be too enthusiastic over the potentialities of radium. The surgeon whose long training and skill have given him confidence in the outcome of his operations is only too likely to depreciate its real value and to circumscribe its application by too many restrictions." Then further: "Radium has cut down my operations for this cause (speaking of fibromas) by over sixty per cent." Referring to the type and size of growth, he says: "I do not believe that the mere size of the tumor is a contraindication to radium, provided it is an intramural growth of the soft, rapidly growing, bleeding type in which the canal is elongated sufficiently to allow the radium to be deposited in its interior." This statement of his, in particular, struck me: "Personally I would express my conviction in regard to the superiority of radium in this class of case by saying that in the case of one of my family, my wife, my daughter, or someone over whom I had authority, or for whom I felt a direct responsibility, I would unhesitatingly look to radium as my first choice."

I close my discussion by quoting Dr. Matas along those points.

CHRONIC BARBITAL POISONING.*

E. McC. CONNELY, M. D.,

NEW ORLEANS.

In 1903 diethyl barbituric acid or Barbital was placed on the market under the trade name of Veronal. It was widely advertised as an efficient. safe, non-habit forming hypnotic and at once became extremely popular not only with the medical profession, but with the laity. This popularity soon caused it to be followed by an ever increasing number of allied drugs, such as luminal, dial, amytal, allanal, etc., until at present they are legion, and one is constantly hearing of others.

These preparations are all put out by the various chemical firms under different trade names, and vary from each other in some detail of chemical formula, usually the substitution of one alcohol radical for another,

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*Read before Orleans Parish Medical Society, May 29th, 1927.

or the replacing of an alcohol radical by a basic salt, but all belong primarily to the barbituric acid group of drugs.

The producing firms circularize extensively, distribute samples freely to the profession, publish the chemical formula of their product and make more or less exaggerated claims as to its advantages. Their detail men visit our offices and are voluble as to the superiority of their drug and explain that it is different from the others. This difference is sometimes not in formula but in physiological action. Just a short time ago I was told this—the pharmacopoeia to the contrary notwithstanding. This enthusiasm is, of course, to be expected.

The usual point urged is the perfect safety of their drug, both as to habit forming and as to acute poisoning, combined with its efficiency, but I have yet to see the detailed physiological action of the drug in one of the circulars, an antidote for it, or the outline of treatment for acute or chronic poisoning by it, nor is there any mention of the occurrences of idiosyncrasies in individuals.

As a matter of fact, there are some differences in the action of the various drugs, as is shown in specific instances, such as the control of epileptic seizures by luminal, *phenyl ethyl barbituric acid,* and also by the different reaction we occasionally get in the individual patient; but generally speaking, so far as I have observed and so far as I am able to ascertain from the singularly meagre literature on the subject, their action is the same. Barbital together with its sodium salt, medinal, and luminal with its sodium salt have been placed in the pharmacopoeia, and I shall therefore speak of barbital, but with the feeling that there is but slight difference of action from the newer and less known preparations.

It has little, if any, action on the heart itself, but affects the vessel walls, causing dilatation, especially of the abdominal vessels and the capillaries, thereby slowing circulation, reducing oxidation, dissipating heat and lowering body temperature. Sands, quoting several authors, says that the hypnotic affect is produced by slowing the cerebral circulation which lowers the carbon dioxide-oxygen exchange. Elimination through the kidney is slow, a relatively small amount is broken down in metabolism and as much as 90 per cent has been recovered from the urine where small doses are used. This percentage is decreased when larger doses are given.

The margin of safety between the therapeutic and the lethal dose is fairly large, most authors placing the lethal dose for the average normal individual at between 50 and 100 grains, and there is a record of a patient recovering after taking 125 grains, but the cumulative action is always to be guarded against; and people with a idiosyncrasy are more or less frequently encountered. I have seen a patient go into active delirium after a dose of 5 grains of veronal (a week later she got the same same effect from one and a half grains of dial), and there is a record of collapse and death after 10 grains. Aside from the above, one encounters reports of acute poisoning fairly often in the literature. In 1911-13 veronal held seventh place as cause of death from all poisons in England and Wales, and Leake and Ware report sixty-one cases of acute poisoning in a period of two years at a Los Angeles Hospital.

We have also the chronic poisoning, or more properly, the chronic intoxication occurring with the continued use of the drug over a long period of time, which, in my opinion, is more to be guarded against, as it is much more apt to occur with the unwary, and because of the pronounced mental and physical symptoms, it is most difficult to diagnose without a direct history of the use of the drug, especially from chronic encephalitis lethargica.

The third type of poisoning, that of the habitual user of the drug, seems to receive but scant attention. One sees little mention of it in text books and all through the

literature it is completely overshadowed by descriptions of the symptoms displayed in the more active forms of poisoning, especially those of the acute poisoning, and is referred to more or less in passing as it were.

That barbital is habit forming is beyond a question of a doubt; any drug which will relieve pain or produce sleep is habit forming, perhaps not in that it will create an apparent physical need for itself, as does opium and its derivatives, but rather more like the addiction to cocain and alcohol, in which the patient can get along without the drug if he would, but he won't, because he has learned to depend upon it and cannot resist its temptation. Peterson, Haines and Webster in their Legal Medicine and Toxicology say of veronal, "cases of chronic poisoning and habit formation began early to be reported," and refer to an article by Kress written in 1904, one year after the intoduction of the drug. Leake and Ware in analyzing their 61 cases of acute poisoning mention that 18 were habitual users of barbital as against 10 alcoholics, 8 morphin addicts, and 1 cocain user. When one considers that in their group of patients, which was more or less selected in that they forcibly brought themselves to attention by taking lethal doses of the drug either from suicidal intent or otherwise, the number of barbital addicts equaled the total of the two most generally thought of habit forming drugs and come within one of equaling that of three, it is significant.

I know of no statistics that will give us an accurate idea as to the prevalence of this condition, but believe it to be far more common than is generally realized. This is due, of course, to the fact that most of them go quietly on their way without attracting attention, some of them never realizing themselves that they are drug addicts, blaming everything else until something happens. When it does, we see them, but, as often as not, we overlook the chronic underlying condition in meeting the more urgent symptoms of the acute situation, or possibly overlook the drug factor entirely, which without a direct history is not hard to do.

Sands states that "barbital addiction results from the repeated taking of the drug by an emotionally unstable person who resorts to it in his inability to meet reality." He adds that it deadens sensibility and gives a spurious feeling of well being, relieving them of their sense of responsibility. Leake and Ware analyze the mental status of their group as ranging from a mild depression to manic-depressive insanity. Constitutional psychopathic inferiority was markedly in the majority.

These observations as to the native mental characteristics of the barbital addict are probably accurate as far as they go. They would probably apply to the average group of drug users whether the drug be opium, alcohol, or anything else. I am familiar with the type of patient in Bellevue Hospital, N. Y., where Sands made his observations, and I should think his estimate correct, certainly his "emotionally unstable person" is sufficiently broad, but we should not conclude that barbital limits itself to the abnormal and the weakling any more than other habit forming drugs. On the contrary, it recruits the ranks of its habitues from other types more than any other drug, except alcohol; this, because many people who would never think of taking opium or its derivatives will continue to use a "harmless non-habit forming drug," and because in Louisiana and most other states there are no checks on the sale of it, and the only safeguard is the conscience of the dispensing pharmacist. Consequently there are many people going blithely on their way little realizing their danger until something happens.

Clinically, the mental symptoms overshadow the physical evidence in most cases and vary in accordance with the degree and duration of intoxication. In the mild form there is a psychasthenic reaction in which

the patient is vaguely restless; mildly depressed; emotionally unstable; unable to make decisions; obsessed with vague fears; shuns responsibility; is somewhat irritable, with insomnia, loss of appetite (generally), constipated and probably has tremor of tongue and fingers; frequently dizziness. In the more advanced form after long use they are depressed; markedly inactive both physically and mentally; deteriorated; retarded; seem unable to express themselves freely; selfish and self-centered; memory poor; worry excessively; easily excited over trifles; become lachrymose on slightest provocation; occasionally delusional. The physical condition in this stage is more pronounced also, they are anemic, the muscles are wasted, soft and flabby. They tire very easily, becoming exhausted at the least exertion and frequently complain of "palpitation." Ataxia is quite evident; there is marked tremor of tongue and extremities. The speech is striking, being hesitant, practically a stammer with a slurring drawl or rather more of a whine, at times it seems to be fairly "dripping tears."

On the whole, both mental and physical deterioration is rather more rapid than with the opium derivatives. I know of no definite specific treatment for the condition. The gradual reduction with thorough elimination, always observing the proper precaution as to the psychic reaction of the patient, has worked as well in the mild cases which were of comparatively short duration as anything else. I have never known of an aggravated case being cured; that is, permanently cured, generally they refuse to make an effort. About all that can be done, all they will permit, is to establish elimination and attempt to recoup their strength by forced feeding, etc.

The prognosis as to the permanent cure of the habit is rather grave and depends entirely upon the type of individual, the stage of deterioration he has reached, etc., and, as with all drug addicts, the environment.

In conclusion, I would by no means condemn this drug, nor any of its family. On the contrary, I believe it is a most valuable therapeutic agent and should not want to be without it, but I believe it should receive the respect to which it is entitled. That we should bring ourselves to realize its potentialities both as to acute poisoning and as to habit formation, and in prescribing it we should exercise as much discretion as in giving morphin or any other opiate. And the sale of it should be properly supervised and regulated, so that it would not be possible, as it is today, for any man, woman or child to walk into a drug store and buy it over the counter if the druggist chooses to sell it.

DISCUSSION.

Dr. Walter J. Otis (New Orleans): Hypnotic urea should at all times be used cautiously in every case. It is well to know the pharmacology and the fate of these drugs, and likewise in prescribing to understand the idiosyncracies of the patient. Unless one is conversant with these facts the result may be disastrous, *i, e.*, in all neuro-psychiatric and psychopathic cases, there would be a tendency to project further the desire for these drugs.

Then, again, cumulative effect must be taken into consideration, as these drugs are excreted slowly, so that an intoxication is produced resulting in death, as in the case of necrosis of the kidney, without the usual signs of nephritis. Especially is to be condemned the habit of prescribing promicuously these derivatives over the telephone. These drugs are not a panacea for all ailments.

Dr. Randolph Lyons (New Orleans): I do not know of any drug that all of us use any more than the barbital group, and it is a little bit startling to discover that we are giving habit forming drugs. I did not realize it except in the case of veronal. Veronal, I know, has a habit-forming tendency and I rarely prescribe it except for a few days, but I have prescribed luminal very extensively and have never seen an instance where the patient could not stop taking it. I have never thought of the actual chemical composition. As Dr. Connely states, there is not much to be found about this in the literature, but there must be sufficient differences between them to make some of them habit-forming and others not. Luminal is extremely effective, widely used, and, so far as I have seen no habit has been formed through its use.

Dr. E. McC. Connely (closing): I do not disparage the use of these drugs; they are valuable, and I would not want to be without them. With regard to luminal: Last week or the week before, a doctor in one of the hospitals told me of a case that I referred to him, an epileptic who had been taking luminal for a long period of time (how long I cannot say, having seen her just before she went away). He dropped the luminal and she died within a week. The doctor said he was convinced that stopping the luminal had considerable to do with her death.

Luminal is habit-forming, as is veronal or any of the others, but not as morphin is habit-forming, but as alcohol is. After individuals of a certain type have learned to depend upon it, they will not do without it. The great danger is that anyone can go to the drug store and buy as much as they wish. If they know the name of the drug they ask for it and the druggist will sell a bottle of luminal, or veronal, and they feed it to themselves.

About a year ago I had a patient who had been taking luminal three times a day for nervousness. I am sorry to say that he was told by the doctor who prescribed the medicine to take it home and use it. He did not see the patient again, and when called by the family said: "I told you you would not get any results from that medicine for a while." When I saw the patient he had a marked psychosis and it took about six weeks to eliminate his toxemia.

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THE SOCIAL HYGIENE PROGRAM.*

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Social Hygiene, as it has become accepted in the United States, has both a broader and narrower significance than is given it in England and on the Continent. In those countries it is thought of as dealing with a broad group of maladies to combat which many research and propaganda agencies have been formed. Here its connotations are limited to problems dealing with and growing out of sex relations, which, medically at least, confine its activities to the discovery and development of measures to control and prevent the venereal diseases.

Though thus limited in a medical sense, however, the field of social hygiene in this country has come to embrace the study of a far broader series of acts and conditions which bear directly on the welfare of the family and the home. Such problems, for instance, as marriage, divorce, illegitimacy, prostitution, and other forms of sex delinquency—these and their like which tend to sustain or destroy our basic social relationships, are considered definite and proper questions to be investigated and, where possible, adjusted by the agencies working in this field. Many of these problems would exist if there were no so-called venereal diseases, although oftentimes they are aggravated and made more difficult of settlement through the presence of these diseases. Further than this, social hygiene in its positive aspects aims to reach not only those who might otherwise become immoral, but every individual. Sex education should be a natural, logical part of the life-training program of all.

The earlier stages of the movement in this country were marked by the forming of several organizations, all having the general purpose of bettering social conditions, but each seeing its own program as of greatest importance. Perhaps the best grouping of the three major bodies of opinion would be: first, those whose primary object was to treat and cure the venereal diseases by medical measures; second, those who were affronted by the commercial prostitution which prevailed so widely and waged their fight by means of legal measures; and third, that group who were bent mainly on securing wholesome, accurate, character-training education for all

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—particularly for youth. In the early years of this century various members of these groups commenced to think more and more in terms of a broader program which would include the best features of all of their individualistic plans and would unite the forces working toward a common end. This realization of the desirability of and necessity for a far-seeing, comprehensive program to meet the many and varied problems which are inherent in this field resulted in the merger of several most important voluntary agencies in 1914 and the formation of the American Social Hygiene Association.

Approximately three-eighths of the budget of the American Social Hygiene Association is used in the promotion of educational measures, because it is understood that through education we stimulate the individual to make wiser choice in regard to companionship and conduct. In this work the association is co-operating with a number of other organizations in the promotion of the Social Hygiene programs. These include the National Congress of Parents and Teachers, the Federal Council of Churches, many universities, colleges, normal schools, Y. M. C. A.s, Y. W. C. A.s, and other educational institutions.

Expert opinion on the forms of laws relating to social hygiene and the best methods of administration for their enforcement is furnished by the Division of Legal Measures. It makes impartial surveys of communities, with particular relation to prostitution conditions; it carries on special legislative work in aiding state and local groups in attempts to secure the revision of inadequate laws, or the enactment of new ones relating to social hygiene. Over a ten-year period the association, through this department, has actively promoted the passage of "red light" injunction and abatement laws in twenty states.

"There can be no question from a sociological standpoint that the prevention and cure of venereal diseases is probably the most far reaching factor in bringing about the health and happiness of the man, woman and child in the community." This statement, from a recent publication of the National Committee on Prisons and Prison Labor, emphasizes anew the importance of medical measures in the broad social hygiene program.

In common with all agencies engaged in the campaign against the venereal diseases, the American Social Hygiene Association has for one of its objects progressive reduction in prevalence of these diseases. Prolonging life by early and continuous treatment is equally important to those infected and to the public.

To these ends, the Association's Division of Medical Measures works in many ways. More effective methods of diagnosis, treatment and control of syphilis and gonorrhea are developed by research; demonstrations of the applicability of new methods are worked out with special groups. The new information thus secured is disseminated through technical articles and news items prepared for the various professional journals, and a regular informational correspondence service is maintained. Lectures are given, and films, exhibits, posters and special pamphlets are circulated to inform the public of the essential facts thus introduced into practice. Close co-operation with the United States Public Health Service, the State Boards of Health, City Health Departments, and voluntary agencies makes possible concerted progress. The division constantly endeavors to stimulate active co-operation of physicians, nurses, social workers, dentists, druggists and others in promoting the public health and welfare aspects of venereal disease prevention and control.

To measure, we must have a base line. In an effort to secure statistical data which can be used for a base line from which to measure future trends in syphilis and gonococcus infection, the medical division is making studies of the incidence of these diseases in a number of selected cities.

In 1925 studies were made in Detroit and Atlanta, where the medical staff obtained from practicing physicians, clinics, hospitals and other institutions having treatment facilities, a report of the number of cases of venereal diseases under treatment or observation on a day specified.

The same procedure is being carried out in Cleveland, Syracuse, New Haven, and at the Cattaraugus County Health Demonstration (N. Y.). Other cities in which preliminary observations are being made with a view to instituting similar studies are Des Moines, Iowa; Kansas City, Missouri; Houston, Texas; Portland, Oregon; Denver, Colorado, as well as Health Demonstrations at Athens, Georgia; Salem, Oregon; and in Ruthford County, Tennessee, and at the Klamath Falls Indian Reservation, Oregon. So far as possible the United States Public Health Service has co-operated in these studies and is at present making additional studies in several cities in West Virginia, Illinois, Indiana and elsewhere. Dr. Walter M. Brunet, director of Division of Medical Measures, serves as a special consultant to the Service in connection with this work.

The Division of Protective Measures deals with those measures which may be adopted by a community for the protection of adolescents. Such measures include the appointment of police women; the licensing and supervision of cabarets and dance halls in which young people congregate; and the provision of wholesome recreation facilities. It is interesting to note that throughout the country districts a great deal of difficulty has been experienced in connection with road houses and amusement centers lying outside of city jurisdiction. The State of Wisconsin has attempted to solve this problem by passing a law permitting the appointment of county supervisors to be responsible for amusement centers and road houses outside of city or town jurisdiction. The National Probation Association, the American Social Hygiene Association, and the Department of Sociology of the State University of Wisconsin have recently completed a joint study of the working of the Wisconsin law, and it was found that when qualified persons have been appointed the results have been satisfactory.

The various divisions of the American Social Hygiene Association are rendering service as they have opportunity in promoting the whole of the social hygiene program. This is the type of program instituted by the United States Government during the World War; it was in a large measure successful although it did not protect all the men desired; there was some sexual promiscuity, but far fewer men proportionately became infected with venereal diseases after entering the Army and Navy than were infected in their communities prior to enlistment. In other words, we were able to demonstrate that a thoroughly well co-ordinated program is effective in the control of venereal diseases. During my administration of the United States Interdepartmental Social Hygiene Board, we were able to demonstrate that wherever sexual promiscuity was high the venereal disease rate was correspondingly high; that when, through law enforcement, commercialized vice was done away with, the hospitalization of soldiers and sailors was considerably diminished. The same facts hold true in the civil communities, although it is more difficult to demonstrate this as we have not such control as will give us statistical evidence.

New Orleans has taken the first step in law enforcement in doing away with the segregated district; we hope she will take the second step and make all houses of prostitution dangerous to operate, as well as put an end to open street solicitation of prostitutes. Whatever may be true of the difficulty of getting rid of sources of venereal infection, it is evident that the open market presents the greatest opportunity for infection. Other cities, including New York, have done much in counteracting this evil, in spite of such difficulties as varied racial populations, large numbers

of transient visitors, and constant alertness on the part of those who profit from the commercial exploitation of prostitution.

The American Social Hygiene Association has much literature on various phases of this subject, and publishes a monthly journal which carries scientific articles, news and book reviews; I present this program as one which will benefit any community and in which the medical fraternity has shown its belief by constantly increasing co-operation.

BREAST TUMORS.*

A. C. KING, M. D.,

NEW ORLEANS.

The female breast adds beauty and symmetry to the human form, and is a wonderful source of comfort, pleasure, and life to the nursing infant, yet it is the seat of malignancy almost as frequently perhaps as any other organ of the human body. Subjected, as it is, to the trauma of nursing, trauma of tightly fitting, or improperly fitting clothing—especially the high corset or the modern brassiere, trauma from other causes, due to its exposed anatomical location, it is no wonder that the tumor growth is so common.

One case of cancer, coming under my observation, occurred in a childless married woman, was caused by trauma inflicted by the frequent carrying in and out of the house, during the winter, of heavy potted plants.

The question of properly fitting clothing in females is an all-important problem, yet physicians are not consulted in matters of this character. If a tightly fitting pointed shoe, a couple of sizes too small, fails to give pain or trouble, the wearer trips along quite happily. If improperly fitting clothing gives no trouble, she continues to be happy, yet, when nails grow in, or painful callouses develop, or a large breast tumor is discovered, then, and then only, is the doctor consulted.

Naturally we men folks are not supposed to know when milady's corset is properly fitted. Neither does milady, for that matter, as witness the fat dames as their ample forms shrink to half size under the efforts of a muscular attendant, as she strains and strains at the laces. I recall an autopsy some thirty-five years ago on an old colored woman of some eighty winters, in which the imprint of her ribs was plainly evident on the liver, and I dare say she had not laced for thirty years or more. Now, if a colored woman can lace to such an extent, what must we expect from our own women in their efforts to conform to present standards of style.

Today the majority of women wear a modern contrivance, or harness, called a brassiere. This is essentially a binder, apt to produce more or less bruising, and, in time, damage to the breasts. I have seen the breasts of young girls, wearing this binder, so flattened against the chest and so elongated and flabby as to resemble the breasts of a nursing mother. I wish and hope that the medical profession as a whole will some day take up the cudgel against this particular type of female apparel. I have no doubt the damage incident to pressure must in some way interfere with the function of lactation later on in life.

Remember that we bandage an engorged breast for support and pressure, particularly if we desire to dry up the milk in cases of still birth or premature labor. Why then should not pressure long applied during young womanhood tend to limit or interfere with milk production, by damaging the secretory apparatus of the breast? Enough babies now have bottles wished on them, without adding to the number by permanently disabled breasts of the nation's future mothers.

Regarding tumors, the surgeon's greatest trouble lies in the fact that comparatively

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few cases of breast tumor apply for operation in the early stage; that is, as soon as the tumor is found, and before metastatic advancement has occurred, if of a malignant character.

Our greatest difficulty lies in not having an opportunity to make a definite diagnosis sufficiently early to effect a cure. In many cases, this is impossible without microscopic aid, which means a rush diagnosis at the operating table.

Given a tumor, small or large, easily rolled under the examining hand, not adherent to the skin, and without axillary involvement, with a normal nipple, with a history of months or year standing, the usual diagnosis is that of a benign growth, but there is always the possibility of malignancy.

Given a tumor following a breast abscess, with axillary involvement, and the diagnosis of malignancy is questionable.

Given a small tumor in the breast of a young women, without other symptoms, we can reasonably make a diagnosis of simple benign growth. However, let us keep in mind this rule—any breast tumor, no matter how innocent to the eye, or to the finger, in a woman of any age, is potentially malignant.

Small growths in young breasts may lie dormant for years, yet after marriage and childbirth, such growths, due to the trauma of nursing, may become malignant.

Infection traveling from without inward through the nipple is also a probable cause. We know that trauma of bone is often responsible for bone sarcomata. We also know that breast cancer is most common between the ages of thirty-five and fifty—that is, near the end of the child-bearing period, after the trauma of nursing is fairly over. Also, at this age, normal resistance to disease is diminished.

We must also take into consideration the family history. Many of you have observed more than one female member of a family afflicted with breast cancer. I recall a father and two sons who died of cancer of the stomach—two sisters with breast cancer. Thus, heredity or environment plays a part.

Barker aptly says: "Physicians are forced, therefore, to take into account what they call differences in disposition to disease," and to "try to determine in how far disposition is inherited and in how far it is acquired." We do not always know.

The diagnosis of breast tumors is considered by most men as fairly easy, but be not deceived. After years spent in handling and operating all classes of these tumors in our service at the New Orleans Charity Hospital, we are often in serious doubt as to a definite and positive diagnosis. Black, of Indiana, in a most comprehensive article a few years ago, stated that, as a member of the Board of Medical Examiners, he was struck by the fact that in answering the question, "What are the early signs of breast cancer?" all except a small per cent gave retracted nipple and axillary involvement as early diagnostic signs. These are late signs, not early.

Many cases come to us with tumor growths as large as a big orange or a cocoanut, hard and nodular, the axilla filled with cancerous glands, sent in as abscess, often with an incision an inch or two in length. These cases a blind man should be able to diagnose, and yet they continue to come.

The question of metastasis is important in the study of breast tumors. In nonmalignant growths, and in the very early stage of cancer, there is none. In cancer it is always present in the axilla, sooner or later, whether the glands are palpable or not. Study the lymphatic system of the breast and axilla and you will more clearly understand this statement. The axilla can be beautifully cleared of fat and glands at the time of operation, yet we are never sure of removing all diseased tissue.

If mediastinal involvement has occurred, and sometimes this is easily determined by the roentgen ray, the case is hopeless insofar as cure is concerned. This confirms then the absolute need of early diagnosis and early operation.

In a case coming to us and dying before operation, autopsy revealed breast cancer, axillary cancer, mediastinal cancer, and cancer of both the stomach and liver. In another, a younger woman, dying after operation, autopsy showed clean breast and axillary wounds, no mediastinal or stomach or liver involvement. Individual resistance probably accounted for this, but it opens up the question as to how much glandular involvement exists in a given case, internally, and where it is.

Again, it gives us an insight into a class of cases apparently almost hopeless, yet in which, if a clean, complete operation is done, life is prolonged far beyond our expectations. We have no way of determining early internal organic metastasis, or if existent at all, so it is our duty to give these women the only chance open to them,—that is, radical operation, with subsequent applications of radium or roentgen-ray. I have no statistics to present, as all of my Charity Hospital cases are negro women, and they never report unless recurrence occurs. At any rate, statistics can be so juggled as to become valueless. Breast cancer in colored females appear to be as common as gall bladder disease is rare, and certainly far more prevalent than in whites.

I have often wished that breast cancer would announce itself earlier by giving early pain and plenty of it. Women having cancerous breasts twice or three times the normal size often complain of little or no pain, unless ulcerated,—only of a dragging sensation and a "lump" under the arm. Many are sent in for abscesses, which have undoubtedly been cancers from incipiency.

The low mortality from acute appendicitis is accounted for by the fact that the appendix announces itself early in the game, thus giving the patient and the doctor warning of an impending volcano, while breast cancer is insidious and slips around like a thief in the night.

Now to answer the question, "What shall we do?"—Operate in all cases? The consensus of opinion is that we should. In young women, these "potential cancers" are easily removed, often in the office under local anaesthesia, leaving but little scar, and certainly ridding the patient of possible future trouble. As a rule, if the danger of permitting these growths to remain is explained to the average mother, the majority will consent to an operative procedure, particularly if it is only of a minor nature.

A microscopic examination should be made of even the most innocent looking tumor, as a protection to both patient and physician. It is a simple case of "prevention is better than cure," and we all realize the hopelessness of cure in true breast cancer, as we see it to-day.

As for cancer, nothing short of a radical operation is worthy of consideration,—just as radical as it is possible to make it. Sacrificing the pectoral muscles, cleaning the axilla absolutely clean, and even sacrificing skin to the point of a subsequent graft, is good surgery, and the only kind offering hope to these unfortunates. Radium and roentgen-ray later is of value. Some operators lay back the flaps at operation and shoot in heavy doses of roentgen-ray promtly after operating. I am not in a position to advise regarding the value of this method.

Cheatte, of London, very aptly remarked that "Chronic Mastitis" is a misleading term because it seldom refers to a true inflammation of the breast, also because the clinical signs generally considered to be connected with it mask many and varied states of breast hyperplasia. It is a dangerous diagnosis, because these clinical signs may hide carcinoma in its earliest stages, advanced carcinoma in rarer in-

stances, and many other states of epithelial hyperplasia.

Cancer occurs at any age after puberty. We have just operated a case in a prematurely developed girl of eleven, wherein a diagnosis of benign tumor has been made, which, much to our surprise, the microscope pronounced carcinoma.

In 1914 we did a radical operation on both breasts for carcinoma in a girl only fourteen years old.

We would advise, therefore, the removal of every operable tumor, large or small, in every breast, young or old. This may sound a bit radical, but all experienced operators are to-day pretty much of this opinion.

DISCUSSION.

Dr. P. B. Salatich (New Orleans): This is certainly too important a paper to pass over without comment. The percentage of true cancers to what women call "lumps in their breasts" is probably one to twenty-five or more. So many of them come to us with that "little lump." My experience has been that later they return and tell us: "Now, doctor, I have had this lump for a long time, and, while it is not painful, I know that it is there, and it worries me." I have been watching these cases very carefully for twenty years, and believe that the first indication of pain in these neoplasms, in a large majority of cases, is incipient cancer, cancer beginning to implant itself on these tumors. I remember a patient who for years had had a lump in her breast, which at several different times I examined. She always said: "It does not worry me. I do not want to be operated on." But later she told me: "Doctor, I am beginning to worry about this lump, it is causing pain." I informed her of my suspicion of beginning cancer and advised removal of the neoplasm. Microscopic examination showed beginning cancer implanted in the mass, involving probably one-sixteenth of the growth.

Now, with regard to removing these lumps, or treating them without removal, I think all of us, before we have had sufficient experience in their treatment, give these patients salves and try other non-surgical methods of treatment. You will find that not one in seventy-five so-called "lumps" will answer to any salve, and I strongly urge, since it can be done so easily, even under local, that every "little lump" that comes to your office be removed.

Dr. S. C. Barrow (Shreveport, La.): I feel that I would be a little recreant to my duty as a representative of that branch of medicine, radiology, if I did not speak a moment on this subject. You are all familiar with Ewing, the pathologist, and in his discussion of carcinoma he winds up his paper by stating that radiation therapy is the "first rational treatment for carcinoma ever devised." Of course, he did not mean that it was the only treatment for cancer, but that it was on a scientific basic foundation. In reviewing the histological and biological studies he has made, there are two outstanding facts that would justify that statement. It has been conclusively demonstrated that a very small proportion of cancer cells, which have been previously radiated (roentgent-gen-radiation of the organism proper within the host) take following transplantion. It has been also demonstrated without any question, that tissue which does not contain cancer, if fully radiated, and then implanted with cancer cells, the cancer cells will not grow. These are facts that admit no discussion today; they have been proven and accepted.

I have a little resumé that I took from "The Journal" sometime ago, a report from the Memorial Hospital, given by Burton Lee, surgeon, and Herrington, radiologist, demonstrating the results, first, with surgery alone; second, with operation plus post-operative radiation; and, third, with operation plus pre- and post-operative radiation. After the five-year period was up, they selected three series of cases, as similar as possible. Series No. 1, consisting of one hundred cases in which only surgery was used, showed that, after five years, 24 per cent of these women were well and free of cancer. Series 2 embraced one hundred cases that were operated on and then radiated. After five years, 38 per cent were well and free from cancer. In series 3, where the treatment consisted of operation with radiation before and after, properly and thoroughly given, 52 per cent were well and free after the fifth year, a jump from 24 per cent, where surgry alone was employed, to 38 per cent with surgery and post-operative radiation, and to 52 per cent with pre- and post-operative radiation.

Dr. Herrington closes his remarks by stating that "operable cases of cancer of the breast should be treated by radiation only." I am not willing to take the responsibility of working that way yet. Dr. Lee, the surgical representative of that team, says: "I am most enthusiastic about the pre- and post-operative radiation of cancer of the breast." I feel that, coming from two men of that kind, working under the advantages that they had, their statements at least should carry some influence, and we urge that, if the case is going to be operated, have your patient thoroughly radiated first, and then radiate after the operation also. After

radiation operate, then repeat the radiation, giving your cases 52 per cent chance instead of 24 per cent.

Dr. E. Denegre Martin (closing): What Dr. Barrow has just said can be borne out by statistics, so much so, that today we always have these cases radiated after operation. Now, whether the improvement is due entirely to the radiation, or operation plus radiation, or getting them earlier and doing more operations, I do not know. However, in the face of the evidence, I am inclined to think that we would err if we did not use radiation.

I would lay stress on the importance of early diagnosis in these cases. I believe that when a woman comes to us we should make an inventory not only of her pelvic organs, but examine the breasts as well. I do this in all cases, and very frequently have been rewarded for my efforts. In examining for a growth in the breast, do not use the fingers only, use the whole hand, employing a gentle, rolling motion, and you can feel any masses; sometimes bi-manual palpation may be necessary.

In operating on these early cases, make a Collins incision and take out the tumor from beneath without mutilating the breast. Women will submit more readily to operation when they know this can be accomplished. When a neoplasm is recognized, it should be watched and removed as early as possible. Very often an earlier diagnosis is arrived at through pressure of the brassiere on the breast causing pain which previously had not been experienced.

When we recall that the breast has five sets of lymphatics, superficial and deep, anastomosing with the lymphatics of the entire body, we can better explain metastasis. It is not confined to the axillary glands, but is just as liable to take place in the liver or other organs of the body. When, however, the involvement is confined to the axillary glands, the prognosis is much better. I would, therefore, stress: (a) Early diagnosis, (b) early operation, (c) application of both surgery and roentgen-ray.

PRE-OPERATIVE AND POST-OPERATIVE CARE OF PROSTATICS.*

P. JORDA KAHLE,

NEW ORLEANS.

Although distinct advances have been made in operative technic in prostatectomy, these can hardly be held accountable for the remarkably low mortality of today as compared with the almost discouraging losses of former days. The difference in results must be sought elsewhere. Empirically at first, and by laboratory tests later, it has been shown that neither the time consumed in performing the operation, nor the coincident infection of the bladder were factors of great moment in determining the end results. Cases expeditiously and skillfully operated, as well as those with clean and uninfected bladders, succumbed. Cystostomy, whether performed under local or general, has its toll and this toll was, and still is, greater than that exacted by the removal of the hypertrophied gland. Many fatalities attributed to prostectomy should rightfully be laid at the door of cystostomy. This we came to realize with the knowledge gained by study of the data given us by the various tests for renal function, and by blood chemistry. The most important, we might say—vital, information gained, is that the sudden decompression of the kidneys with resulting acute congestion and the insufficiency resulting from destruction by nephritis, pyelonephritis or pyonephrosis must be borne in mind, and all efforts must be directed to prevent the occurrence of the first, and the improvement, if possible, of the second.

A general disregard of either of these possibilities is responsible for the high mortality rate still prevalent in prostatectomy as done by the general surgeon. This is true because a one stage operation is done in the face of a large residual urine or because, if a two stage operation has been decided upon, the second stage is undertaken without complete study to determine the sufficiency or the stabilization of the kidneys. It is unfortunate that routine has been responsible for the second stage, the enucleation of the prostate, during the second phase through which patients with large residuals usually pass following preliminary drainage. It is during this stage that the change in blood pressure, the lowered pthalein output, the marked decrease

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in urinary output, the increased albuminuria and other evidences of acute congestion of the kidneys, manifest themselves, and yet, it is at this critical time that an added load is thrown upon the kidney by the second operation. Were this second phase following drainage per urethram or via the suprapubic route of equal duration in all patients, and were the condition of the cardio-vascular system of no moment, it would be an easy task to formulate a routine by which in a given number of days following the institution of drainage, the prostate could be enucleated. The stabilization of the kidney function, or its improvement, varies to such an extent that individualization is essential to success. The second stage has been successfully done within two weeks after the institution of drainage; on the other hand, we have waited two years, while in other cases catheterization or suprapubic drainage has been the limit beyond which it were unwise to venture.

The tendency of today, to drain per urethram, instead of by suprapubic cystostomy, finds application in a large number of cases, and is preferable for economic, and at times psychic reasons, provided proper attention to drainage and irrigation can be given by competent internes or by the surgeon himself, and provided that complicating conditions such as calculus, tumor, diverticulum, or marked cystitis with irritability of the bladder, be eliminated. To determine this, the cystoscope is invaluable and should be used except in cases known to react unkindly to instrumentation, or in patients who are very septic and feeble. In patients prone to epididymitis, the cystoscope as well as the catheter should be avoided. A suprapubic cystostomy is much safer and will permit of exploration for complicating conditions as well as for the type of obstruction present.

Whether decompression of the kidneys be brought about by the catheter or by cystostomy, this decompression should be gradual and so regulated that the kidneys readjust themselves to the new conditions with little or no evidence of disturbance. A clamp or stopper which permits of increasingly larger amounts of urine to be withdrawn periodically until continuous drainage is established, will suffice. In the event of a suprapubic cystostomy, the proper closure of the bladder around the catheter will insure against unintentional emptying and too rapid decompression.

During the period of continuous drainage, elimination should be promoted by forced fluids, diuretics and cardiac stimulants, although with improved renal function the cardio-vascular condition is ameliorated. Should it be necessary, a thorough digitalization is effected by giving large doses of digitalis for two days before the second stage. We have found the results better than by giving small doses over a long period.

It is also during this period of drainage and preparation that attention should be paid to the patient's habits. Constipation should be corrected, the diet and the exercise should be about normal and if alcoholic stimulants have been used we do not withdraw them. To permit of the patient's getting around and deriving the benefit of mild exercise we avoid any complicated appliance for the establishment of drainage and rely entirely on the proper closure of the bladder if a cystostomy has been done.

It is now our routine practice to estimate the pthalein output, to examine the blood for retention products, to note the blood pressure at frequent intervals, and to estimate the resiliency of the kidneys by taking the specific gravity of a 24 hour specimen when the patient is on a dry diet with a limited intake of fluids, and comparing it with the specific gravity of a 24 hour specimen when the patient is on forced fluids. We feel, in the latter test, that a patient whose specific gravity does not vary appreciably under the conditions imposed, is one whose kidneys are working at maximum capacity and unable to stand an ex-

tra tax such as might result following prostatectomy. Such a patient is always a more hazardous risk even though the pthalein and blood chemistry indicate proper elimination.

In the matter of preparation the diagnosis of the type of obstruction and the choice of the anesthetic should be included. As a result of the former, the surgical attack will be determined before hand, and an enucleation done when indicated, while the punch or the cautery are used when applicable. A failure to recognize the pathology present is responsible for unsatisfactory results in many instances. In the matter of anesthetics, we are partial to spinal analgesia in patients with a blood pressure over 110. We use 1¼ grains of aposthesin to 1 c.c. of distilled water injected between the 1st and 2nd lumbar vertebrae. We feel that with this form of analgesia the danger of a pneumonia or a nephritis is lessened, while the ingestion of fluids is not interrupted by a post-operative nausea or vomiting.

The post-operative treatment of prostatics really begins with the pre-operative treatment, and must be kept in mind during operation. The lessening of shock and hemorrhage will depend largely on the expeditious and thorough manner, with the least trauma to surrounding strictures, with which prostatectomy is done. To lessen the risk of hemorrhage the coagulation time should be determined to detect a bleeder. In all cases some form of hemostasis provided at the time of operation should be resorted to. We prefer the Pilcher, Hagner or McKinn bag for this purpose. The bag may be removed with the large suprapubic drain in 48 hours without pain and without risk of hemorrhage.

We never use the gauze pack as the removal is painful and will at times tear up the prostatic bed giving rise to severe, and at times fatal, secondary hemorrhage.

On the removal of the bag and the large drainage tube a Pezzer catheter with a large flange is then used for suprapubic drainage until the wound has granulated snugly around it, usually in 10 or 15 days, at which time it is removed. It is not usually necessary to insert a catheter per urethram after the removal of the Pezzer, as many of the patients keep dry or leak only for a day or two. If a suprapubic fistula persists, there is either some obstruction in the lower urinary tract or an incomplete removal of the obstruction. It not infrequently happens that the incision in the bladder has been made too low. A high incision will close faster. Lumbar tabes may be responsible for lack of closure but this should have been eliminated before prostatectomy was done.

Should there be evidence of shock or renal insufficiency intravenous infusions of saline or of glucose and blood transfusions are valuable. It may even be advisable in some cases to transfuse one or more times before operation.

Hiccough is usually evidence of a toxemia and is of grave significance when due to renal insufficiency. For this reason the urinary output should be measured and recorded. This would preclude the early irrigation of the bladder to combat local infection. The tongue is a good index to the renal condition. A dry glazed tongue even before the appearance of hiccough is always a signal for increased efforts towards elimination; sweating, purgation, gastric lavage, and the administration of fluids by the route best tolerated should be practiced. On the other hand, the repeated administration of opiates for the relief of hiccough, whether due to renal insufficiency or to the other causes is to be condemned. The activity of the skin, the bowels, and the kidneys is decidedly hampered by their use. Hiccough will occur at times from the use of a general anesthetic, gas or ether, and may be distressing. It is usually not serious.

Paralytic ileus will occur in a few cases no matter what form of anesthesia is used. It is distressing and in the presence of serious myocardial degenerations may be ex-

tremely serious. Purgative enemata, gastric lavage, hot turpentine stupes, and surgical pituitrin may be used to overcome this complication.

Epididymitis occurs not infrequently following prostatectomy; some observers giving the incidence of its occurrence as high as 20 per cent. It is a serious complication usually occurring during the second or third week after operation when the patient is up and about. The sepsis resulting therefrom may be the deciding factor as to recovery. It certainly prolongs the convalescence, and prophylaxis by bilateral ligation of the vas should be routinely practiced. Should it occur, the usual treatment for epididymitis is to be employed. If the symptoms warrant it, epididymotomy should be done. Occasionally epididymitis will occur after the passing of a sound introduced to determine the possible contraction of the vesical neck or of the prostatic urethra. Although this is a rare result of prostatectomy, it is not unusual to have made an incomplete diagnosis and to have overlooked a contraction of the vesical neck which should have been corrected when the prostate was enucleated. Copious irrigation before, and the instillation of 1 per cent solution of nitrate of silver after passing the sound minimize the risk of epididymitis.

With a more generalized use of local, sacral and spinal analgesia the incidence of pneumonia has been somewhat diminished. It still claims its toll, however, as a factor in prostatic mortality. Hypostatic pneumonia and hypostatic congestion of the lungs are seen less often if the cardio-vascular system is watched carefully and if the position of the patient is changed frequently. Unless there be some contraindication the back rest may be used on the first day of operation, and the patients may be put in a rolling chair on the fourth.

In closing let me emphasize that the success of prostatic surgery depends on an accurate diagnosis, and on the most minute attention to details in the matter pre-operative and post-operative care.

DISCUSSION.

Dr. H. W. E. Walther (New Orleans): In 1921 Braasch and Kendall first called our attention to the difference in the results following the intravenous administration of phthalein for testing secretory functions of the kidneys as compared with the intramuscular test. Long before this I had adopted the intravenous methods and had noted its superiority. The readings from intramuscular administration are variable and untrustworthy. Intravenous test only should be employed.

In 1925 Shaw reported very interesting observations on 15 and 30 minute phthalein readings. This observation I consider the most important piece of research since Rowntree and Geraghty gave us phthalein in 1910. Shaw found, in normal kidneys, that one would obtain:

40% of the dye in the first 15 minutes
17% of the dye in the second 15 minutes
8% of the dye in the third 15 minutes
4% of the dye in the fourth 15 minutes

making a total one hour collection of 69 per cent as average. Unless one has done the test this way, he does not know that he can get all necessary data from a one hour phthalein reading instead of doing a two hours collection. In my service at the Baptist Hospital we have adopted thirty minutes readings—either for one or for two hours—and the same ratio holds as pointed out by Shaw. In good kidneys we get:

50% phthalein for first 30 minutes
15% phthalein for second 30 minutes
10% phthalein for third 30 minutes
5% phthalein for fourth 30 minutes

making a total of 80 per cent for two hours, or 65 per cent for one hour. In reverse ratio, with poor kidney function cases we have noted commonly such readings as:

5% phthalein for first 30 minutes
10% phthalein for second 30 minutes
15% phthalein for third 30 minutes
20% phthalein for fourth 30 minutes

a total of 15 per cent for one hour, or 50 per cent for two hours. In good surgical risks for prostatectomy the maximum amount of dye should be excreted in the first half hour. When the initial collection is low, the renal function is below par and one should proceed cautiously. The one hour phthalein is a time-saver and should be more widely adopted.

The anesthesia factor unquestionably has an important bearing upon post-operative care and results. The personal equation of the surgeon as to whether it is to be local, spinal, sacral, caudal or general will forever remain an individual matter. Nevertheless I feel that more serious thought should be given this matter by the general surgeon. In our work we have adopted local for the first stage and ethylene-oxygen for the second stage, with excellent results and no mortality since the abandonment of ether.

Dr. Kahle mentioned the McKim bag. I am sure every up-to-date urologist has adopted some type of bag to arrest hemorrhage so that this complication following the removal of prostates is a thing of the past. At the Baptist Hospital we have installed water suction pump drainage, with the Lowsley apparatus, and all our suprapubics remain perfectly dry throughout their stay in the hospital.

One more matter and I am through. Gastro-intestinal complications following prostatectomy give me personally more trouble than any other post-operative train of symptoms. I have wondered if others have had the same experience? The prompt employment of the duodenal tube with lavage, pituitrin by needle, hot turpentine stupes, and last but by no means least, blood transfusions, will help these patients when nothing else will.

Dr. E. K. Hirsch (Baton Rouge, La.): There are just one or two things I would like to say. I think the greatest fault we have to find in many men doing prostatic work is that they set a certain time limit between the first and second stage, operation, which Dr. Kahle has called attention to, and the period of six days or six weeks has absolutely nothing to do with it. Among other things, the stabilization of the kidney and other functions is most important.

Another thing I have seen recently in the literature, and which happened to me in one of the best risks I ever had, was a rapid uremic death, death occurring in seventy-two hours in a patient who apparently was as excellent a risk for prostatectomy as I ever had. Yet, in the mention of these facts, there is no accompanying information as to its possible prevention. As I know nothing of the prevention in such cases I would like Dr. Kahle to explain the reason as well as the treatment.

Dr. P. Jorda Kahle (closing): I appreciate the supplementary paper by Dr. Walther.

There is no doubt that the reading of phthalein is often misleading. A two hour reading is less significant if patients are suffering from retention of urine, and I feel that the low output during the first hour is evidence of a lack of decompression of the kidney. It is common to find patients with large residuals with a good two hour output, but the output for the first hour is consdierably less than that during the second hour. There is nothing new in this observation, as it was mentioned by Rowntree and Geraghty at the time that they published their report on phthalein.

We are in the habit of giving phthalein intravenously and intramuscularly, but at different sittings, as we feel that the intravenous injection gives us information concerning the secretory power of the kidney, whereas the intramuscular injection may give us a hint as to faulty metabolism, as well as of the functions of the kidney.

In reference to Dr. Hirsch's case, I believe that this happens to all of us, no matter what type of surgery we are doing—we have a calamity out of a clear sky. I know of nothing that can be done to avoid it, nor of measuring the reserve power of the patient's kidneys. We have patients whose blood chemistry is apparently good, the blood urea content is not markedly above normal, and the phenolsulphonephthalein is sufficient, and at the time of doing these tests the kidneys are doing good work. This fact was brought forcibly to my attention in Philadelphia, thirteen or fourteen years ago, when Lewis was advocating in the course of routine examination of the kidneys what he called the specific gravity test. By this test I believe that some information is given as to the resiliency in the kidney. This specific gravity of a twenty-four hour specimen is taken with the patient on forced fluids, another twenty-four hour specimen is taken with the patient on a dry diet. The specific gravity of both are compared. If the kidney is working at top speed the specific gravity of the two specimens are going to vary very little. If the kidneys can adapt itself to the load thrown upon it, if it is resilient or has reserve power, the specific gravity will vary decidedly. I always feel safer after having done the specific gravity test, as I believe that it gives information that we do not get from any of the other tests. The other tests of renal function show that the kidneys are doing good work, but they do not show whether the kidneys are carrying the maximum load.

THE DETERMINATION OF CERTAIN TUBAL PATHOLOGY BY THE INJECTION OF LIPIODOL.

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AND

WALTER F. HENDERSON, M. D.†

NEW ORLEANS.

There is no question but that the cause of a very large percentage of all cases of sterility lies in the condition of the Fallopian tubes, and up to quite recently the Fallopian tubes, except at operation, have been a sealed book. Many women have been operated upon needlessly, therefore, for conditions which were frankly hopeless, and others have been refused operation who perhaps might have been helped. In this connection it is well to remember that although sterility is not vital in the sense that it threatens life, it is vital in the sense that it affects the happiness of the individual and of the family, and that ultimately it affects the welfare of society. Moreover, if we are to judge from the statements of gynecologists to the effect that an increasingly large proportion of their practice is made up of women who desire children and are barren, it is evident that the already relatively large percentage of childless unions is apparently increasing.

Sterility in the presence of gross tubal disease presents no diagnostic difficulties, but the situation is different when there are no clinical signs of pathology of this kind, when every apparent cause for the sterility can be eliminated, and yet the woman does not conceive. In such instances the tubes should always be suspected, but until quite recently there has been no way of proving the responsibility, short of opening the abdomen, a procedure not, in our opinion, warranted on mere supposition.

For the last ten or twelve years repeated endeavors have been made to study the condition of the Fallopian tubes in this type of case, with a view to the determination of when operation was justified and when it was not. The Rubin insufflation test was the first really practical diagnostic measure devised, and yet even it has decided disadvantages. If only the stethoscope be employed to detect the presence of air in the peritoneal cavity, the personal equation enters in too largely to make the results thoroughly satisfactory from a scientific point of view. One of us (Miller) has many times been uncertain as to whether the air which was heard was really in the peritoneal cavity, or was merely a leak from the cannula in the cervix. Moreover, even when roentgenology is resorted to additionally, the only information secured is that the tubes are patent or that they are not. There is no information, in occluded tubes, as to the location of the obstruction, which is decidedly the most important point in deciding whether or not surgery is justified.

Various solutions have been employed at different times to visualize the tubes, but all of them have been unsatisfactory, either from the radiologic standpoint, or from the standpoint of the patient's welfare. In lipiodol, however, the ideal agent seems to have been found. This, briefly, is a solution of 40 per cent iodin in poppyseed oil, so compounded organically that no chemical process has yet been evolved which is able to disintegrate it when once union has occurred. It was introduced by Sicard and Forestier in 1922, first as a means of demonstrating tumors of the spinal cord, and later as a means of demonstrating other forms of pathology elsewhere in the body. For some time it has been employed in pelvic work on the Continent, but this particular use is fairly recent in American clinics. It should be added that lipiodol is an absolutely non-irritating substance, without any tissue reaction following its use, and that the literature, so far as we are aware, recounts only one fatality following its injection. This was a brain abscess,

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reported in the five thousand cases of Sicard and Forestier.

The technique is simple, and hospitalization is not necessary. The patient is placed in the lithotomy position, the vagina is swabbed out, and the cervix is touched with tincture of iodin. The lipiodol is then injected through a laryngeal cannula applied in the cervix, from a Luer syringe. A rubber cork fits over the cannula, some two inches from the tip, and acts as a plug at the external os, so that leakage is reduced to a minimum. The cannula is of copper, and is so small and malleable that we have never encountered any difficulty in inserting it even into a nulliparous cervix or through a tortuous canal. The solution, of which not more than five or six c.c. is needed, should be injected very gradually.

The picture made immediately after the injection usually shows the uterus and tubes well outlined, and, if the latter are patent, lipiodol will already be dripping from the fimbriated extremities. Another picture made twenty-four hours later determines whether or not the solution has escaped into the peritoneal cavity, and definitely settles the question of whether or not the tubes are entirely or partially occluded.

Fluoroscopic examination, whenever practical, is done simultaneously with the injection of the lipiodol. In normal, healthy tubes peristaltic waves are clearly seen, beginning at the fimbria and passing towards the fundus, usually occurring about fifteen seconds apart and one at a time, though sometimes two may be observed simultaneously. This consideration is a highly important one. It is easy to see how disturbed peristalsis, even in a patent tube, might result in the death of the fertilized ovum before uterine implantation could occur.

It might be well to mention briefly the surgery possible for the relief of closed tubes. It is axiomatic that the further the obstruction is from the fimbriated extremity, the smaller is the hope of success, and I personally (Miller) am decidedly opposed to promiscuous salpingostomies. In a young woman, however, when the obstruction is at or near the fimbriated end, if there is no other apparent bar to conception and if she is willing to take the admittedly small chance which the procedure offers her, operation is certainly justified. It is justified, too, in those cases in which the obstruction is apparently due to the kinking of the tubes from peritubal adhesions. Further than this we are not prepared to go. We do believe, however, that if this test does nothing more than to prove definitely to the unhappy women who now haunt gynecologists' offices that they can never hope to become pregnant, it is well worth while. It is conceivable, too, that with a more scientific study of tubal conditions in the living, which this type of test makes possible, more intelligent modes of treatment may be devised than exist at present.

This paper is a purely preliminary report of a study which was undertaken by us jointly the first of this year, and which we hope to continue over a considerable period. For the future it will be concentrated largely on the problem of sterility. The present report, however, is based on approximately forty cases representing all types of tubal pathology, both gross and obscure. From it the following points emerge:

1. Lipiodol injections through the cervix clearly outline the uterus and Fallopian tubes, as is evident from the plates herewith exhibited. Not only is every type of tubal distortion and obstruction demonstrated, but also tumors and polypi of the uterine cavity, distortions and displacements, and even, in one instance, a polypoid endometritis, as evidenced by definite, grape-like protrusions from the endometrium.

2. Three of these cases were studied prior to operation, and at operation the

roentgen-ray findings were entirely confirmed.

3. Every type of case, including several pus tubes, has been injected without any ill effect. For this reason we see little basis for the contention of Rubin that the lipiodol test should be used only when the tubes have been proved by a previous air insufflation to be definitely stenosed or actually closed, so that none of the solution may escape into the peritoneal cavity.

4. Like the Rubin test, the lipiodol test probably has some therapeutic value in that it may occasionally straighten out kinked tubes or dislodge mucous plugs, but its practical value is, in our opinion, purely diagnostic. Likewise we are not yet prepared to say that the injection has a real therapeutic effect in cases of acute pelvic inflammation, though we are aware that such results have been reported in chest work.

In conclusion, it is well to emphasize the fact that no test of this sort is justified until the husband has been found virile, and until a routine general and special study has eliminated other possible causes of the sterility.

NOTE—Our thanks are due for the assistance rendered us in this work by the members of the Roentgen-ray Department of Touro Infirmary, particularly Dr. F. Y. Durrance and Dr. John A. Rodick.

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DISCUSSION.

Dr. John F. Dicks (New Orleans): The use of lipidol to test the patency of the Fallopian tubes is undoubtedly a distinct improvement over the old Rubin test. I have been using it for several months and find it satisfactory.

A point that should be stressed is the importance of the twenty-four hour plate, for without this second study you cannot be positive that lipiodol has passed through the tube. In other words, there is an element of error in one plate because lipiodol may be seen in the tube as far as the fimbria, yet the fimbria may be occluded. However, if a twenty-four hour picture is made and lipiodol can be seen free in the pelvis below the ends of the tube then you can assure your patient that the tube or tubes are patulous.

I don't know how Dr. Miller feels about the twenty-four hour plate but I am never satisfied unless my diagnosis is confirmed in this way.

Dr. Walter J. Otis (New Orleans): Do you produce any reaction to suggest irritation from this injection of lipiodol? Have you ever seen a case with symptoms following the test, or read of a case where this oil produced an irritating effect?

Dr. C. C. Bass (New Orleans): I would like to know whether lipiodol is an antiseptic, also whether it distributes bacteria; that is, whether with the diffusion of the oil bacteria might not be carried into the tubes at the same time? This seems very probable.

Dr. H. E. Miller (closing): In answer to Dr. Bass's question about the antiseptic value of lipiodol, it is still a debatable question. Several of the men who have experimented with lipiodol in chest conditions have claimed that the iodin content of the solution had some antiseptic qualities.

The peristalsis in the tubes which has been observed with the fluoroscope begins at the fimbriated extremity and passes on down to the fundus of the uterus about fifteen seconds apart and only one wave occurs. A second wave, however, is occasionally seen.

The plate made twenty-four hours after the injection of the lipiodol is particularly necessary, inasmuch as it is not always possible to find the lipiodol out of the tubes and into the abdominal cavity immediately after the injection.

Personally, I think more of the lipiodol test than that of Rubin, as it gives a definite picture of the tubes and positive proof of the material being extruded through the fimbriated end. We have not found that the injection of lipiodol has given any pain as very little force is used in injecting the solution into the uterine cavity, the remarkable diffusibility of the solution causing it to enter the tubes and abdomen without much pressure being exerted.

TOXIC DIARRHEAS OF PARENTERAL ORIGIN.*

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LAKE CHARLES, LA.

The subject of this paper is pertinent alike to the general practitioner and pediatrician. The conclusions presented are not all new, neither are they all old. I have tried to arrange the matter so that a distinction may be drawn in the different etiology as well as in the different treatment indicated.

It appears from casual observation that the average family physician is not impressed with the importance of distinguishing between diarrheas of parenteral origin and other types of diarrhea. As a general practitioner a few years ago, I could not believe that the entero-colitis of infants and children may have its cause remote from the gastro-intestinal tract, and dependent for its existence on this obscure pathology.

The "first and second summer" diarrheas of infants of a decade ago, have abdicated in favor of the "first and second winter" diarrheas, because acute upper respiratory infection with its complications is now the most frequent cause of diarrhea.

Diarrhea is only a symptom of many diseases, and is a result of the influence of toxins on the intestinal mucosa; these toxins may be generated in the alimentary canal by drugs, improper food and bacteria, or the toxin may be elaborated elsewhere resulting in a toxemia, and thereby affecting the intestinal lining and alimentary glands in producing an abnormal secretion. It is the latter phenomena we wish to discuss. As parenteral, therefore, we mean all causes originating outside the stomach, intestines and their glands.

Diarrheas of parenteral origin are apt to be preceded by fever and vomiting, whereas diarrheas of enteral origin are not. In the latter there is frequently no vomiting at all. Parenteral diarrheas are usually not as serious as those due to improper feeding, and often no modification of the feeding is indicated in the treatment.

Parenteral causes of toxic diarrhea will again be divided into three groups, viz.:

Group (1) of acute infections:

(A) Obscure,

- Pneumonia.
- Pulmonary abscess.
- Meningitis.
- Pyelitis.
- Otitis media.
- Mastoiditis.
- Naso-pharyngitis.
- Osteo-myelitis.

(B) Evident,

- Pneumonia.
- Pyelitis.
- Stomatitis.
- Furunculosis.
- Acute infectious fevers.
- Acute tonsillitis.
- Empyema.

Group (2) of chronic focal infections:

- Chronic pyelitis.
- Chronic tonsillitis and adenoiditis.
- Chronic parnasal sinusitis.
- Chronic alveolar abscess.
- Chronic mastoditis.
- Chronic otitis media.

Group (3) of other causes:

- Drugs.
- Over clothing.
- Fevers in general.
- Starvation diet.
- Sprue.
- Celiac disease.
- Uremia.
- Obscure causes.

GROUP (1) ACUTE INFECTIONS.

The baby or preschool child suddenly becomes ill, its temperature rises to 102 or more, there is vomiting, bounding pulse, perhaps delirium, the child appears very ill. There may be pain in the abdomen and a good deal of flatulence, and by the time the medical man arrives there will be a diarrhea. This will be a typical watery diarrhea, and large quantities of water may be lost within a few hours.

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How many of us, in such cases, without a real examination, conclude that the child has eaten something which has made him sick, write a prescription for calomel and castor oil, and promise to call again next day? A more grave mistake could not be made; a pneumonia may be present, a bulging ear drum, an acute tonsillitis, meningitis or pyelitis. At another visit when the correct diagnosis has been made by the consultant or family, we declare, "It has run into this or that, or so and so," to save our skins!

The symptoms outlined above demand a thorough examination of the chest, throat, ears, limbs, central nervous system, blood and urine, and if all of these be found negative, you still have no right to assume that the trouble originated in the gastro-intestinal tract, even if there is excessive vomiting and diarrhea. By persistence and thoroughness in your examinations you will locate the real trouble far removed from the enteral canal in almost 99 per cent of the cases. The blood picture in these cases is essentially that of the primary pathology, plus concentration.

These diarrheas may persist long after the causative factor has cleared up, on account of changes in the infant's diet, as the good (?) neighbor will advise a change from breast milk to condensed milk.

The prophylaxis of this form of diarrhea lies in proper hygiene, avoiding crowds and attention to colds and other infections.

The treatment should be toward the underlying cause of the diarrhea, but the diarrhea as a symptom will call for immediate attention also, as the water loss and starvation can promptly make angels of babies.

Marriott's classical picture of these extreme cases fits too well to be omitted here. "A small infant may lose a half pound or a pound in a single day, the loss is chiefly water; coincident with the loss of weight, the appearance of the patient changes greatly. The features become sharpened, the eyes sunken and often fixed in a far-away stare. Later the conjunctivae lose their luster and are coated with a lusterless film. The eyes are likely to be turned up under the half-closed lids, the fontanelle is depressed, the skin has a peculiar pallor and often a characteristic grayish color like that of wet ashes," etc.

I will make no effort to detail treatment in these extreme cases of athrepsia or anhydremia or both. The intravenous administration of 10 per cent to 20 per cent glucose (20 cc. per kilo of body weight) with insulin may be used, and it may be repeated at eight hour intervals as indicated. Intra-peritoneal Ringer's solution, 500 cc. to 700 cc. repeated as necessary, may also be used. Many patients respond only after a blood transfusion is given. All food may be withheld from 6 to 24 hours, depending on the condition of the patient, and this includes breast-fed babies.

Skimmed lactic milk has been my best friend in these cases, though others prefer some of the dried milk formulae or protein milk. Cereal waters are sometimes more easily retained than plain water, but cereal water is no substitute for food.

In mild cases the skimmed lactic milk diet may be all that is necessary to correct the diarrhea. The only drug of service in treating this symptom is an opiate, and usually this is paregoric if there be little vomiting, or codein by needle if there be excessive vomiting, but under no circumstances should a cathartic be given. Abt aptly remarks in commenting on this question: "The marvel is that certain members of the profession continue to treat diarrhea by causing more diarrhea and intestinal irritation. Fortunate is the child who recovers from such treatment." The various bismuth salts rarely measure up to expectations unless given in enormous doses, and then they are poisonous. Of course other drugs may be indicated in treating the underlying condition.

GROUP (2) CHRONIC FOCAL INFECTIONS.

This is the paroxysmal diarrhea of childhood, the result of chronic focal infection. These cases occur in older children than the preceding, rarely in babies. There is a history of its beginning as early as two years of age, or as late as six or more. It occurs at intervals of two or three weeks to two or three months.

These children frequently present the typical adenoid faces, they are nervous and easily excited, they are choreic, undernourished and have sporadic appetites. They often complain of pain in the extremities, especially in the lower limbs. Occasionally a victim is seen who is apt at school work, but the majority of them are more or less mediocre. These children are always complaining of being tired.

These outbursts of gastro-intestinal storms can not be attributed to errors in diet, as they will occur when the patient is on the strictest diet. The attacks run their course over a period of three to eight days but are influenced in their severity by treatment.

On close examination there may be found a "flare up" of the focus of infection, but this may be slight and easily overlooked.

The small submerged tonsil with its "satellites" (adenoids), is the most common offender in this group.

The blood picture between the paroxysms will be normal, during the attack there will be a leukocytosis. The stools are at all times negative for specific organisms.

The child will complain of headache, there will be fever, there is apt to be vomiting, the patient will be constipated at first, there will be a great deal of gas in the abdomen. (This gas will be present also between the paroxysms.) The child may complain of sore throat and the pharynx will be found congested. In a day or two there will be mucous stools, three to eight daily, usually not much tenesmus. There may be occult blood in the stools, microscopically there is constantly found blood, pus, bacteria and undigested food particles. Colic is usually associated with this form. The toxemia will cause convulsions in some patients.

The prophylaxis consists in the elimination of all focal infections. The treatment consists in putting the patient on a liquid diet. Argyrol 1 to 300 in milk or water should be used, this dilution prohibits growth of the intestinal bacteria. Enemas of a saturated solution of magnesium sulphate two or three times daily will help to dispell the accumulated gas, keep down the tenesmus and contribute to the comfort of the patient. If there be much colic, opiates should be used. Sponging and ice may be indicated. The symptoms will clear up in a few days on this regime. In convalescence the patient will appear a great deal more emaciated and depressed than the few days illness would warrant.

If the focal infection suggests medical treatment it may be started at once, but if it is surgical, one should wait until the acute abdominal symptoms have subsided. Between the paroxysms the tonsils and adenoids should be removed, or the sinus drained, etc.

The traumatism incident to a tonsillectomy may, in some patients, be sufficient to introduce a new attack which will run a typical course.

GROUP (3) OTHER CAUSES.

This group includes all parenteral causes not included in the first two groups. In the outline above the most important of these have been mentioned.

I will not take the time to enumerate the various causes, or outline the treatment of the responsible conditions; but they are included in this paper for the purpose of being considered in differentiating in the etiology of the symptom under discussion. The diarrhea will necessitate treatment, but primarily the cause should be ascertained and eliminated as quickly as possible.

If, in writing this paper, I shall cause one man to think before he writes his calomel and castor oil prescription, and thinking, desist in writing them, and instead make a careful examination of his patient with a determination to discover the real pathology and thereby give rational and reasonable therapy, I will have been well repaid for the effort put forth.

SUMMARY.

Toxic diarrheas of parenteral origin are discussed. Three groups are recognized: (1) Those accompaning acute infections. (2) Those of chronic focal infections, and, (3) those of all other causes.

Group (1) frequently demands prompt, and sometimes heroic treatment as supportive measures; cathartics are strictly contra-indicated.

Group (2) is usually self-limited and the cure is obtained by eradicating focal infection.

Group (3) consists of all other causes of parenteral origin, several entities are mentioned but no attempt is made to outline special treatment for the different conditions responsible.

DISCUSSION.

Dr. E. J. Cather (Oakdale): Mr. President, I do not feel that a good paper like this should go by without somebody commenting on it. I only want to express my approval of every word said in this paper, and looking back on my past record I wonder how in the world so many of my babies ever got well with the old treatment we used to give a good many years ago. We used to think that every case of diarrhea was due to some intestinal infection. We soon found out that we always have a diarrhea with most any infection in respiratory tract or ears or brain and everything else.

A good while ago I heard the late Dr. Howland of Baltimore read a paper, and I think if there is any one thing that has ever given me more anxiety than any other, it is the diarrhea of babies, and when he read his paper on diarrhea, he didn't prescribe any medicine. I wanted to be real sure about that and I called him up and said, "Don't you give any medicine at all?"

He said: "Didn't you hear my paper?"

"Yes," I said, "but there are cases where you have a water discharge every few minutes. What are you going to do about that?"

"Oh," he said, "you might give a little paregoric after each action if there are more than twelve actions in twenty-four hours."

That helped me a little bit with the medicine that I have been giving, but if we leave these babis alone and stop feeding them for twelve or twenty-four hours, and if you can get fluids down by mouth or rectum, get them in some way and leave them alone, they will get well.

I was very glad to hear the doctors paper. I think the mothers for generations have been fed up on medicine, and if you go to see the baby and don't give it some medicine, they think the doctor hasn't done his duty and they want to change doctors. I have just gotten into the habit of letting them change if they want to. If they want to give them calomel and castor oil, let them go ahead. They will be sorry after the baby has died. I can hear about it. For generations the laity has thought that you have to give them calomel and castor oil and that is the first thing they do in these diarrheas. It is going to be a hard thing to educate the people that they don't have to have some purgative right away, because they have been taught that so long.

I want just to say that I enjoyed Dr. Crawford's paper and I think if we can just preach to every mother to leave the baby alone and be satisfied not to give them the medicine, we will save a lot more babies.

Dr. Crawford (closing): I don't think I have anything further to add. I was anticipating a little discussion on the second group—that caused by chronic focal infection. I have seen quite a number of these cases and I am sure you gentlemen have. Sometimes it is rather confusing. These cases will go along and you are rather inclined to believe that you have a specific intestinal infection, but by repeated examination of the stools, I think you will find no specific organism present.

REVIEWS

HYPERTENSION IN CHRONIC NEPHRITIS: A REVIEW.

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For almost a century, clinicians have recognized a peculiar combination of phenomena known as the cardio-vascular-renal syndrome—a name given to an association of a high blood pressure and cardiac hypertrophy with chronic nephritis. It was Richard Bright, in 1836, who first called attention to this symptom complex, and who made the first attempt to correlate the elements of the clinical picture on the basis of pathological physiology. Since that time a vast amount of experimental work has been done toward the end of establishing the etiological inter-relationship of each of the three elements—blood pressure, vascular system, and kidneys.

In outlining the problems which lead to a study of these factors, there are three fundamental questions to be considered: Is the hypertension the primary condition, giving rise later to the kidney changes, or is the nephritis the antecedent disease and the elevated blood pressure a compensatory result? If the hypertension is the initial pathological change, what brings it about, and why should it be followed by the development of a nephritis? If the kidney disease be the first to appear, how are the subsequent vascular disorders to be explained?

An intelligent study of this problem demands at the outset a precise understanding of the minute structure of the kidney and of its vascular relationships. To this end it will be well to recall briefly the essential anatomy of the normal organ.

The ultimate functioning element of the kidney is the renal corpuscle, which consists of a spherical tuft of capillary vessels, the glomerulus, which is invaginated into the end of the uriniferous tubule, and thus comes to be enveloped by a double layer of flattened epithelial cells known as the glomerular capsule of Bowman. This capsule opens through a narrow neck into the long and tortuous uriniferous tubule, which, after leaving the cortex, enters the medulla, loops upon itself, and re-enters the cortex to join the successively larger collecting tubules leading into the papillary ducts and finally into the calices. It is to be noted that all of the renal corpuscles lie in the cortex of the kidney, and that the medulla is composed of the uriniferous tubules and their surrounding capillaries.

The kidney receives its blood supply from the renal arteries, which, as they enter the hilum, divide into two sets of principal branches, the interlobular arteries. These vessels immediately course toward the capsule of the organ, lying in the connective tissue between the lobules of the medulla. When they reach the line of junction of the cortex with the medulla, they divide again, each branch passing horizontally in an arched manner along the bases of the pyramids at the outer margin of the cortex, giving off branches which on the one side pass down into the substance of the medulla to form a rich capillary plexus around the uriniferous tubules, and on the other hand, branches enter the cortex and pass toward the outer surface of the kidney, to become the afferent arterioles of the renal corpuscles. Within the corpuscle this afferent vessel breaks up into a mass of convoluted capillaries which form the glomerulus, and which re-unite as the efferent vessel. This latter, after leaving the corpuscle, promptly breaks into a second capillary plexus around the adjacent uriniferous tubules of the cortex—a point which is often misunderstood. These vessels then lead into the smallest venules, which grow in size as more tributaries are added, until they have formed the interlobular veins, whose course parallels that described for the arteries. It is to be noted in considering the vascular supply of the kidney that in addition to the arterioles

which supply the glomeruli, there is a vast number of capillaries occupying the interstitial tissue surrounding the uriniferous tubules of both the cortex and medulla, an anatomical arrangement providing for the longest possible blood path, together with a double system of capillaries. It has been stated that from ten to nineteen times more blood passes through the two kidneys in a given time then through all of the other organs of the body combined, and that during diuresis, as much as ten percent of the total blood volume may be contained in the kidneys.

It was this fact of the tremendous vascularity of the kidney which led the earlier observers to conclude that the rise in blood pressure observed in cases of chronic nephritis was due to the obliteration of this great capillary bed by the fibrosis and shrinking of the kidney substance (Traube). They assumed that the gradual elimination of so great an area of the vascular system must necessarily raise the pressure, if the blood volume were to remain the same, and the space in which it was confined were to be made smaller. This conception of the mechanism was certainly simple, and apparently logical, but was very soon shown to be entirely erroneous when it was discovered that ligation of both renal arteries does not raise the general blood pressure. Obviously, then, the mere elimination of a great area of the vascular bed, despite its size, is not the factor concerned here. The general vascular system is apparently capable of accommodating itself to the new situation of a reduction in its capacity without a rise in pressure.

In a further attempt to solve the problem, the idea was hit upon that with the gradual destruction of parenchymatous kidney substance in interstitial nephritis, more blood must pass through those glomeruli which yet remained functional, in order to maintain urine secretion, and thus to preserve life. It was said that "Nature" accomplishes this end by raising the pressure in the general systemic bed, and thus increasing that in the renal artery. Renal elimination must be maintained at any cost, and the cost is a high one. Today the opinion is that this conception is in great part correct—that is, the hypertension is considered to be somewhat a compensatory measure, although it is now proven that in the hypertension of chronic interstitial nephritis, neither the minute volume, rate of flow, or systolic output is increased, and that it is rather an increase in the pulse pressure which is effective in promoting increased diuresis than an elevation of systolic pressure.

If we go no further, however, than to say that "Nature" accomplishes this purpose, we have merely evaded the issue and stated a fact that is perfectly obvious. Of course, "Nature" does everything in the final analysis. What we must know is how and why the reaction comes about—what is the actual mechanism concerned, and what structural or chemical change initiates the process. When the problem is approached from this angle, it is apparent that the desirable case for study is not the one with advanced kidney disease and a heart hypertrophied to twice its normal size, but rather the condition in its incipiency—where the normal physiology is just giving way to pathology.

Jaffee has been able to select several such early cases, and finds in them an important clue as to what is probably the first factor concerned in the development of this cardio-vascular-renal syndrome. In making microscopic studies of the kidney in these early cases of hypertension, where no signs of kidney disease had yet become evident clinically, he found a slight dilatation of many of the afferent vessels of the glomeruli, beginning in the short intraglomerular portion of the vessels and gradually affecting the entire arteriole. In the earliest stage this distension of the afferent vessels was the only change noted, and it is peculiarly significant in that it indicates not only a disturbance in the renal circula-

tion, but it points to a certain place where the primary disturbance may arise.

What accounts for this afferent vessel dilatation? We must assume that a constriction has occurred at some point distal to the dilated area, and the only place this can possibly be is in the glomerular tuft of capillaries. Upon examination of these capillaries, there are seen irregularities in their blood content, with evidence of capillary spasm and ischemia of the glomeruli. Now the process has been traced a step further—how is this capillary spasm to be explained? Krough has shown that there are contractile cells on the walls of the capillaries which have long fibril-like processes, grasping the vessels like the tentacles of an octopus. These fibrils are so arranged that contraction will completely close the capillary, and the cells themselves are not only under the control of the vasomotor system, but also seem to be susceptible to the influence of certain substances passing through the capillaries, and expand or contract as they are relaxed or stimulated (Warfield). Their contraction, therefore, brings about the glomerular ischemia, and provides a point of obstruction in the glomerulus sufficient to account for the slight rise of pressure in the vascular system leading up to the glomerulus, and the consequent dilatation of the afferent arteriole.

It is to be particularly noted that in these earliest cases, there are no actual organic changes whatever, either in the kidney or its blood vessels. If this ischemia of the capillaries continues, however, degenerative changes are to be expected to occur in their walls, and in the structures which depend upon them for nutrition. And these degenerations are seen somewhat later in a hyalinisation of the walls of the glomerular capillaries.

But in the attempt to discover what it is that brings about this contraction of the capillaries we must look back still further. Here we leave the field of anatomy and turn to physiology, and when we do so it is found that only one fact is reasonably established—that the capillaries are stimulated to contract by some irritant acting from within their own blood content. The exact nature of this irritant has not yet been determined. There is considerable evidence to indicate that certain end-products of protein metabolism may be responsible, and that high protein diets may have an influence in initiating the process. Guanidin and high uric acid concentrations have been shown to be injurious to vessel walls. Perhaps toxins from common micro-organisms may be the stimulating element. From the present evidence it would appear that this factor is not always the same in all cases, but that whatever be the nature of the irritant, its end results on the glomerular capillaries are essentially identical.

Besides this action of an irritant from within upon the capillary walls, Elwyn Herman suggests that the angiospasm may be a vaso-motor phenomenon. It is known that the normal control of the blood flow to the glomeruli is brought about through sympathetic nerves which have their origin in the renal ganglion, which lies in the connective tissue at the hilum, and that the vaso-constrictor fibers for the renal vessels are to be found in the thoraco-lumbar outflow of the sympathetic system in the roots of the spinal nerves from the fourth dorsal to the fourth lumbar, while the skin and cutaneous vessels are supplied from the same outflow. Exposure to cold, for instance, has as its first effect a reflex vaso-constriction not only in the skin, but of the kidney vessels, leading to a diminution in the amount of urine. At the same time there is an elevation of systemic blood pressure due to a reflex vaso-constriction in the splanchnic area, by way of the same sympathetic nerve outflow. Reasoning by analogy, why can it not be assumed that this early glomerular ischemia, brought about by some chemical irritant, likewise causes a reflex splanchnic vaso-constriction

by the same mechanism, and thus account for the very earliest rise in systemic blood pressure?

As soon as the glomerular ischemia becomes marked, there is a diminution in the amount of glomerular filtration and a consequent change in the blood composition and volume due to the beginning retention of the nitrogenous products of metabolism. A new mechanism may come into play, in addition to the splanchnic vaso-constriction, which attempts to overcome the glomerular angiospasm—that is, the development or liberation of certain pressor substances which tend to bring about an elevation of the systemic blood pressure. Volhard assumes that the same reflex which causes vasoconstriction in the splanchnic area must also stimulate an increase in the production of adrenalin. The inability to find an excess of adrenalin in the blood in such cases is not against the idea, since it is undoubtedly continually used up at the site of its activity. There is no agreement, however, as to the exact nature of this pressor substance, whether it be adrenalin or not, but it is quite certain that some such element is developed and liberated.

It has been stated that this functional angiospasm in the glomeruli is at first a spasmodic and relatively intermittant condition, but that if the vessels remain contracted for any length of time, degenerative organic changes in their walls are the inevitable consequence. Permanent intimal thickenings occur which may advance to the stage of an obliterative endarteritis and seriously and permanently impair the function of the glomerulus. Just at this point, then, is the beginning of the true organic pathology in the kidney parenchyme!

The process of obliteration of the capillary tufts is a slow one, and for many years the gradual reduction in the number of functioning glomeruli, although it affects the kidney reserve, does not produce any clinical symptoms. The patient may notice the lowered reserve in that after heavy drinking his elimination is less prompt, and he may have an increasingly troublesome nocturia after such excesses in fluid intake. The elevations of blood pressure are likewise transient and intermittent, as the metabolic irritant produces the spasmodic glomerular ischemia, but as the process of obliteration of the kidney parenchyme proceeds, the reflex vasoconstriction of the splanchnic vessels probably becomes more constant, and added to it is the effect of the pressor substance on the entire peripheral vascular system—with a resulting constant increase in the blood pressure. Besides, under these conditions scleroses are prone to occur in the general vascular system as well as in the kidney vessels. The hypertension alone is probably not accountable for this sclerosis, but as suggested by Foster, it is probably the combination of the increased stress on the vessel walls, plus the degenerative action of retained metabolic products, with possibly the additional factor of an inherited tissue weakness which brings about the sclerosis. This hardening of the vessel walls, of course, tends to aid in maintaining the hypertension.

We have, then, as the expression of the very chronic form, a period of mild and intermittent hypertension, with a complete absence of any clinical evidence of renal disease. Moschowitz considers the cases of so-called primary or essential hypertension as identical with this stage. A second period follows, characterized by a gradually increasing hypertension with a gradually decreasing kidney reserve. The blood pressure is often very high, and the whole second period, sometimes lasting for many years, may present nothing more than this hypertension. The hypertrophy of the heart, of course, is the natural result of the increased peripheral resistance. During this second stage, there occur attacks of acute ischemia of the glomeruli, and the kidney, once the seat of an acute ischemia, seems predisposed to a recurrence, which adds its symptoms to those of the chronic

condition, and the patient may be suddenly taken with oedema and an enormous increase in the nitrogenous products of the blood.

The third stage appears when the changes in the glomerular vessels have progressed to a point where, despite the compensatory blood pressure increase, and despite the maximum efficiency of the remaining glomeruli, renal function cannot be maintained. The course of this third period is dependent upon the rapidity with which the glomeruli become obliterated, upon the ability of the organism to maintain the high blood pressure, and upon the cardiac efficiency.

In drawing conclusions from these studies, let us first briefly recapitulate the story of the development of this cardio-vascular-renal syndrome as it has been outlined. The very first change from the normal that can be determined by anatomical study is the ischemia of the glomerular capillaries with a dilatation of the afferent arterioles to those glomeruli. The primary cause of this ischemia is the factor yet undetermined, but there is considerabe evidence to indicate that it is some irritant which acts upon the walls of the capillaries from within their blood content, and while there is no reason to suppose that it does not similarly irritate all the capillaries in the vascular system to some extent, yet those of the renal glomeruli seem to be peculiarly susceptible to its influence, as evidenced by their early and active response. The ischemia itself often tends to cause an elevation of the general blood pressure possibly through the mechanism of a simultaneous reflex vaso-constriction of the splanchnic vessels, or of the vasomotor center itself, and the liberation of the same reflex mechanism of some pressor substance, as adrenalin, which will maintain the elevated blood pressure. At this earliest stage, the periods of hypertension, if present at all, are fleeting, and only coincident with the transient capillary ischemia in the kidney. As a result of the prolonged and repeated spasticity, however, actual degenerative changes arise in the glomerular capillaries, the impulses from the kidney vessels become more constant, the general vasoconstriction is increased, and the blood pressure gradually tends to rise. At the same time the kidney parenchyme is suffering because of the advancing disease of its own vessels, and slowly but progressively it responds to its injury by repair in a process which we recognize as chronic nephritis.

But, it may be said, were not all these instances quoted, merely early cases of so-called "essential hypertension" which would subsequently develop clinical signs of renal damage?—those which Christian has classified under "essential hypertension progressing into chronic nephritis." What have they to do with chronic nephritis? Moschowitz is very definitely of the opinion that the old classification of hypertension into "essential," "arteriosclerotic," and "nephritic" is a fallacy, in that it attempts to explain etiology in terms of pathological anatomy. Such a classification does not take into consideration the fact that the state of the patient, either clinically or at the autopsy table, represents merely a phase in the disease and not a complete end-result. He considers, therefore, that the terms "essential," "arteriosclerotic," and "nephritic" represent phases in one and the same disease process, in most cases, rather than three sharply defined clinical entities—that the majority of nephritides or cardio-nephritides begin clinically as cases of "essential hypertension," with or without cardiac hypertrophy, but without clinical indications of renal damage as apparently evidenced by absence of albumin and casts. There is one very certain fact—that the presence or degree of hypertension bears little or no relation to the presence or degree of kidney damage. An elevated blood pressure is often seen when the kidneys are apparently normal; a normal blood pressure may be found with profoundly diseased kidneys, as in the senile or arteriosclerotic organs

which are morphologically indistinguishable from those resulting from a progressive glomerulo-nephritis. All attempts to correlate these phenomena have been unsuccessful, either when we conceive of the destructive process within the organ as a whole, or when we analyze it in terms of the different components of the kidney structure. This is Moschowitz' main argument in support of his belief that the hypertension is the primary and the arterial and kidney lesions the secondary phenomena.

Yet there undoubtedly are instances which present definite clinical evidence of a chronic nephritis for a considerable period, without hypertension, but which subsequently gradually develop a high blood pressure. Certainly it would appear, therefore, that at least in these cases the hypertension is a result of the nephritis, if we wish to consider vascular lesions in the kidney as an actual nephritis. This is in accord with the observation made earlier in the paper, in which a mechanism has been suggested. The perplexing question is why in some instances the hypertension is such an early manifestation while in others it is delayed until the kidney damage is comparatively extensive.

SUMMARY AND CONCLUSIONS.

How then, are the questions which were asked in the beginning to be answered? Is the nephritis primary, or the hypertension? In a great many cases the hypertension undoubtedly is the primary condition, leading eventually to generalized vascular changes and a chronic nephritis. The cause of the hypertension in these cases is unknown, but it seems probable that it has to do with irritating products of a disordered metabolism. In such instances, then, whatever changes are seen in the kidney at autopsy represent injury due to the hypertension itself or to the toxin that caused the hypertension—that is, the chronic nephritis here appears to be the result, rather than the cause of the vascular changes.

There are, however, without question, many cases in which the vascular lesions in the kidney constitute the first pathological change, and actually induce the hypertension, to be folowed by more extensive and progressive nephritis as an expression of the response of the kidney to the deleterious effect of the advancing vascular disease in its own parenchyme.

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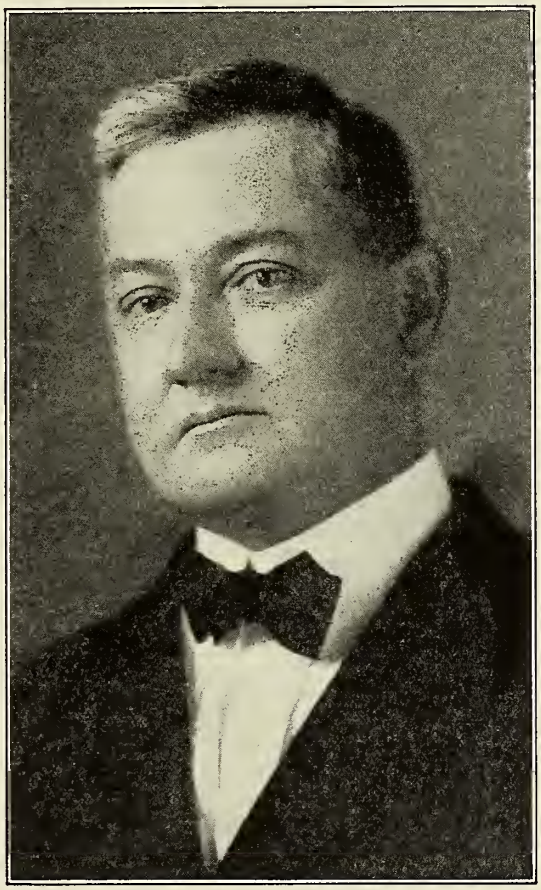
THE KAHN TEST.

One of the peculiarities of the medical man is that he is often both conservative and radical. He is willing, at one time, to try a new laboratory test or a method of treatment or an operation newly devised, and then for some unaccountable reason, at another time when some other new device is presented to him, he is unwilling to accept it or try it out and it falls by the wayside, sometimes to be resurrected long after the original observation had appeared, but frequently never to attain the stamp and usage of custom, the authenticity of a well-tried and proven method. Both the individual medical man and the general profession are responsible. At times there is seen almost a group hysteria when a new idea is presented. Every laboratory, operating theater, or office has men in them engaged in a study of the new conception. If in three or four places clinical investigation is being conducted on the new phase of disease, it is just as likely as not that there will be several hundred more in a few months conducting similar studies. On the other hand, a paper may appear, be received with a certain feeling of scepticism and no one apparently wishes to give the subject matter more than passing thought.

The above generalization applies in part to the Kahn test. First presented to the profession five years ago as a definite test for the presence or absence of syphilis, which had obvious advantages over the Wassermann reaction, it has never attained the popularity or general use that it deserves. Gradually, however, reports by competent observers are accumulating, which go to show that the test is of real value. Two recent publications substantiate the remarkably few notations already published, when one considers the hundreds of men engaged routinely in carrying out the Wassermann test. The first, by Hull,* points out that in 26,000 specimens examined by both the Wassermann and Kahn technique there was an agreement in the two methods in 97.8 percent, while in the 200 cases which disagreed, a study of the clinical histories indicated greater sensitivity of the Kahn than of the Wassermann. The second publication by the originator† of the method should not be discounted because the author is writing about a child of his own. It is a fair, non-prejudiced, scientific collection of figures and facts. A series of 174,580 serums were examined by both procedures, the complement fixation and the precipitin reaction. An absolute agreement of 96.77 per cent, and no agreement in 0.61 per cent, was found in the technic now employed. Data such as these are well worth careful consideration by two groups in particular: first, the heads of large hospitals and of state laboratories, and, second, the syphilographer and dermatologist engaged in the treatment of con-

siderable numbers of syphilitics. The saving of money, time and labor would appeal to those who have difficulty in meeting the budgets of laboratories supported by the state and private benefactions. The man with a considerable clientele of syphilitics should appreciate the lessened expense of the Kahn test to the patient, and the advantage of time saved in receiving the report, which may be had in an hour, and saved because the test does not require the sometimes frequent repetition of collection of blood because of faulty speciment submitted to the serologist.

Simplicity of technic, freedom from technical errors, and a minimum expense should not be considered in any test. The only criterion should be accuracy. It does seem, in view of the above reports and many others, that the Kahn test is as accurate a method of determining the presence of syphilis in man as is the Wassermann reaction. The advantages of this test of Kahn should result in the more widespread supplanting of the Wassermann than is the case at the present time.



LUCIEN MAURICE PROVOSTY

*Hull, T. G.: Twenty-six Thousand Kahn Tests Compared with the Wassermann Test, J. A. M. A., 88, 165, 1927.

†Kahn, R. L., et al.: Report on Three Hundred Thousand Kahn Tests, J. A. M. A., 89, 84, 1927.

DR. LUCIEN MAURICE PROVOSTY.

The unexpected passing of our esteemed confrerè, Maurice Provosty, was a shock not only to the profession, but to the community in which he labored so assiduously for the best portion of his existence.

He was a cultured gentleman, fearless in his convictions, and loyal and staunch in his friendships. His nobility of heart, his sympathetic nature and his unbounded charity endeared him to the well to do as well as to destitute suffering humanity.

The Orleans Parish Medical Society has lost one of its most active and devoted members. He was ever ready to rally to its banner in championing its every cause, and was unrelentless in his efforts for the welfare of his profession. His clearness of judgment, his logical arguments and his innate love of justice were of invaluable service on the different committees he so diligently served. He rendered signal service on the hospital abuse committee. It was greatly through his efforts that the profession of the city and state were successful in the enactment of a law by the last Legislative Assembly to curb this pernicious encroachment by the undeserving on the charity of the state.

Dr. Provosty was 59 years of age, a native of Pointe Coupee. After his internship at the Charity Hospital he began the practice of his profession in his native par-

ish, but for the past 23 years had resided in this city.

He was a graduate of Tulane University, lecturer and assistant in Clinical Medicine in the Graduate School of Medicine, Tulane University, from 1905 to 1911, and for the past several years Professor of Physiology at the Loyola School of Dentistry.

No warmer eulogy could be said of him than that he was a true, ethical, honorable and representative member of his profession and a perfect gentleman.

Requiscat in pace.

METRIC STANDARDS.

For the past many years the use of the metric system of weights and measures has been discussed widely pro and con. To date, the use of the decimal metric system has been adopted only in isolated instances, and as a result both the apothecaries' and the metric measures are employed. This has caused, and will continue to cause, considerable confusion everywhere, whereever measures are used. Accepted largely by the scientific world as being the most accurate, simplest system, metric standards are used in all types of scientific publications. But no one will doubt but that the only rational solution to the problem is the acceptance of one system or the other generally, with the complete discard of the rejected system.

Considering the situation from the physicians standpoint, many publications include measurement in both systems. Text books on therapeutics and prescription writing for example, must use both systems. If a physician uses one system, he must of necessity be familiar to some extent at least with the other. And so the confusion progresses. Medical students, and all college students as well, must learn both systems. And druggists must be able to use both systems accurately.

Believing that the acceptance of the metric system for general use throughout the United States will be of decided advantage to everyone concerned, various associations and organizations are preparing an extensive campaign for legislation along this line during the next Congressional session. Hon. Fred A. Britten of Illinois will introduce a liberal Metric Standards Bill in the House of Representatives during the early part of the new session.

The movement has very prominent endorsement and support. More than 300 chambers of commerce and industrial organizations are urging such legislation, among these the New Orleans Association of Commerce is especially active. Others include the National Wholesale Grocers Association, American Chemical Society, National Wholesale Druggists Association, and the National Research Council.

Especial organization and campaigning is being carried on by the Metric Association and the All-America Standards Council. The promotors and endorsers of this latter's work include men prominent in the scientific, industrial and professional world.

We are looking forward with anticipation to the success of such a movement, believing that it is the only means of solving present difficulties. We heartily endorse the program and the proposed legislation.

THE FIFE BROTHERS.

We hesitate to bring up this disagreeable subject again in these columns. But thinking it might be of some interest we have published in detail the decision that was rendered by Mr. Justice Overton of the Louisiana Supreme Court when the case was appealed from the Civil District Court November 29, 1926. The decision rendered by Judge W. H. Byrnes, Jr., in the lower court was affirmed for the reasons so well expressed.

Subsequently, on May 2, 1927, in an appeal to the United States Supreme Court, this decision was affirmed and upheld in

full. So that the matter rests here at present.

MR. JUSTICE OVERTON.

Monday, November 29th, 1926.

LOUISIANA STATE BOARD OF MEDICAL EXAMINERS,

vs.

JOSEPH B. FIFE AND WALTER W. FIFE.

No. 26,844.

Appeal from the Civil District Court, Parish of Orleans, Division "E," Hon. William H. Byrnes, Jr., Judge.

Act 56 of 1914, as amended and re-enacted, in part, by Act 54 of 1918, regulates the practice of medicine in this state. Section 1 of the latter act amends and re-enacts Section 1 of the former, and reads as follows:

"That from and after the promulgation of this act, no person shall practice medicine in any of its departments within the State of Louisiana, unless such person shall possess the necessary qualifications and requirements of this act."

Section 2 of the Act of 1918 amends and re-enacts Section 2 of the Act of 1914, and reads as follows:

"That after the promulgation of this act, any person before entering upon the practice of medicine in any of its branches shall present to one of the boards of medical examiners as herein constituted, a diploma from a college in good standing, of any sect teaching medicine or the healing art, and shall stand a satisfactory examination before the board upon the following branches, to-wit: Anatomy, physiology, chemistry, physical diagnosis, pathology and bacteriology, hygiene, surgery, theory and practice of medicine, materia medica, obstetrics and gynecology. The person shall also satisfy the board that he or she is twenty-one years of age, a citizen of the United States, of good moral character, and possesses a fair education; * * *

Section 9 of the Act of 1918 amends and re-enacts Section 13 of the Act of 1914. The section, as amended and re-enacted, reads, in part, as follows:

"The term practice of medicine, surgery, midwifery as used in this act is hereby defined to mean holding ones self to the public as being engaged within this state in the business of diagnosing, treating, curing, or relieving any bodily or mental disease, condition, infirmity, deformity, defect, ailment, or injury in any human being other than himself; whether by the use of any drug, instrument or force, whether physical or psychic, or of whatever nature, or of any other agency or means; or who shall examine any such person or material from such person for such person; whether such drug, instrument, force or other agency or means is to be applied or used by the patient or by any other person, or be for compensation of any kind or be gratuitous; or attending a woman in childbirth without the aid of a licensed physician, surgeon or midwife; or using any other title than optician, to indicate that one is engaged in the business of refracting or fitting glasses to the human eye."

Section 21 of the Act of 1914 is amended and re-enacted by Section 12 of the Act of 1918 so as to read:

"That this law shall not apply to the giving of family remedies in cases of emergency; or to legally licensed dentists, pharmacists, osteopaths, practicing according to existing laws; or to anyone attending in an emergency a woman in childbirth; or to anyone serving full time without salary or professional fees on the resident medical staff of any legally incorporated municipal or state hospital or asylum; nor to prohibit the practice of Christian Science or religious rules or ceremonies as a form of religious worship, devotion or healing, providing that the person administering or making use of, or assisting or prescribing such, rely on faith and prayer alone, and do not prescribe or administer drugs or medicine nor perform surgical or physical operations nor assume the title of, or hold themselves out to be, physicians or surgeons."

The plaintiff herein reached the conclusion that defendants were practicing medicine in the City of New Orleans without having obtained a certificate authorizing them to practice it, and, therefore, were practicing medicine in violation of the act, quoted, in part, above. Having reached that conclusion, plaintiff instituted the present suit, alleging that defendants were thus engaged in the practice of medicine in New Orleans, and praying that a writ of injunction issue and be perpetuated, restraining them from pursuing that calling until they procure the required certificate or license, and that they be condemned to pay the penalty of $100 and also $50 attorney's fees, provided by law.

If defendants were practicing medicine during the period set out in the petition herein, the evidence leaves no doubt that they were doing so without a license or certificate, issued by plaintiff, as required by law, authorizing them to do so. As to whether or not they were practicing medicine, it may be said that the evidence leaves no

doubt that, during the time mentioned, they were treating disease and other bodily infirmities. They were not treating these by using drugs of any description, nor were they using in their practice surgical instruments of any kind. If it be essential to constitute the practice of medicine that one or the other of these be used, then we think it clear that defendants, as contended by them, were not practicing medicine. But the practice of medicine has a broader signification than that. It may consist in the application of physical force to parts of the body for the purpose of curing disease or relieving bodily ailments, and the Legislature has, in part, so defined it. Sec. 9 of Act 56 of 1918, quoted *supra*. Defendants were engaged, it appears, in using physical force applied with the hands only, in treating disease. They were, in reality, practicing the system known as chiropractics, which, as defined substantially in Louisiana, State Board of Medical Examiners v. Cronk, 157 La. 321, 102 So. 415, is a system of adjusting the subluxated or slightly displaced vertebrae of the spinal column, by hand, for the restoration of health. See also "Chiropractics," 11 C. J., p. 758. To practice chiropractics is to practice medicine. Board of Medical Examiners v. Cronk, *supra;* Commonwealth v. Zimmerman, 221 Mass. 184, 108 N. E. 893; State v. Johnson, 84 Kan. 411, 114, p. 390. Since defendants were practicing medicine within the meaning of the statute, and since they were doing so without the required certificate, they were practicing in violation of the statute.

But defendants contend that the statute, as amended, is unconstitutional. Their contention is that to require them to stand an examination in surgery and materia medica, and perhaps in other things, is to require them to be qualified in subjects for which they and those who practice chiropractics have no need, and which bear no relation to that system, and since the effect of these requirements is to virtually suppress the practice of chiropractics in this state, they plead that the statute deprives them of liberty and property without due process of law, in violation of the constitutions of this state and of the United States.

At the outset it may be observed that no person has a natural or absolute right to practice medicine or surgery. It is a right granted upon condition. Allopathic State Board of Medical Examiners v. Fowler, 50 La. Ann. 1358, 1374, 24 So. 809; Lewis v. State, 155 S. W. 523. And although a state cannot prohibit the practice of medicine and surgery, and would hardly undertake to do such a thing, still it is well established that, under its police power, it may regulate, within reasonable bounds, for the protection of the public health, the practice of either, by defining the qualifications which one must possess before being admitted to practice the same, and, to make these regulations effective, to require the one intending to engage in the practice, to possess, before engaging therein, a certificate from the proper authority showing that he possesses the required qualifications. Hawker v. New York, 42 L. Ed. 1002; Dent v. West Virginia, 32 L. Ed. 623; Louisiana State Board of Medical Examiners v. Cronk, *supra;* Allopathic State Board of Medical Examiners v. Fowler, *supra*. The Legislature, however, in defining these requirements, cannot prescribe, as a condition to the right to practice, knowledge of a subject, which bears no relation to the practice of medicine. Dent v. West Virginia, *supra*. But, this does not mean that the Legislature, in exercising its power to prescribe the qualifications, which, in its judgment, one should possess to practice medicine, must make the requirements such as to provide for every school of medicine that may exist, by requiring of those belonging to each particular school, a knowledge only of those subjects, which the theory of healing, advocated and put in operation by each school, requires. Were it otherwise, the Legislature would be greatly hampered in the exercise of its power to protect the general health and the public from imposition and fraud. Every group of men who might get together and evolve some system, designed to restore health, would be entitled to recognition, and all that could be required of them would be evidence of good character and a knowledge of such subjects as their particular school seemed to require, although the Legislature might deem with reason a knowledge of such subjects wholly insufficient to entitle any one to treat the sick. However, the Legislature is not hampered by any such restriction in the exercise of its power to protect the public health. As truly said in Allopathic State Board of Medical Examiners v. Fowler, *supra* (50 La. Ann. 1358, 1374, 1375):

"We know of no constitutional right given to particular persons, who, entertaining peculiar theories of medicine, group themselves together, and call themselves a special school of medicine under a selected name, to be recognized as and dealt with as such. An indefinite number of schools of medicine might claim recognition, with no fixed ascertained standard to pass upon their pretensions."

Our conclusion is that plaintiffs have no constitutional grounds to complain, by reason of the fact that, before being permitted to treat the sick, they must make it appear, in the manner prescribed by law, that they have an adequate knowledge of materia medica and surgery, and of the remaining subjects, required by Section 2 of Act 56 of 1914, as amended by Section 2 of Act 54 of 1918, quoted above. While materia medica and surgery are not used in the chiropractic system, still they, as well as the other subjects required by the act, as amended, bear a relation to the

practice of medicine as a general science and that is sufficient to prevent the act from being unconstitutional, in view of the fact that the Legislature is not bound to recognize every school of medicine, and deal with it as such.

Another contention of defendants is that the act, as amended, is violative of the Fourteenth Amendment to the Constitution of the United States, in that it denies them the equal protection of the laws, by unjustly discriminating against them. Defendants base this contention on the fact that the Legislature has withdrawn, or practically withdrawn, osteopaths and dentists from the operation of the Act of 1914, as amended, and has provided regulations for their admission to practice, as well as for the admission of chiropodists and trained nurses, different from those which it requires for the practice of medicine and surgery, not requiring of them a full course, or none at all, according to the needs of the calling, in materia medica, surgery, and other subjects, named in the medical and surgical act, cited, whereas it requires of those, by not excepting them from the operation of the act, who desire to practice the chiropractic system, a full course in materia medica and surgery, though in practicing, they, in accordance with their school, would use neither surgery nor drugs.

Without going into detail, by stating the requirements for the admission of osteopaths, dentists, chiropodists and trained nurses to practice, and granting for the purpose of this case that all who follow these callings may be considered as practicing medicine or surgery, to a greater or lesser degree, it may be said that the requirements for admission to them are different from those prescribed by the Act of 1914, as amended, relating to the practice of medicine and surgery, and that there is no requirement, prescribed by the Legislature, requiring one who desires to follow any one of these callings to take a full course in materia medica or surgery before being admitted to pursue any one of them, and it may be safely assumed that the various boards admitting applicants do not require anything of the kind. Act 185 of 1908; Act 88 of 1900 and Sec. 1 of Act 32 of 1894; Act 159 of 1916; Act 138 of 1912. Defendants do not complain that these exceptions, in favor of osteopaths, dentists, chiropodists, and trained nurses, make the Act of 1914, as amended, unconstitutional, but their complaint is that the act is unconstitutional, because it discriminates against them by not granting them similar privileges, but requires them to take the full medical and surgical course. If the Legislature were called upon to recognize every school of medicine, and to deal with it as such, requiring nothing but what the system practiced by each school demands, there might be some force to defendants' contention, but, as we have held, the Legislature is not called upon to do so, but has a reasonable discretion as to whether a particular school should be recognized and special provision made for it. Since the Legislature has such discretion, defendants cannot complain, on the ground of being unjustly discriminated against, because the Legislature has not deemed proper to recognize their school of medicine, and make special provision for those desiring to practice that system, by prescribing a course of study in accord with the theories which it holds for restoring health. See Allopathic State Board of Medical Examiners v. Fowler, *supra;* Johnson v. State, 267 S. W. 1057; Singh v. State, 146 S. W. 891; State v. Morrison, 127 S. E. 75.

Our conclusion is that on none of the grounds urged is the act complained of unconstitutional. If defendants wish to treat the sick in accordance with the theories held by them, they must comply first with the Act of 1914, as amended. So thought the trial judge, and we think that his judgment perpetuating the writ of injunction, and awarding the penalty and attorney's fees, prayed for, is correct.

The judgment appealed from is therefore affirmed.

CORRESPONDENCE.

August 20.

Editorial Board, New Orleans Medical and Surgical Journal.

Dear Sirs:

One finds a very real difference between the hospitals and universities of London and Amsterdam, which are in most ways conducted on similar plans, and those of Copenhagen and Denmark. In this latter small but prosperous country the ideals of a socialistic state are relatively closely attained. It is found that many of the tenets of socialism are actively in force; old age pensions, non-employment doles, state care of the sick are not a novelty but an accepted fact. The consequence of these money absorbing projects is that there are no really poor people in the community, but by the same token there are no millionaires and the relatively well-to-do are taxed to an extent almost unbelievable. State control of everything which has to do with the general community is reflected to a high degree in the university and the hospitals which I had the pleasure and honor of visiting with Dr. H. C. Gram, son of the man who gave his name to the well known stain, an eponym which is used probably as frequently in medicine as any which comes to mind, excepting probably the ubiquitous Wasser-

mann. Incidentally, an American feels like a mere child nationally when he considers that this Danish family directly have been connected with the university since 1583.

The University Medical Department is free to any aspiring candidate who has passed certain examinations and who has the ambition to spend seven years in training and in learning his profession. The two earlier years in the course are spent in studies which closely resemble our premedical years in college, but even during this time the student is given elementary training in the simple subjects, such as bandaging, pharmacy, and so on. After two years of such work he commences not only preclinical but also clinical training. Knowing but a minimum of medicine he is daily required to spend a certain number of hours a week in the wards. The student in these early years simply follows the teacher around and observes what he does and says. I can not see how he gains much by these mornings in the wards without a knowledge of anatomy, physiology, and pathology, subjects which he does not complete for two or three years after his introduction to the wards. The last two years in the clinical subject, however, are beautifully adequate. The student virtually lives in the hospital. He is not only the clinical clerk, taking the histories and keeping the records, but he is also almost in the role of an interne who is on duty part of the time. His work is, however, carefully controlled and directed and supervised by the internes and visiting staff. This, in brief, is the manner in which a Danish physician secures his medical education. It represents a tremendous number of hours devoted to clinical subjects, many more than are given in American schools, but many of which are useless and are so much time wasted. Despite these hours which are, I believe, wasted, arguments, which contend that they are not valueless, would expiate upon the splendidly trained products which are in fact turned out of the medical school with a doctor's degree.

The relation of the State Hospital, the Rigshospitalet, and the University is a close one. The professors and their assistants are paid in part by the University and in part by the controllers of the Hospital funds. In addition, on the grounds of the hospital are large and comfortable homes for the heads of the departments and at each end of the hospital administration building commodious seven to nine room apartments for the staff assistants. The hospital services are only assigned to the main divisions of medicine; surgery, internal medicine, obstetrics, and pediatrics are the only branches that are directly represented by services. The specialties are under the care of these various departments, but specially trained men are available as consultants who treat and care for the difficult and unusual cases, but who do not live on the hospital grounds nor have wards assigned to them. In medicine there are two divisions, totally separated and functioning as independent units. The one is in charge of Faber, who last year visited the United States and whose book, "Nosography in Medicine," is a little gem. The other is run by Lundsgaard, who spent several years in post-graduate study in this country (U. S.).

The admission to the wards is controlled by the staff. They have the privilege of denying or admitting patients to the several services. As a consequence they can more or less select the type of patient and case they wish to have in the ward. Patients pay approximately $1.85 per day for beds in the ward, or this sum is paid by certain state funds. This money does not begin to pay the cost per bed per day rate which is more than double the amount assessed. The difference is paid by the state in a yearly appropriation. Patients who can afford private rooms are allowed to take them, but charges for treatment and medical attention are charged at definite rates which go to the state and not the attending physician.

The State Hospital is a large and magnificent structure built on the pavilion system. It is surrounded by beautiful gardens. The gardens are so wonderful that detractors of the medical men on the staff are wont to say, "Well, at least they have good gardeners at the State Hospital." The wards are commodious, airy, and well arranged. Each large ward is subdivided by means of small partitions with smaller units. From the middle of each ward there go off two rooms, the one is for the nurses' use, the keeping of records, medicines, and so on; the other room is a ward laboratory where the routine examinations are carried out. One interesting feature of these wards is a small black board suspended over the head of the bed of each patient. On this is written the diagnosis, the temperature, and pulse rate, often the blood pressure and any unusual findings. In this way the visiting staff or a visitor can grasp in a minute not only the diagnosis but also the important features of a case.

The roentgenologic, special laboratories, libraries and clinics are complete and modern in every respect. Another feature deserves mention. There is a large building for physical therapy where massage, hydrotherapy, passive and active exercises, and similar methods of applied treatment are carried out in a manner made famous by the Scandinavians and utterly unknown to us in completeness and thoroughness.

The other large hospital in Copenhagen, the Bispebjerghospitalet, is a city hospital. It, also, is a magnificent institution. Some distance from the center of the city, an even larger area can be utilized than by the State Hospital. In many

respects the two institutions are similar. There are some differences, however. The city hospital has to accept any and all types of cases, consequently there are many patients with chronic disease, many cases of chronic arthritis, for example, a disorder extremely common in this cold and damp climate of Denmark. Many of the patients also remain in the hospital, if they can, for an unduly long period. They not only have the bright and comfortable ward to stay in, with the attendant nursing care, bed, board and idleness, but they, also, receive sick benefit from the government. I can readily picture the state of affairs in the Charity Hospital of New Orleans, where it is so often difficult to get rid of patients no longer requiring hospitalization, were these self same patients being paid regular wages by the State of Louisiana as long as they were in the wards. I imagine these hospital boarders would have to be run out by the police.

Dr. Meulengracht is the visiting physician, who kindly showed me around. He, as the physician to the State Hospital, is paid a salary, but in the case of the physician of the City Hospital it is paid by the civic authorities and not by the combined State and University funds. The visiting staff at this hospital give half time service or more. Meulengracht made his rounds while I was with him. This consumed a little over two hours. He had already been in the institution an hour before my arrival, and his laboratory and consultation duties would require several more hours of that day's time, he told me as I left him. It was really quite inspiring to see how each patient was duly visited that day, but not only that day but each day the patients are examined, studied and observed.

Many cases of arthritis are seen, as I already said. The European physicians take but little stock in our views of the great importance of focal infection. They do not believe the arthridides, the majority of times, are due to focal infection. They treat the patient with arthritis with massage, hydrotherapy, heliotherapy, diet, and do better than do we, I believe, with our rather promiscuous teeth extractions, tonsillectomies, prostatectomies, and other ectomies performed to cure chronic deforming joint disabilities. Incidentally, I find the European doctor a sincere admirer of American medicine and methods, except in one particular and that is an almost universal tendency to scoff at the frequency with which the tonsils are removed from the members of America's future citizenry. Rheumatic fever is, also, a frequent disease, but there are apparently only a few cardiac cripples. Meulengracht is well known for his work on diseases of the blood. He has, as a consequence, an unduly large number of patients suffering from blood disorders. Incidentally, he told me that of eight patients with pernicious anemia, who had been upon the Whipple-Minot liver regimen, three had died. Chlorosis, a disease which we think has disappeared with the corset, is no longer seen, despite the fact that the dress of the Northern European differs in many respects from the American woman, this being one respect. Pernicious anemia is a disease which is increasing in frequency, due to the fact, of course, that being a disease of later life there are more people living today past the age of forty than in days passed.

Just one word more about the interesting methods of the Danes of selecting the heads of departments in the University if seventy-five per cent of the faculty do not agree on any one man. In medicine, as an example, the candidates for the position must fulfill certain requirements which are sufficiently rigid to bar promiscuous applicants. The last examination found three men who had accomplished the necessary preliminary work. These three men who were then examined by a committee of seven medical men representing the State, the University faculty and so that there would be absolute fairness two examiners came from Norway and Sweden. The candidates were then given a three day trial. They were required to give didactic lectures and clinics upon patients each day. They were allowed to choose their own subject one day, the next day they could have an hour's time to prepare on a subject assigned to them, and on still another day they were obliged to speak for an hour without preparation on any subject the committee selected and told to them immediately before their appearance in the lecture hall. After this severe test the committee decides by majority vote upon the man they think has made the best showing.

I trust that this communication has not been too prolonged nor too rambling, but that it may give some idea, sketchly drawn, of medicine in one small European State.

Very sincerely,

J. H. Musser.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

The Orleans Parish Medical Society will resume their regular meetings on October 10th.

The President has appointed the following as a State Wide Committee on Publicity as instructed by the Conference held under the auspices of the Committee on Public Policy and Legislation in New Orleans, July 25th, and approved by the Executive Committee:

Drs. L. J. Menville, H. E. Bernadas, F. M. Johns, Urban Maes, N. N. Blackshear, A. E. Fossier, B. A. Ledbetter, Oscar Dowling, H. Theodore Simon, R. B. Harrison, H. B. Gessner, all of New Orleans; J. E. Knighton, I. B. Rougon, S. C. Barrow, all of Shreveport; R. O. Simmons, Marvin Cappel, Clarence Pierson, all of Alexandria; D. C. Iles, J. G. Martin, all of Lake Charles; D. I. Hirsch, J. Q. Graves, C. P. Gray, all of Monroe; L. J. Williams, C. A. Weiss, all of Baton Rouge; S. B. Wolff, B. A. Littell, all of Opelousas; L. O. Clark, Lafayette; F. T. Gouaux, Lockport; R. F. DeRouen, Clarence; C. C. DeGravelles, Morgan City; S. L. White, Ruston; J. B. Benton, Minden; C. O. Wolff, Haynesville; J. K. Griffith, Slidell.

This Committee will meet in the early part of October, time and place to be designated by the President, and formulate plans and also appoint a sub-committee to carry them out.

Any member of the Orleans Parish Medical Society moving his office on or about October 1st will kindly communicate with Secretary, 1551 Canal Street.

At the last annual meeting of the Louisiana Dermatological Society, Dr. J. N. Roussel was elected President; Dr. R. A. Oriol, Vice-President; and Dr. T. A. Maxwell, Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA.

Several Radiologists from Europe, Canada, Mexico, Cuba and American Possessions wiill attend the meeting of the Radiological Society of North America in New Orleans, November 28th to December 2d. About four to six hundred members expect to attend.

Several cruises to Cuba, Panama, etc., are being thought of for the members. A trip to the Lepers Colony will be a part of the program.

The medical profession in general is giving their active support, and a most successful meeting is contemplated.

DIED: Blumes J. Lemoine, Cottonport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1895; member of the Louisiana State Medical Society; aged 56; died suddenly, July 26, at Baton Rouge, of angina pectoris.

DIED: Daniel Ryan Sartor, Alto, La.; Medical Department University of Louisiana, New Orleans, 1872; aged 79; died, July 6, as the result of hypertrophy of the prostate.

DIED: Carlie Wyley Davidson, Bogalusa, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1914; aged 45; died suddenly, August 3, of angina pectoris.

NEW STEP IN INTERNATIONAL RELATIONS OF PHYSICIANS.

The cordial relations of the physicians of America, North and South, and their colleagues of the Old World were further expressed by the appointment of American representatives to the editorial cabinet of the Acta Dermato-Venereologica published under the direction of Dr. Johan Almkvist of Stockholm, Sweden. The nominees are: Howard Morrow of San Francisco, Howard Fox of New York, J. B. Shelmire of Dallas, D. R. Smith of Toronto, Pardo Castello of Havana, and Herman Goodman of New York.

The Acta Dermato-Venereologica publishes original contributions in French, German, or English within the fields of dermatology, urology, and social hygiene, and items of interest of persons or progress in these specialties.

American literary contributions should be addressed to Dr. Herman Goodman, 18 East 89th Street, New York City.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The North Mississippi Medical Society met in Water Valley, Mississippi, August 24th, 1927, and presented the following program:

1. Thyroidectomy. J. C. Cully, Oxford.

2. Spinal Anesthesia in Major Surgery. Dr. Avent, Grenada.

3. Treatment of Diseases of the Prostate Gland. R. A. Hennessey, Memphis.

4. Some Recent Surgery Among Chinese. R. V. Taylor, Jr., Memphis.

5. Some Principles in the Management of Gastric Lesions. R. L. Sanders, Memphis.

The Tri-County Medical Society met in Brookhaven, September 13th, with Vice-President M. D. Ratcliff in the chair. Dr. Elise Rutledge is Secretary. Dr. John Darrington, President of the State Association, and Dr. W. E. Noblin of Yazoo City, were guests of honor. The following program was given:

1. Why a County Health Unit in Every County. J. M. Dampeer, Crystal Springs.

2. A Discussion of Our Plans and Policies. John Darrington, Pres. of State Association, Yazoo City.

The next meeting of this society will be held in Brookhaven, December 13th.

The South Mississippi Medical Society met in New Augusta on September 8th and presented the following program:

1. Birth Injuries. Charles Bloom, New Orleans.

2. Common Eye Injuries. "Buck" Buchanan, Hattiesburg.

3. Duodenal Ulcer. L. B. Hudson, Hattiesburg.

4. Obstetrics. H. L. McKinnon, Hattiesburg.

5. Abruptio Placentae. J. S. Gatlin, Laurel.

6. Infant Feeding. Joe Green, Richton.

ANOTHER STRAW VOTE.

The "Hon." Bernard Macfadden has recently been circularizing the much ridiculed and despised medical profession. It is hard to think that any physician who scorns the idea of cults would be taken in by such a transparent piece of advertising for his salacious and suggestive magazine. It is unthinkable that very many physicians will sign and return the card.

CHILDREN'S HEALTH CAMP.

The third season of the Children's Health Camp closed on Wednesday, August 31st. This has been the first Summer Camp season at Sanatorium and in most respects this has been the most successful of the three seasons. As many of the camp guests are from homes where there is tuberculosis it is desirable that these children have the advantage of medical attention from specialists along this line. A carefully balanced schedule of recreation, study, rest and proper food has been maintained throughout the camp period. As a result each child at the time of departure showed the beneficient result of the summer outing in a more erect carriage, better rounded out body and wholesome facial expression. The months to come will further show the good work done during camp days through the heightened resistance of each child to infectuous diseases.

Dr. and Mrs. Jesse L. Roark of Sanatorium are receiving congratulations on the birth of a son at Baptist Hospital, Jackson, Mississippi, August 30th.

Dr. John Walker, in charge of the tuberculosis unit at the State Hospital for Insane at Jackson, Mississippi, has been spending some time at Sanatorium observing mode of treatment employed in treatment of tuberculosis at the Mississippi State Sanatorium.

Dr. W. A. Toomer, resident physician at the State Sanatorium, left on September 11th to engage in private practice at Tupelo, Mississippi. Just prior to opening his office in Tupelo, Dr. Toomer will spend some time in study at Johns Hopkins at Baltimore. Dr. Toomer has been a member of the medical staff at Sanatorium since September 15th, 1923, and he, Mrs. Toomer and their two daughters will be greatly missed from the Sanatorium group.

Dr. H. M. Anderson, a former member of the Sanatorium medical staff, will fill the place left vacant by Dr. Toomer. Dr. Anderson was forced to resign his position at Sanatorirum about three years ago due to ill health. Since that time he has been resident physician at both the Texas State Tuberculosis Sanatorium at Sanatorium, Texas, and Cottage Sanatorium at San Angelo, Texas. Dr. and Mrs. Anderson are being happily received by their old friends at Sanatorium.

On Thursday, August 18th, the Mississippi State Sanatorium was visited by Dr. Augustine

Hernandez Mejia, Director General of the State Department of Health of the State of Vera Cruz, Mexico, and Dr. Henry Carr, Representative of the International Health Division of the Rockefeller Foundation. These guests were brought to Sanatorium by Dr. and Mrs. Felix Underwood of Jackson. Both men expressed themselves as being greatly pleased and favorably impressed by all observed at Sanatorium. The Children's Health Camp was of special interest to them, they stated, because it represented a start toward a permanent year round preventorium for children at Sanatorium.

The especial reason for the visit of these men to Sanatorium at this time is because of their interest in and connection with the large tuberculosis hospital shortly to be erected in the mountains just overlooking the City of Vera Cruz, this hospital to be directly under the supervision of the Vera Cruz State Board of Health. Dr. Carr at this time is working in co-operation with the public health activities of the Government of Mexico and he and Dr. Mejia are now making a tour of inspection of a few institutions of this character which have been suggested to them as being the outstanding institutions of this type in the United States. Upon leaving Mississippi these gentlemen were going to observe mode of treatment pursued and hospital management employed in a similar institution in New York State.

Dr. C. E. Walker, Assistant Superintendent of the Mississippi State Sanatorium has been spending his summer vacation at Memphis and Ripley, Tennessee. Mrs. Walker and the children accompanied Dr. Walker on his summer outing.

THE RECREATION CONGRESS.

The Playground and Recreation Association of America is sponsoring this congress which meets in Memphis, October 3-7, 1927, with its headquarters in the Peabody Hotel.

The Recreation Congress, unlike many conventions, is not limited to any professional group, but is for everybody who is interested in play or art or recreation and in giving these a chance to grow. In its special meetings it goes very concretely into the practical problems of workers in different divisions of the field. If one is interested in an organized community recreation program, in the church's use of recreation, in how play can be used in the school, home, club, or factory, in any special activity such as music, drama, art, camping, athletics, or games, he will be able to attend discussions of his special subject by leaders and workers in the field.

Twice daily, morning and evening, the Congress gathers for general meetings which are addressed by men and women of national reputation. In addition, twenty-eight different section meetings are held during the week to discuss various play and recreation problems. Following brief presentations of recreation topics by qualified leaders, discussion is open to all.

Because many delegates desire to learn more thoroughly certain play activities that will be useful to them, the Recreation Congress Institute has been organized. This Institute is made up of a series of classes. Each day from 4 to 5:30 sessions of the Institute under expert leadership will be conducted in music, drama, games, traditional rhythmic games, story telling, nature study and handcraft. These are open and free to all who want to enjoy these activities during the week and better prepare themselves for leadership.

M. S. M. A. NEWS.

Dear Doctor Ullman:

There are thirteen physicians in active practice in DeSoto county. Our county society meets every other month; considerable interest is manifested in these meetings. Our county adjoins Shelby county, Tennessee, in which is situated Memphis, so we can have the advantages of most excellent hospitals, clinics, and the Medical Department of the University of Tennessee. The Southern Medical Association will convene in Memphis in November; much interest is being manifested in this great gathering of the physicians of the South. I am positively of the opinion that no county in Mississippi has more royal and loyal doctors than DeSoto county. I think that the New Orleans Medical and Surgical Journal is the most beneficial magazine that I subscribe to, and I get quite a number. The August number was particularly fine, and permit me to congratulate you on the Mississippi News. You are the right man in the right place.

With best wishes, I beg to remain,

Sincerely yours,

(Signed) L. L. MINOR,
Secretary, DeSoto County Medical
Society, Memphis, Tenn.

DIED: Chester Knox Roe, Bay St. Louis, Miss.; Louisville (Ky.) Medical College, 1871; Civil War veteran; aged 82; died, July 21, of nephritis.

The Lauderdale County Board of Supervisors at their September meeting arranged a $25,000 budget for a full-time health department for Lauderdale County and the City of Meridian to begin operations January 1, 1928.

The Monroe County Board of Supervisors arranged a $10,000 budget at their September meeting for organizing and conducting a full-time health department beginning January 1, 1928.

Since July first, Sunflower, Humphreys, Issaquena, Yazoo and Warren Counties have organized full-time co-operative health departments, making a total of 23 full-time counties now in operation and two others to begin full-time work on January 1, 1928.

During July and August and up until September fifteenth, twelve cities and towns of the State officially adopted the Standard Milk Ordinance. Sanitary work under this ordinance in these cities and towns will be begun at once which will insure a safe milk supply.

The "Know Mississippi Better" train in its sixteen days tour of the West visited twelve states and thirty-one cities and towns. In ten of these States the State Health Officer or a special representative met and entertained the State Health Officer of Mississippi, which was very much appreciated and gave him an opportunity to look into the public health programs of a number of States. It was regrettable to learn that in a few of the States the Board of Health seemed to be run for the sake of politics and not for the sake of the people. Whenever a Board of Health is made the football of politics by being disorganized and confused with each succeeding State Administration, it will soon lose the confidence of the medical profession, the people generally, the Legislature, the U. S. Public Health Service, the International Health Board, the Federal Children's Bureau, and other contributing agencies and is doomed to failure. Mississippi should be congratulated on the fact that the State Board of Health is not now, nor will it ever be permitted to be again, a strictly political Board whose policies and programs will be tossed hither and thither with each succeeding political wave that sweeps the State.

The Federal Caustic Poison Act was passed by Congress and became effective on the date of its passage, March 4, 1927. The law provides that no penalty or condemnation shall be enforced for any violation of the act occurring within six months of its passage. Tentative regulations for the enforcement of the law have been prepared by the Department of Agriculture.

The purpose of the law is to safeguard the users of certain dangerous caustic and corrosive acids, alkalies, and other substances by requiring that parcels, packages, or containers suitable for household use bear upon the label or sticker the word "Poison" in uncondensed Gothic capital letters of not less than 24 point size, and immediately following the word "Poison" directions for treatment in case of internal or external injury.

BOOK REVIEWS

Therapeutic Malaria: By G. de M. Rudolf, M.R.C.S., L.R.C.P., D.P.H., D.P.M. Oxford Medical Publications. 1927. 223 p.

The author has had a large experience as assistant medical officer with therapeutic malaria treatment of neuro-syphilis at Claybury Mental Hospital. He combines his opinion and observations with statement of opinions and observations of many others throughout the world who have had more or less experience.

The book will be found interesting and instructive to those who expect to employ this new method of treatment of general paralysis. All phases of the subject are discussed and information bearing on almost any question in connection with the treatment is presented.

Although all new methods of treatment are likely to be unduly favorable, one who reads this book feels that there is little or no question in the mind of the author but that therapeutic malaria is a valuable remedy for paresis in many cases.

C. C. Bass, M. D.

Physical Diagnosis: By Richard C. Cabot, M. D. 9th ed. New York, William Wood and Company. 1927. 536 p.

The latest revised edition of one of the standard texts on this subject. It is apparently more complete in many details than the previous editions.

Of some interest is the reference to phonographic records which have been made, under the direction of the author and a collaborator, of the various normal and abnormal heart sounds. It is said that these records will probably be marketed some time this year.

Willard R. Wirth, M. D.

Ker's Manual of Fevers: Revised by Claude Rundle, M. D. 3rd ed. Liverpool, Oxford University Press. 1927. 346 p.

This text is a detailed consideration of the infectious diseases. It is well written, rather concise without being too brief. The illustrations are few, but apparently adequate.

The introduction considers the general subject of fever. Then follows a chapter upon the methods of examination of rashes and throats. Subsequent chapters then consider in detail the various exanthems and infectious diseases, including their treatment.

The title of the text is rather misleading, and would be much better changed.

Willard R. Wirth, M. D.

Hewat's Examination of the Urine: By G. L. Malcolm-Smith, M. B., Ch. B., F. R. C. P. Ed. Rev. Ed. No. 7. Edinburgh, E. and S. Livingstone. 1926. 228 p.

The revised edition of this work includes not only a compact concise treatise upon the examination of urine, but also an introduction into the examination of blood, sputum, gastric contents, feces, and cerebro-spinal fluid.

While the various chemical methods and techniques discussed in the book are not sufficiently elaborate for the modern hospital laboratory, they are practical to the worker without special laboratory experience and with limited apparatus. This work may be recommended as one describing simple technic easily read and not burdened with an excessive amount of explanation.

Edwin H. Lawson, M. D.

Text-Book of Medicine: By American Authors; ed. by Russell L. Cecil, A. B., M. D. Philadelphia and London, W. B. Saunders Co. 1927. 1500 p.

This volume is a new venture in single volume text-books of medicine in that there are some one hundred and thirty contributors—each contributor writing upon some subjects or group of diseases of which he is more or less of an authority. On the whole, the editor is to be congratulated on his choice of contributors.

The arrangement of the book is very similar to that of the older text-books of medicine. One misses, perhaps, the fine, even-flowing style of Osler, for instance, but this is, of course, inevitable in such a treatise and does not detract from its intrinsic value. Furthermore, in this age of specialism, it would take another Osler to cover the entire field of internal medicine, and geniuses of that type are indeed rare. This book is therefore the natural outcrop of the trend of the times and represents the opinions of many authorities in condensed form on all branches of internal medicine. In a single volume text-book of medicine, one of the most important elements is the proper allowance of space to each subject according to its relative importance. This has been admirably carried out by the editor with no doubt considerable difficulty, as each contributor probably considered his subject the most important.

In concluding the reviewer would state that his task in reviewing this book was an unusually pleasant and profitable one and he can cheerfully recommend it not only to students but practitioners of medicine.

Randolph Lyons, M. D.

The Cause and Cure of Speech Disorders: By James Sonnett Green, M. D., and Emilie J. Wells, B. A. New York, The MacMillan Company. 1927. 458 p.

In the "Cause and Cure of Speech Disorders" Dr. Greene presents the results of his vast experience to us—a survey of over ten thousand defective speech cases—in a clear, concise manner, and singularly free from technicalities.

The book is divided into three parts:

The Person Who Stutters

The Person Who Stammers

The Person Whose Voice Is Abnormal

For the sake of the general reader it must be clearly understood that stuttering and stammering are not to be considered interchangeable terms, but two distinct classifications of speech anomalies. "Stammering he defines as speech of a defective nature, which may arise either from a central involvement, or from a peripheral involvement."

"Stuttering he defines as speech of a hesitating nature conditioned on certain states of mind in the form of emotions, feelings, attitudes, or ideas."

From cover to cover the book is convincing and interesting, but the outstanding feature of it is the section devoted to stuttering. Here the author makes a detailed and exhaustive analysis of the mental and emotional states of the stutterer.

The thoroughness with which he investigates the subject and the importance of his deductions not only accord them a passing interest but a place of permanent value.

A large group of excellent exercises covering the needs of the speech defective is appended in Part IV of the book, and both pupil and instructor may profit from their study.

The book is a valuable contribution to the literature of this subject, and should meet with a cordial reception.

Sally Spyker.

Textbook on Diseases of the Skin and Syphilis: By Albert Strickler, M. D. Philadelphia, F. A. Davis Co. 1927. 689 p.

The book is well written and the tables of classification well arranged. The volume has three weak points: Pellagra treatment is not fully gone into according to latest findings; in the section of syphilis, very little mention is made of salvarsan dermatitis; no mention is made of its treatment; radium and its application has only a few paragraphs, while pages should be devoted to technic of screening, dosage according to size, depth of lesions, etc. The modern doctor and medical students will demand that this be included in a modern book on dermatology. If the author will enlarge these sections in his next edition, it will become one of the best books on dermatology.

John A. Devron, M. D.

Disorders of the Nose, Throat and Ear: Problems of Deafness: By Aaron Roth, M. D., F. A. C. S. Brooklyn, Physicians' and Surgeons' Book Co. 1927. 238 p.

A well-written little volume, primarily designed for those students who desire only a superficial knowledge of otolaryngology. The chapters on deafness are well worth reading and serve to intensify the reader's interest in this subject. The subject matter, while presented in highly concentrated form, is written in simple non-technical terms and arranged in instructive sequence so that the interest of the reader is held to the end.

F. E. Lejeune, M. D.

General Therapeutics: Ed. by Bernard Fantus, M. S., M. D. (Practical Medicine Series.) Chicago, Yearbook Publishers. 1927. 399 p.

This complete and concise review and summary of the year's development in therapeutics, will more than repay a perusal of its contents. The extensive reading of the author, coupled with a happy faculty for presenting his subject matter, clearly makes the book a welcome companion to one seeking an open spot in the jungle. That the author is thoroughly acquainted with therapeutics, one soon learns. Drugs and methods in therapeutics that have made a decided impression during the year are dealt with at length and from various viewpoints. The literary style is good and the book succeeds in holding one's interest. The publishers are to be commended for printing the volume in such good, readable type, and in such a handy size.

I. L. Robbins, M. D.

A Terminology of Disease: By Adrian V. S. Lambert, M. D. 3d ed. rev. New York, Paul B. Hoeber. 1926. 158 p.

This is a revised third edition. Many changes have been made, but the general arrangement has been left intact. The author is well aware of the difficulties presented by a manual of this kind when the vast array of synonyms perplexing one in medicine, is considered. A new edition of such a book is not only the indication of growing desire for more standardization and uniformity of terminology but more especially an indication that the author has apparently succeeded quite well

in his task. I must heartily agree with the author's remark, "If it aids in making hospital records more accessible, it has more than justified its publication." A book of this nature should serve a worthy purpose.

I. L. Robbins, M. D.

Manual of Materia Medica for Medical Students: By E. Quin Thornton, M. D. 2d ed., thoroughly revised. Philadelphia, Lea & Febiger. 1927. 394 p.

This book, according to the author, has been thoroughly revised and brought up to date. The revision is based on the last centennial revision of the U. S. Pharmacopoeia.

The grouping and arrangement of such a book is at best difficult, and though one feels that the author has probably devoted too much space to some subjects and not enough to others, yet the volume may be recommended as a whole. I cannot but feel that for a book aiming for conservation of energy and time, several subjects as "Latin Essentials in Prescription Writing" and "Incompatibility" are quite lengthy. The Table of Doses helps greatly to bear out the aims of the book. In conclusion, I may say that it represents a difficult task well done.

I. L. Robbins, M. D.

Diseases of the Newborn: By James Burnet. Oxford University Press. 1927.

This monograph of 275 pages covers the anatomy, physiology and diseases of the newborn. It is one of the Oxford Medical publications. That fact alone will give it wide circulation.

The book itself is very readable, written in clear, concise style. As might be expected in a volume of such small size, it is impossible to cover all details and to include all therapeutic measures. There are, however, many sins of omission as well as commission. For example, in outlining the treatment of thrush, nothing more than boric acid mouth washes is recommended. The treatment of intracranial hemorrhage consists of leaving the infant alone and the intraperitoneal injection of citrated blood. No mention is made of spinal drainage.

The reviewer does not agree with the author's interpretation of Colles' law in congenital syphilis. A primipara is not allowed to nurse her syphilitic infant. If the baby is apparently healthy and the mother syphilitic the baby is allowed to nurse for the first three months only.

There should be no necessity for the concealing of truth from parents, except in unusual circumstances and yet we are told that the practitioner has to conceal the actual facts about the real nature of congenital syphilis.

L. von Meysenbug, M. D.

PUBLICATIONS RECEIVED.

The MacMillan Company, New York: "The Treatment of Acute Infectious Diseases," by Frank Sherman Meara, M. D., Ph.D.

P. Blakiston's Son & Company, Philadelphia: "A Text-Book of Histology," by Dr. Frederic T. Lewis and Dr. J. L. Bremer.

REPRINTS.

"Suggestions for County Medical Societies," by G. Henry Mundt, M. D., F. A. C. S. "Physical Therapy in Relation to the State Medical Society," by G. Henry Mundt, M. D.

Battle Creek, Mich., Sept. 16.—That the medical profession itself is in part responsible for the growth of quackery and of anti-medical cults in the United States was asserted by Dr. Donald B. Armstrong of the Metropolitan Life Insurance Company in speaking here today before the Michigan Conference of Social Work. Dr. Armstrong based his statements upon the thousands of letters received by insurance companies and other national agencies from people all over the country seeking health advice and medical guidance.

"From this experience," stated Dr. Armstrong, "it is clear that the public wants protection against quackery and fraud. Many who write for advice suspect that the advertised cures are fakes, but don't know where to turn for safe and sound medical advise and treatment."

Dr. Armstrong pointed out that the people throughout the country not only want to be protected against quackery, but they are willing to accept and actively desire direction to safe and helpful medical and health services and facilities. In seeking reliable services, however, many go wrong and get into blind alleys, through lack of guidance. They are so often fooled by quackery in the guise of medicine that they frequently lose faith in the medical profession as a whole.

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GUNSHOT WOUNDS OF THE ABDOMEN.*

THE IMMEDIATE END RESULTS IN 46 CASES.

MARTIN O. MILLER, M. D.,

NEW ORLEANS

The series of cases which I am reporting (46 in number) are cases which have come under my personal observation here in Charity Hospital while on duty every other day as house surgeon, since July 1, 1925, to date.

In reviewing these cases of abdominal perforations which I have had the opportunity to observe, I do not do it with the hope of bringing any new ideas in the treatment or plans of management, but with the desire to review the subject briefly and to bring forward the method which I have employed in Charity Hospital.

To my mind the most important factor in treating gunshot wounds of the abdomen is a too early operative procedure, which is just as dangerous if not more so, than a too late surgical interference. From time to time the question comes up as to when to operate and when not to operate these cases. All cases of active hemorrhage demand immediate surgical interference. It has been a recognized fact that the mortality rate increases rapidly with the increase of time intervening between the time of injury and the time of operation.

*Read before Orleans Parish Medical Society, June 13, 1927.

First, how shall we differentiate between shock and hemorrhage? The patient suffering from hemorrhage is usually listless and lifeless, while on the other hand the shock patient is usually restless and has air hunger. If after giving an infusion of glucose or saline before operation the patient rallies for a few minutes only with a rise in blood pressure, and then again the blood pressure falls, it is fairly safe to state that this patient is suffering from hemorrhage. The patient who does not rally after intravenous administration of glucose, or saline, or blood, will not rally from the additional shock of an operation.

The diagnosis is nearly always self evident in gunshot wounds of the abdomen from the point of entrance of the bullet. However, in two of my cases, one received a bullet wound at the junction of the middle third of the right thigh, there was rigidity of the abdomen, no point of exit, fluoroscopic examination revealed the bullet in the right lower quadrant of the abdomen in the region of McBurney's point. At operation three perforations of the cecum were found. In the other case the point of entrance was in the 5th right intercostal space, in the mid-axillary line. There was pain, tenderness and rigidity of the upper abdomen, no nausea or vomiting, and pain throughout the upper abdomen. Fluoroscopic examination revealed the bullet in the upper abdomen in the midline, midway between the ensiform and the umbilicus. At operation two perforations were found in the stomach midway between the greater and lesser curvatures about two-thirds of

the distance from the pylorus. There was a similar perforation on the posterior wall of the stomach. There was no injury to the pancreas or blood vessels. Both of these cases had uneventful recoveries.

To my mind it is of diagnostic value to plot the structures which would be perforated in an imaginary line from the point of entrance and the point of exit, and in the event that there is no exit here is where tht fluoroscope is of benefit in locating the bullet, giving the surgeon an idea where to look for the damage.

Tenderness is nearly always present; vomiting may or may not be present; rigidity may or may not be present. I have seen cases with perforations of the abdomen in which the abdomen was soft and flacid. Pain is present in about 75 per cent of the cases. The facial expression is always one of anxiety.

In quoting Dr. Richard A. Barr of Nashville, who states a bullet can not produce traumatic shock without hemorrhage: "Intra-abdominal hemorrhage demands operation for its control. A general anesthetic is a stimulant in psychic shock. So in a general way I think that one can justify holding the position that shock is not a contra-indication to prompt operation in gunshot wounds of the abdomen." My results in cases which I have operated early did not concur with the statement made by Dr. Barr.

The only positive way to determine whether perforations have occurred is by exploratory laparotomy. It is better to explore a negative abdomen occasionally than to fail to operate on one with perforations.

In practically all the cases it is surprising how small an amount of bowel contents escape from a perforation. This is explained by Nicholas Senn as being due to the contraction of the muscular coat for several inches above and below the point of perforations. Leakage is prevented until the muscles become exhausted and peristalsis forces the intestinal content to the point of perforation. It is always a good idea to give large doses of morphin, say one-half grain, from the time of the injury until the operation in order to paralyze the intestines, thereby inhibiting, or preventing peristalsis.

There was only one case of the abdominothoracic type. Morelli states that it is the oscillation of the mediastium caused by the traumatic pneumothorax that largely contributes to the immediate shock of these patients. It is always best to suture the wound of the diaphragm before giving any time to suturing the intestines; this will invariably give the patient immediate relief.

Stomach perforations when that organ is full are more serious because of the escape of the contents. Anterior perforations are easy to find and to repair. A posterior wound is best reached through an opening made by separating the greater omentum from the transverse colon along the line of the insertion of the omentum to the intestines.

Wounds of the small intestines are as a rule in pairs, but may be single. A few hours after perforation of the small intestines the neighboring peritoneum becomes covered with a plastic exudate.

It is claimed that if we eliminate from consideration associated lesions of other organs, infection from injury with escape of contents of the large intestines is more serious than infection following the injury of the small intestines. The contents of the cecum and ascending colon are rich in bacterial flora of virulent character, so that comparatively few patients with perforation of the colon survive even when promptly operated on.

Wounds of the kidneys are as a rule accompanied with injuries to the small intestines and are best treated conservatively unless there is great danger of extensive hemorrhage. Nephrectomy is required if the renal vessels are divided or great de-

struction of the kidney has occurred. Occasionally gunshot injuries of the kidneys are followed by hydronephrosis subsequently requiring incision and drainage.

Wounds of the bladder are comparatively rare. The bladder contents are normally not infectious but if they enter the peritoneal cavity cause more or less chemical irritation. Cystotomy should be done in bladder wounds with urinary infiltration. Intraperitoneal wounds of the bladder demand abdominal operation if conditions are favorable; if not, a retention catheter should be introduced promptly.

Liver injuries are lacerations as a rule. The wound of entrance is usually small and that of exit large. Hemorrhage is always present and often subsides spontaneously. Fortunately the liver tends to tear and give way between the large vessels. Uncomplicated gunshot wounds of the liver require no surgical treatment, unless there is serious hemorrhage which is best controlled with a pack.

Injuries to the spleen, if there is active hemorrhage from the splenic vessels, are best treated by doing a splenectomy. A simple uncomplicated wound is treated by suturing.

A brief summary of the cases, 46 in number, is as follows:

The largest number of perforations was 23. In 3 cases no perforations of the viscera were found except that only the peritoneum was injured. The average number of perforations for the series was 8. Upper abdominal injury was present in 16 cases. Injury to the colon occurred in 17, to the liver in 7 cases, to the bladder in 2 cases, and to the spleen in 1 case. The rest were injuries to the small intestines associated with other complications.

Spinal analgesia was used in 6 cases, ethylene in 1, local in 1, and the rest received ether. The mortality was not greater with spinal analgesia than with ether. Spinal analgesia is not recommended for gunshot wounds of the abdomen because these cases are in a moderate degree of shock and spinal tends to increase the shock and to lower the blood pressure. For all practical purposes ether, I believe, is the anesthetic of choice.

The average time for each operation was 53 minutes.

Injuries in the upper abdomen are much harder to manage, the mortality is greater than those of the lower abdomen. The mortality is much higher in cases in which there are injuries to both the large and small intestines.

The incision of choice is the median incision, which is made sufficiently long to give a good exposure. If a great deal of hemorrhage is encountered it is best to find the active bleeding point and control it at once. Evisceration is not recommended because it increases shock. All perforations of the intestines are repaired with paraffin silk No. 9 in two layers—the inner including all the coats, and an outer Lembert continuous suture. In the colon, owing to its lax wall, leakage of its contents occurs fairly early, but its relatively fixed position, excluding the transverse colon, favors walling off of infection. In looking for perforations of the intestines always begin at some fixed point and repair each perforation as it is found. Occasionally it is quite evident from the direction of the bullet that the entire inspection of the abdominal viscera is not necessary.

Irrigation of the abdomen was never done. Where there was a great deal of soiling sponges were used to cleanse the soiled areas.

Drainage was done in each case either through stab wounds or at the lower angle of the wound. Every case received tetanus anti-toxin.

In two cases it was necessary to do resections of the small bowel because of the close proximity of the perforations and the extensive injury done to the intestines.

End-to-end anastomosis with the Murphy button was done in both instances.

These cases were brought to the hospital almost immediately following the injury. My recent practice has been to give a half grain of morphin upon admission, take the blood pressure, examine carefully without too much manipulation, fluoroscope (gently handling the patient), and then send to the observation room where each patient receives 2000 c.c. 10 per cent glucose intravenously with ten units of insulin per each 300 c.c. of the glucose; in other words, one unit of insulin per each 3 gm. of glucose; and hypodermoclysis 1000 c.c. normal saline, with external heat and cardiac stimulants if indicated. The patients rallied in every instance but one; when an exploratory laparotomy was done, and an active point of hemorrhage was revealed—the immediate operation was done because the patient was getting progressively worse. In the other cases laparotomy was done from 3 to 6 hours after injury. Up until a recent period we encountered considerable difficulty in obtaining blood for transfusion. Through the co-operation and suggestion of Dr. P. H. Jones and Dr. M. W. Hunter, medical officers at the Charity Hospital, we are now able to get blood for transfusion from the medical wards from patients suffering with hypertension.

Immediately after the patient was operated on and sent to the ward 500 c.c. of citrated blood was given. From then on two infusions daily (from two to six days) were given of 2000 c.c. each of 10 per cent glucose with 10 units of insulin with each 300 c.c. By means of a Wassermann needle it was not necessary to cut into the vein. About 3 hours was required for each infusion. Enough morphin was given to keep the patient absolutely quiet, a Jutte tube through the nose was allowed to remain in the stomach for drainage for a period from 1 to 4 days. Practically no discomfort was experienced with the Jutte tube. Subsequently blood transfusions were given as required. Fluids were administered on the 2nd day by mouth and the Jutte tube clamped for about 30 minutes after the intake of fluids. The wound was dressed daily with gradual removal of the drains, which were completely removed on the 7th day. There was very little distension of the abdomen in those cases which did not die of general peritonitis. After the patient reacted from the anesthetic the head of the bed was elevated 12 inches.

Of the 46 cases operated on there were 26 colored males, 11 died and 15 recovered. 5 cases were colored females, 2 died and 3 recovered. 12 cases were white males, 7 died and 5 recovered. 3 cases were white females, all died. The youngest colored male was 14 years, the oldest 44 years. The average age was 26 years. The youngest colored female was 18 years, the oldest was 43 years. The average age was 27 years. The youngest white male was 16 years, the oldest was 53 years. The average age was 33 years. The youngest white female was 18 years, the oldest was 41 years. The average age was 33 years.

Of the 46 cases, 23 recovered and 23 died, giving a mortality of 50 per cent. The number of patients who died on the first day was 6. 1 died on the operating table. 2 died on the second day. The number of days the longest lived after operation was 19. The average for the series was 5 days. Of those that recovered the longest number of days remaining in the hospital was 59, the shortest 12, and the average stay in the hospital was 18 days.

The combined causes of death were general peritonitis, hemorrhage, shock, septicemia, intestinal obstruction, multiple carbuncles, and bilateral infection of the parotid gland, and bronchopneumonia. Of the last 10 cases operated on 7 recovered and 3 died. The time elapsing from the injury to operation was 4 hours. Each patient received infusion before operation, 2 received transfusion on the table and from 1 to 5 transfusions after going to the ward. Of the 3 patients who died, 1 died on the 12th day after the operation from septicem-

ia following multiple carbuncles; 1 died on the 8th day of acute bilateral parotitis. In neither of these cases was there any evidence of peritonitis. The other case died of lung complications on the 2nd day. This patient in addition to having nine perforations in the small and large bowels received two bullet wounds of the chest, and one of the arm.

Dr. James Monroe Mason of Birmingham in 1923 reported 69 cases, of which 9 were stab wounds and 59 gunshot wounds of the abdomen, 1 crushing injury with a ruptured spleen. In his series there was a mortality of 56.4 per cent. Ordinarily the stab wound is a less serious injury than gunshot wounds. I have personally operated on 8 cases of stab wounds of the abdomen without a single mortality,—these I have not included in my series.

Dr. E. D. Fenner in 1902, Annals of Surgery, reported 152 cases from the Charity Hospital in New Orleans of which 96 were gunshot wounds with visceral injuries, of these 71 died giving a mortality of 74 per cent.

In 1915, Annals of Surgery, Dr. LeGuerry, of Columbus, S. C., reported 27 cases with three deaths,—a mortality of about 10 per cent. Dr. M. B. Davis, of Nashville, November, 1925, reported 20 cases with 13 deaths, a mortality of 65 per cent.

At Touro Infirmary, New Orleans, 4 cases,—4 deaths, a mortality of 100 per cent. At Hotel Dieu, New Orleans, 2 cases, —2 deaths, a mortality of 100 per cent.

SUMMARY AND CONCLUSION.

1. Before operation, treat shock with infusion or transfusion.

2. Give large doses of morphin before operation and after operation, in sufficient amount to keep the patient quiet.

3. Fluoroscopy is an aid in localizing the bullet, giving the operator an idea as to its course.

4. Infusion and transfusion as the condition of the patient demands following the operation.

5. The median incision is the one of choice.

6. Ether anesthetic is recommended.

7. Drainage of the stomach with Jutte tube following operation.

8. Do not operate early. From three to six hours after the injury is the best time. Operation is recommended up to 36 hours after the injury.

9. When in doubt as to intra-abdominal perforation do an exploratory laparotomy.

10. Transfusion should be extensively employed.

11. Auto-reinfusion should be practiced in selected cases.

12. The greatest mortality occurs in cases of profuse hemorrhage.

VISCERAL INJURIES IN GUNSHOT WOUNDS OF THE ABDOMEN.*

FRANK L. LORIA, M. D.,†

NEW ORLEANS.

It is not my intention to present a study of gunshot wounds of the abdomen in general; because through my experience in the study and analysis of these cases I cannot consent to the prevailing opinion that gunshot wounds of the abdomen can be honestly and conscientiously discussed and dismissed through the efforts of one paper alone. The subject is too large for a short paper; except, perhaps, for the presentation of a few interesting cases. In this short discourse I merely wish to put before you one phase of this important subject.

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Much has been written, both by civilian and military surgeons, on this question; but in each instance the subject appears to be only scantily covered, with the result that the reader is left with the same impression as before reading. For the last twenty years very little progress and only a few new ideas have been evolved. I do not claim that I shall present any new ideas; but I am going to urge the study of these cases in a new way; that is, in a more detailed manner. Each case is an individual problem in itself; but, at least from statistical studies, it must be admitted that a few general principles exist; and it is from these phases that I shall urge the survey of these cases.

Only a small percentage of cases of gunshot wounds of the abdomen escape injury to the viscera and other nearby structures of importance. Condict in a report of 20 cases of gunshot wounds of the abdomen presents 1 case operated without there having been found any injuries, and one in which the omentum alone was injured. In a series of 76 cases operated by the house officers at Charity Hospital during the years 1925 and 1926, twelve cases escaped damage to the structures within the abdomen and pelvis. All recovered except one who died of intestinal obstruction. The relative safety of careful exploration is, from these figures, pretty well demonstrated.

In 1925 Dr. Matas was instrumental in the appointment of a committee on gunshot wounds of the abdomen, of which he was made chairman and the writer secretary. It is the duty of this committee to study and analyze all cases that are admitted to the Charity Hospital for treatment; and to make an annual report to the surgical section of that hospital. The work of gathering the material—that is, watching the cases during their stay in the institution, seeing them, when possible, if they should recover, or witnessing the autopsies when they die—fell to the secretary. It is because of this that I have been afforded an excellent opportunity to study these cases at first hand. Each yearly report to the surgical section has consisted of a study of these cases from about 18 different points of view. The subject of this paper and the material utilized in its construction is gathered from one of these points of view.

CLASSIFICATION OF THESE INJURIES.

Through the study of these cases I have found that the injuries to the various organs and other structures may be classified as follows: (1) Contusions, (2) Abrasions, (3) Penetrations, (4) Perforations, and (5) Lacerations. It will naturally be reasoned that the severity of the injury varies with the type of the injury; and it must also be admitted that of the types named, the first is the least dangerous, while the last will produce the most deleterious results. It is scarcely necessary to repair contusions, somewhat more important to treat abrasions; and doubtlessly essential to repair or in some one manner or other treat the lacerated tissues.

SOURCE OF MATERIAL.

The figures, to be presented herewith, were derived from a study of 112 cases, which is the total number admitted to the Charity Hospital during the years 1925 and 1926. Of these 76 were operated. The study was possible through analysis of the operative records in the cases that were operated and lived; and from the records of the coroner's office in the cases which were not operated but died; as well also—a further study of the operated cases at post-mortem. A study of these figures has given me some idea as to their prognostic significance. However, the author does not mean to convey the impression that these injuries alone constitute the determining prognostic factor. I thoroughly realize that multiple other factors come into play. Among them are the general health condition of the patient at the time of receiving his injury; the extent of shock, if any, whether it be from hemorrhage or otherwise; the provisions made to treat this

shock before operating; the duration of the operation; the structures or viscera injured and their extent of injury; the post-operative treatment; and the ability of the patient to fight infection.

Mason tells us that the hemorrhage factor is of very considerable importance; McGuire says the duration time of the operation is of very great import; whilst Condict appears to give the impression that quick surgical intervention is probably the deciding factor. The writer agrees with the opinions of both Mason and McGuire, but feels that they present only two factors which should be put side by side along with other factors, such as the pre-operative treatment of shock, etc.

I feel that quick intervention in these cases, unless there is practically no shock, should be discouraged. In 150 consecutive operations, McGuire, by carefully treating his patients for shock—pre-operatively, has been able to give us the gratifying figures of 30 per cent mortality. It was also shown in my statistical and analytical report that the greatest number of deaths occurred in those patients operated within the first two hours after injury.

The following table gives the time of operation following the injury and the mortality in each group of cases:

Time of operation	Lived	Died	Mortality
One hour	12	28	70.00%
Two hours	13	12	48.00%
Three hours	2	2	50.00%
Four hours	1	0	00.00%
Five hours	0	1	100.00%
Six hours	0	1	100.00%
Ten hours	0	1	100.00%
Time not given	1	2	66.67%

It will be seen that of the 76 cases operated 65 were laparotomized within the first two hours after being shot. Of this number 40 or 57.5 per cent died of internal hemorrhage and shock. The remaining 17 died of various causes.

ORGANS AND OTHER IMPORTANT STRUCTURES INJURED.

Suspected injury to the viscera and other important structures in the abdomen and pelvis constitutes the chief and only reason for exploration. The course of the bullet often tells us which organs are probably injured. However, this is only approximate and problematic. The course of a bullet is very easily deflected by the various tissues which it strikes; and often when no injury is suspected to the organs in the pelvis perforated ileum and bladder are found. The position of the patient when shot probably determines this more than any other factor. Because of this a general exploration of the abdomen and pelvis is routinely advised in all cases.

Condict, in summing up the Gouverneur Hospital Series found that "the mesentery was perforated four times, the omentum five times and the inferior vena cava once. Omentum was found protruding from the abdomen five times and the intestine three times. Of the wounds of the hollow organs there was one of the gall-bladder, two of the transverse colon and one of the sigmoid, six of the jejunum and six of the ileum.

"Of the solid organs there was one perforation of the pancreas, only two perforations of the spleen, three of the kidney and 12 of the liver. In no case in this series, were the pelvic organs or the bladder involved."

These statistics were gathered from a study of 52 cases of gunshot and stab wounds of the abdomen treated at the Gouverneur Hospital from March 11, 1911, to August 31, 1922.

Of the 112 cases treated at Charity Hospital—as above mentioned—the organs and other structures found injured at operation or at necropsy may be tabulated as follows:

Organs, Etc.	No. of times Injured	Lived	Died	No. showing complicating Injuries
Stomach	26	7	19	20
Duodenum	5	1	4	5
Small intestine	51	11	40	44
Large intestine	44	6	38	40
Rectum	1	1	0	1
Liver	26	2	24	17
Biliary Ducts and Vessels	3	0	3	3
Gall bladder	3	0	3	3
Pancreas	8	0	8	8
Spleen	3	1	2	2
Right Kidney	5	0	5	5
Left Kidney	5	0	5	5
Urinary Bladder	3	2	1	2
Right Ureter	1	1	0	1
Renal Vessels	2	0	2	2
Vena Cava	4	0	4	3
Iliac Vessels	5	0	5	5
Mesentery and Omentum	24	8	16	23

The aorta, left ureter, female pelvic organs, and portal system were uninjured in this series.

It is readily seen, from these figures, that almost all cases showed complicating injuries of one kind or another. Whenever any of the important blood vessels—such as the iliacs—or pancreas and kidneys were struck the termination was invariably fatal. However, this does not necessarily always apply.

In this series injury to the important blood vessels gave uniformly fatal results. The probable reason for this appears to be lack of transfusions and an oversight in the repair of the injury. Transfusion by all means in cases presenting these injuries may tend to save more of them. Autotransfusion, as recommended by Davis, is splendid where the hollow viscera are uninjured; but as we are never sure of this the practice would appear to be too risky for routine use. Should it be impossible to obtain a donor infusions would be of great help; and even if a donor is found an added infusion reinforces that patient's capacity to fight off death.

Injuries to the solid viscera are somewhat less fatal than injury to the important blood vessels. Liver injuries, unless of the lacerated type with profuse bleeding, or injury to important portal radicles, as a rule are favorable. This statement tends to contradict the figures; but it is reasonable to believe this way; and furthermore, more recent cases appear to bear this out. In addition most of the liver cases presented also had other severe injuries. Damage to the spleen must almost always be corrected because open wounds of this organ, as a rule, bleed profusely. Splenectomy is very often necessary; but even so more cases recover. Beltram says that injuries to the pancreas always call for drainage, otherwise the escape of pancreatic juice into the abdominal cavity may cause necrosis and loss of life. The case he reported recovered following this precaution. Injuries to the kidneys are quite serious; perhaps more so than damage to the gastro-intestinal tract. Extensive injury to one of a healthy pair of kidneys will add to the seriousness of the case through the acute retention of nitrogenous by-products, with a tendency to uremia. The good kidney as a rule cannot compensate rapidly enough to avoid this. I am of the opinion that for this reason nephrectomies in these cases should be very few. Even though the injured kidney causes the onset of this trouble removal will only aggravate it; because, as a general rule, there is always enough functioning tissue present to help out to some, even though a small, extent. Hemorrhage is probably best fought by packing the retroperitoneal space in the region of the injury. Ureteral injuries are best left alone. Fistulae brought on by injury to the ureters, as a rule, close spontaneously.

Injuries to the hollow viscera are usually more easily dealt with. In cases of damage to the gall-bladder, drainage with removal at a later date—if necessary—is probably the best procedure. Openings in the urinary bladder are best repaired as usual.

The gastro-intestinal tract often attracts the surgeon's attention to such a degree that it makes him less mindful of possible, and perhaps, even more serious injuries to other structures. I have seen a number of cases in which all injuries appeared to be

repaired. The gastro-intestinal tract, liver, and spleen appeared in good condition; but on further examination there was found a ruptured iliac or renal vessel, or injury to the pancreas which had not been drained.

I do not mean to detract from the importance of scrutinizing, inch by inch, the entire gastro-intestinal tract; but very often the surgeon feels content just as soon as he has finished repair of the stomach and intestines. However, even with this great care in the repair of the gastro-intestinal tract, oftentimes an abraded wound is left unrepaired and rupture takes place, producing fatal results. Contusions are, as a rule, best left unmolested and abrasions should be treated with care. A great number of perforations within a small area calls for resection. This also applies to extensive lacerations. Large lacerations of the duodenum, in any of its portions, necessitate a gastro-enterostomy and careful repair of the lacerated area to avoid a flow of duodenal contents into the peritoneal cavity. In order to save time the end to end anastomosis with use of the Murphy button is almost indispensable.

CONCLUSIONS.

1. Statistics analyzing injuries to the various organs and structures in the abdomen and pelvis were derived from a study of 112 cases and are herewith presented.

2. The subject of gunshot wounds of the abdomen is too large for general discussion. It is my opinion that a separate study of the various phases of this subject will later lead us to a better understanding and better results.

3. Only a small percentage of these cases escape injury to the various structures and viscera. As careful exploration carries only a slight risk, operative intervention is routinely recommended; but only after the proper pre-operative treatment.

4. Injuries to the various structures in the abdomen and pelvis may be classified as (a) contusions, (b) abrasions, (c) penetrations, (d) perforations, and (e) lacerations.

5. The prognosis in these cases is governed by many factors.

6. Injuries to important blood vessels were uniformly fatal.

7. The solid organs, also, show a very high mortality.

8. Injuries to the hollow viscera are least fatal. The surgeon as a rule uses most of his time for the repair of these injuries; often to the neglect of other structures which may need more attention.

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DISCUSSION.

Dr. Jerome E. Landry (New Orleans): Drs. Loria and Miller are to be congratulated on the very orderly and interesting preparation and presentation of their papers. Gunshot wounds of the abdomen are particularly interesting to me and should prove so to those of us who have had the opportunity of serving as house surgeons at Charity Hospital. Unfortunately, gunshot wounds of the abdomen are strictly police emergencies. By that, I mean they are invariably associated with criminal acts and are controlled by the police, who rush them to Charity Hospital in an ambulance or police patrol and the house surgeon operates, whereas, in the ordinary surgical emergencies, such as strangulated hernia, intestinal obstruction and other acute conditions, the surgeon of choice is consulted, sends the patient to a private institution and operates. I dare say there are not more than six surgeons in the City of New Orleans (outside of the house surgeons) who have had an opportunity to operate on gunshot wounds of the abdomen.

I will now briefly touch upon a few of the interesting and important facts brought out by Drs. Loria and Miller:

1. Dr. Loria shows, by statistics, that the greatest mortality is about two hours after injury, death due to shock caused principally by hemorrhage. My views coincide with those of Dr. Miller, who stresses the value of stimulation before operation. I know that by the judicious use of glucose intravenously, and blood transfusion, in other words, by preparing our cases a bit before operation, we should and could reduce our mortality, if we can get our patient out of a state of shock. I think the ideal anesthesia is spinal analgesia. Before using spinal, however, be sure that the patient is not shocked. As a rule, gunshot wounds of the abdomen are associated with shock and the spinal tends to further lower the blood pressure. Wells, in a recent article, tells us how to keep up blood pressure by the intramuscular injection of adrenalin chlorid, ¼ cc. every 20 minutes or so.

2. I believe that late deaths from gunshot wounds of the abdomen involving the liver, caused by septic conditions, are due to hepatic abscesses. I have had two cases of spleen injuries in which a splenectomy was done each time—both died.

3. All cases should be operated on before the expiration of eight hours, or during the period of contamination; one might get by with later operation, but it is dangerous. I cannot agree with Dr. Miller when he says he has operated on cases where thirty-six hours elapsed before surgical intervention and that this period is not too late. Too early is bad and too late is bad. Six or eight hours is about the correct interval; shock is usually counteracted by this time, but if we go beyond that we may get to the point of infection and then we are going to have trouble.

4. Dr. Loria brings out the fact that hemorrhage is often overlooked by over anxiousness on the part of the operator to close perforations in the gut; hence, we should pay closer attention to a more complete exploration. Great stress should be laid on this point, as perhaps many of these cases of delayed shock are due to continuous bleeding of some obscure vessel.

5. He spoke of liver injury being fatal; I have operated on cases with rather extensive tears, simply packing this organ with gauze sponges and they have recovered.

6. Another important point brought out is that in perforations of the intestines, if the perforations are in too close proximity, or the perforation is very extensive, do not try to close them up; it is better to do a resection and an end-to-end anastomosis with a Murphy button, or lateral anastomosis.

I doubt whether any hospital in the world treats as many gunshot wounds of the abdomen as Charity Hospital. Its records certainly afford a wealth of material for study to anyone interested in the subject. To give you an illustration of the enormous amount of cases of this nature treated in this institution, on New Year's night, 1920, between midnight and morning, I operated on four cases of gunshot wounds of the abdomen; one of these cases, a negress, who was shot in the lower abdomen, proved to be exceedingly interesting. Exploratory laparotomy revealed a perforation of the ileum; she had multiple fibroids of the uterus in one of which (a pedunculated fibroid undergoing calcareous degeneration) the bullet embedded itself. I repaired the perforation in the ileum, removed the calcareous mass, and the patient recovered.

Dr. M. O. Miller (closing): In regard to contusions of the intestines, I believe that these injuries should not be left alone, but given attention, otherwise gangrene might set in, a possibility which can easily be guarded against by plication.

In cases of gunshot wounds of the abdomen associated with shock, my observation is that the white patients usually experience shock in a greater degree than the negro patients.

In conclusion, I wish to express my appreciation and thanks to the following:

To the Visiting Staff of the Charity Hospital for the invaluable information which was brought out at the monthly surgical meetings. I feel particularly grateful to Drs. Matas and Loria for their help and co-operation from time to time in studying these cases.

To Drs. P. H. Jones and M. W. Hunter, Medical Officers of Charity Hospital, for their inauguration of a system of obtaining blood from hypertension patients, and to the Visiting Men who have medical wards at the Hospital for their willingness and co-operation in permitting this to be carried out in their respective wards.

To my predecessors, Drs. E. L. Irwin and S. F. Elder, and to Drs. W. H. Cook and J. G. Snelling, present House Surgeon.

To the Interns, who deserve a great deal of credit for their unfailing co-operation and assistance and without whose help I would have been unable to carry out this work.

To Dr. Jerome E. Landry for his discussion and the valuable points which he brought out.

Dr. Frank L. Loria (closing): I wish to thank Dr. Jerome Landry for his liberal discussion. I want to also congratulate Dr. Miller on his splendid paper. His work has been very gratifying, and his figures show a big improvement over the figures of several other house surgeons that I have studied. Dr. Miller must also be complimented for the institution of a method of getting blood for transfusion in these cases; a method which is probably in use in no other hospital in this country—that is utilizing the blood of patients with hypertension. I do not know that this had not been thought of before, but Dr. Miller is the only one who has put it into routine use.

As pointed out by Dr. Matas some short time ago, our Charity Hospital is certainly a laboratory of gunshot wounds of the abdomen. No institution in the world, outside of an actual seat of war, can claim to treat as many cases as are treated in this hospital. It is because of this that we are able to gather so much valuable material and thereby given a splendid opportunity to study these cases.

THE RELATIVE UNIMPORTANCE OF GLASSES.*

W. A. STEVENS, M. D.,

GULFPORT, MISS.

Years ago many people suffered discomfort, pain or poor vision, for months and years, when glasses would have prevented it all. That time has passed. It is well to advocate the wearing of correct glasses, but it is usually unnecessary to urge people to wear glasses. They nearly all seem willing to wear them if necessary, and some insist on wearing them whether necessary or not. I do not wish to censure the wearing of glasses, but to call attention to their unimportance in many cases.

I believe that the eye, by irritation or inflammation, by disturbances of vision or by symptoms of muscular weakness is often the earliest and most delicate indicator of physical abnormality.

The patients coming to be fitted with glasses may be put into the following classes:

1. Those who have an error of refraction.

2. Those with muscle imbalance or muscle weakness, with or without refractive error.

3. Those in whom the eye examination reveals signs of disease.

4. Those in whom the eye examination is negative.

1. Perhaps the first class is the largest. The patient complains of poor sight or of headache or of pain, burning, tiring or blurring of the eyes. An error of refraction is found. The probability is that the cause of the symptoms has been found and that proper glasses will give relief. But there are some questions to be considered.

Some patients complain of eye-strain who have very small refractive errors, while others with large errors have slight symptoms or none at all. Does not the reaction of these respective persons to their refractive errors give information regarding their nerve and muscle tone?

In many cases of asthenopia the symptoms date back only a few weeks or months. Why did the symptoms appear, when the refractive error was there before?

Some years ago a school boy came to me complaining of headache and tiring of eyes of several weeks standing. I found a com-

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pound hyperopic astigmatism. He asked if I were sure that this error caused his headaches. I told him that I knew it *could* cause his headaches. A day or two later he became sick with an attack of malarial fever. After recovering he returned to school, complained no more of headache and never returned for his glasses. There was no question about the error of refraction, yet it caused no symptoms when he was free of malaria.

Often glasses are worn with satisfaction for a time and then discarded. This may be due to relief of the eye-strain. But I believe it is frequently because the asthenopia was caused by some systemic infirmity, which having passed off, the need of glasses is no longer felt.

I am coming to believe that if the history of asthenopia is of short duration, the patient should be examined further, even if refractive error is found, remembering that there may be more than one cause for the symptoms.

A lady consulted me in March, 1926, complaining of frequent headaches. I found the refraction O. D. + 1.50 D. S., O. S. + 1.50 D. S. = + .75 C. ax. 90°. There was a deviation of the nasal septum to the left, causing contact with the middle turbinate. The tonsils were submerged, red and spongy. I suggested fitting with glasses and if this failed to give relief, tonsillectomy and submucous resection of the septum. She preferred to try the operative work first. Tonsillectomy was done and she complained of no more headaches. I believe that there were two or three factors in the cause of her symptoms, and that the refractive error was relatively less important than the tonsils.

Presbyopia is generally considered inevitable at about 45 or 46, but it is much influenced by the health. It appears earlier in individuals in poor health. Sometimes it is precipitated by a severe illness. It is delayed by vigorous health and outdoor life. Some years ago I examined a man, aged 55, who had never used glasses. He had a slight hyperopia and 1 D. of presbyopia. He had returned a few months before from Mexico, where he said he had lived in the open for several years, usually sleeping on the ground.

2. Glasses are of great value in many cases of heterotropia. They are ineffective, however, if there is much amblyopia or if there is no fusion sense.

In heterophoria glasses are a help in certain cases; e. g., in anisometropia, in hyperopia with esophoria, in myopia with exophoria. But in many cases they do not help. Muscle exercises often give good results, but sometimes do no good until the underlying cause is found and removed.

In one case I found an exophoria of 12°, converging power 10°, emmetropia. This patient had been given prism exercises by an oculist for six weeks without benefit. There was a deviation of the nasal septum to the left, completely obstructing the left nostril. I did a submucous resection. A month later the converging power was found to be 18°. Convergence exercises were given and a short time later convergence was 35°.

The cause of the exophoria here was probably pressure in the middle turbinate region. Sometimes it is due to infected sinuses, teeth or tonsils. sometimes to systemic disease or weakness.

3. Many patients that come for glasses have something much more serious than refractive error. I have had such cases in whom I found cataract, glaucoma, paralysis of ocular muscles, keratitis, choroiditis, retinitis, retinal arteriosclerosis, optic nerve lesions, etc.

Paralysis of ocular muscles is most usually due to focal infection or syphilis. Last year, however, I had an unusual case in a little boy at Greenville. The parents said that they thought his sight had been defective for the past week or two and that he had complained of double vision. Examin-

ation showed nothing but the diplopia. Further questioning brought out the information that he had fallen out of a running automobile on the concrete road two weeks before. He cried a little at the time, was not unconscious and had complained of no pain since. A roentgenogram showed a linear vertical fracture in the parietal region of the skull, extending to the base. Dr. Archer examined him and found nothing else abnormal. He was put to bed and the diplopia passed off in about two weeks.

When a patient whom I have previously refracted returns in a year or two with a very marked change in the refraction of an eye, especially an increase in refracting power, I am on the lookout for either cataract or glaucoma. If nothing pathological is found, such a patient should return at intervals for observation.

The presbyope who has been wearing reading glasses and who returns because of headache should have the fundi examined and should be examined for focal infection, nephritis and high blood pressure.

There are cases with easily diagnosed cataract, glaucoma or fundus disease who ask to be fitted with glasses. Let me say that in a case of progressive loss of vision, if you find that a change of glasses will give a little improvement in vision, say a line or two on the test card, resist the temptation to change them. If you do prescribe glasses, the patient will soon decide that he sees no better with these glasses than with his old ones, that they are no good and that he was robbed when he paid $10.00 or $12.00 for them. On the other hand, if you impress on him that glasses are unimportant and that the trouble is in his eyes, he will probably pay the same fee without complaint. Such is the peculiar psychological effect of prescribing glasses.

The busy oculist is too much inclined to fall into a routine. Sometimes he doesn't take time to let the patient talk and tell all his troubles. It is true that it is often a waste of time, as the patient will insist that his iritis or keratitis was caused by a cinder, but sometimes his description of symptoms will direct the investigation and actually save time.

Several years ago a man was sent to me by Dr. Payne of Greenville. He impressed on me that he did not come voluntarily, that he had resolved never to consult another eye specialist. He had consulted two, he said, and they would not listen to his troubles, but simply examined his eyes and changed his glassses, and the new glasses were no better than the old. His main symptom was constant severe headache. He also complained that when working at his desk he could not see objects to the right. Vision was 20/20. Hyperopia 1.25 D. S. Presbyopia 1 D. S. The fields were taken and showed a right homonymous hemianopia. Pupils responded to light on either half of the retina. The fundus was normal. Diagnosis was probably a tumor in or near the left occipital lobe of the brain. A decompression operation was performed soon after and the surgeon's diagnosis was glioma of the parietal lobe. I deserve no credit in this case except for listening to the man's account of his symptoms.

Sometimes in examining a fundus, I am uncertain whether it shows abnormality or not. I usually have this patient return in a few days or a week. In one instance I examined a man who dropped in to have his glasses changed because he had been having headaches for three weeks. I found his glasses correct. The fundus appeared normal except that the disc, instead of being concave, seemed to be flat or perhaps slightly convex. I asked him to come back in three or four days. Two days later, to my chagrin, he had a stroke of apoplexy. I am uncertain about the explanation of the papilledema. Perhaps there was an intra-cranial aneurysm. Since then I have seen another case with the same appearance of the disc, accompanied by diplopia and a little weakness of the arm and leg, fatal apoplexy occurring about a week later.

4. There are many refraction cases in whom the examination is negative. I include in this class those with orthophoria and with emmetropia or with iso-hyperopia up to .75 D. S. I can see no need for any one with normal vision and good health to wear a clear glass of .25 D. S. or .50 D. S. in each eye. I believe that a larger amount of hyperopia will not cause symptoms in such persons if the eyes are not abused.

A simple calculation will show that if a person reading at 13 inches with a +.50 D. S. or +.75 D. S. will take off the glasses and move the print to 15 or 17 inches he will read with the same accommodation. He will require less convergence and if the vision is normal, he will see practically as well.

In these negative cases, the headache and other asthenopic symptoms may be caused by focal infection. Children brought to be fitted with glasses are often relieved by removing the tonsils. I had one case in which a spasm of the accommodation passed off after a tonsillectomy.

If no trouble is found with the nose, sinuses, teeth or throat, a general physical examination may reveal some pathology. Sometimes the outbreak of an acute disease explains the symptoms. In other cases the symptoms may cease after a time, no cause having been found. In others the cause is not found until weeks later. One patient complained that her glasses had become unsatisfactory. I found her refraction exactly the same that I had found a year before. Having examined the eyes, nose and throat I advised her to see her physician. Six months later she had a major operation performed, the nature of which I did not learn. A few months later she told me that her same glasses were perfectly satisfactory.

In some cases the symptoms are due to poor light. I have examined children said by the teacher to have defective sight, in whom I found normal eyes with normal vision. Evidently something was wrong in the school room.

In many instances, the cause of asthenopic symptoms is a bad habit. Children are said to be near-sighted because they hold the print six or eight inches from the eyes, who are found to have 20/20 vision and hyperopia. Others who complain of tiring of the eyes are found to hold the print too close. In these cases it seems to me that training them to hold the print farther away is better treatment than putting on convex lenses.

Bad habits are found in adults too. The most usual ones are doing an unreasonable amount of eye work and taking insufficient exercise. A young man who had been living an outdoor life began book-keeping. He came to me a few months later complaining of headaches and tiring of the eyes. He had emmetropia and orthophoria and was taking no outdoor exercise at all.

A young lady with symptoms of eyestrain was working in an office about a mile from her home and taking no outdoor exercise. She had only a slight hyperopia, I advised her to quit using the street cars. Two weeks later she reported that her symptoms were gone.

In conclusion: American oculists are probably the most accurate refractionists and prescribe the smallest corrections in glasses. Accuracy and precision are to be commended. But we should not sacrifice breadth of view for magnification of detail.

In asthenopia, the eye muscles are too weak for the work required of them. Refractive error may be the cause, may be one cause or may have nothing to do with it. One cause or the entire cause may be a pathological condition or a bad habit, the correction of which may prolong life and is therefore more important than the correction of the refractive error.

DISCUSSION.

Dr. B. S. Guyton (Oxford): I enjoyed this paper. It bears out the things I have always heard about Dr. Stevens—that he is very conser-

vative and does not do things that he thinks are not really essential in caring for a case. He spoke of the fact that patients who need glasses usually do not need any urging to wear them. I question that to this extent, that you take strong hyperopes and you nearly always have trouble making them wear suitable glasses. You examine their eyes and prescribe strong glasses for them, and you have a great deal of trouble in getting them worn. I was taught to compromise on total strength when I first studied this and I think the man I first studied under was one of the best on refraction I have known, and he advised compromising on the total strength of glasses in hyperopes when examined with a mydriatic. I have noticed Dr. Jackson at Denver prescribe the full strength and insist that the patient wear the glasses whether he likes them or not. It may take three or four weeks until he gets accustomed to them.

I have found a great many very intelligent people, strong hyperopes, who would not wear the glasses, even when needed ever so badly. A great deal of my practice is with university students, and I find that those who work hardest (take for instance the medical students, and you know a man in the first two years has something like from thirty to thirty-six hours a week, and there is a great deal of microscopic work) are those who get most good out of the glasses for the small errors of refraction. You take those who do not work so hard, and the glasses of weak strength don't do so much good. But the medical students who are laboring all the time, get a great deal of good out of glasses when there isn't much error of refraction.

I have had some experience with operating on the nose to relieve certain errors. I had one case who had considerable exophoria, I never could correct his trouble with glasses. I used prisms on him to some extent; I could never get him entirely corrected until I did a septum operation, and after that he had no trouble.

I believe the doctor mentioned one case of a tumor with which he had trouble. It so happens that I have run on three cases of pituitary tumor in my limited experience, and two of these cases had a most beautiful demonstration of bi-temporal hemianopsia. One case came in asking for glasses. His brother came with him, and before I had time to examine his eyes, his brother got to laughing at him about "My big, fat little brother." I found he had gained fifty pounds in three months; in other words, he had gained half a pound a day for three months. He was a lineman for a bridge gang on a railroad, and he was still working at his trade. On thorough examination I found he had bi-temporal hemianopsia; typical of tumor of pituitary gland. I sent him to Mayo brothers and they verified the diagnosis, but did not operate—advised waiting a while. I never got the boy back to them—he died.

The next case I had came in also looking for glasses. It so happened that I was spending the summer in Denver. I did a little locum tenens work while Dr. Jackson was out of his office at the American Medical Assosciation—he had me to look after cases that would come in without engagements, and this man dropped in wanting glasses for poor vision. I found that this case was another pituitary tumor in which he had gotten fat rather fast and had bi-temporal hemianopsia.

It is often a question with me as to how the men who are limiting themselves absolutely to eye-work will get along without making a nose and throat examination. I am sure that a lot of our troubles with the eyes are due to infections about the nose and throat, and with these men who limit themselves to the eyes, it seems to me that perhaps one-fourth of their patients would have to be sent to a nose and throat specialist. I think it is a great help to examine the nose and throat. I certainly enjoyed the doctor's paper, and I am sure he is right in the fact that a great many of us do prescribe glasses when they are not needed.

Dr. L. S. Gaudet (Natchez): They say that the eyes are the mirrors of the soul. The eyes are also the mirrors of the body. Dr. Stevens has given us a very valuable paper, because it brings out a great problem in the fact that the oculist must be a physician, and also brings out the problem of the physician being somewhat of an oculist. In the case of all eye troubles, regardless of whether they are the fitting of glasses, or for pathological conditions it is an unwise problem when an oculist narrows himself down to the point that he forgets the rest of the body, and that is one of the valuable points that Dr. Stevens brings out in his paper.

In cases of any kind of eye trouble, regardless of what it may, it is wise always to take into consideration the functions of the other portions of the body and the bearing of those functions upon the eye condition. I believe that we eye men too frequently get ourselves into a little, narrow routine method of doing things and overlooking so many other vital problems that come up in our work. I think the doctor mentioned a case of malaria causing headache and getting relieved without the fitting of glasses. Well, if we stop to think and talk about headaches, we will only be going over old problems and we won't do that. The first thing on the list, we must remember is our focal infection, and probably 99 per cent of all people have some focal infection of some kind or other. It may be tonsils, it may be sinus, it

may be teeth, but if this paper does nothing else but broaden our minds in our eye work, it has accomplished some very valuable things.

Dr. W. A. Stevens (closing): I thank the gentlemen for their discussion. The point that Dr. Guyton mentioned, the difficulty in some cases in getting people to wear glasses properly. That is true but those are rather exceptions than the rule, I think, at this time. I do not want to leave the impression that I am not in favor of prescribing glasses when they are needed. I think astigmatism should always be corrected and corrected fully and I have seen the correction of only 25 D. of astigmatism give complete relief from the symptoms. The main point is that we should not drop into the habit of just correcting a refractive error and stopping there. If the patient comes for glasses he may need something else much worse. I am sure that my friend Dr. McWilliams finds a great many more cases of sinus trouble now than he did five or six years ago, because he is looking for it. I am sure in the last few years I have seen a great many more cases of glaucoma than before I had a tonometer. Having a tonometer has not caused me to find them, but the fact that I have it rather indicates that I am looking for glaucoma. I find most of them before I ever use the tonometer and employ it more for precision than anything else—to see how much tension I have found. But, as the Bible says, "Seek and ye shall find"—that is the main point. We ought to be looking for something, and not stop with the first thing we find, which may be a little refractive error.

OTITIS MEDIA.*

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This is a very common condition and because we see so much of it, is considered too simple. When we consider that about 80 per cent of all the partial and progressive types of deafness are due to, or are the result of, an earlier otitis, and certainly a large part of these were otitis media, we must revise our idea of its simplicity and consider these conditions as potentially dangerous. Nearly 10 per cent of them result in mastoiditis.

The development of otitis media is dependent upon the entrance into the middle ear of micro-organisms. This entrance may be effected through the eustachian tubes, the most common route, through the blood stream or the lymphatics, and of course if there be a perforation of the drum membrane, through that route. The type of bacteria may, and does, vary with the individual case and the stage of the disease. Almost always there is a mixed infection after the "M. T.", membrana tympanum, is opened. There seems to be some divergence of opinion and findings of the types present before the external avenue is opened. Hays says, "First of all comes the various types of streptococci, mucosus, capsulatus, communis, viridans and hemolyticus; the staphylococcus; the pneumococcus and then the various organisms which are not so commonly found, such as the bacillus of influenza; the Friedlander bacillus, the bacillus proteus and the colon bacillus. Any type of organism may be found but these are the most common and they have been given in the order of their importance and in the order of their frequency."

Other factors which contribute to the cause are also many and varied, possibly the most common being the so-called "common cold," with its attendant irritation of the nose and naso-pharynx. These membranes become swollen and cause blocking of the ventilation and retention of the infected mucus forming an excellent culture medium for the growth of additional bacteria; the hard blowing of the nose so blocked, and the forcing of the air through the path of least resistance, which is often the eustachian tubes; abnormal development of the intra-nasal structures; the presence of diseased or hypertrophied tonsils and adenoids or excess of lymphoid tissue in the vault of the pharynx. Certainly the "diseases of childhood," particularly the exanthemata, are contributory factors and with these may be mentioned pneumonia, diabetes, influenza and typhoid fever. Swimming with the resultant entrance of bacteria-laden water into the nose

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and throat is another factor. Particularly is this true in the natatoria.

Because of the prevalence of many of the contributory factors in the cool damp months, late fall, winter and early spring, otitis media is also more prevalent in these months. The incidence of the disease is greater in children than in adults and may be explained by citing again these contributory or predisposing causes and their relative incidence in children, also by the fact that in children the eustachian tubes are straighter and their pharyngeal orifices are larger, affording easier access to bacteria. Deficiencies in diet may also play a part in childhood, even in adults.

It is a well known fact that children can stand more tension on the ear drums than adults, the tissue being more elastic. This, with other factors, creates a difference in the symptoms in the two classes of patients. In fact the symptomatology varies greatly in individuals in each class. Usually the chief symptom is pain. Yet all of you have had cases when the discovery of a discharge from the ear was the first indication of trouble. The history of these cases will in most instances reveal a recent cold or rhinitis possibly so slight as to have shown only a little nasal discharge and practically no discomfort. Another case may complain of tinnitus or impairing of the hearing only. Still another may be referred for examination with only a baffling temperature as a symptom. In children under two years a careful examination of the ears should always be included regardless of what other condition may be suspected. It would be a "safety first" measure to say the least. The body temperature may be raised from one to four degrees, even more, or may be entirely normal. In babies the only symptom may be fretfulnesss at night, with or without rubbing or pulling at the ears. The pain is almost always more severe at night. When the pain is severe and of long duration there may be marked exhaustion.

The blood picture varies so much as to be of little help except by repetition and comparison or in eliminating the possibility of some complication.

Objectively the symptoms are again more or less varied, from a slight to a marked engorgement of the vessels of the membrane, to a distortion of the membrane, or bulging. The distortion may extend over only part of the drum or may even extend well out into the canal wall. The obliteration of the margin of the drum with the canal wall in the postero-superior region is not at all uncommon. In a thin clear drum with a minimum of inflammation, and before the tympanic cavity is filled, one may sometimes be able to make out the outline of the level of the fluid in the cavity.

As the product of the inflammation, usually serous at first, increases the drum is pushed before it and when of sufficient quantity at some point where the pressure is greater or the membrane is thinner marked bulging or pointing occurs causing necrosis, sloughing and perforation which with its resultant drainage usually affords some measure of relief, especially if the perforation be large enough and favorably placed. These spontaneous openings vary much in size, shape and location. The smaller ones afford some temporary relief but tend to close too early and reopen when pressure becomes sufficient. The larger ones tend to remain open after the discharge and inflammation have completely subsided. The openings of medium size often give relief drainage and recovery.

One symptom that often worries us a bit is tenderness on pressure over the mastoid antrum. This may be due to the proximity of the antrum to the tympanic cavity, especially in children, or the inflammation may spread into the antrum by either contiguity or continuity. Indeed one author whom I have read (Kerrison, Diseases of the Ear) states that the antrum rarely escapes becoming inflamed when the middle ear is involved. This symptom has, no doubt, before the days of the roentgen-ray and with those most surgically inclined,

caused the opening, unnecessarily, of many mastoids. No one claims more than 10 per cent mastoids and certainly this percentage must be much lower where treatment has been given.

Usually the diagnosis of otitis media presents but little difficulty. The history, some one or more of the several usually present symptoms and signs; "cold," "sore throat", recent affliction by some of the exanthemata or "mumps" will lead one to an examination of the ear and the diagnosis. There are some conditions, however, that are worthy of mention in differential diagnosis. In beginning parotitis the pain is usually not so severe, is in front of and below the ear, is increased, usually, by eating any food that increases the flow of saliva, and the absence of findings in the ear itself. Certain conditions in the pharnyx and larynx may cause pain referred to the ear, laryngeal tuberculosis fairly advanced being one condition. The examination of the ear shows little or nothing while examination of the larynx shows the pathology. The catarrhal or non-suppurative type of otitis media simulates very much the suppurative, and very often becomes suppurative, but there would be no bulging of the drum. Acute myringitis is one of the hardest conditions to differentiate. The picture is of a reddened drum with pain, though less severe, and the pain does not persist or grow in severity. Blebs or blisters may be confused with bulging, in fact it may present many of the signs and symptoms of otitis media. The absence of the pharyngeal symptoms, the presence of the light reflex and type of redness will be of help in making a diagnosis. Many of these cases will not clear up without myringotomy and then sometimes become infected ending in an otitis media. The tympanic cavity is often the site of an inflammatory process in acute myringitis of very long standing.

Pain referred to the ear from dental conditions, *i. e.*, apical abscesses, exposed nerves and more particularly an impaction or unerupted third molar, sometimes presents difficulties. The almost, if not total, absence of findings in the ear after a careful examination should lead us to seek consultation with a dentist or radiologist if we do not locate the trouble on the inspection of the mouth. I have found it difficult to convince patients that the pain was not in the ear until I had proved it to be elsewhere. The pain is sometimes quite acute and is so definitely in the region of the ear that one must needs be positive before saying there is no trouble in the ear. Trifacial and facial neuralgias must also be reckoned with at times. Again, the absence of ear symptoms is our main stay, and the exact location and distribution of the pain.

The course of otitis media may run from a few days to several weeks in the so-called uncomplicated cases. Quite a few are inclined to call a case that has discharged for three weeks or more a complicated case, and the complicated cases may run on indefinitely according to the severity and the measures employed and may terminate in mastoiditis, labyrinthitis and even death. I shall not go into a discussion of the complications at all.

In the uncomplicated cases the end results should leave but little evidence of the disease. There may be some thickening of the drums with scars and possibly some paleness. All too often there is a varying degree of deafness. In those that do not heal, there may be anything from a small perforation remaining to an almost complete destruction of the drums and part of all of the ossicles. Early and proper attention should in most cases prevent complications and leave little after effects.

Far be it from me to attempt to lay down hard and fast rules to follow in the treatment of otitis media. I shall mention only some of the things and measures that I have found helpful.

Prophylaxis, I think, should be the first consideration. Of course this is not always possible for the case is often already far advanced when it presents itself. The edu-

cation of the laity is of the utmost importance in prophylaxis. Let us try to train them that an ear-ache may end in a lifelong affliction, deafness, if not something more tragic. Next is to train them that "colds" may bring dire complications, especially where the baby is taught to blow its nose with too much force, and that colds should receive proper treatment if they can not be prevented. Again they must be taught that before a child "outgrows" his diseased tonsils and adenoids he may suffer many other maladies therefrom, among them being deafness.

When the case presents itself before there are the classic indications for myringotomy one might temporize with various measures. I believe that I have aborted not a few cases by early and persistent treatment. Phenol-glycerine, 5 to 10 per cent may be instilled into the ears, repeating every hour or so, then the naso-pharnyx and nose should be treated to relieve the congestion there. I use adrenalin in its various dilutions and follow with argyrol or neo-silvol 5 to 10 per cent and apply heat over the ear and wait a while. This is only in the early stages of course. Another method is irrigating the ear with intensely cold water for a period of several minutes, a short wait and repeat. If these measures do not cause a subsidence of the symptoms in a short time one might as well prepare to make an outlet for drainage which will likely follow the instrument used.

When it is necessary to incise the drum membrane it should certainly be done in a workmanlike manner. A well-pointed and very sharp knife should be used, to make a long curved or angular incision, the type and method well known to all of us. As for anesthesia, there is again a difference of opinion. All the "genetral" anesthetics have been employed. In my own work I use the local almost exclusively. There are not a few preparations that have been used for this purpose. I use equal parts by weight of crystals of cocain, menthol and phenol and find that I get almost if not perfect desensitization and certainly this amount of phenol renders some asepsis to the field. I use this on a small softly wound pledget of cotton placed against the drum where it is allowed to remain for about ten minutes. Strum, in the British Medical Journal, adds to this one part each of rectified spirits and oil of cloves, saying that he does not get anesthesia without them but that he does get an otitis externa when it is allowed to touch the canal walls. I do not find this true with the "C.M.P." solution for I have gone so far as to instill it in the canal.

After drainage is established it is necessary to keep the canal clean and prevent a damming back of the pus. In my office I use cotton swabs but prescribe irrigations with either weak bichlorid or boric acid solution for home use. Have this irrigation done with a douche-bag which has the regular tip replaced by the glass part of a medicine dropper and the bottom of the bag is held about twelve inches above the level of the ear. I realize there are many critics of the irrigation method but many of them are deciding that in private practice a layman can not "dry clean" an ear without causing more damage than with the douche, when the pressure is properly regulated. After irrigation and drying I have dropped into the ear either phenol-glycerin or boric acid and alcohol. The ether treatment I have not tried sufficiently to pass upon it. Mercurochrome and acriflavin mask too many symptoms.

After the discharge has subsided it is necessary to ascertain if the opening has closed, and the state of the hearing. Politzerization and massage may be of some help in clearing up a slight deafness. The unhealed wound if of much size can be helped but little. If small, one by treatment may assist in the closing. In one case of my own with a fairly large opening, about one and one-half by three m.m. oval in shape and fairly regular in outline, I got a closure by freshening the edges of the wound with

a curette and applying over the opening a small piece of sized paper saturated in tincture of benzoin compound. I cite this because the opening had persisted after three or four months. I have tried the method in many other cases with little result except in the fairly new and smaller ones. These while they were slow, might possibly have healed without my efforts. The larger and older ones showed a little or no benefit.

Realizing there is much left that might be said I am reminded that it was hard to find even this stopping place without going much further.

I wish to give credit to references found in articles by Beridon in the March issue of our own Journal; Lewis in Journal Ear, Nose and Throat and Hays textbook on the Ear, Nose and Throat.

DISCUSSION.

Dr. E. H. Jones (Vicksburg): I believe that I am down to open the discussion of Dr. Wilkins' paper. He has covered the subject so thoroughly that I do not find much to add, but there are a few points I would like to discuss. For one thing, last year I personally found, and in talking to other doctors have found, more than 10 per cent of mastoid involved. I remember that Dr. LeJeune and Dr. Lynch had been doing nearly four times as many mastoids as they had in other years; this was probably due to the prevalence of influenza. In discussing the etiological factors, I note that he mentions streptococcus mucosus capsulatus. Dr. Buckley is my authority for the statement that the mastoid infected with that type of organism is an operative case, because there is such an enormous destruction of bone, with such apparently slight symptoms. This is borne out by the way that type of infection progressed in the only case I have ever seen. It was shown by roentgen-ray that there was marked destruction of the bony cells.

He also mentions diet. I may be a little bit "hipped" on the subject of diet. I had the pleasure of hearing Dr. Stuckey discuss diet last February, and I remember his stating that he had a little grand-daughter that was two years old, whose ear drum had been opened eleven times; that that child could be getting along well, and just allow her to eat all the nice sweet, sticky candy she wanted to, and in two days she would have an ear abscess. He was mentioning that in discussion of the use of vitamines and cereals, and at that time he recommended Wryco. I do not know that I have any marked results with it but it has not done any harm.

Another thing is the vagueness of symptoms sometimes. Dr. Alden was to have been here yesterday, and he would have discussed the etiology of mastoiditis as causing some of the summer diarrheas. Dr. Adkins was loaded on this, but you remember in the discussion that Marriott gave, he said they would take ear drums that would have no symptoms whatever and lance them and find very little pus, but if the child died they would find pus in the mastoid.

Another symptom that I have met several times—he mentions here that the margin of the drum or the canal wall may be entirely obliterated; not only have I seen it obliterated, but it goes up sometimes to form a periosteal abscess just above the ear. I have had two cases where I had to open the ear drum and had to incise above and posteriorly to the ear to drain that pus.

I had a peculiar case just two days ago. A very excited mother called me out in the early afternoon to see her little son who had a bad earache. He was cutting his first molar and I found that that was the cause of his ear trouble. Dr. Wilkins mentions teeth as being one of the causes.

He mentions blowing the nose. I think that should be considered. I think Hippocrates started the maxim "Never put anything in your ear smaller than your elbow," and that you should "Never blow your nose hard enough to feel it in the ear."

In mentioning solutions used, I notice he is not wedded to any, and I have had the same experience. I use magnesium sulphate saturated in glycerin. I had found that metaphen, 1-5000, is preferable to neo-silvol or argyrol, but has to be used in copious quantities. I usually have the patient use it five or six times a day, and I get better results.

I want to compliment Dr. Wilkins on getting anesthesia with this solution he uses. I have used it a great many times but I have never gotten complete anesthesia with it. I went so far as to get some ethyl chlorid, and I tried it two or three times and it worked well, but I find so many cases in the literature about the trouble following the use of ethyl chlorid, sometimes sudden death, that I got rather scared of it and quit.

In these cases I find it preferable to use a little curved knife—I cannot think of the name of it, but it was described in the Archives as a little knife that has a stop on it. It has a long cylindrical shank and it has a stop so you can reach in, and unless you use an enormous amount

of force, you can not hit the promontory or stapes at all, and it is very useful with children.

In cases of otitis media where there are apparently some mastoid symptoms developing, I have used suction at times—very gentle sunction with very good results. I think I have avoided some cases of mastoiditis by using suction.

The doctor mentions one process that I think is unsafe. That is, politerization afterwards. I think the method of inflating the eustachian tube by an eustachian catheter is much to be preferred.

There is another method of treatment he did not mention—zinc ionization. I do not know that I have used it enough to know much about it either, but I can report a series of ten selected cases with 100 per cent results. Friel says that post nasal sepsis contra-indicates zinc ionization in otitis media. I have tried experimenting on some cases that had otitis media and also sinus trouble with post nasal dripping, and in using it I did not get any results. If we do not count these little experiments but confine ourselves to the actual cases, we get 100 per cent. I wish to cite one particular case: a young girl eight years old came in from the country; this was at the Charity Hospital; the folks lived over in Louisiana. The child had a right otitis media for six years, and a left for two years, with bad tonsils. I used zinc ionization on the bad ear first. I tried it on the right ear, and in one week that ear was entirely dry. That has been a year and a half ago and it is still dry. Then I decided to take out the tonsils; that was our old remedy, and I did it as thoroughly as possible, and waited two weeks for the other ear to show any symptoms of clearing up, but it did not, so I used zinc ionization and it cleared up right away. I think this is an excellent form of treatment.

Dr. E. F. Howard (Vicksburg): Just two points I will mention. The first is the prophylaxis by early drainage. I can recall one series where we cut some four hundred and twenty-five drums during that epidemic of influenza and had no operative mastoids. If we are figuring on a 10 per cent basis, and I have never seen such a high percentage as that, I do not see how we got away from it, except that we cut everything that we could possibly consider serious. If you cut a drum, and are clean about it, you will not hurt it, nothing is at stake, you have not done any great amount of harm, and ever since that series of cases, I have been profoundly convinced that I had better let the innocent suffer with the guilty and cut the drum, irrespective of whether indications were very suspicious or not, especially where we are working in the presence of some epidemic of that sort.

The other point is on irrigation. I have absolutely abandoned the question of irrigation in otitis media, and I abandoned it about a year ago. I had been extremely suspicious that they never washed any pus out of the ear. I had been long convinced that you just irrigated the outer part of that ear canal. I want to tell you of one case I had. It is all in the family so I can tell this little story. This was the case of the son of Dr. S. W. Johnston, a boy of some twenty or twenty-two years of age. I went out to see him one morning and found him with a beautiful bilateral otitis media, one ear draining and the other with the drum bulging. By afternoon he had beautful drainage on both sides. The boy was very ill. Dr. Johnston brought on immediately his other son from college, he is now in his third year at Vanderbilt, to help nurse the boy. He had a couple of trained nurses, and two or three days afterwards when I called they had a two-quart fountain syringe and were washing out his ears. I waited until they got through and looked in his ears, and there was just as much pus in there as before, because there could not have been any more; you just moved the ear and it dripped out. Now, if a graduate of thirty years experience, plus a third-course medical student, plus an anxious mother, plus two trained nurses, can't wash pus out of the ear, I don't believe it can be done by an ordinary family, so I have limited myself to dry cleaning. I instruct the family of the patient to do wiping with swabs and confine myself to that, and have cut out the irrigation.

Dr. George E. Adkins (Jackson): I want to rise to the condemnation of irrigation myself. They do not irrigate the canal, they irrigate the ear. Then, again, the doctors make a point that if they treat their patients in the homes they can not wipe them out. That is all right, but the thing is if they can't treat them in the homes, why direct them to do it? They can not open the ear drums in the home, and I think it is better to do your own follow-up treatment than it is to give it to the family who can not do it, because you are not as well off after you irrigate as before. Here is what happens. A few years ago bulgarian bacillus solution was recommended to be put in the ear, and we got some results, and we got it because it destroyed the yeast fungi that spring up in the ear. It is a rational proposition now, because we know how it acts. The ear canal is lined with skin. That same skin reflects over the drum. It isn't a mucous membrane as the laity think it is, and when we put water in the ear it stays in—some of it stays in. Now, put on a rubber glove after you have scrubbed for an operation, and then let it stay on for an hour or so, and pull it off and see the condition of your skin. Immerse your hand in water and then take it out and see the condition of your skin. It has

got to peel off, but when it peels off in your ear canal, it has to drop down and fills right up again, and I think it will fill up a good deal quicker after you irrigate than it will if you don't.

Dr. Charles A. McWilliams (Gulfport): I have a little method that I use in irrigating the ear with an alcohol solution. I have the same opinion about irrigation with a large amount of solution that Dr. Adkins and Dr. Howard have, but my idea about irrigation is that we really do more harm, especially if we do not caution the patient not to put anything in the ear until the discharge begins. We all know that when we do a paracentesis, there may be no discharge for two or three days, sometimes it is even longer than that. I make it a rule to tell the patient not to put anything in the ear until the discharge begins, because I think we set up an otitis media very often when we open the ear and get a dry hole. I had a case where the ear drum was bulging and it looked as if it were full of pus, and when I opened it, it was full of gas, and there was a hole in the ear drum and absolutely no discharge. The discharge started in a couple of days. If I had put any kind of solution in it—mercurochrome or anything else—and some germs were in the canal of the ear, it would set up a secondary infection which is worse than a primary infection in the ear. I think the main thing is not to use anything in the ear until the discharge begins, and then when it begins the only thing you can accomplish by irrigating the ear is to keep it from causing a secondary infection in the canal. You do not get any of that solution inside your drum. I make it a rule to give them boric acid and alcohol, and put twenty drops in a medicine dropper and irrigate the exterior canal, pump it up and down. I do this for two reasons: one is you have to give them something to use—if you don't they will think you are neglecting the ear, and will probably put somebody else to irrigate it, and the alcohol solution does keep an external otitis from forming, especially when the pus gets behind the ear.

Another thing about this cocain, menthol and carbolic acid—I think if you will leave it in at least twenty minutes you will get a satisfactory anesthesia. I do not think you will get it under ten minutes, but I would not advise leaving it longer than twenty minutes. I had one case where I put the solution in about 2 o'clock in the afternoon. I had the ear filled up, and after I put the solution in the parents asked for a general anesthetic and wanted a certain doctor to give it. I told them to find him and let me know when he came. I went on to treat some other patients and left the solution in the ear for about four hours. When they came back everything was perfectly white. It really didn't do any damage—there was no sloughing of the drum, but I thought sure we would get a sloughing of all tissues. The child had both a general and a local anesthetic.

Another little stunt I tell the patients to use. I read it somewhere. Instead of using politerization, I have them to hold the nose and swallow. There is an opening of the eustachian tube in the normal ear; if it is all swollen you can't feel it—if it's normal you can hear the ear drums click, opening and closing. I think that little stunt really helps in all otitis media cases.

Another observation I have made is that the most persistent discharge from children, that gives me more trouble than any other type. is that associated with sinus infection. Most of these sinus infections are unilateral. The ear that runs the longest is always on the side where the sinus infection is worst, and in such cases it is mighty hard to clear them up until you clear up the sinus infection, so I always pay attention to the treatment of the sinus and post nasal spaces rather than to the discharge. I give them a little alcohol solution to keep them busy with the ears, but I know the cause of it and once the sinus trouble is eradicated and the adenoids removed, you can get that discharge stopped in children.

Dr. H. R. Fairfax (Brookhaven): I think Dr. Wilkins is to be congratulated on his excellent paper, and I want to emphasize one point. In a case I had recently there was absolutely no pathology that I could see in the ear. The child had been complaining a day or two with her throat. I said, "Let me see your throat." The tonsils were just full of pus. As to irrigation treatment I have to disagree with him there. I am much more in favor of the old fashioned alcohol and boric acid swab treatment. It has been very satisfactory.

Dr. B. S. Guyton (Oxford): I would like to mention one thing here. Two or three years ago I heard Dr. Harold Hayes in the Colorado Congress in a series of lectures, and he mentioned the use of adrenalin and cocain when you first see a bad ear, or the patient first begins to complain of earaches. He stated that in most of these cases unless the drum looked extremely violent that he would use a prescription something like this: cocain and menthol each 5 grains, adrenalin a dram to an ounce of water, and have the patient to heat it and use 5 drops in the ear every half hour for five times, and then wait about twelve hours and use it again—the same series five times every half hour—about five drops. I use it in infants this way, any age child. I have used this since that time, and I am sure it has helped me in numbers of cases to save having to open ear drums.

To illustrate it, I have a little boy whose ears fired up. I opened the drums immediately; a few months later one fired up again. I opened it immediately. I could see from the scar tissue in his ear drums, however (they healed each time), he had a little deafness. His ear drums fired up again in spite of the fact that his tonsils and adenoids were out, and I did not want to keep on opening his ear drums, so I used this medicine and I have used it every time since then that his ears have fired up and every time it has cleared them up. I never wait over twelve to fifteen hours from the time they begin to have earache; if the second series of treatment does not clear it up, I then go ahead and open the ear drums.

Two or three years ago at our meeting in Biloxi, Dr. Blackshear was there and he discussed some papers on otitis media and he showed us this little knife he was using with great success, and I have used it a great deal since then. With very little children I do not use any anesthetic, I just punch the ear drum and it is all over in a second, and very few of them will cry more than a few minutes. This is the knife (exhibiting it). It cuts a "V" shaped opening. If you make a curved incision in the ear drum you will notice in a few hours it has healed up all but one tiny little point. This will make just as good opening as you would get from anything else. If you care to see this knife, here it is. I carry it in my pocket all the time. With just a little alcohol sterilization you can punch an ear at any time.

I notice you mention wiping the ears out. I rarely ever use cotton swabs to wipe an ear out. I use suction. I have a Brawley suction outfit right by my cabinet. On the end of a rubber tube I put the glass part of a medicine dropper, and on the small end of that the tiniest little piece of rubber catheter, and I suck out the pus by sticking the little rubber catheter in the canal. You can get it out much better and with far less pain to the patient.

As for local anesthetic I have been using the same thing that Dr. Wilkins mentioned. I had Dr. McWilliams' experience once. I left it in too long and I got a burn, and it gave me trouble for two weeks. I put it in the ear just exactly as Dr. Wilkins does and asked the patient to stay out in the other room for a few minutes. I forgot the patient for a whole hour and when I did get him back in the office I saw I had a burn, and it took me two weeks to get it cleared up and it caused no end of trouble. You can look in that ear right now and see the patient has some scar tissue all through that drum that I do not believe would have been there if we had not allowed that anesthetic to stay in so long.

Dr. W. A. Stevens (Gulfport): Regarding the prophylaxis, I have never had much confidence in drops instilled in the ear, but in earache from an ordinary cold I frequently find that mopping out the naso-pharynx will relieve it. The instillation of argyrol and liquid albolene through the nose will frequently relieve a child that is having earache. If these measures fail, the ear drum should be opened. In the exanthematous diseases we should take no chances at all. If there is sufficient inflammation to cause pain and fever, I believe in lancing the drum. I have used the same anesthetic mixture and by leaving it in fifteen or twenty minutes have found it satisfactory. After you have an opening in the drum, I certainly think you never want to drop any solution of any kind in the ear, and I instruct my patients to do nothing whatever to the ear until they see yellow pus coming from it. I then tell them to irrigate it, with the idea that it will prevent irritation of the external ear. If it has not stopped discharging in a week I use the suction or dry treatment. The majority of them will not run pus at all—simply have a little serum running two or three days, and then it is all over. If you use drops in the ear you may induce infection. Even those that do show up pus after three or four days will usually within a week's time be healed. You do not need any after treatment at all, but I always tell my patients that if it runs as much as a week, that is long enough and we had better get busy with dry treatment then, but my treatment is entirely taking out and never putting anything in.

Dr. H. L. Arnold (Meridian): I am glad Dr. Guyton mentions suction. I think it is one of the most valuable aids in the treatment of a discharging ear, and frequently when the patient is old enough I use it by an apparatus that is not original with me, of putting a tube to the ear and having a glass bulb and a rubber tube in the mouth and let the patient suck it out. I find it a very valuable aid in the treatment of these ears. I am sure if you will use this mixture Dr. Wilkins mentions—the local anesthetic—and get it on the drum, leave it about 15 or 20 minutes, you will never have any trouble in opening an ear.

Dr. E. L. Posey (Jackson): I use somnoform in treating these drums. I find it very satisfactory. If you gentlemen never have used it, try it sometimes. I never use glycerin and carbolic acid after the drum is opened. I find that sometimes this will stop up the opening made by the incision and you have to reopen the drum. I never use irrigation. I have never found where it could do any good. I can see where great harm can be derived from its use.

Dr. H. D. Anthony (Memphis): I certainly appreciate listening to this paper. I would like to mention one thing—a little more about something the doctor brought out. He mentioned the case of the infection of different germs, and he

mentioned the hemolyticus streptococcus. I think this acute infection of the middle ear has been neglected and I think we are going to hear more about it all along now, and right soon. The hemolyticus streptococcus I think is the most violent infection that we can have in the middle ear. It is so violent that cases have been reported, and I have had a few, where it caused mastoid infection within twenty-four hours after the infection started in the middle ear. This type of mastoiditis is always caused by the hemolyticus streptococcus, and you get a thrombotic condition in the small vessels in the mastoid cells. I have a case right now to demonstrate this, I think, in the hospital—that has been there eight weeks, and as you well know a case usually leaves the hospital within two weeks, sometimes within a week after operation. This child was taken suddenly ill with acute, violent earache at school, came home, her mother took her temperature, and as she was accustomed to using a thermometer she really took the temperature by rectum, which is the only correct way to take it. This child's temperature was so high that you could not depend upon it being taken by mouth; the temperature the first day was 102, that was in the afternoon; that night it was 103; next day it was 104; on the third day I was called to see the patient and the temperature was still 104. I examined the child and saw the drum was red, with some bulging, mastoid very tender, stiffness in the sternomastoid muscle and very tender on that side of the neck. With these symptoms I immediately transferred the child to the hospital for a myringotomy. I wanted to get a large incision and the child had a small drum and a small canal. In those cases, I think a general anesthetic is better than when you have a large canal. Of course you can do better local work in a large canal. This child went on forty-eight hours following this—the temperature stayed up. I had a blood culture taken and had a positive culture for a hemolytic streptococcus in twenty-four hours had eight colonies, and I think eight colonies was a marked infection for a twenty-four hours growth—in fact, it was less than twenty-four hours. I imagine it was about eighteen hours.

Well, the ear started on Monday, the myringotomy was done on Thursday, blood culture was taken on Saturday, and Sunday the roentgen-ray picture was taken of the mastoid and reported negative. There was no breaking down; in fact, the affected ear looked as well as the good ear. I did the mastoid after that finding and found there was not a normal cell in the mastoid; there was practically no pus in the antrum and there was not breaking down of any cell—the whole thing was acute hemolytic streptococcus infection in the mastoid. For four days after that the temperature stayed so high and she had so many chills that it looked like a typical picture of jugular thrombosis. A culture was taken every day and it was positive every day, so I attempted and did do a jugular resection, took out a section of the jugular. It was a child nine years old, and you could not take a long section out of a child that size. I did a simple mastoidectomy, the sinus wall looked normal, but I did the jugular to cut off a general infection from that area that was infected with the hemolytic streptococcus—the culture from the ear showed pure hemolytic streptococcus and the culture from the blood showed the same. I believe this case of acute otitis media following immediately with a high continued septic temperature was due to a general septicemia.

There seems to be a good deal of discussion on dry and wet treatment, which always comes up, and I am interested and always find out some new way to clean an ear that I had not thought of. I have found out several today. In one patient you can clean an ear better with one method than you can with another. The cases I have tried the dry treatment on, the canal gets stopped up with the secretion and I did not get the drainage that I wished for, and for the last few years I have been letting the mother irrigate with a medicine dropper. I furnish them with a medicine dropper and have them to sterilize the solution every time they use it—plain boric acid solution; have them turn the child's head over on the bed without any pillow, and suck it up and down, and when you suck it up you can see just how much pus you are getting and keep on until you get a clear solution returned. I have repeatedly had the mothers do that, and then looked in the ear and there was a drop or two of clear fluid in the ear and most of the time you will have a clean drum and a clean canal, but the solution soon comes with the pus out of the middle ear, and it just sweeps the water out in a way that does not cause any damage.

I am so glad to have had an opportunity to hear the discussion of local anesthesia. I never have before heard anybody mention that it has caused trouble by burning and sloughing in the drum. I have always believed that it did, and I have never used it but a few times, because I can not see why carbolic acid is not a cautery and gets under to the sub-cutaneous tissues and will give you an anesthesia, and what few cases I have used it on, I think it caused a swelling of the drum, and the incision seemed to be closer together after using it than if I had not used it.

Dr. E. Leroy Wilkins (closing). I expected to get romped on even more than I have about this irrigation proposition. In my reading in the last two or three years I have found a large increase in the number of men who have stated they are

being converted to the irrigation method when properly administered, for the cleaning of the ear by the laity. Not all of our people can have such assistance as Dr. Johnston's boy did; therefore we may get better results.

Dr. Jones mentioned more than 10 per cent of mastoids last year. I had quite a lot of cases of otitis media, but did not have as much as 10 per cent of mastoids.

The proposition about the different types of bacteria and when to operate because of the streptococcus hemolyticus has always been my bugaboo, and I always hated it more than anything else.

The proposition of diarrhea due to middle ear disease was so new to me and I knew so little of it that I did not mention it.

In the different methods of treatment and the suction, etc., in cleaning the ears, I mentioned here three years ago, in discussing a paper on this same subject, the use of dry cleaning. When I was at Camp Dix, N. J., with Dr. Wells P. Eagleton of Newark, N. J., we ran a series of about one hundred and eighty or ninety cases. He wanted to put in a line of treatment with dry cleaning. It was quite popular at that time, so he had us to treat every case by dry cleaning, and the use of dichloramin T; he had us clean the ear, fill it with dichloramin T, and then with some slight pressure with Seigel's otoscope press some of it into the middle ear. We ran along and some of those cases showed pretty good results, so without his knowledge we ran a series of control cases, using boric acid and alcohol. We had a report on those dichloramin T cases twice a week at the officers' meeting, and he just thought we were getting wonderful results from them, but as the cases grew more numerous we showed him we were getting just as good results by dry cleaning and suction, and the instillation into the ear canal of 70 per cent alcohol saturated with boric acid. He had this published in the Army and Navy Journal, a series of about one hundred cases we had run and the marvelous results we had accomplished; this was in 1918.

As far as the anesthetic is concerned, I do not like a general anesthetic in any place at all where I can use a local. Certainly with ether or most any other gas anesthetic, there would be a possibility of lighting up some trouble there. If you use anything of that kind to relieve otitis media you have certainly created an irrigation in the lungs, and a child going out in two hours afterwards, will stand a chance of getting some infection in the lung. I seldom let one go more than fifteen minutes with the local anesthetic in the ear. Taking up from one to fifteen minutes, I have not seen any bad results, but by the long continued application of this to the ear canal and the drum it may perhaps cause sloughing. I have been afraid of it for that reason.

As to the knife mentioned by Dr. Jones and the punch by Dr. Guyton. The knife with the shoulder and the hooked bill point serves me excellently. I also have a long, curved rapier knife, and with little children where they are going to fuss a good bit, certainly under your local anesthetic, I would rather take that much trouble than to take a chance of giving them a general anesthetic when their lungs and their nasal mucous membrane are already infected and involved, but that knife serves a very excellent purpose, I think. The punch I have never used. I have one. About nine or ten years ago Dr. Lewis Levy of Memphis read a paper before the Tri-State Medical Association on otitis media and demonstrated that knife. Some of those doctors criticised him about "gouging" the ear. I had gotten one of the knives, but I put it away after this.

Some one mentioned the politzerization method, and not using it. I have not been able but a few times in my life to use an eustachian catheter on a child. I like it in adults; there is less chance of infection, but I do not do much with it in children under five years. You have to put them to sleep to do it.

Dr. Howard mentioned the early opening of all ears. That idea is quite prevalent with ear, nose and throat men everywhere. A great number of them go on the proposition when in doubt do a myringotomy. Certainly it is better to let the innocent suffer with the guilty than to wait too long, but I hate to open an ear drum unless I am sure, because I feel that in the hands of the laity, and most of the patients are getting that sort of care, you certainly have a chance to get an entrance infection from the outside.

May I again speak of irrigating? I have an ordinary douche bag, tips removed. I make them take an ordinary medicine dropper. I show them how to pull the ear to straighten the canal and put this so that this point will throw a small stream of water in there. I have had very little trouble. All of them do not get the ears clean, but with the medicine dropper and the small tube and small stream of water, most of them can. Then, at the office I have an old tubing from a fountain syringe with a medicine dropper fixed in it, and I have shown it to every patient I have had for six or seven years. I show them how to fix it and I have them tie it so that this medicine dropper, with a short piece of tubing extending, is about one foot below where the tubing attaches to the bag. You do not get an excess pressure, and I have been able to get them to clean the ears much better than I could with the other method. The moisture remaining from this treat-

ment, glycerin and phenol, helps to overcome that to some extent and the boric acid and alcohol to a greater extent.

Dr. Adkins said that if they were not going to do it right to let you do it. I try to have my patients come back one time anyway within the first two or three days and if they discharge more than a week. Dr. McWilliams mentions three or four days—I am afraid some of his cases maybe got an infection from the outside when they wait that long. If I do not get a discharge within the first thirty-six hours, I probably am getting a secondary external infection.

Dr. Anthony or Dr. McWilliams mentioned holding the nose and swallowing. This is excellent. The chewing of gum is being recommended for the relief of soreness of muscles in post-tonsillectomy cases, and I find that it milks down the secretion to some extent. I have not used it to know whether this is so or not.

I have had quite a few cases with unerupted or impacted third molars who have given me quite a good deal of trouble. In one case, a lady made me incise an ear drum against my will, when I had tried to get her to have a tooth extracted, and against my will but with the young lady and her physician both insisting that her ear was the trouble, I did a paracentesis—got no drainage, no pressure of air. I kept it as clean as I could, and in three days she told me she was going to get better, that her ear was running. I figured I had not kept it clean and had infection from external route. Finally she had to go to the dentist—she had an unerupted third molar on both sides—both of them were removed at the same time and in thirty-six hours her pain absolutely left her. Her ear discharged for about ten days and we relieved that with the other methods. I try to see every case on whom I do a paracentesis at least once afterwards. I insist on their coming back, and I look at the ear and see what is going on. I thank you, gentlemen.

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SYPHILIS OF THE LUNGS.*

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I am presenting this subject because, so far as I know, no series of cases of pulmonary syphilis has previously been reported before this body, and in order that I might save you the glaring errors I have made in the diagnosis of the condition, and put in words these experiences along the pathway of medicine which might be of some benefit to you. I do not intend to lead you into the mazes of medical history, or recommend to you in detail the fairly voluminous literature of this subject, nor induct you into a confusing bibliography; there will be no presentation of text book data, no tedious discourse on micro- and macro-pathology, on fine differential points in auscultation, percussion and phonics, and great quotations from authors I have read; but I will rather let you infer that I have spent many sleepless nights poring over tomes concerning this subject. In these days when the quest of the obscure and the terror of the obvious has become a cult I hesitate to make such a simple presentation of a common subject, but I feel that the general practitioners, those who represent the frontier of medicine, are overlooking a rather common condition that has always been considered a rarity. I feel that the presentation of a few personally studied cases will be of more value than the statistical report of many hundreds. More than twenty cases have come under our observation in the past six years, but I will only present four as characteristic ones.

Contrary to the usual rule I am going to present my conclusions first:

1. Pulmonary syphilis offers no definite criterion for diagnosis from the standpoint of the roentgenologist as it offers no characteristic picture nor can it absolutely be distinguished from other lesions. However, there are certain shadows particularly in the bases, which will lead one to suspect syphilis.

2. The course of the disease, due to the mild inflammatory reaction of the spirochetal agent, may be either acute or chronic, but chronicity is the rule.

3. Clinically the picture of pulmonary syphilis is not characteristic and simulates

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chronic bronchitis, bronchial pneumonia, neoplasm and tuberculosis.

4. The blood Wassermann is only fifty per cent positive and if it is positive it may but mean other visceral lesions and is but another link in the corroborative chain.

5. The therapeutic test is the one which generally gives most consistent proof, as all of these pulmonary syphilitics have their condition cured or arrested at once on beginning specific treatment.

6. In a case of supposed tuberculosis with repeated negative bacteriologic findings, or of a primary new growth of the lung, it should be first put on anti-syphilitic treatment and thoroughly tested with the same before being condemned to prolonged anti-tubercular treatment or neoplastic death.

I do not intend to insult your intelligence or reach your threshold of receptivity and powers of assimilation by showing you a long series of pictures to show that I have really amassed a great lot of data, but I am showing you radiographs on four cases to demonstrate a variety of therapeutically proven syphilitic lesions of the lungs in their various manifestations.

Case No. 1. The first case for your consideration is Mrs. A. A., forty-three years old, who is a fair example of pulmonary sclerosis or fibroid induration, which shows as broad indurated bands growing through the parenchyma of the lung, enclosing it in a network of fingers reaching quite to the periphery and extending uniformly into the bases. You will note the presence of calcified glands which are usually not found in a purely luetic chest. In the lower right lobe you will see an area of circumscribed fibrosis which is probably a healed gumma, while in the left side is a much more diffuse fibrosis. This case is being quoted first as it was the only one in which the diagnosis was guessed correctly.

She had three children with no miscarriages, her family and husband are in good health. She was somewhat neurotic, ignorant, introspective, an indefatigable talker and had poor insight into her own condition. She came complaining of a cough which had been recurrent in type for five years. She had no hematemesis but some dyspnea and her pain was merely muscular from paroxysmal unproductive coughing. She was slowly losing weight and has had intermittent rises in temperature. She would have low grade fever for several weeks at a time and did not feel badly enough to go to bed. She had taken a barrel of cough medicine. The attacks seemed to be self-limited and she apparently recovered without treatment. She had lost but little weight and she thought that her loss of strength was due to lack of sleep and overwork. She had been variously treated for capillary bronchitis, asthma and tuberculosis. She was too poor to go to Colorado but was now desperate enough to sell her home, quit her husband and move. Physical examination showed her pupils to be Argyle-Robinson. Her patella reflexes were absent and she had a positive and unmistakable Rhomberg. It was these findings that made me suspect pulmonary syphilis. Examination of her chest revealed nothing of importance except fine sibilant rales universally distributed. No moist or crepitant rales were brought out on expiratory cough. There were no changes in the transmitted voice or percussion note. Sputum was repeatedly negative but so also was the Wassermann. In view of the fact that her symptoms were out of proportion to her physical findings, no bacillus of Koch, no night sweats, little loss of weight, intermittent fevers subsiding without treatment, a suggestive roentgen ray and positive signs of cerebral spinal syphilis she was diagnosed pulmonary lues and put on specific treatment. This was in September, 1926, and now she is well from her point of view. The nocturnal and morning cough has stopped. She is attending to her work unhindered and she does not feel sick.

I believe the only reason the above diagnosis was made correctly was because in the three years previously we had been mistaken so many times, as the next three cases will show.

Case No. 2. W. T. W., aged thirty-two, the father of two healthy children, whose wife is well and has had no miscarriages. His father had sarcoma of the foot, and the leg was amputated at the mid-thigh and cured. He denies specific infection. He comes to clinic complaining of a mass on the left side, the center of which is in posterior axillary line extending from the upper border of the eighth rib to the level of the lower border of the first lumbar vertebra. When the mass was first noticed it was the size of a goose egg. In ten days it had doubled in size. At the hands of a capable physiotherapist he took diathermy for two weeks, but in spite of this latter day saint the mass grew rapidly. When first seen by us, the growth was flat, immovable, two inches

thick, three inches in diameter, hard, outline clear cut, not tender, no fluctuation, discoloration, or local temperature. He felt well but was easily fatigued. There was no chest pain. He had previously been in good health but in the last three weeks since the appearance of the lump he was failing rapidly. He was anxious and worried, had lost thirty pounds in weight, no night sweats. His temperature ran from 99.2 to 100 in the evening. His complexion was striking, having a peculiar greenish cast but without corneal jaundice. He gave the appearance of a chlorotic. His lungs were quite interesting. The right was perfectly clear without adventitious breath sounds but the left was slightly dull from apex to base both anteriorly and posteriorly, but with a striking absence of rales. The voice sounds were increased with pectoriloquy and egophony present The breath sounds were distant, were markedly broncho-vesicular throughout but had been obliterated by an infiltrative growth leaving the great and small bronchi symmetrically diminished in calibre. Having been cocky enough to have made a diagnosis of pulmonary new growth on two cases just previously I jumped upon this as a sweet and delicate morsel for diagnostic technique and made a clinical diagnosis of periosteal sarcoma with new growth into the lung by contiguity. He was sent to the roentgen ray department for deep therapy of the soft tissue mass in the left lumbar region. Roentgen ray of the bone showed no relationship of the mass to the ribs. At that time there was no fixation of the diaphragm or fluid in the chest. He was given deep therapy for fifty minutes and reported back for observation in five weeks. The mass had ceased to enlarge but there was no change in its size nor was it anymore movable, but the growth had apparently been arrested, there was now present effusion with fixation of diaphragm. Systemically he was no better. To prove that one cerebral cell was at least working, I remembered that there was such a thing as syphilis of the lung and told the unfortunate patient that his condition was 90 per cent cancer and 10 per cent syphilis. To be entirely fair with him I gave him a prognosis of not more than a year to live and intimated to him very strongly that, while he was still able to, he had better get his business together, as the growth on his chest wall had involved his lung and that he was scheduled. He agreed to the suggestion to take antisyphilitic treatment and was given one dose of neosalvarsan intravenously. He was advised by his employer to go to another clinic for examination. A visiting doctor at this clinic, hearing the case brought before the staff meeting, remarked that he had treated the patient twelve years previously for a primary lesion. Another Wassermann was made, and following as it did a recent dose of salvarsan, was positive. His mass was removed, and he was given intense antisyphilitic treatment. He made a spectacular recovery and after eighteen months observation and treatment he is apparently well.

Case No. 3. The third case demonstrates a beautiful picture of luetic bronchial pneumonia of the miliary type closely simulating miliary tuberculosis, a type stressed much in the texts and literature. The onset of her illness was of such a mild nature that she did not call a physician for several weeks and probably would not have had a doctor then except that her gastric symptoms became marked, with much dyspepsia and burning in the epigastrium and she was referred to us for stomach study. During her barium meal the flouroscope revealed a suspicious chest. The cough as a symptom increased; it became paroxysmal and strident and sounded very much like whooping cough, occurring after going to bed and rising in the morning. She was disturbed somewhat all through the day. There was considerable dyspnea on exertion. Anthracosis and tuberculosis were suspected when her family physician examined her and referred her again to the clinic for roentgen ray. Diagnosis of miliary tuberculosis was unhesitatingly made, but later a suspicion of pulmonary syphilis was added. Repeated examinations of the sputum were negative. There were a few fine rales over the chest. There was no pleurisy demonstrable, but there was much general chest pain not substernal in type as one would expect. There was no change in the percussion note. There was five pounds loss of weight in three weeks. The roentgen ray plate showed circular shadows freely and indiscriminately distributed over both lungs. The prognosis given by her family physician was a life expectancy of but a few months. This petrified and terrorized her husband but she was neither shocked nor panic stricken but packed up bag and baggage and went to her own physician in New Orleans who had treated her through the vicissitude of a questionable and stormy career. He had a Wassermann made which was strongly positive and he made the diagnosis of pulmonary syphilis. Being a very ethical and gracious physician he returned her to us for treatment. She was running afternoon fever of 101°. Her cough had increased, was still rather spasmodic, strident and exhaustive. She had much malaise, easy fatiguability, persistence of the chest pain which required opiates and continued loss of strength and weight. She was having secondary infection as her pearly sputum was becoming mucopurulent. She was given one dose of 606 and immediately began to improve. She was given doses very five days and by the end of the twelfth day she was completely relieved of all

symptoms, both gastric and pulmonary. Unfortunately she was a lady of embonpoint and many curves. Her veins were very small and on one occasion a centimeter of the solution wasted into her tissues and saw her shadow no more. We have seen her several times since and she says that she is well.

Case No. 4. Mr. M. W., 48 years old, five weeks ago, before entrance to the Sanitarium here, was taken ill in Florida with a chill and fever. He returned home and went to bed with a severe cold and cough with pain in the right shoulder. The temperature at that time was 103. The acute illness lasted about one week, being accompanied by diarrhea with considerable colonic pain. The stools have been very offensive and putrefactive, no blood present, but a noticeable amount of mucus. He has had a slight cough since the beginning of his illness with a mucilaginous expectoration, prune juice in color, with no red blood. He has fever up to 101°, appetite is poor and he has lost a pound a day for six weeks. He has a general soreness over his chest with pain in his neck and right shoulder, of which he complains bitterly, which phrenic signs drew our attention to the right diaphragm.

Physical examination showed a plethoric type of man with large thick chest. He had no stigmata of lues and denied specific history, with a Wassermann negative in three antigens. He had some dullness at the base of the right lung which merged into the liver dullness. He had a few mucous rales up to the lower border of the scapula which disappeared on expectoration. There were a few rales on expiratory cough anteriorly and posteriorly. The sputum produced was very striking. It was like grape jelly and he raised a considerable quantity daily. His cough was not particularly annoying but it did come in paroxysms, at night and in the morning, though he coughed to a lesser degree during the day. He was in the hospital six weeks and during this time of observation he had recurrent rises of temperature lasting five days each, with from five to nine days intermission. He had perpetual indigestion. When at first a roentgen-ray examination was made it showed the usual markings of a post-influenzal chest with definite peri-hilar infiltration most marked on the right side. The right diaphragm was considerably elevated presenting a torn appearance about an inch to the right of its internal attachment. At that time the right diaphragm had restricted motion but no mass was apparent. The almost daily repeated flouroscopic examinations showed a definite mass attached to and extending below the right diaphragm. Later the lower portion of the right chest showed a dense shadow with almost total obliteration of the right diaphramatic shadow. We were puzzled as to the diagnosis. On entrance tuberculosis and unresolved pneumonia were considered. But the sputum examination repeatedly made showed no Koch bacilli, only an occasional pus cell, though loaded with mucus. His blood count was 12,000, which did not change on examination through his stay. The inflammation in his right chest grew in size and density, which is not true of an unresolved pneumonia. The sputum was characteristic of neither. The opinion of the internists we had in consultation varied. The preponderance of evidence was for a primary cancer of the lung situated on the right diaphragm, although there was some argument for an amebic abscess of the liver which had developed a bronchial fistula, but the diarrhea stools were not amebic in character, no ameba could be demonstrated, the liver was not enlarged, and the condition cleared up under dietary management. A second Wassermann was negative. He was referred to the roentgen-ray department for deep tharpy, but we were advised by our roentgenologist to give anti-syphilitic treatment before deep therapy was used. It took considerable difficulty to persuade the patient to receive Salvarsan but when he finally consented the result was spectacular. Three days after the first dose was administered his sputum began to clear up and before he had finished the first series he had resumed his duties feeling perfectly well. He was dismissed in June, 1923, and the only time that he has been back for treatment is for cure of acute alcoholic attacks.

It is reported that in tubercular sanatoria there is an incidence of from 3 to 11 per cent of syphilis of the lungs. The reason that there are not more syphilitic pulmonary cases reported from the great autopsy centers of the country is that the gross lesions are the same as for any healed chronic inflammatory process of non-specific origin. The diagnosis of the condition must be on general and not definite criteria. The signs, symptoms and history must be conclusive by indirect and not direct reasoning. The presence of other manifestations such as a positive Wasserman, bone involvement, selective adenopathy, signs of cerebro-spinal involvement, history of a cough which is recurrent paroxysmal, nocturnal and early morning in type with presence of much mucus and few organisms, no tubercle bacillus on repeated examinations, a roentgen-ray that shows much fibrosis, either of the miliary type or that radiating from the hilum to the right base, must lead you at least to a consideration

of pulmonary syphilis with appropriate steps being taken to prove or disprove its existence by the unfailing therapeutic test.

This paper reminds me of an Oslerism: "Learn all about syphilis and the rest of clinical medicine will be given unto you."

DISCUSSION.

Dr. Elliott (New Orleans): I have only had two cases of syphilis of the lung in the past seven years—that I recognized. The first case came in for stomach trouble. We gave a barium meal and found gastro-intestinal tract normal but the roentgen-ray showed a beautiful lung; *lace* in both lungs like Dr. Douglas' third case. The Wassermann was negative but I got hold of both the mother and the father and found the source of the trouble. The patient has done very well for the past two years on mercury. I do not give 606 in these chronic cases. I have gone back to the old-fashioned mercury and potash. I believe I have better results.

The second case was that of a man of fifty years of age with a beautiful cavity at the right apex—a beautiful cavity, clear and distinct, profuse expectoration, loss of weight. Frequent examinations showed no bacilli in the sputum. The patient had temperature in the afternoon; in fact, all the typical signs of advanced tuberculosis.

After six examinations of the sputum, all negative, we tried the therapeutic test and the patient has done splendidly. I have watched this patient for two or three years and he is practically well.

Of course, this disease is only diagnosed by elimination. I have never heard of a case being diagnosed, you might say, primarily. They are all called cancer of the lung or tuberculosis, because we always forget—I know I forget—how often we have fever in syphilis, no matter whether the lung or some other part is involved. I have seen several cases treated for typhoid fever where syphilis of the liver was the cause of long-drawn out temperature; therefore, I say that the diagnosis of this disease is by elimination. If you have negative sputum examinations, and even though the history is absolutely negative in every other respect, try your therapeutic tests. It certainly can do no harm and may clear up the diagnosis.

Dr. Durel (New Orleans): The gentleman spoke of the therapeutic test in those cases of pulmonary lesions simulating syphilis and tuberculosis. In our department of tuberculosis at Charity Hospital, out of probably three or four thousand cases, offhand I think I can safely say that we haven't seen twenty cases of syphilis of the lung, not only by clinical observation but by autopsy. There were several cases we were sure were syphilis of the lung which went to autopsy and showed epigastric growths or a tuberculous condition.

Concerning the therapeutic test, I have been caught several times and I hesitate somewhat if I have a suspicion of tuberculosis existing in the case, especially the iodid of potash and also giving neosalvarsan in those cases that simulate tuberculosis. I have seen very active lesions stirred up that lead to final death. I have seen profuse hemorrhages. We have had one case that died. There is no doubt but that the iodid of potash given in that case lead to a disintegration of the tuberculous area and the patient died with hemoptysis.

It is not that I am not in favor of the therapeutic but I means that as a warning; when we have a dual diagnosis before us such as this tuberculosis or this syphilis, let us go slow with our iodid of potash and also with our 606. We are liable to do some damage if we are too reckless.

I congratulate the doctor on his paper. No doubt, it is very well brought out, carefully brought out and timely brought out, but let us not go to the other extreme as we did a few years ago. It was so much so that my internes would come to me and say, "This is syphilis, this is syphilis," and the first thing I knew almost all my patients had been put on anti-syphilitic treatment. One of the attendants was so sure that everybody had syphilis that one day I found out on my charts that everybody had been put on iodid of potash.

In those cases, I believe with Dr. Elliott; I am not too anxious to use the 606. The old iodids, especially the iodid of mercury, as taught by the fathers when we were students are best. I remember a case sent to me years ago for an active tuberculosis and at that time we had no Wassermann. I put him casually on iodid mercury and he had a very wonderful recovery.

Therefore, in conclusion, in the absence of bacilli in the sputum in a case simulating far advanced tuberculosis, be careful because I have yet to see the far advanced case of tuberculosis die without showing bacilli in sputum. I haven't seen one in a year. Therefore, with the far advanced tuberculosis case with a negative sputum, be careful of your diagnosis of tuberculosis. Of course, I still believe in the tuberculin test and I try in many of those cases when I am in doubt to give a dose of old tuberculin ranging from one to five milligrams of tuberculin, and if I get a focal reaction about a lesion that I suspect to be syphilitic I change my opinion and do not tag that patient as syphilitic. I am positive then that I am dealing with tuberculosis. But if I do not

get a focal reaction in a lesion that I suspect to be tuberculous in a syphilitic patient, I conclude that the lesion is syphilitic.

Dr. A. A. Herold (Shreveport): This excellent paper dovetails so well with the paper we heard from Dr. Perrett yesterday on intrathoracic growths that I can't help but refer again to the patient whom I have now under treatment on whom roentgen-ray diagnosis of malignancy was made and in spite of a negative Wassermann I finally got a positive syphilitic history, and although he is at present getting both deep therapy and antisyphilitic treatment, he is improving, and I really believe the improvement is due to the specific treatment more than the therapy.

Dr. Durel has well put it that we must be careful about giving syphilitic treatment in frank cases of tuberculosis. I think we should be careful in differential diagnosis in those two conditions—tuberculosis and syphilis. But in cases of malignancy, until the diagnosis is palpable we should never condemn the patient until after first trying anti-syphilitic treatment even though repeated Wassermann and every provocative Wassermann be negative. I have seen that in several instances and I have seen harm done with iodid administered in cases of tuberculosis where syphilis was also suspected.

Dr. Newhauser (New Orleans): There has been brought out a point relative to the treatment and differentiation of tuberculosis and syphilis which to my mind is not yet complete for the reason that we hear from one source that tuberculosis should be treated as tuberculosis really and syphilis as syphilis. My experience has been that, where we are dealing with syphilis and tuberculosis and we are undecided as to whether this individual has tuberculosis or syphilis, we should first be certain that we have either tuberculosis or syphilis or tuberculosis and syphilis. And if we are dealing with both tuberculosis and syphilis, treat the syphilis as well as the tuberculosis and how best can we get any result from an active tubercular process unless we treat the syphilis also? We know the disadvantages of potassium iodid in arrested tuberculosis and the danger subsequent to its administration, and we don't like to give it and we won't give it, but we do give salvarsan and we will treat these cases therapeutically in the Veterans' Hospital when we are dealing with both tuberculosis and syphilis. We know it is a rare disease.

It is not for me to stand here and tell you gentlemen what you should do and what I should do. It is rare but we do the best we can. We must remember before we are satisfied that a case is syphilitic or it is a syphilis of the lungs, there must be found very definite evidence of syphilis. We get 100 per cent Wassermanns in individuals that have tuberculosis and we must never lose sight of one fact, and that is that you can always have tuberculosis ingrafted on a syphilitic process due, of course, to low resistance.

Dr. Eshleman (New Orleans): I think there are two types of syphilis of the lung which were not mentioned in the paper, or were not brought out strongly anyhow—syphilis of the respiratory tract, I should say, instead of the lung. Ulcerative conditions in the bronchi or in the trachea at the point of bifurcation, I think, exists in syphilitic conditions similar to what exists in the larynx and merely an extension downward. Those cases are almost invariably undiagnosible. There is no thoracopneumonic test such as spirochetal sputum or such.

The other type, besides the type that the doctor mentioned of indurated area and gummatous areas in the lung, is a late process, it is a process of fibrotic change in the lung which is known as fibrosis of the lung. That is, of course, always a doubtful condition too, and often is undiagnosible even at autopsy because of the fact that the pathologist cannot definitely establish the fact that the fibrosis is due to tuberculosis or syphilis or what not.

Dr. Douglas (in closing): I want to thank my friends for their liberal rescue in giving me some discussion on this paper. I thoroughly concur with Dr. Durel about treatment with the iodids of these cases of suspected tuberculosis that might be syphilis. We attempted that several years ago with a client of ours with rather disastrous results and now we don't even give the neosalvarsan. We think the sulpharsphenamin is much less toxic and we usually give them a dose to see if they get better.

Now, in the combined lues and tubercular chests, we are rather inclined to let them alone. I have one in mind now, a very dear friend of ours and of the clinic, who has had tuberculosis a number of years and has visited all the sanatoria, and his sputum is fairly rich with bacilli. He also has a profound arteriosclerosis, nephritis and a damaged heart muscle. We are turning him over to the good graces of his family and the sympathy of his physicians and we are letting him go toward a tubercular and a leutic death, because we feel that if we do relieve him somewhat, the damage has already been done, and we but hasten it by injecting into the veins or giving by mouth toxic substances that he can bear very poorly.

I wish to thank the doctors for helping me out as they did. It makes me feel better, as a stranger in New Orleans.

ENURESIS IN FEMALE CHILDREN.*

ITS TREATMENT IN OTHERWISE NORMAL INDIVIDUALS, WITH REPORT OF CASES.

A. MATTES, M. D.,

NEW ORLEANS.

Bed wetting as a symptom is commonly seen in the young of both sexes. Its presence is noted in a number of conditions that have for their basis some congenital development anomaly, or some disturbance of the endocrine system or the nervous system. This paper is based on its occurrence in 20 female children that present no other abnormality than the occasional presence of a low grade cystitis. It will therefore be seen that the subject to be discussed is well limited.

In "Modern Urology" by Cabot, the discussion of enuresis is omitted. Koplik states that it is a functional neurosis of the bladder, in which urine is passed involuntarily. In girls Koplik has seen it persist into adult life, its treatment presenting a serious problem. Holt briefly passes over the various malformations and other organic and nervous diseases, as well as tumors, that may cause it, and spends much time dealing with the so-called neuroses. He says, "Most infants can be taught to evacuate the bladder at the end of the first year, and usually control is acquired during the second and is complete by the end of that year, the time depending on the training." If no control is present by the end of the third year, during waking hours, incontinence may be said to exist.

E. L. Young in 1922 stated that all methods are more or less futile, all more or less ridiculous and some of them dangerous. He mentions all forms of operative procedure and suggests nothing of great value. Custom in 1921 covers well the medical treatment of nocturnal enuresis and speaks very favorably of the use of these measures in conjunction with the treatment of any local condition. He mentions the use of instillations of Ag NO_3 W. E. Carter in 1921 quotes Sachs, who in 1896 believed in training the nervous system as a cure for the trouble. He remarks that complete function can be hastened through education by repetition, and that success in the treatment depends on how carefully instructions are carried out by the mother. The literature is replete with suggestions of a medical and surgical nature. The drugs of years ago still remain standard.

CAUSES.

The cause of incontinence may be in the central nervous system, in the urine, in the bladder, or in any of the adjacent organs. Conditions to be borne in mind are: cystitis calculi, contracted bladder, irritation in neighboring organs, rectal irritation, vaginal irritation, adherent clitoris, vulvo-vaginitis, heredity, family trait, and habit.

SYMPTOMS.

It may be nocturnal, diurnal, or both; habitual, occasional, or it may follow some exciting cause. Pain may be present, but not usually so.

PROGNOSIS.

Holt states that properly managed a cure can be accomplished. Again, some may resist treatment and cease spontaneously at puberty. Others fail to benefit by any known measure. Koplik states that many cases improve only to be subject to relapses. In my series the results have been uniformly good.

From a review of the cases that will be presented, I have been able to classify the causes in the following groups: Psychic, neurogenic and mechanical. Of the mechanical factors, there is (1), the increased acidity of the urine; (2) habit; (3) lack of education on the part of patients so that they are unaware of the existence of a vesicle spincter. A combination of psychic and mechanical factors: In this state, the

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sphincter is relaxed or there is a sluggish sphincter action caused by failure of patient's cognizance of the ability to hold the urine when the desire to void arises. All three factors play a part in vesicle neck irritability due to hyperesthetic nerve endings, trigonitis or highly acid urine.

If these causes or predisposing factors are borne in mind, it can readily be seen that in order to overcome such a condition measures must be instituted that will decrease urinary acidity, stimulate sphincteric action and control, and awaken the patient to the fact that, in order to urinate, an effort must be made or no urine will flow. These measures are briefly enumerated as: 1. Alkalinization of urine, 2. Reduction of fluid intake after 3 to 4 p. m., 3. The last meal never later than 4 to 5 p. m., 4. No sweets or pastries, especially in the afternoon, 5. Voiding before retiring. The above suffices in the average case. If improvement is not noted in two days, drugs are prescribed—sodium bromid and tinct. hyoscyamus, three to four doses a day. An improvement will be noted where nervous excitability of the centers play a part, as well as peripheral irritation and low grade trigonitis and posterior urethritis. Local measures are now employed to increase the tone of the vesicle sphincter. The local treatment consists in the use of one to two c.c. instillations of silver nitrate in concentration 2 to 6 per cent. A small cannula is used for this purpose. The treatments are given every second to fifth day, and number two to ten or more. Immediately there is an improvement and within a week or ten days there is a disappearance of all tendency except in the most obstinate of cases, and even these are improved or cured, although with a little longer treatment. Dilatation of the urethra is a valuable adjunct at this stage. Silver nitrate acts by coating the entire urethra with an albuminate of silver, desensitizing the sensitive nerve endings, and by its penetrating, irritating effect throwing the vesicle sphincter into a state of tonic spasm. The excess of silver runs both forward and backward. In the latter case, it is diluted by the urine, and remaining in the bladder tends to increase its tone. The tendency to void involuntarily is reduced or disappears, and this effect will continue for several hours to days. No case reverts to its old status, after treatment is instituted. The number of wettings is decreased to the surprise and astonishment of both parent and child. There is no urging, bribing, or reward of any kind necessary to assist or aid in the treatment. No stricture or bad result has been noted in any of the cases.

The intra-urethral treatment of enuresis properly applied offers a very valuable addition to the measures commonly employed.

Of the twenty cases considered, eleven were white and nine colored. They were seen in the outdoor clinic at the Charity Hospital of New Orleans during the past four years. The oldest girl was thirteen the youngest four. The shortest treatment was several weeks, the longest five months. Six cases were discharged as cured. In all six, silver nitrate was used. One case is still under treatment and may be said to be cured. Twelve cases deserted, improved. Of the twelve, silver nitrate was used in six. One case deserted unimproved after three visits. In this case, there was an associated cystitis.

On account of lack of space the detailed histories of these patients will be printed only in the reprints of this article. It will suffice here to quote briefly the records of two patients.

Case 1: F. V., a white female child, aged 13 years, was brought to the clinic on account of bed wetting almost nightly. Examination of the urine, which was clear, showed nothing abnormal. On the first visit, 15 c.c. of 10 per cent argyrol was injected in bladder, and a teaspoonful of a prescription of tincture of hyoscamin and sodium bromid, drams 4, diluted in water to make 4 ounces was given 3 times a day. At the same time sodium bicarbonate, 1 dram, twice a day was ordered.

On November 14, 2 c.c of silver nitrate, as a 2 per cent solution, was injected in the bladder. This was repeated on the nineteenth. On November 28, the urethra was dilated. In the course of the next two months the 2 per cent silver nitrate solution was injected 10 times with improvement in the complaint, January 30, 5 per cent solution of silver nitrate was injected, and since then the patient has had no further trouble.

Case 2: W. M. F., a colored child, aged 7 years, was admitted to clinic on account of wetting the bed at night since birth. The urine of this child was clear, with an occasional leukocyte.

In a period of 2 months 4 injections of silver nitrate were given, and then an injection of 2 per cent argyrol, and after this 2 more inejctions of 2 c.c. of 2 per cent silver nitrate. February 22, there had been no further wetting of the bed. The child's mother was instructed to bring her back if there was any further wetting.

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DISCUSSION.

Dr. J. R. Stamper (Shreveport): Mr. Chairman and Members of the Society: It is not my object to discuss this paper but there is one thought I would like to impress upon the doctors and the laity and the nurses who might come in contact with these cases, or some friend might ask them what could be done for them. They should not be neglected because most of them, if neglected, or fussed at about wetting the bed will soon become more or less cowardly and not develop and thrive in school as they should.

That is the thing that I want to impress upon the members of the Society. As to the classification of this condition, in a general way I would classify the cause as those causes in the urinary tract such as a very mild nephritis, cystitis, stone or whatever it might happen to be. The treatment would naturally be correction of those causes. There are other causes such as systemic conditions like hypothyroidism, which I think is one of the most important causes in the child, especially that type that is a little backward and doesn't thrive at school like he should. Other causes such as anemia, etc., bring about general debility in a rundown child and it doesn't thrive.

So much for the causes, and the treatment is to correct the condition that exists. The thing that I would like to impress is always to advise the parents of those children to consult a doctor and try to have it corrected before the school age. Just a couple of doors from me is a child. Every morning as soon as the sun come out you can see the bedclothes hanging on the wire. So far as I know that child's parents have never consulted anybody about the bed wetting. I think that child is one that comes under the hypothyroidism type because he looks like that type.

Dr. H. W. E. Walther (New Orleans): Urology in its early days limited its efforts toward alleviating conditions in the male alone. Later, thanks to such pioneering work as that of Dr. Kelly and Dr. Burnam, we devoted more serious attention to urinary ailment in the female. In recent years, due to the enlightening paper and investigations of Hyman and Kretschuser and others, in acquainting us with the fact that cytoscopy, by using modern infant cystoscopes, could be employed in children as well as in adults, we are now in a position to more fully and more scientifically put our finger on the source of trouble.

I rose primarily to make a plea for the more careful study of the urine in little girl patients. What applies to the adult female; that is, always get catheter specimens of urine, equally applies in little girls. We have small catheters just as we have infant cytoscopes, and these little ones can be catheterized with very little trouble if we gain their confidence, and the catheter specimen is the one that should be studied.

We have been prone in the past to be too lax and looking too lightly upon bed wetting in children. Urinalyses were frequently omitted and one medicine after another was administered by mouth without any benefit whatever. Many mothers, after going the rounds of a few physicians ,gave up the matter as hopeless, thinking that the doctors could not be of any aid.

If the remedy that Dr. Mattes presented today of using installations in the bladder of silver nitrate is given a trial in these conditions that are often due to the bladder, particularly the bladder neck, we will be surprised how many of these little ones we can relieve in a very short time.

I cannot condemn too strongly the use of one to one million silver nitrate or weaker. We don't

get any results with that strength; unless we use from one-half to two per cent silver nitrate in installation, of a dram or two, we are not going to get any effect from our silver. If we do get our effect from silver it is prompt and very convincing.

Dr. Frank J. Chalaron (New Orleans): Dr. Mattes has covered the subject rather fully but still after all that he has said there remain "that class of cases which fail." It has been my misfortune to meet with cases of that kind, especially about the time of the war where several men had been refused admittance into the army for bed wetting ,a habit that had been established in early youth.

In those cases I used a method that had been suggested years ago by Cathelin of the University of Paris, and that is the epidural injection of one per cent novocain in doses of about ten c.c. In three of the cases that I had the result was marvelous and the men were able to join the army.

In the case of a young girl in whom bed wetting had been established since the age of five and who wet the bed at irregular intervals and on whom the nitrate of silver, belladonna and electrical treatments had been tried, the Cathelin injection gave a definite cure. We needed two injections to produce the cure.

The causes of bed wetting are numerous. I agree with Dr. Mattes entirely that before we attempt to treat a case of bed wetting, a most thorough examination and daily examination, not only of the urine but of the patient should be done.

Dr. Mattes (closing): I wish to thank the members for their discussion. The subject is extremely limited. Other conditions that cause enuresis are not included. I will briefly review one case that is mentioned here. Case No. 11: A white girl aged thirteen. Bed wetting almost nightly and one to two days a week. The urine is clear and is negative. All the specimens were catheterized. 15 c.c. of 10 per cent argyrol was instilled in the bladder and she was placed on sodium bromide and sodium bicarbonate and tincture of hyoscyamus by mouth. Reported in four days, having wet the bed once. 2 c.c. silver nitrate was instilled in bladder and urethra. She returned five days later improved, with a notation of less bed wetting. Silver was again used. Nine days later more improved. Three days later improvement continued. At that time she had an attack of flu and her condition for the most part recurred. She was in bed for three weeks during which time she complained as much as prior to treatment. She reported back Jan. 1st. Silver was used. On the 5th she was improved; on the 7th, improved; 9th, improved. She was instilled each time with silver nitrate. On the 12th she had not wet the bed in ten nights, or her clothes in the daytime. Seven days later with instillation then of 5 per cent silver nitrate (I increased the percentage) there were two wettings. From the 19th of Jan., 1925, up until the 30th of Jan., she had wet the bed only two successive nights. 5 per cent silver was used. Returned eleven days later, during which time there was no wetting. Observation continued a month, patient remaining well.

Here is an obstinate case of enuresis that was carried on and properly handled, I think, and discharged cured. The parting shot is this, in the treatment of enuresis in individuals (female children) that show no other cause, medical measures plus instillations of silver nitrate properly applied and properly timed and in the proper percentage will cure all cases. I make that statement not advisedly because I have not seen the case that has applied to the clinic in the last five years that could not either be cured or improved to such an extent that they deserted.

EPIDEMIC ENCEPHALITIS.*

A FACTOR IN SOME MORBID MENTAL STATES.

HENRY DASPIT, M. D.,

NEW ORLEANS.

Within the past few years, we have been meeting in private practice, general hospital clinics and in hospitals for mental disorders ever increasing numbers of morbid mental states which on close analysis have been placed as residual to acute epidemic encephalitis, or what is more likely, a demonstration of chronic epidemic encephalitis. In our courts and correctional institutions, many individuals have been encountered in whom conduct and moral disorganizations, without demontrable psychosis, have occured as the result of the damage of an epidemic encephalitic episode. In the handling of this latter group, a very complex problem has developed which is far from any reasonable solution. It would be well for the psychologists, especially in dealing with disorders of be-

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havior in children, to keep constantly before them the possibility of this association.

The time limitation, properly imposed by the society, precludes a detailed consideration of this very broad topic and today we must content ourselves with generalizations.

There can be no doubt whatever that epidemic encephalitis is extremely frequent in this country and section, out of all proportion to the health organization statistics, if one may judge from the number of classical encephalitic types met with by neurologists. The fact that the disease is reportable for statistical purposes alone gives us little information as to its percentage occurrence, as there seems to be an inherent disinclination on the part of most of us to report almost any disease condition and probably that due to the great variety in the grouping of the symptoms of the disease, as well as the varied grades of the intensity of the initial attack, diagnosis is often a matter of much difficulty. Incidently there can be no doubt that a great tendency exists to dub almost any acute, apparently minor, febrile condition which may be associated with catarrhal symptoms as la grippe, influenza, etc. Relatively inconspicuous signs of involvement of the central nervous system frequently escape notice. That epidemic encephalitis may attack any level in the nervous system is now well recognized. Lethargy is not to be anticipated in the greater proportion of cases and cranial nerve disturbance may be entirely lacking. Rather than to regard many of the distressing symptoms as residuae, it is the custom of the clinic from which this paper arises to consider the disease as of acute and of chronic phases. Also that many of the chronic pictures occur where there is no history of the acute, sometimes lethargic, initial episode. The occurrence of relatively acute exacerbations in the course of apparently, fairly well stabilized conditions would rather speak in favor of a chronic toxic or infectious process that for the residual effect of a completely expired, acute disease.

In keeping with the past observation of others, it is our experience that there is no specific mental picture, which, when considered alone and without scrutiny of associated physical disorder of central origin, either in the present or the relatively recent past, would justify the formulation of a psychic syndrome characteristic of the disease. This is especially important in psychopathic hospitals where, either due to the lack of observation on the part of previous medical attendants or the simple, routine disregard with which data is furnished these institutions as the result of a notorious lack of interest in psychotics on the part of general practitioners, great difficulty is experienced in the proper evaluation of these cases and they are often classified in the more well known psychotic groups. We have also observed that there are many instances where the onset was characterized by a definite acute epidemic encephalitis with marked psychic symptoms or where the mental disturbance developed sufficiently close to justify the association and where the mental disorder has persisted and been of such a nature as to necessitate hospitalization, many of these individuals reach psychopathic hospitals without any recognizable physical finding attributable to encephalitis. This again stresses the necessity of most careful scrutiny into the past history of the case, both for personal information as well as for data for the final holding institution. We have seen a few cases which for some time we regarded as schizophrenias, who showed nothing somatically and where the history given was in no way suggestive, only later to develop Parkinsonisms easily differentiated from schizophrenic negativism and which served to properly place the condition. Just as one is not inclined to regard every psychosis developing in an individual showing a positive spinal-fluid Wassermann reaction as necessarily syphilitic in origin, we also consider that epidemic encephalitis re-

quires careful consideration before conclusion is reached that it is the essential factor. The relation between the psychotic demonstration and the encephalitic attack should not be too remote and where the interval is great, and there exists no physical disorder consistent with encephalitis, it is wise to consider other possible etiology. This is especially applicable to adult life, though some observers have credited the association after a lapse of eight years. There can be no doubt that the disease occurring in infancy and early childhood may do terrible damage to the unhardened and extremely vulnerable brain of this period of life and without leaving any marked physical handicap prepare the soil favorable to the development of adolescent or adult psychosis. If there is anything to the belief that heredity burdening demarks those cerebral traumata that will show resulting psychotic manifestations, the deleterious effect of the organic brain changes of encephalitis is beyond question.

Though somewhat contrary to some of the previous remarks, and yet in no way inconsistent, is the observation that epidemic encephalitis, acting as any other toxic-infectious state or cerebral traumata, may liberate classical schizophrenic or manic-depressive psychoses depending on the constitutional make-up of the individual. Also, that even without primary mental disturbance from the encephalitis per se, the resulting physical handicap may represent a conflict to which the unfortunate is quite unable to adjust and a classical psychosis will be unescapable. It is probably quite true that the intensity of the traumata or the conflict, rather than the inherent endowment of the patient, is the principal factor in essential mental disease. We have seen in several instances where the acute encephalitic process has activated previously latent, asymptomatic cerebro-spinal syphilis.

The whole gamut of the psychoses may be met with in epidemic encephalitis, the marked delirious pictures with active hallucinations and confusion, the syndromes of the Korsakoff type, marked manic states usually with clouding, depressions especially with a suicidal trend, schizoid and syntoid presentations, paranoid states with or without deterioration, spasming disease with or without mental symptoms, and simple progressive deteriorations either affective or intellectual. In children especially has been noted the occurrence of disturbances of consciousness, with and without motor phenomena, clinically meeting the requirements of so-called epilepsy and definitely ascribable to the cerebral damage resulting from epidemic encephalitis.

No less interesting and certainly no less important are the character alterations, disturbances of conduct which may amount to definite delinquency and bring the individual into conflict with the law, moral delapidation, etc., occurring in children following, or as a part of, this disease. While this brings a new group requiring radically different handling from the usual delinquent or psychotic, it opens a most interesting field for thought and investigation to those of us who do not lean on the slender support of psychological clouds and psychoanalytic procedure but look for an organic background in all diseases, physical and psychic.

In line with this thought is the fact that in a norm of admitted good heredity and excellent environment, the occurrence of a definitely recognized organic disease with involvement of cortical, basal ganglion regions, or both, marks the development of morbid mental states, psycho-neurotic or definitely psychotic, which even as yet are by some ascribed to psychogenic factors alone. Also that the transition from mental health is rapid and follows the organic process without the injection into the life of the individual of any other factor.

Entirely outside of the consideration of mental disease is the frequently reported effect on mental development. No attempt is made to check up the massive litera-

ture on the subject and no claim is made for originality. It is fairly well established that following acute attacks of epidemic encephalitis mental development may be arrested at any level, the mental level lowered, disturbance of conduct and moral sense may take place with or without evidence of deficiency and even with new precocious trends. Naturally such effects are to be expected in the formative period, childhood, but many personality alterations have been reported, and some observed by us, in late adult life.

Our acquaintance with the disease and opportunity to make follow-up observations on acute cases presenting mental symptoms is, unfortunately, not sufficient to justify any deduction as to ultimate prognosis, at least from the psychiatric viewpoint. We are nevertheless inclined to believe that only a small proportion of the cases showing acute psychotic reactions in the early stage of encephalitis remain morbid and that the conduct disturbances of childhood, developing on this basis, may be expected slowly to improve. The observation of others that no one is ever the same, psychically, after encephalitis may be true, but we are inclined to doubt this.

I refrain from saying anything pertaining to therapy as the treatment naturally devolves itself into what may reasonably be done for epidemic encephalitis. What can be said as to consistent therapy in a disease where the etiology is quite unestablished? Many quite fantastic and empiric proceedures have been advocated which amount to little more than shooting at the moon with a blow-gun. As to the handling of the associated morbid mental states there is nothing to offer other than the methods employed in the treatment of the psychoses in general.

DISCUSSION.

Dr. E. McC. Connely (New Orleans): Dr. Daspit has left very little to discuss except to reiterate. I think he has well brought out the point that the frequency of encephalitis is little realized if we look over statistics. If we go to the literature, however, and see the great mass of material that has been produced in the comparatively short time that we have known of the disease, we realize how frequent it is and how widely distributed as to area.

In December of 1925, it was estimated there were some 3,000 articles on the subject. I don't know what figure has been reached now but in almost every magazine we see there is a report on it. Of course, the discrepancy, as Dr. Daspit has pointed out, is probably due to diagnostic difficulties and probably due to the general negligence of most of us in reporting things.

The mental picture is so varied that it has been impossible definitely to define any particular syndrome. A good many people have made efforts to establish a picture without any degree of success.

Of course, it has been confused with all of the various psychoses, notably schizophrenia, and when we realize that it might act, as Dr. Daspit says, as a precipitating cause for any incipient psychosis, we can see how difficult is would be to draw a diagnostic line. The disease process will attack practically any part of the central nervous system and of course that accounts for many variations of the mental symptoms. We have to think also of the effect of the toxins on the individual psyche of the patient. Very few patients, practically none, react exactly in the same manner even to the old established psychoses.

If I might use an illustration with which some of us are familiar, at least those who are old enough, you take 100 men and give them alcohol to drink; you won't get any two of that hundred who will react in exactly the same manner to the alcohol. It is the same way with any other toxic substance that we take into our bodies, I think.

The character changes, as Dr. Daspit points out, are usually found in children. Brown and Partridge of Philadelphia have made some reports on a group they had under observation for about a year, I believe. They found that they were amenable to treatment but required definitely different handling from that given the ordinary mental defective. They reported that practically as a whole the group had progressed and would give us a rather optimistic prognosis at least in children.

I am not prepared to accept the statements by some authors, however, that the character changes only occur in children. I have seen some cases who apparently have character changes after having encephalitis in adult life. I have recently had a man who had definitely come in conflict with the law and was definitely asocial, who, so far as we were able to ascertain, had been a perfectly responsible, decent citizen prior to ence-

phalitis. Unfortunately his home was some distance away and we weren't able to get very complete data of his past. But I felt that there was sufficient question of encephalitis being responsible for his conduct to rate him as disabled. He was an ex-service man.

Dr. C. S. Holbrook (New Orleans): Mr. Chairman, from the literature we have been inclined to think that encephalitis was a disease that we saw during the periods of the war, in 1918, 1919, and 1920, but we are seeing a great deal of it here in Louisiana at the present time, a great many active cases. In any of the large clinics and in hospital practice, one can see at least half a dozen cases of acute encephalitis a month. The diagnosis is frequently not appreciated. The misnomer of sleeping sickness that has been applied to this disease often prevents arriving at a correct diagnosis.

Lethargy, as Dr. Daspit brought out, occurs in very few cases; I should say not more than a third of the cases. Another third of the cases are apt to have no disturbance at all. Another third of the cases are apt to be excited; insomnia is frequently present. So when we consider encephalitis and have in mind the picture of sleeping sickness, we are very apt to mistake it. The transient ocular motor disturbances that may go to the oculist or may be complained of to the general physician and not a great deal of attention paid to, are frequently evidence of encephalitis. The possible encephalitic disturbances and especially, as Dr. Daspit had in mind, the mental disturbances following encephalities are sometimes recognized by the patient being able to give a history of so-called influenza or grippe, fever, malaise, with seeing double for one or two days.

The true recognition of the condition is often not arrived at until a year later or two years later when some of the chronic disturbances arise that cannot well be overlooked. The Parkinson type of residual frequently does not show up for a year or two or several years after the original attack of encephalitis.

In children, the gross disturbance is generally a matter of the production of imbecility, or arrested mental development. These children develop what is thought of as brain fever, which is encephalitis, and after that their mentality is very grossly interfered with. They become arrested mentally. Other children, older children, have decided conduct disturbances. A child that has given no trouble before drops into the group of difficult children. Then there are the children who become decidedly vicious after such an experience and really have to be taken out of school and frequently placed in institutions.

The Parkinson syndrome, the parlysis agitans syndrome, is usually seen in men and comes on as a more frequent result in the adult than in any other stage of life. These people develop the typical picture of Parkinsonism, usually with a history of grippe in which they saw double or ill-defined illness. I believe that this should be considered as chronic encephalitis, as Dr. Daspit has suggested, these cases of Parkinsonism usually continue to grow worse and the patient dies. Occasionally the process becomes arrested, but if it were only an aftermath or only a sequela of the disease the disturbance would remain in status quo. It would not get progressively worse. Almost all of these Parkinsonian disturbances get worse and the patient dies.

I wish to close my remarks by just calling your attention to the prevalence of encephalitis that we now have. We are seeing it every day and I am inclined to think the cases that we do see now are more fatal than those we saw a few years ago

Dr. John B. Elliott (New Orleans): In 1921 I was called to see the 13-year-old child of a friend of mine. The child had had a temperature for about three weeks. The blood showed a weak Widal. We thought the case one of typhoid fever. The child went along for six weeks with a low temperature and seemed to recover very nicely. In January, 1925, four years later, the mother came to me as a friend, not as a doctor, and said, "Please examine my boy. He is getting so bad. He has been put out of three schools in the last four months." That was the story told me. The boy had been stealing things, and had become unmanageable.

The boy was brought to the office. I found a very well developed boy, but I noticed he had a slight twitch in the right arm and a slight hesitation in speech and a peculiar fixation of expression. Now, there was a case that I had misdiagnosed four years previously. That boy had encephalitis when I saw him in 1921, had gotten along fairly well for four years and then developed this typical syndrome of encephalitis. The boy, today, is doing a little better, but I am not hopeful about these cases.

I saw eighteen cases in one room in Philadelphia last spring with Dr. Spiller and I have never forgotten that room. I think it is a more common disease than we think. Whenever I see a case I am doubtful about, I "pass the buck" to the neurologist.

Dr. C. C. De Gravelles (Morgan City): Dr. Elliott stole my case away from me. In 1920, I think it was, I had a chap about 12 years old at that time, an exceptionally intelligent boy, stood very well in his school work. He developed what I thought was typhoid fever at the time. In fact, he showed a very positive condition. The case ran

the typical course for about six weeks. He recovered, but after his recovery he became very vicious, so vicious in fact and this state progressed so rapidly that we are now thinking of sending him to Monroe to the reform school up there.

Prior to his typhoid or his possible encephalitis, he was an exceptionally bright and good chap. Since that they can do nothing with him in school, he will not study and he is forever getting in trouble with the law.

The question arises in my mind now, is it possible to have both conditions existing at the same time. I would like for Dr. Daspit to tell us, please.

Dr. L. L. Cazenavette (New Orleans): As has already been brought out by previous discussors of Dr. Daspit's paper, the subject of encephalitis, epidemic encephalitis, deserves more attention than has been given it heretofore. This disease should be kept in mind as the possible cause of a typical form of nervous and psychotic disturbances seen particularly in children, though adults are not exempt. The fact that these disturbances may, and they frequently do, present themselves long after the initial period of the disease recalls the necessity of emphasizing the following point.

As far as we know, the disease is due to a filterable virus which enters the body through the respiratory tract and curiously enough affects the nervous system only, the central nervous system. In other words, other organs like the heart, lungs, kidneys, etc., are not affected. The virus expands its energy on certain portions of the central nervous system. Wimmer, in his magnificent monograph, entitled chronic epidemic encephalitis, brings out this important point and quotes Netter: Encephalitis may last a very long time, many months, many years—the virus remains in nervous centers, just as that of syphilis.

Syphilis has its initial stage; the secondary stage may be noticeable or not; the so-called tertiary stage may show its manifestations many years after the initial stage. During that long period of time, the patient may feel fairly well, but the spirocheta may still be there. Some other disease may come along and then the latent syphilitic manifestations may flare up. The same may occur in encephalitis. The virus may enter the system, remain there for an indefinite period of time, apparently dormant, when an acute illness may set this virus at work again and we then have the chronic encephalitis conditions presenting themselves long after the initial stage. This does not imply that the chronic manifestations of encephalitis whether in the neurological or mental sphere would not occur without the intervention of an acute malady.

Dr. T. J. Perkins (Jackson): I am delighted to know that it has been brought out so forcibly that the mental manifestations of chronic encephalitis are rather remote and I would like, just here, to emphasize the point that Dr. Daspit brought out, and, that is the necessity of the complete history in these cases. Cases coming to mental hospitals, without a very complete history, present a problem of differential diagnosis. The personality changes so closely resemble the personality changes in dementia precox that, without a history, it is almost impossible to make the differentiation and, I feel that, the necessity of furnishing a very complete and definite history before the patients reach the stage of mental dilapidation, which necessitates their commitment to a mental hospital, cannot be brought too forcibly to the attention of the mental profession.

Dr. Henry Daspit (closing): I first wish to thank the gentlemen who discussed the paper. The discussion sounds almost like a love feast when it was expected to find some real conflict in ideas.

Undoubtedly, we should give the question of epidemic encephalitis a great deal more attentio than we have, and incidentally, a great deal more study.

In response to Dr. DeGravelles as to the conduct and personality disturbances in his patient probably being of the nature of an epidemic encephalitis when he had arrived at the conclusion that typhoid was the factor: I think that we are justified in presuming the development of encephalitis from varied causes other than the epidemic variety. We may have in early childhood material damage done by the encephalitis of measles, scarlet fever, typhoid or what not. I do not think that Dr. DeGravelles should discredit his primary diagnosis. Many other things than epidemic encephalitis may bring about such changes. An exemplification of the attitude of some medical men toward encephalitis happened out in DeGravelles country, just across the river from him. A patient of mine, a classical case of chronic encephalitis Parkinsonism, was there for a little rest. He was receiving scopolamin as this is the extent of our real therapeutic effort in such cases. He saw this particular doctor, who is a most excellent surgeon, and asked his advice. He was told that there was nothing whatever the matter with him, that he merely imagined he was stiff and that scopolamin was only good for twilight sleep.

The remark that the causative agent was a filterable virus leaves me without comment, as when febrile conditions are unexplained as to etiology, the pathologists always indict a filterable virus.

PHYSICAL THERAPY IN EVERYDAY PRACTICE.*

WILLIAM A. LURIE, M. D.,

NEW ORLEANS.

The position of physical therapy in medical practice of today is perhaps no better indicated than by the importance attached to this branch of medicine by the American Medical Association. The establishment of the Council of Physical Therapy as a permanent committee of the society places the same safeguard over this part of medical practice as has existed for years in regard to the official acceptance of other orthodox means of therapy. This council should serve a dual purpose. It should protect the public against quackery and charlatanry in medicine, as it pertains to this branch of medical practice, and on the other hand, protect the medical profession from exploitation by manufacturers who produce fantastic and useless machines with mythical powers. The public needs protection, for they have no means of identifying good from bad in physical therapy. They are at the mercy of the cultists who use these means to impress their patrons rather than actually to attempt to heal them. For their protection, therefore, and for the protection of the medical profession, this council functions.

The council on physical therapy has made several recommendations, the chief of which are embodied in the statement that treaments by non-medical means should be considered only in addition to regular forms of medical treatment. They discourage physical therapy as a means of treatment in the hands of non-medical practitioners and ratify it as one of the triad of medicine, surgery and physical therapy. They feel that in this manner useless treatments will be curbed and the tendency of self-treatment will be lessened. The same objection is cited by them in the use of one form of physical therapy as is mentioned when a hobby is followed in any branch of medicine. The hobby is ridden to death.

Medical and surgical cases of acute and chronic type are benefited by physical measures. Like acute cases of any nature, there are many that are self-limited, and in them any simple or single form of treatment may prove of benefit. The chronic cases however require a variety of forms of treatment. These should have physical treatments properly given, properly timed and given in the proper sequence. To give treatments properly, a correct technic is necessary. In this direction especially lies the great difference in practice by non-medical means and the regular form of practice. In the applications by non-medical means the patient receives a curative dose of some form of therapy to which he should respond or react. It is at once apparent that treatments of this nature are time-consuming. Time is required to make the different applications, and time must be allowed to develop the necessary reaction while under treatment. The success or failure of physical means is often measured by the time given to the treatment as well as their administration in the correct order. Considering the chronic ailment of the patient, therefore, its treatment requires the application of several physical means, each in prolonged application and over an extended period of time. There are few patients who can afford to install the devices for their own treatment, or few physicians whose practices are such as to warrant their purchasing the means to treat these patients at home, devoting to each the time to give a proper treatment. So the use of physical means by the individual practitioner in his own practice, to which he devotes a definite set of office hours, is impracticable. Physical therapy would more properly be practiced by a group of physicians where one is in charge and where all the necessary apparatus to give every form or combination of treatment is at hand and thoroughly under-

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stood. In such an institution, treatments may be prescribed much like medicine is today. Under such conditions some astonishing results may be demonstrated in chronic, refractive cases. This statement is based on my own limited experience with a few of the newer forms of physical treatments, in a limited practice extending over a period of about six years.

Before recounting several case histories I want to make one observation.

Treatment by physical means in no way interferes with the treatment of any case in any other recognized manner. However, to place credit where credit is due, observations must be made through a newer conception of symptoms, pathology and reactions. Not that symptoms may be different, but by physical means they may be ended or altered in a manner that cannot always be explained through our present conceptions of them. Pathology is no different, but certain physical means are specific for many forms of tissue changes. These treatments often result in the happy regeneration of tissue and the correction of the dyscrasia. So, to look upon physical therapy like medicine of old, is not to do so with an open mind nor the vision of present day progress. To treat a chronic disorder of any individual organ as a specific entity without relation to the general system, or to consider that conditions of the entire body may have no influence on either a local lesion nor the function of all organs, is a fallacy. Rarely will physical treatments independently directed to some special organ produce any greater benefits than result from any other form of treatment. However, symptomatic treatment by physical means is more easily and better practiced than through medical prescription. The relief of symptoms in this manner often unmasks the hidden etiological factors. This aids in the cure of many chronic cases. This is particularly illustrated in one case history herein reported.

There is not the time to describe the different forms of treatment nor their technic. Suffice it to say that electricity is the force which develops the forms of light and heat used in the cases here reported. Light is of ultra-violet character as produced by the mercury quartz vapor lamp while heat is developed by the high frequency electric current as the violet-ray or diathermy. One particular virtue to the ultra-violet therapy is its effectiveness in the relief of pain. In 1924, a series of cases of pain about the head particularly of neuralgic type were reported by me before the American College of Physiotherapy and X-Ray, now the American College of Physical Therapy. These cases seem to be the first reported using ultra-violet radiations for pain about the head. A Muller, Zimmern and Cottenot and others recently report success with roentgen ray in pain and facial neuralgias.

Because of the remarkable results experienced in these cases, pain as a result of corneal ulcerations and acutely infected eye conditions was treated by this means. Here 100 per cent effectiveness can be reported, with results demonstrable in from 24 to 48 hours. Because of these results I feel I could urge this form of treatment for the relief of pain if for no other reason. However, the continuation of this treatment has a happy effect on the pathological condition if local, so in addition to its use as an analgesic, or sedative, it can be recommended as a curative measure.

The technic of the ultra-violet applications in facial neuralgia is based on the directing of the rays from water-cooled quartz mercury vapor lamp to the ganglion. This requires the use of special applicators. The nearest route to the Gasserian ganglion is through the mouth behind the malar process and between it and the zygomatic process, focusing the rays backward, upward and inward. In some instances raying was done through the posterior palatine foramen. In all cases an exposure of ultra-violet rays from the same lamp was given over the face over the peripheral nerve area where pain was the most severe. A

surprisingly large percentage of cases were relieved of pain in a few hours and were cured in a series of from 4 to 8 treatments. Relief from severe pain was experienced in all cases.

Let me now give a typical case history of an acute type of pain about the head.

Case No. 1. S. S. G., 26 years of age. Thirteen weeks previous to coming under observation the patient developed ulcerations of the cornea of both eyes. In spite of treatment by an ophthalmologist, the ulcers persisted. Codein was used as required for rest. The patient was conscious of pain even while under the influence of the narcotic. The pain was continuous and described "as if someone had thrown a handful of sand into the eyes" and as if some one were "prying the eye-balls out of their sockets." The eyes were greatly congested, the eyelids swollen and red. There was a great increase of lachrymation. Because this patient lived out of the city he had to be treated cautiously, so that none of the effects of an overdose of raying would develop and cause complications. It was therefore not until the third treatment that the patient experienced relief. After the first treatment, the patient explained that the "sandy" feeling was greatly lessened. At the third appointment it was noted that there was a decrease in lachrymation and the congestion of the sclera was markedly less. At the time of the fourth treatment, one week after the time the case originally came under observation, the patient remarked in a dramatic manner that the pain was completely relieved. Ultra-violet treatments were continued at longer intervals and after a total of eight treatments the patient was dischargd By that time the congestion of the eyeballs had disappeared and the ulcers were almost healed. This patient was seen three weeks later. There had been no further pain, in the intervening time. The ulcers were healed.

Another typical case history of pain of neuralgic type, considered of the idiopathic variety, bears recounting.

Case No. 2. Mrs. B. K., 47 years old, had always had poor teeth which caused local pain. About two years ago, all but four teeth were removed. The pain continued and assumed a neuralgic character over the right side of the face. About a year and a half ago narcotics were prescribed for the relief of pain. This patient remarked that she was conscious of pain, even while taking the narcotic mixture. Six months previous to coming under ultra-violet treatment the patient attended the dental clinic at Charity Hospital. A general examination was made and treatment given, both locally and generally, without results. Ganglionic alcohol injection was advised but refused. Seventy-two hours after being put under ultra-violet radiation the pain was completely relieved, even in the face of the abrupt restriction of narcotics. This patient remained free from neuralgic pain for several weeks until an infected process became apparent under the tongue on the same side. Ultra-violet radiations controlled this pain until the infection was opened and drained. No pain in the previously affected tri-facial area was experienced during the development and healing of this process. It is more than likely that the infection under the tongue was the etiological factor in this case of neuralgia, masking its location and lying dormant during that time.

Three other interesting case histories will be recited.

Case No. 3. O. A. W., a dentist who on Februrary 8th sprained his right ankle while playing basket-ball. The next morning roentgen ray was negative to fracture. Two treatments of diathermy were given on the 9th of February to the badly swollen, painful joint. That night the patient had the ankle strapped and returned to the office on the following day for treatment. After the use of diathermy the surging galvanic current was used. Mild muscular contractions were produced. This treatment was subsequently continued once daily and the commentaries on the history chart are as follows: February 12th, walks well with cane. February 13th, swelling decreasing. February 14th, does not use cane. Wider range of motion. February 15th, adhesive bandage removed. February 19th, no pain, normal range of motion, walks with only slight limp. Discharged.

Case No. 4. M. W., a physician who three days previously had been struck just below the left knee. The patient had rested and made hot application to the part. The pain had increased with marked swelling chiefly in the patellar ligament. Motion at the knee was impossible. Diathermy was given Feb. 24th for 30 minutes, following which the pain diminished. A second treatment of the same duration was given the following day, after which patient informed me that there was no further pain. Walking was possible without limping.

Case No. 5. (Mrs.) R. G., a physician who eight months previously, while visiting in the North, had suffered a fracture of the neck of the right humerus . Some impaction was pictured. The healing of the fracture had been uneventful, but following discharge by the surgeon, motion was markedly limited. Applications

of heat were made and active and passive motion by massage was attempted. This proved painful, but was continued until the time of undertaking treatment by physical means. On January 3rd, when these treatments began, there was an inability on the part of the patient to raise the elbow as high as the shoulder, and to rotate the arm so as to place the hand back over the lumbar area. Between January 3rd and February 21st fifteen treatments of diathermy were given, followed by muscular exercise as induced by the surging galvanic current. On February 21st, seven weeks after undertaking this treatment, there was ninety per cent of the normal range of motion in the right shoulder joint.

Striking results such as are noted in these cases, with the almost immediate relief of pain and the increase in the range of motion should not be looked for in joint injury cases where fibrosis has developed. However, good results can be looked for where treatment is undertaken early, or in neglected cases where the treatment of the proper kind are given over a protracted period. Physical treatment properly and timely applied to an infected joint will leave it more serviceable than when left to heal without such treatment.

In conclusion, I want to summarize by stating that in my opinion there is a well defined field in medicine for the use of physical measures in everyday practice. Physical therapy should at no time replace or deter the use of proven, specific and regular modes of treatment. However, in justice to the patient and to treatment by physical means, the recommendation or administration of such treatments should not be deferred to a time when naught but a miracle can cure the patient. Results from treatment by physical means are not shrouded in mystery. The dosage is accurate. Physical treatments are no more a cure-all than any form of treatment, but intelligent and early use of them produces many unexpected happy results. Ultra-violet is a rapid, safe and easy means to relieve pain particularly about the head. It has not the dangers of roentgen ray. Because of the inability to confine physical treatments to one type in all cases, a multiplicity of forms of treatment should be at hand for administration. For this reason it is advisable that this branch of medicine be practiced either in institutions or by the specialist where all the necessary means and time are at hand for proper treatment. It is better practiced in conjunction with a group of physicians and surgeons as the triad of medicine, surgery and physical therapy.

DISCUSSION.

Dr. W. A. Knolle (New Orleans): We have found the use of various physical therapy treatments of enormous value in hospital and general office practice in many ways; relief of pain, lessening of inflammatory reaction, absorption of exudates and in a tonic way. Now a few things are quite essential: first, the proper diagnosis, then a definite and proper technique, then the proper machines that will do what you want them to do and, finally, in our practice, someone trained sufficiently well to carry out the follow-up. Just as Dr. Lurie says, you cannot do it all yourself, it is too time-consuming. We have trained two technicians, one to do the work at the hospital and one at the office. They can carry out a definite prescription and make observations, much as a nurse, and only at intervals is it necessary to check these up.

The uses to which these various forms of therapy can be put are entirely too numerous to discuss. I have had considerable experience in some of the things Dr. Lurie mentions. In the relief of trifacial neuralgia where the trouble was in the ganglion, I have been unable to get results, but have gotten results over the distribution of some of the nerves and in some facial conditions where the trouble was entirely peripheral. The violet light of the mercury vapor lamp is one of the best tonics we have available.

With diathermy you can produce heat at the point you want provided you have the apparatus to do it with. In the hospitals we have found that the use of diathermy, together with the ultra-violet body radiations, prior to operation, has helped us in cases which we undoubtedly would have lost had it not been used. We have been able to raise the blood pressure in myocarditis and in one case where the internist hesitated to suggest operation, the patient went through appendectomy and cholecystectomy without showing any reaction to the anesthetic. Dr. Lurie asked me the other day if I had time to say something about other conditions and I mentioned two things which may be of interest in the surgical section. In a case of cirrhosis of the liver which recently came to our attention and in which a Talma operation was done, putting him

under diathermy over upper abdomen, including the liver and part of the heart, we were able entirely to take the water out of him and bring him back 75 per cent. He came to the hospital to die but now he is considering getting out and doing active work in the future.

Another condition is prostatitis; those cases which are too bad a risk to operate and all you can do is a suprapubic cystotomy and let them wear a tube. In numerous cases, with simple diathermy, we have been succeeding in making these patients void after fifteen or sixteen treatments and go ahead a long time afterwards. When there was a recurrence of the trouble we have been able to duplicate results. How long it will keep up I cannot say, as my experience covers only three years.

There are a lot of men about town who know nothing of physiotherapy, and the general practitioner, instead of referring certain cases to the neurologist, employs this treatment, hoping that the color of the light, or something of that kind may have an effect on the mind. If you have ued it you know that it has a definite effect, much more effect than some medicine and some surgical procedures. It is a bad thing to suggest these things to patients when you know they are not going to do any good whatever—you are simply damaging the procedure.

Dr. N. H. Polmer (New Orleans): We learn this morning that physiotherapy has found a place for itself in every day practice. It is not a form of therapy for the internist or the surgeon, but in its wide field is indicated in most of the organic and functional conditions we meet in general practice. That some men get better results than others is chiefly a matter of technique. The possession of a diathermy apparatus does not make one a physiotherapist any more than the possession of a pair of forceps makes one an obstetrician. The selection of the necessary current and the proper application of electrodes as well as a treatment of sufficient intensity and duration is what will produce the desired results. These are what make for success or failure in physiotherapy. The Council of Physical Therapy of the A. M. A., working as an impartial committee to pass upon the different forms of apparatus and their use as well as indications for their use. will serve to place physiotherapy on a more rational basis.

We are here, as physicians, to learn of the newer and better forms of therapy and should take with us the message of physiotherapy; the knowledge that it is not a substitute, but an aid and adjunct to our accepted and practiced forms of treatment.

Dr. C. H. Moseley (Monroe, La.): I would just like to ask Dr. Lurie what has been his experience in the treatment of diabetes with diathermy? We have patients coming to us with diabetic lesions, who apparently have been benefitted. We refer these cases to people doing that special work and we have had excellent results in the treatment of diabetes with diathermy and we have found it takes less insulin. This has not been positively demonstrated, but I have examined the urine myself from day to day. Just before I came here I had a case of vulvovaginitis with diabetes, who responded quickly to diathermy over the liver region.

I would like to know whether I am being fooled, or if other people are having the same experience that I have had?

Dr. Guy A. Caldwell (Shreveport): Physical therapy has a large field and is developing and I think no one is gladder to see it than the orthopedic man, but I do rise to sound a note of warning in the use of physiotherapy in connection with its application to the extremities. We must not get away from fundamental principles and get lost in the midst of violet rays. There is something in connection with the treatment of joints, muscles and bones which must stand uppermost in everybody's mind, and physiotherapy then comes next. We must have rest for the joint that has been injured; with rest and physiotherapy we get results quicker than if rest alone is used; but rest is the first thing. Immobilization is fundamental and unless we use that first and physiotherapy second, we do not get maximum results.

I think physiotherapy should be always under the direction of the doctor. Technicians are necessary and play a very important part in these treatments, but patients should not be turned over to them for an indefinite length of time. In fracture cases particularly, it is necessary that surgical judgment be used.

The earliest form of physiotherapy, viz: baking, massage, passive and active motion, originated with the orthopedist, and we have long recognized its value as well as its proper place as a therapeutic measure. Diathermy is an improved manner of applying heat, but diathermy is not physiotherapy. It, together with other electrical modalities and lights, has broadened the field of physiotherapy until it is an adjunct to general surgery and internal medicine as well as orthopedics.

Physiotherapy, including diathermy and the various other electrical modalities, has an important place in the treatment of injuries and diseases of the extermities, but it is not the first place and is not all of the treatment necessary.

Dr. W. A. Lurie (closing): I want to thank Dr. Knolle for helping me out, and enlarging the list of cases in which physical therapy is beneficial. In the scope of the paper all could not be mentioned to any great degree and it was expected that Dr. Walke in his discussion would bring out more of the use of physical therapy in industrial surgery.

I will refer you to Dr. Granger's paper in The Journal of the A. M. A. in which he cites that although there may not be an individual cost reduction, each case is benefitted so that the aggregate cost in industrial surgery is lessened where physical therapeutic means are used, and he cited that the Aetna Life Insurance Company had a great reduction in the amount of losses paid, and the disability difference in many of their cases so treated was appreciable.

Relative to the treatment of the prostate, as mentioned by Dr. Knolle, I want to say that if he will add to diathermy the use of the mercury vapor lamp, water cooled, or substitute treatment by the water cooled mercury vapor lamp for some of his diathermy treatments, he will find the case will progress more rapidly.

I want to sound a note of warning, that is, you do not get results with physical means in chronic cases any quicker than in any other form of treatment, for the patient must have time to react to the treatments he is getting before results are noticeable.

What Dr. Polmer said, that: "Diathermy apparatus does not make a physiotherapist any more than the possession of pair forceps makes the obstetrician" is timely. To be successful one should have the necessary knowledge and the required accessories to the apparatus to get the treatment to the proper point. This depends on experience which the average general practitioner does not have, and many accessories which are too many and too costly to buy for a limited number of cases.

I am glad to see that everyone stressed the point that there is virtue in physical therapy and that it has its place and that that place is in connection with medicine and surgery and not physiotherapy alone. However, I wish to suggest you do not delay in referring your cases to the physiotherapist until the time when nothing short of a miracle can effect improvement.

My experience with diabetes is rather limited; however, the general idea of physical therapy, the general conception of its use in the increase of elimination, the stimulation of functioning of other internal organs, will help in these instances and probably explain why some improvement was noted in the cases cited. We must not lose sight of the fact that the change in a patient's diet, in conjunction with the insulin, could easily account for the marked improvement noted.

In a case of jaundice with typical symptoms of catarrhal gall-bladder involvement, the patient had more relief from diathermy than any other measure; for instead of locking up the secretions, elimination was improved and the case cleared quickly.

REVIEWS

STIFF AND PAINFUL SHOULDER.

DR. RAMIREZ y SANTOS, M. D.,

PORTO RICO.

The object of this paper is to discuss in a more or less general way the various conditions which may produce a stiff and painful shoulder.

Before discussing these, it might be well to review briefly the anatomy of the shoulder-joint and some of the adjacent structures. The joint is a ball and socket articulation. The bones entering into its formation are the head of the humerus and the shallow glenoid cavity of the scapula. The joint is protected above by an arch formed by the coracoid process, the acromion and coracoid ligament. Under ordinary conditions the surfaces are held in a position by the muscular action, aided by the atmospheric pressure. The deltoid muscle is worthy of mention because of its bursa which covers the joint above, laterally, in front and behind. The brachial plexus however, is the most important anatomical consideration, because most of the causes of pain are due to irritation of this plexus at some point on its distribution.

The causes of shoulder pain have been classified as "direct" and "indirect" causes. Under the "direct" are given injury, arthritis, synovitis, fibrositis, myositis, neuritis, effect of exposure to cold and dampness, effect of occupation, sub-acromial bursitis and local muscular paralyses.

The "indirect" causes are grouped as follows:

(A) Cardio-vascular lesions such as angina pectoris, aortic atheroma and aortic aneurysm.

(B) Pleural, pulmonary and mediastinal conditions, such as pleurisy, pneumonia, tuberculosis, intrathoracic new-growths and pneumothorax.

(C) Gastric lesions such as flatulence, indigestion, gastritis, gastric ulcer and carcinoma.

(D) Duodenal lesions such as, catarrhal duodenitis with or without jaundice and duodenal ulcer.

(E) Hepatic lesions such as, biliousness, gall-stones, cholecystitis, nutmeg liver, new-growths, acute tropical hepatitis and hepatic abscess.

(F) Nervous lesions such as hermiplegis, herpeszoster, acute brachitis, caries of the cervical and dorsal spine, syphilitic cervicodorsal pachymeningitis and cervicedorsal neuralgia.

Orr calls attention to the following diseases as causes of shoulder pain: pulmonary infarct, actinomycosis of the lower right lung, perforated gastric ulcer, subphrenic abscess, perforation of the gall-bladder, peri-splenitis, spontaneous rupture of the spleen, acute pancreatitis, and supra-renal tumors.

Probably the largest group of shoulder disabilities seen in general practice are the so-called medical or non-surgical cases. Of this group the arthritides are by far the most important from the standpoint of frequency of occurrence and in the number of cases. They have been classified as follows :

(A) Acute type in which we have: (a) acute infectious arthriti such as gonorrheal arthritis and strepticoccal from such septic focci as the teeth, tonsils, etc.

(B) Chronic type in which we may have: (a) the hypertropic arthritis found more often in the middle and advanced age; (b) atrophic arthritis or arthritis deformans; (c) tuberculous arthritis, (c) malignant arthritis; (e) luetic arthritis or Charcot's disease.

We may also have involvement of the tissues around the joint giving rise to this important clinical symptom. Bursitis of the shoulder is of common occurrence. In this condition the pain is located over the front of the joint, anterior to the top of the shoulder and at the insertion of the supraspinatous tendon. There may or may not be a history of trauma. The onset is sudden and the pain is intense, motion on any direction being extremely painful. There is generally some swelling of the area surrounding the point of greatest tenderness but no redness is to be seen.

True periarthritis of the shoulder is seldom recognized. The onset may be sudden and when so the pain is very acute and the patient is very careful in moving the arm and shoulder. Efforts at abduction, extension and flexion of the shoulder produce pain and the patient prevents these. It may also come on insidiously, which is the usual way of onset and then the patient reveals nothing abnormal on a careful physical examination: there is no swelling or redness and palpation reveals no tenderness. The patient complains of stiffness of the shoulder and it is found that all motions of the joint are markedly limited in all directions.

The causes of this infection are many. It is often found following infections such as infiuenza and common colds. Focal infections and lues are of extreme importance.

Bursitis does not give any symptoms essentially useful in the diagnosis of this condition. Tenderness over the bursa and the fact that limitation of abduction was partial in bursitis and total in arthritis had been thought to be useful in the differential diagnosis. The sign described by Danharn, where tenderness over the bursa exists but disappears when the arm is abducted and the bursa slides under the acromion, may be of use.

Cooman describes three types of bursitis: (a) acute or spasmodic type, (b) sub-acute or adherent type, and (c) chronic or non-adherent type.

The pain in the acute cases is usually severe and as a rule worse at night. It may be localized at a point on the shoulder just below the acromion. It may often be referred to the insertion of the deltoid or even down the arm to the elbow or into the fingers. In cases where the motion is not limited the point of tenderness passes under the acromion with the tuberosity when the arm is abducted or reappears when the arm is lowered. This is absent in the chronic cases. In these acute cases abduction and external rotation are limited and the patient is unable to put his hand on the back of the neck. Occassionally effusion into the bursa is demonstrated and frequently there is puffiness to the touch.

In the adherent type there is absolute mechanical limitation to abduction and external rotation. Localized tenderness may or may not be present, according to the degree of inflammation. In recent cases it is usually present and absent in old, quiescent cases. The pain is in the same distribution as in the first type and in severe cases it may resemble brachial neuritis. In some cases it is so severe as to prevent sleep and in others there may be no pain whatever.

In the third type the essential characteristic is painful motion, but all of the arc of motion persists. The trouble is due to irregularities in the contour of the base of the bursa, usually at the external side of the bicipital groove, so that motion instead of being smooth and free, is interrupted in its course as the irregular points pass beneath the acromion. In these cases localized tenderness may or may not be present. Abduction and external rotation are little if any limited, but at some point during abduction acute tenderness is experienced which disappears as soon as the tuberosity is safely beneath the acromion. Instead of a smooth, even motion there is a sudden change from an obtuse to an acute angle between the scapula and the humerus. Elevation in the frontel plane is usually easier than in the saggital plane. There may be considerable pain especially after use. It is felt at the insertion of the deltoid or in the neck as in the other types.

Codman in discussing the differential diagnosis of these cases of subdeltoid bursitis mentions the following diseases:

(1) Tuberculosis.

In tuberculosis of the shoulder joint, the roentgen-ray picture is very characteristic and in subdeltoid bursitis it shows a normal joint except where there is a deposit of lime. The atrophy of the muscles and fixation are more pronounced; the 10 degrees which always are free in subdeltoid bursitis are often lost in tuberculosis. Fluctuation is often present below the acromion behind or over the bicipital groove. Tuberculin may be useful.

(2) Fracture of the tuberosity and of the anatomical and surgical neck might be confused with subdeltoid bursitis, but the roentgen-ray picture is nearly always a conclusive evidence for differential diagnosis. Such fracture nearly always shows ecchymosis and swelling down the inner side of the arm, while examination in subdeltoid bursitis is usually always negative.

(3) Deep Axillary Abscess.

When the abcesses are small and high under the pectoralis major the main symptom is fixation of the shoulder point. Care-

ful examination will show that the point of maximum tenderness is high under the pectoralis major and not at the point of the shoulder.

(4) Muscular Rheumatism is as Codman says one of the commonest diagnoses given to this condition. He believes that true muscular rheumatism is at present a very rare disease. When other lesions are differentiated, there are few which may be called muscular rheumatism and these have none of the subdletoid symptoms except pain.

(5) Chronic Rheumatic Conditions.

Chronic rheumatism of the joint has been classified as atrophic, hypertrophic and infectious arthritis. Atrophic arthritis is a disease of the joint cartilage itself and the symptoms of true joint infection are more pronounced. These are localized pain more pronounced high up in the axilla than under the acromion with a more complete loss of motion.

The hypertrophic type may be a cause of subacromial bursitis because exostoses either on the tuberosity or on the acromion may lead to mechanical irritation of the bursa.

By infectious arthritis is meant a joint irritation, due either to the presence of organisms or their toxins, this irritation not being severe enough to cause suppuration. This condition is very common cause for subacromial bursitis. Codman believes that these infections attack the bursa first because the bursa is less well protected and less well constructed to meet mechanical strains.

(6) Acromio-Clavicular Arthritis.

In these cases we have localized tenderness over the acromio-clavicular articulation together with a decided thickening around this area.

(7) Inflammation of the Biceps Sheath.

In all motion of the humerus we have a motion of the tendon as well. In this inflammatory condition of the sheath we have localized tenderness very close to the long head of the biceps which at times is difficult to say whether it is in the groove or in the tuberosity. Forward and backward motion of the scapula is more or less limited in this condition while in subdeltoid bursitis this motion is the most free of all. The arc of 10 degree of painless motion is much against the presence of inflammation of the biceps tendon sheath.

(8) Brachial Neuritis.

This condition is the most difficult to differentiate from subdeltoid bursitis. Codman believes that the condition begins as an inflammation of the bursa, in other words, he believes that bursitis is the most common cause of brachial neuritis. There are however, certain points which indicate that this is not a typical brachial neuritis. The pain is not felt on the anatomical courses of the branches of the plexus and the tendrness is usually on the bands of the intermuscular fascia, rather than on the nerve trunks.

Brickner classifies bursitis in various kinds according to the clinical picture they present: acute, hyperacute, chronic and chronic with exacerbations. In the acute type the pain and the stiffness develop rapidly and reach the highest point in a few days. The arm can only be abducted to a very slight degree without the causation of very severe pain.

The hyperacute type includes a number of cases in which the pain is very severe and the mobility of the arm is limited. In this type the arm is held close to the chest and the slightest attempt to raise the arm causes very severe pain. Here also we have rapid atrophy of the adjoining muscles.

The chronic type begins with the acute type. The pain and discomfort of the joint is more or less constant and annoying. External rotation is sometimes limited and there is usually present tenderness over the lesser tuberosity. This may

last for months or years and may disappear with or without treatment. There are cases, however, which persist in spite of any treatment used.

The chronic cases with exacerbations include those cases which last for years and in which there is a recession of symptoms for a long period, but every few weeks or months there is a severe exacerbation with symptoms of the acute or hypracute type.

There is at times much difficulty, as A. W. Hammer says, in differentiating tuberculosis of the head of the humerus from sub-deltoid bursitis. Early in tuberculosis there is localized pain over the head of the humerus and the shoulder acquires a characteristic attitude brought about by the accompanying muscular spasm. There is always a primary lesion in some other part of the body, and abscess formation is of late occurrence in tuberculosis. Tuberculosis of the shoulder joint may appear as the proliferative type or the dry type. The former is easily recognized, but in the dry type there may be some difficulty unless the roentgen-ray shows definite lesions of the process. Generally the atrophy of muscles and bones is much more pronounced in tuberculosis. The tuberculin test may be used for further information.

Chronic arthritis, as it has been pointed out in a previous paragraph of this paper, is another cause for a stiff and painful shoulder. Under this term is included a series of degenerative changes occurring at any age impairing function to a greater or less extent, according to the joint changes. Traumatism plays an important part in its causation, but infection may be the starting point of the articular invasion. The most common variety of chronic arthritis of the shoulder is the traumatic or the result of an injury in an individual suffering from an underlying infection or toxic condition. In these cases there is a marked tenderness over the greater tuberosity as well as in the axilla; some induration about the articulation and the presence of crepitus.

Another cause for shoulder pain, particularly on the left side, is conditions causing irritation of the diaphragm, and thus giving rise to a reflex phenomenon. A diseased appendix may likewise cause this clinical symptom. The mechanism is brought about by a pyloro-spasm, increased intragastric pressure, upward pressure upon the left diaphragm by the fornix and irritation of the phrenic nerve. The phrenic nerve terminates around the diaphragmatic surface and at its origin it gives some cutaneous branches around the clavicle. So we can see how irritation of its terminating filaments on the diaphragm will cause a referred pain on the shoulder region.

Cope believes that pain felt over the shoulder region occurring in the course of disease of the upper abdomen is due to irritation of the diaphragm or its peritoneal covering and is referred on the fibers of the phrenic nerve. The frequency of pain at the tip of the right shoulder in cases of liver abscesses, made Cope wonder if it was due to irritation of the liver itself or to irritation of the diaphragm. The diaphragm seems to be the more likely site of the origin, for the shoulder pain was more acute in those cases in which an abscess threatened to burst into the thorax. It was found later that this pain in liver abscess was seldom or never felt unless the pus was near to or threatening to perforate the diaphragm.

Another condition which may cause this symptom, as Cope has found out, is perforated gastric and duodenal ulcer. He cites a case in which all symptoms pointed to a perforation of a duodenal ulcer, together with a severe pain over the supraspinous fossa. On operation he found a perforated ulcer about the junction of the first and second portion of the duodenum with a considerable amount of plastic lymph in the sub-hepatic region. After fixing the perforation, the shoulder pain

cleared out. He attributed the pain to irritation of the posterior part of the right side of the diaphragm. He also mentions the presence of this important and common clinical symptom in cases of diaphragmatic pleurisy and empyema. He cites a case of thoracic actinomycosis affecting the left costo-diaphragmatic region with severe pain on the left supraspinous fossa. The shoulder pain became better directly in proportion as did that on the acinomycotic process.

Cases of acute appendicitis and gallstones have been reported as causing severe shoulder pain, and hence these conditions must never be neglected in looking for the cause of shoulder pain. This referred pain is characterized by its sudden appearance and by its exact localization along the distribution of a spinal segment. It is also accompanied by hyperesthesia and is often increased by deep respiration, cough or change of position.

Cederberg has observed this shoulder pain in sixteen cases of acute pelvic infections, mostly tubal pregnancies. The pain in the shoulder region has been found to be on the opposite side of the lesion, the explanation being based on that of a referred phenomenon.

Infection of one of the bones around the shoulder joint may give rise to a stiff and painful shoulder. F. Viola in the "Riforma Medica" reports two cases of osteomyelitis of the clavicle; both cases presented as main symptom intense pain over the shoulder. He believes that pressure over the brachial plexus by the inflammatory tumor is the cause of the pain.

There are also many cases in which this symptom seems to be the main trouble, but after the most careful study and examination no diagnosis can be made out. These are usually unstable, neurotic individuals and may follow a minor injury. They present no definite signs of neuritis or atrophy but this persistent subjective symptom continues regardless of any treatment instituted.

SUMMARY AND CONCLUSIONS.

1. Lesions of the sub-acromial bursa and the tendon of the supraspinatous muscle are the most common causes of stiff and painful shoulder.

2. The arthritides of the joints may also be considered as important factors.

3. Many cases which are diagnosed as contusions of the shoulder joint, neuritis, periarthritis and muscular rheumatism are in reality due to lesions of the sub-acromial bursa and supraspinatous tendon.

4. The cause of pain in the shoulder region in cases of abdominal lesions is irritation of the diaphragm and not of the abdominal viscera.

5. Pain in the tip of the shoulder is likely to be of diagnostic value in subphrenic abscess, diaphragmatic pleurisy, actinomycosis of the chest, perforation of gastric and duodenal ulcers, and probably ectopic pregnancy.

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CASE REPORTS AND CLINICAL SUGGESTIONS

MASTOIDITIS WITH LATERAL SINUS THROMBOSIS.*

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New Orleans.

This is a case of a child nine years of age admitted to the Touro Infirmary on April 10, 1927, with the complaint of chills and fever.

About twelve months ago she had a suppurative otitis media, the right side of her face being so swollen that it closed the right eye. The ear suddenly ceased to drain and the temperature went up. After repeated hot applications discharge began and she made an uneventful recovery.

All was well until about four weeks ago when the ear began to suppurate again, this time without pain. The following day the temperature went to 103°. She began to have rigors, with temperature fluctuating from normal to 105°.

The blood picture showed a leukocytosis of 14,800 with 82 per cent neutrophiles and 70 per cent hemoglobin. A roentgenogram of all the sinuses was negative, but there was distinct pathology of the right mastoid cells. Mastoidectomy was done and free pus was found.

The child failed to improve. Blood cultures were made of these, the first two were negative and the third showed streptococcus hemolyticus. She was given mercurochrome intravenously twice and also antistreptococcal serum without improvement.

In this state she was brought to Touro. Her general appearance was striking, for in spite of an illness of over one month she was bright and lively, well developed and very well nourished.

There was a sense of bogginess just below the right ear. The right side of the neck seemed full and firm to the touch. There was a slight bulging of the right ear drum. The left ear drum was normal.

The oral hygiene was good. Her tonsils had been removed, but there was a remnant of the right tonsil still remaining with what seemed to be a discharging sinus just behind it.

The remainder of the physical examination was negative with the exception of a slight systolic blow at the pulmonic area.

Cultures were immediately taken from the blood stream and from the discharging sinus behind the right tonsil. Both blood and pharyngeal cultures showed the presence of a short chained hemolytic streptococcus.

The blood picture showed a leukocytosis of 11,000 with 70 per cent neutrophiles and a reduction of the red cells to 4,000,000, with 85 per cent hemoglobin.

In view of the findings in the neck anl pharynx, as well as the blood stream infection, it was decided that the child still suffered from a mastoiditis, or an insufficiently done mastoidectomy, with infection of the jugular bulb and vein in the neck extending back past the mastoid region into the lateral sinus with thrombosis of that venous channel.

The absence of more marked symptoms than the irregular chills and temperature with such a virulent blood stream infection was explainable under the assumption that the lateral sinus was thrombosed above; the jugular vein in the neck clotted below, and the suppurative process between the two discharging through the purulent sinus in the old tonsillar fossa. The fact that cultures made from the ear as well as the tonsillar fossa showed the same organisms further strengthened this hypothesis.

Consequently on the next day after admission the child was again operated on. The neck was dissected and the internal jugular ligated. The old mastoid wound was opened and some remaining necrotic mastoid cells found and removed. The lateral sinus was then exposed, opened and found to contain a large quantity of pus. At the distal end a blood clot was found, removed and free bleeding established from above. This was then controlled by packing with iodoform gauze. The lower end of the sinus was likewise treated.

The upper end of the internal jugular was then opened and again pus welled out from the vein, bleeding was established which must have come through the petrosal sinuses indicating that they were clear. A probe was then passed through the jugular and seen to protrude behind the tonsil in the old tonsillar fossa. The neck wound was closed and the sinus cavity packed with iodoform gauze.

For a few days the child appeared better, her temperature did not reach the extreme range it had been running, and her chills disappeared. But she soon developed an urticaria which caused her great discomfort.

On the 17th she complained of pain for the first time and was restless. On the 23rd her blood picture showed a further reduction in red

*Read at Touro Infirmary Clinical Staff Meeting, May 6, 1927.

cells to 3,500,000 with only 75 per cent hemoglobin, so a transfusion of 200 c.c. of whole mother's blood was given. For a while she seemed to improve, then the temperature took on its tall "picket fence" appearance again and the transfusion was repeated with another temporary improvement until May 2nd, when a third transfusion of 300 c.c. was given.

By this time the child had grown so cross and irritable that almost any form of treatment was an ordeal. Her condition was somewhat improved though she still ran temperature and carried a streptococcal blood stream infection. Thinking that a change to home surroundings would benefit her, she was allowed to go home under the same close attention.

This case illustrates the importance of a thorough examination for blood stream infection, for in spite of two negative cultures a third culture was made which demonstrated the organisms. One culture may be useless, diagnostically, as is the taking of the temperature on one occasion only, but one positive culture is diagnostic.

Eagleton states after a most varied experience "that localized thrombosis of a small venous radicle of the head or neck does not occasion a positive streptococcic blood culture without involvement of a large venous trunk." He regards a positive blood culture as diagnostic of a large venous sinus involvement.

Staphylococcic blood stream invasion, however, may be different as it seems to have a tendency to reach the blood stream by way of the small venous radicles and having once gained control the disease progresses rapidly.

One of the most striking features in blood stream infections is the appearance of the patient. In this case, although recording a high temperature she looked well—almost too well in proportion to the temperature.

Cases in which there is remission of temperature and chills are undoubtedly less virulent than those in which there is continuously high temperature. In a general way, a continuously high temperature with chills is the rule, with free pus in a large venous trunk.

The appearance of delirium is of gravest significance. As long as the infection is confined to the sinus, the sensorium is entirely clear. Delirium doubtless does occur in cases of lateral sinus thrombosis that recover, but its presence is indicative of a meningeal involvement—the usual terminal process.

The associated meningitis need not be suppurative and diffuse, but may be protective and limited in type, in which case if the cause of the meningeal irritation can be removed the inflammation within the dura is apt to subside.

In reviewing this case, I feel sure that the child has been rid of her original focus of infection. Had there been another focus of infection as severe as the original one, it would surely by this time have ruptured, causing meningeal symptoms or abscess formation. The disease is no longer of the sinuses, but a systemic affair.

It is evident that thrombophebitis with a purulent clot rarely results in recovery from surgery alone. Drainage is difficult and the hope of recovery rests on surgery aided by the transfusion of whole or immunized blood. However, it seems probable that as long as the infection is limited to one sinus, the case may recover, provided the surgical attack is instituted early enough.

Eagleton is prone to look upon the formation of clot as primarily protective in origin. According to him, the conception of thrombosis of the cerebral sinuses as fundamentally a septic clot occluding a large venous pathway, should be somewhat revised.

The extension of the clot is largely due to the mechanical slowing of the blood current and is nature's effort to prevent the entrance of infection into the blood stream itself; for even when the clot is very extensive both ends of the thrombus are frequently entirely aseptic.

A thrombus, then, should be regarded as nature's protective effort to prevent invasion of the blood stream, not, as in the usual view, that the thrombus is the agent of bacterial dissemination, something that must be removed lest the infection should be spread. When the clot is infected, it is generally necessary to eliminate it surgically; but prior to actual infection the protection of the clot and its utilization to limit the infection process offers the chief hope of the patient's recovery.

The nature of the anatomy in lateral sinus infections would appear to be favorable for treatment by intravenous injections of bacteriocides because the disease is within the blood vessels themselves.

Kolmer has experimentally demonstrated that about 25 per cent of induced blood stream septicemia from hemolytic streptococci which otherwise are uniformly fatal, were saved by injection of mercurochrome; but in this case as in other cases intravenous mercurochrome failed.

With failure of intravenous dyes more benefit can probably be derived from the use of trans-

fusions and of immunized transfusions following the operation wherein the donor is injected from time to time with a small reactive dose of the prepared organism in the hope that the donor will develop in his blood the agglutinins and bacteriolysins.

DISCUSSION.

Dr. Clyde Lynch: I want to congratulate Dr. McComiskey on the manner in which he presented his case. We have several types of infection. One is primarily a thrombosis of the small venous radicles of the mastoid veins. In this particular type of infection the symptomology in the mastoid is practicaly negative. There is no tenderness on pressure over the mastoid. The roentgenograms appear negative because there is no breaking down of cell partitions and in these cases if the diagnosis is reached early and an early mastoidectomy done, it is possible to obviate the possibility of blood stream infection. In the other type of case we have to deal with the situation usually observed in milder infections, namely, the breaking down of the cell partitions with pus cavities forming in the mastoid process. In this class any sinus infection is much delayed, usually more than ten days.

There is one other thing I want to bring out and that is that there are probably twenty-five collected cases of cured sinus thrombosis without any surgery at all. The best results occur in cases where the vein is ligated and cut in two, not simply opened by puncture.

Dr. W. W. Leake: Dr. McComiskey is to be congratulated on the manner in which he prepared and presented his case of lateral sinus thrombosis. I also want to compliment him on his temerity in attacking so formidable a foe in his initial effort in presenting a paper before this meeting.

Lateral sinus thrombosis is one of the most serious conditions met in diseases of the mastoid region. We have comparatively few cases in our hospitals—the infrequency of the complication depending largely, I think, upon the fact that our operators are conservative and quit when they have removed all necrosed and infected material. It has been my conviction for years that lateral sinus thrombosis occurring so frequently as is reported in some clinics is due often to the radical procedure of the operator in exposing the sinus, palpating and puncturing it, as is advocated by some writers. It is possible for the sinus to become involved from infection before operation and this, I believe, was the situation in this case.

Dr. Harold Kearney: My experience in lateral sinus thrombosis has been limited to the extensive series of no cases. I have never had any. Dr. Lynch thinks that lateral sinus thrombosis is rare here as compared to lateral sinus thrombosis in the East and Northwest, where it is very striking. Cases of sinus thrombosis are reported with regularity in the Northwest and East.

I attended a meeting of the Colleg of Surgeons recently in Philadelphia and one operator reported two cases of sinus thrombosis in his own recent experience.

Dr. McComiskey: I wish to thank the members of the staff for their generous discussion and interest in the case.

RENAL GLYCOSURIA.*

C. T. Williams, M. D.
New Orleans.

A white female child, 3½ years of age, was first admitted as a private patient to Dr. Kinberger, March 31, 1926. She was discharged two days later, with a diagnosis of chronic bronchitis and a notation: "No cause could be found to account for the glycosuria present." The child was admitted to the charity service, September 10, 1926, for study, and discharged one month later, without a diagnosis, except for renal glycosuria.

Of full term and normal delivery, the child had been the first and only pregnancy of the mother. She had been breast fed for the first two weeks of her life and was then given a cow's milk formula, on account of the failure of the mother's breast milk supply. The progress in growth and development was entirely satisfactory up to one year of age (weighing 25 lbs. at this time, according to mother's statement). She sat alone, walked, talked, etc., at the usual time.

The child had measles at 20 months and pyelitis shortly following the measles, persisting for several months. An automobile accident in July, 1925, resulted in a number of contusions about the head and several lacerations about the face, none of which were considered of a serious nature. Two months after this accident sugar was found present in the urine. This finding has been more or less constant—at times only a faint trace, at times none and again as much as 5 per cent. From one year of age, there have been recurrent attacks of vomiting, regardless of the type of food given, with simultaneous anorexia and chronic constipation. The child has grown very little in stature since one year of age and has made no permanent gain in weight. Her nourishment has been difficult to maintain, the weight going up occasionally around 23 or 24 pounds, but promptly sliding back to 21 or 22 pounds, where it has remained. The child

*Read before the Touro Infirmary Clinical Staff Meeting, May 6, 1927.

makes weekly visits to the clinic and almost every time we see her there has been some new development, like stomatitis, conjunctivitis, furunculosis, etc.

Findings on first admission:

The physical examination was negative, except for an undersized child, with tube rales in both sides of chest posteriorly.

A roentgenogram of the chest showed: "A post-influenzal, or a post-pneumonic process at the base of the right lung."

Roentgen-ray of the head was negative.

The urine examination showed: Albumin, heavy trace; sugar, heavy trace; few pus cells and an occasional hyaline cast. Blood count: total white cells were 7,500, of which 48 were neutrophiles, 47 small mononuclears, 4 large mononuclears, and 1 eosinophile. No malaria plasmodia were found. No changes in the red cells were noted. Blood chemistry: total non-protein N. 27; urea N. 13.5; creatinin 1.2; uric acid 1.6 and dextrose 93.

Findings on second admission (six months later):

The physical examination showed a poorly developed child, much under-size for her actual age (weight 23 pounds, age 3½ years). There was a marked urticarial eruption over the entire body, which persisted for 24 hours after admission. Her mentality was considered precocious for her age. The liver was about 2.5 c.m. below the infra-costal margin in the mid-clavicular line. The lips were dry and of a brownish color. The mucous membranes of the mouth were pale and presented a glistening appearance, with a number of deep fissures, particularly well marked at the angles of the mouth. There was a dark deposit on the teeth, with two or three cavities in the upper incisors. The examination was otherwise negative.

Gastro-intestinal series and a fluoroscopic examination were negative.

Roentgen-ray of the head was negative. Examination of the eye grounds was also negative.

The glucose tolerance test showed the following: (16 gm. glucose orally). Fasting, 40 mg. dextrose per 100 c.c. of blood; half hr., 52.6 mg. dextrose per 100 c.c. of blood; 2 hr., 46.5 mg. dextrose per 100 c.c. of blood; 3 hr., 55.0 mg. dextrose per 100 c.c of blood; 0.3 of 1 per cent sugar in urine.

On a liquid diet (including milk), from September 24th to October 3rd, the sugar in the urine was as follows: September 26, 1 per cent, and October 3rd, 0.3 per cent.

On a weighed diet, from October 4th to October 14th, consisting of CH- 20; F- 34, and P- 18, sugar was present in the urine on every day, except the last, the amounts varying from a faint trace to as much as 0.6 of 1 per cent.

The spinal fluid was negative. Blood Wassermanns were repeatedly negative. Stool examinations were negative for ova and parasites.

During her stay in the hospital, she had her good days and her bad days, vomiting on an average of every three or four days. When the vomiting attacks were on, almost complete anorexia prevailed. The bowels were chronically constipated the entire time.

The child was referred back to the clinic on October 14th, "unimproved," with no diagnosis, except for renal glycosuria.

On November 17th, anti-luetic treatment was instituted, consisting of ten intramuscular injections of sulpharsphenamin, 0.1 gm. weekly, followed by six weeks of "mixed treatment," and then six weeks of mercurial rubs. The child has not vomited since the first injection of sulpharsphenamin, almost six months ago, and has had no sugar in the urine, according to weekly examinations, for more than five months now. She has not gained in weight, however, and is still constipated.

DISCUSSION

Dr. von Meysenbug: I have not seen the patient Dr. Williams has described, but I have been very much interested in renal glycosuria, because I have seen several cases in children of different ages, and I have always been struck by the low blood sugar. I do not know the diagnosis in the case, but it certainly is an interesting fact that anti-luetic treatment was the main feature of the child's improvement.

Dr. Randolph Lyons: I want to say that I do not know much about children. I have no more idea what was the matter with the child than Dr. von Meysenbug had. It appears to me before treatment and diet for glycosuria are given, we should be fairly sure it is glycosuria. I should like to ask Dr. Williams if there were any confirmatory tests made to prove that the sugar was glucose?

Dr. Williams: In answer to Dr. Lyons' question, the phenyl-hydrazin test was done and found positive for glucose.

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COMING MEDICAL MEETINGS.

The Annual Meeting of the Southern Medical Association will be held this year at Memphis, in the week beginning November 14. The program that has been provided for this meeting is of the highest caliber; it represents the best standards of the South. It should prove to be of inestimable value to the physicians of this community to hear what will be discussed at Memphis. It is earnestly hoped that all doctors living in Mississippi and Louisiana, who can secure a well-deserved relief from their usual pressing professional responsibilities, attend this very splendid clinical and scientific medical session.

Five months after the meeting of the Southern Medical Association, the Louisiana State Medical Society will hold its yearly meeting at Baton Rouge. It is the earnest desire of the men who have to do with the arrangement of the program that essayists and speakers volunteer to present papers at this meeting. A state meeting should be representative of the work that is being done in a state. It is impossible for an individual physician to know about the manifold activities of his fellow-doctors throughout the state. Therefore, in order to cooperate with other physicians, to assist in dissemination of knowledge and to add to their own stock of information, the members of the profession should freely and generously offer to contribute to the program. Those of you who see interesting cases, carry out novel and new lines of treatment, or who in any way have anything worth while to bring before the Session, should communicate at the earliest opportunity with the men responsible for preparation of the program.

THE SPLEEN.

It is said that in days of old the Greek Marathon runners were accustomed to having their spleens removed in order to improve their ability in running. It was appreciated at that time, centuries ago, that life was compatible with removal of this organ of unknown functions, and at that time it was realized that these functions were of minor importance. Our present-day knowledge of the spleen is undoubtedly very much greater than centuries ago, but there still remains much to be learned about the bodily purposes of this compact and small organ.

The most important functions of the spleen probably reside in its ability to destroy blood and to make blood. The formation of red cells is a fetal function which is not maintained after intra-uterine life.

Its function as a blood destroyer or a preparer of cells to be destroyed by the reticulo-endothelial system persists during adult life. In addition to these two important offices the spleen is also concerned with bile formation, possibly directly, but in any circumstance making ready the destroyed red cells or their hemoglobin for further action by the liver. The spleen plays an important part in immunity. It is instrumental in antibody formation; it fixes toxins, and it has an elective affinity for bacteria. Also it is a most important organ in the reticulo-endothelial system. Certain cells of the spleen are markedly phagocytic, which may play some part in its immunological activities. Further immunological functions are not proven in human beings, but are assumed from animal experimentation. The spleen probably helps to inhibit the growth of tumors. Splenic implants of tumor growths grow much less readily than elsewhere in the body; and likewise tumor implants grow very much more readily in the splenectomized animal than in the non-splenectomized. It plays some role in aiding natural immunity to tuberculosis. Tuberculosis of the spleen as a primary condition is rare. As a secondary manifestation it is rarely found until the body is overrun by the infection. Animals with large spleens are difficult to infect by injections of the bacillus of tuberculosis, as for example the cat and the dog. On the other hand, animals with small spleens are readily infected, such animals being the well-known laboratory mammals, rabbits and guinea-pigs. That the spleen plays any part in digestion or metabolism is a mooted question. Probably it has something to do with the metabolism of iron.

A new activity of the spleen, or at least an activity which has been unrecognized for fifty years, has been recently pointed out by Barcroft. In a series of ingenious experiments he has shown that the spleen has a reservoir function, being capable of marked dilatation, and also of contraction, storing up red cells which are shunted off from the general circulation. The red cells that are discharged from the splenic pulp furthermore are shown by him to be cells which are distinctly more fragile than those in the general circulation.

It is of interest to note the relationship of splenic function to those diseases and disorders which are characterized clinically by enlargement of the organ. The immunological function of the spleen is observed in those acute infectious diseases which are of long duration. In typhoid fever enlargement of the spleen is one of the characteristic physical findings. In diseases such as splenic anemia and pernicious anemia the destructive activity of the spleen is well recognized, and in these conditions, notably the latter, the removal of the spleen is often of a distinct advantage. An exaggeration of the function of rendering red cells less resistent to hemolyzing factors is seen in that interesting condition, hemolytic jaundice. In addition to destroying the red cells, blood platelets are destroyed by the spleen. Perverted function in this case manifests itself by producing occasionally an essential thrombocytopenia, a disorder which may be cured by the removal of the organ. Reversion of the spleen to its fetal function undoubtedly takes place after severe hemorrhage. In polycythemia vera the spleen again seems to take up this earlier embryologic activity, and an enlarged spleen is felt on examination of the patient. During severe anemia, particularly when improvement takes place, the spleen is often found to be large. The active phagocytes of the spleen are responsible for the enlargement that is seen in a certain number of animal parasitic diseases, notably kala-azar.

Barcroft's demonstration of the shunt off from the general circulation of much of the blood in the spleen, which during life is from two to three times greater in size than when removed at autopsy, helps to explain in part the enlargement of the organ in malaria. In the individual who has been insufficiently treated with quinine, the drug has been unable to reach parasites in this

cut-off portion of the circulation. Here they multiply and grow and produce pathological changes. The parasites remain in a pool as it were without outlet but sooner or later breaking into the general circulation as a result of some one or another cause. The reservoir effect of the spleen also is an aid to a weakened heart, reducing the blood volume and lessening the work of the heart. In certain types of poisoning, in which gases destroy the oxygen-carrying properties of the red cells, it has been very definitely shown that this lake of red cells which has not been acted upon by the gaseous poison may be called to the help of the struggling cells which have been attacked. The close circulatory association of the liver and spleen and their frequent mutual involvement in disease predicates another activity of the spleen, namely that of activating liver function. These chief actions of the spleen are important, but not necessary to life. The explanation lies in the fact that after removal of the spleen there is an increase in the reticulo-endothelial elements which undergo compensatory hyperplasia elsewhere in the body compensate for the removal of the organ.

PERIODIC HEALTH EXAMINATION.

Conforming with a suggestion made by the President of the Orleans Parish Medical Society in his inaugural address the Committee on Periodic Health Examination has settled on a definite plan for a "Longer Life Week" to take place the first week in December.

It is the purpose of the Committee to secure the co-operation of all civic, religious, fraternal and educational bodies with the idea of reaching as many people as possible and to drive home to them the advantage and necessity of periodic health examinations which mean longer and happier life.

Our local medical profession in late years has been appalled by the number of sudden deaths occurring in its midst. How far would periodic health examinations have diminshed the toll? Other groups suffer like bereavements and we believe that periodic health examinations can diminish the evil.

The committee requests that each and every member of the Orleans Parish Medical Society lend his aid to make this a success. Any suggestion from the Membership will be highly appreciated.

WHAT A CHILD SHOULD DEMAND OF HIS DOCTOR.

A child has a right to demand of his doctor that he be well-born, that he be ushered into the world with efficiency, dispatch and consideration for his safety and that of his mother. It means that his mother shall have been, for a number of months preceding his debut, under the watchful eye of a physician.

That his doctor instruct his mother in the essentials of dietetics when his first nine months of eating have been provided for. These essentials concern his daily food intake.

That at the end of the first year of life he shall have been protected from the three diseases which it has become necessary for any child to have;—namely, diphtheria, smallpox and thyphoid fever.

That he be guarded against the hazards that make up the "school diseases," such as eye-strain, bad posture, fatigue, nervousness, malnutrition, and the hundred and one defects of the modern American child that accompany the school as it is so often administered by those who view the child as plastic material to be fitted to the school.

—*"Children," the Magazine for Parents.*

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the past month the Board of Directors has held its regular monthly meeting; the Society has held its Third Quarterly Executive Meeting and a Joint Clinical Meeting with the Staff of Charity Hospital.

At the meeting of the Board the routine business which had accumulated during the past three months of summer vacation was taken up and dispensed with.

Dr. Geo. B. Collier and Dr. John T. Eagleton were elected to Active Membership.

Dr. Leonard C. Scott who had resigned from the Society in good standing on account of his contemplated change of residence was reinstated to Active Membership.

Dr. Paul R. Meyer was elected to Interne Membership.

The following Interne Members who had applied for Active Membership were favorably voted upon and are now among our Active Members: Drs. Hymen L. Cohen, Geo. D. Feldner, Morrell W. Miller, A. J. McComiskey, Wm. H. Roeling, Herbert L. Weinberger and Robert M. Willoughby.

The question of Group Insurance was brought up for final consideration at the Quarterly Executive Meeting. It was passed unanimously and our President, Dr. A. E. Fossier, was given authority to sign the group policy which will give the $3,000.00 insurance to about 268 members who have signified their acceptance. This policy will be dated November 1st, and the members will be further notified as details are completed.

Dr. W. H. Knolle who was recommended to Honorary Membership by 22 members in good standing was elected to this membership at the 1st October meeting. Dr. Knolle was present and thanked the members for the honor bestowed upon him.

The Condolence Committee, Dr. Daniel J. Murphy, Chairman, proposed the following resolutions, which were adopted:

Whereas, God in His Wisdom saw fit to remove from our midst our beloved confrere, Dr. L. Maurice Provosty.

Be it resolved, That the Orleans Parish Medical Society spread over its minutes the fact of its loss in the death of our beloved brother, Dr. L. Maurice Provosty, and

Be it further resolved, That the Society express in writing to the famiily of the deceased, its condolence and sympathy, together with a copy of the above resolution.

The Board of Directors has selected Dr. M. G. Seelig a noted surgeon of St. Louis to be the Orator for the second annual Stanford E. Chaille Memorial Oration to be held Tuesday, December 6th, 1927.

The Joint Clinical Meeting with the Staff of Charity Hospital was well attended and interesting cases were presented and discussed.

All members who have changed their addresses kindly notify the Assistant Secretary so that the mail files may be corrected.

The Membership of the Society to date is 488 of whom 458 are Active Members.

REPORT OF TREASURER.

Actual Book Balance, 8/31/27	$652.89
Receipts during September	$307.80
	$960.69
Expenditures	$299.34
	$661.35
Outstanding checks	$185.41
	$846.76
Receipt since Bank Balance	$ 42.50
Bank Balance, 9/27/27	$804.26

REPORT OF LIBRARIAN.

The constant use of the Library continued to a marked degree through the months of July, August and September. The work has been much heavier than during any of the other summers since the reorganization of the Library. Eight bibliographies have been prepared on subjects, as follows:

Scopolamin in Labor, 1925-date.
Post-Partal Eclampsia.
Diabetes Mellitus in Infancy and Childhood.
Duval's Work on Measles.
Etiology of Measles.
Pemphigus.
Acriflavin.
Ectopic Pregnancy.

Gifts have been received from
Dr. E. McC. Connely,
Dr. Maurice Lescale,
Dr. H. Dickson Bruns,
Dr. E. L. King,
Lane Medical Library,
Dr. Paul J. Gelpi
Mrs. P. B. McCutcheon.
Dr. W. H. Block,
Mrs. John Oechsner.

215 books have been added to the Library during the Quarter. Of these 137 books were received by binding, 27 from the New Orleans Medical and Surgical Journal, 17 by gift, 25 by purchase and 9 by subscription.

3 sections of new steel shelving have been installed and the consequent shift of material has been made.

Miss Marshall was on vacation during September, the Library room calls being cared for during her absence by Miss Maier and Miss Crossen.

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

STATE-WIDE COMMITTEE ON PUBLICITY.

It will be recalled that, pursuant to a call of Chairman B. A. Ledbetter of Committee on Public Policy and Legislation, there assembled in New Orleans, on July 25th, a number of physicians from various parts of the state, who discussed many matters pertaining to the functions of this committee. The result of the deliberations of this assemblage was the passage of a resolution, requesting the president of the state society to appoint a special state-wide committee on PUBLICITY.

Following this meeting, President Herold took up this matter with the executive committee, by mail, and, finding no opposition to the proposal, he forthwith appointed thirty-five members of the society, trying to get a good representation from all parts of the state. He then called the meeting for October 12th, 10 a. m., at headquarters in New Orleans. The following attended the meeting, viz: L. J. Menville, F. M. Johns, A. E. Fossier, B. A. Ledbetter, H. T. Simon, R. B. Harrison, S. B. Wolff, J. E. Knighton, J. Q. Graves, R. O. Simmons, L. J. Williams, R. F. Derouen, J. K. Griffith, C. C. DeGravelles; A. A. Herold, president, and P. T. Talbot, secretary ex-officio.

Many matters pertaining to the matter of publicity—taking the public into our confidence and educating them along medical lines—were discussed; numerous suggestions were made and it was finally decided to leave the working-out of a practical plan to a sub-committee of three or five, to be appointed by the president, who was selected as chairman of the general committee. This special sub-committee is to report its findings and suggestions back to the general committee, which is to meet on the call of the chairman. Several names were recommended for this committee, all of which will be taken under consideration and the appointments announced in a short time.

Dr. M. T. Van Studdiford has returned to the city after a trip to Vienna, where he had occasion to visit the leading hospitals of Europe, pursuing his specialty of dermatology.

TUBERCULOSIS AND PUBLIC HEALTH ASSOCIATION OF LOUISIANA.

With Christmas just two months off, activities in the State Headquarters and in the parishes are becoming more intensive, preparatory to the

opening of the Seal Campaign on Thanksgiving Day, November 24th.

Our supplies from the National are almost all in and orders from our local workers are coming in daily. Encouraging reports of the plans being made to make our campaign a success are being received. Notwithstanding the existing depression as a result of the flood, spirited work in the seal sale is going on in all localities, and many have expressed the hope for a banner year. Sympathy in the tuberculosis cause is becoming more prevalent as the more urgent need for preventive measures is manifest. In 1926, there were approximately 2300 deaths from tuberculosis in Louisiana.

Splendid co-operation is promised us by the billboard poster companies, the press, and other agencies. From the Presidents of Colleges and Superintendents of Schools come letters of support in our campaign.

The Sixth District Medical Society will meet in its ninth annual fall session in the wonderfully progressive city of Bogalusa, Parish of Washington, on Wednesday, November 2, 1927, at 9:45 a. m., sharp, at the City Hall, with the following tentative program:

Call to order and official business

Invocation.

Paper by Dr. F. F. Young of Covington, "Mental Disorders and Society."

Paper by Dr. Geo. S. Bel of New Orleans, "The Heart."

Paper by Dr. Jos. A. Danna of New Orleans, "Recurrent Duodenal Obstruction."

Clinic at Elizabeth Sullivan Memorial Hospital, by Doctors Lafferty and Slaughter; (subject to conditions then existing.

1 P. M.—Luncheon at Pine Tree Inn as guests of His Honor, W. H. Sullivan, Mayor of Bogalusa.

2 P. M.—Visiting the industries and other points of interest of Bogalusa, with special reference to the Elizabeth Sullivan Memorial Hospital, the biggest sawmill in the world and the paper mill.

A. G. MAYLIE, M. D., President.

ITALY'S TAX ON BACHELORS.

The Italian Government recently introduced a tax on bachelors, the proceeds of which are to be used for the work of the National Bureau of Maternity and Infant Welfare, which has been greatly hindered by lack of funds. Premier Mussolini has recently expressed the opinion that in order to obtain sufficient funds for this purpose it may be necessary to impose a tax on childless marriages also. The National Bureau of Maternity and Infant Welfare, through its provincial committees, supervises a large number of agencies engaged in maternity and infancy work.

UNIVERSITY OF CALIFORNIA ESTABLISHES INSTITUTE OF CHILD WELFARE.

The president of the University of California has announced the establishment of an institute of child welfare in the university. The Laura Spelman Rockefeller Memorial has made liberal appropriations for its maintenance for a period of six years beginning July, 1927. The California Congress of Parent-Teacher Associations has pledged to defray during the six-year period the rental charges of such off-campus housing space as the institute will require. Herbert R. Stolz, M. D., has been appointed director of the institute, and Harold E. Jones, Ph. D., director of research.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examination:

Junior Medical Officer (Interne).

Applications for junior medical officer (interne) will be rated as received by the Civil Service Commission at Washington, D. C., until December 30.

The examination is to fill vacancies in Veterans' Bureau Hospitals throughout the United States, and vacancies in positions requiring similar qualifications.

The entrance salary ranges from $1,860 to $2,400 a year without allowances, or $1,260 to $1,860 a year with quarters, subsistence, and laundry, depending upon the qualifications of the appointee as shown in the examination and the duty to which assigned.

The duties, under immediate supervision, are to admit patients, take histories, make physical and mental examinations and record findings; to make ward rounds of inspection, note charts, record observations; to prescribe for minor ailments or for acute or emergency cases, and to dispense medicine in emergency; to perform minor surgical operations and to assist at major operations and in redressing; to administer anesthetics; to make routine laboratory tests and analyses; to assist at outpatient clinics in dressing and in administering vaccines; to keep records, make up case histories, answer correspondence relating to patients, and compile statistics requiring medical training.

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The American Board of Otolaryngology will hold an examination in Memphis the first day of the Southern Medical Association meeting, Monday, November 14, 1927. The certificate of this Board is probably the most valuable of its kind in the world and is probably the most valuable certificate that any Ear, Nose and Throat man in America possesses. All applications or communications concerning this examination should be addressed to Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha, Nebraska.

The sixth annual meeting of the Southern Association of Anesthetists will be held at the Claridge Hotel, Memphis, Tenn., November 14th and 15th. This organization meets annually in conjunction with the Southern Medical Association.

The Southern Association of Anesthetists is a regional unit of the Associated Anesthetists of the United States and Canada. Others serving various geographical sections are the Eastern, Mid-Western, Pacific Coast and Canadian Societies of Anesthetists.

Among the authors appearing on the program for the coming meeting at Memphis are: Drs. J. S. Lundy and A. E. Osterberg, Rochester, Minn.; M. Q. Ewing, Amory, Miss.; Walker B. Gossett, Louisville, Ky.; Edley H. Jones, Vicksburg, Miss.; Nettie Klein, Texarkana, Texas; J. G. Sherrill, Louisville, Ky., and J. G. Poe, Dallas, Texas.

BORN TO: Dr. and Mrs. David Henry Keller, Alexandria, La.; a girl.

DR. A. A. ALLAIN, OF IBERVILLE, DIES FROM FLOOD WORK.

Worn out by his work for the Red Cross during the flood last spring, Dr. Arthur A. Allain, for 40 years a practicing physician of Iberville Parish, died early Monday morning, October 23, 1927, at Hotel Dieu, where he had been a patient for the last three weeks. The funeral was held from his home at Bayou Goula, La.

Dr. Allain had been a member of the Iberville parish school board and had served the parish as coroner. He was 66 years old. He is survived by his daughter, Miss Dena Allain, and two sisters, Mrs. S. S. Ingman, of Savannah, Ga., and Mrs. Ella Lounge, of New Orleans.

During the flood Dr. Allain was a tireless worker, devoting his ability and energy to the relief of sufferers, without pay and without regard to the long hours he labored. It was this work, his friends say, which in a large measure brought about the illness which caused his death.

DIED

Suddenly at Zenoria, La., July 26th, 1927, Dr. George Preston Smith, born June 2nd, 1859, Sheloh, Union Parish, La. He was a graduate of the Memphis Hospital Medical College, 1890, and a member of the American Medical Association, Southern Medical Association, Louisiana State Medical Society, and LaSalle Parish Medical Society.

A good man, loyal, ethical charitable; he was ever ready, and did the best he could. May he rest in peace.

Headquarters Fourth Corps Area, Office of the Corps Area Surgeon, Fort McPherson, Georgia, October, 1927.

Captain Harry Walker Scofield, Med-Res., 830 Cotton St., Shreveport, La., has been relieved from assignment to the Field Artillery Group, and reassigned as Asst. Surgeon, 4th Div. Trains, (Inactive.)

Captain Gilbert Christian Anderson, Med-Res., 2322 Lowerline St., New Orleans, La., has been transferred to the 87th Division for assignment.

1st Lt. James Rocquet Davobal, Med- Res., 218 Angela Ave., New Orleans, La., has been allotted to the 87th Division for assignment.

TWO PSYCHIATRIC FELLOWSHIPS OPEN

The National Committee for Mental Hygiene announces that two fellowships for training in extramural psychiatry at the Institute for Child Guidance in New York City are available for properly qualified candidates.

These fellowships have been created by the Commonwealth Fund to provide special training for physicians who have had hospital experience in psychiatry, but who wish to prepare themselves for community work in the fields of child guidance, delinquency, education and dependency.

The fellowships are open to physicians who are (1) under 35 years of age, (2) graduates of Class "A" medical schools, and (3) who have had at least one year of training in a hospital for mental disease maintaining satisfactory standards of clinical work and instruction.

Inquiries and applications should be addressed to Dr. Frankwood E. Williams, Medical Director, The National Committee for Mental Hygiene, Inc., 370 Seventh Avenue, New York City.

THE ANNUAL MEETING OF THE SOUTHERN MEDICAL ASSOCIATION.

Through their secretary, Dr. Cooper, the Memphis and Shelby County Medical Society, as host to the Southern Medical Association, desires to extend a most cordial and very hearty invitation to the physicians of Louisiana and Mississippi to attend the meeting of that scientific body in Memphis November 14-17.

The Memphis and Shelby County Medical Society has a membership of over 300. Each member joins in the sincere hope that the largest attendance in the history of the Southern will be present and that each visitor will feel personally the welcome herewith extended as if he were receiving it in person accompanied by a hearty hand-shake.

A. F. COOPER, M. D.,
Secretary Memphis and Shelby County Medical Society.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The regular quarterly meeting of the Homochitto Valley Medical Society was held in Natchez on October 13, with President W. R. Brumfield in the chair.

Dr. John Darrington, President of the State Association, and his son, Dr. G. Darrington, of Yazoo City, were among the guests present.

The following officers were elected for the ensuing year:

President—Dr. L. W. Walker.

Vice-Presidents:—

Adams County—Dr. Edwin Benoist.
Amite County—Dr. W. J. Grady.
Franklin County—Dr. J. L. Calcote.
Jefferson County—Dr. W. H. H. Lewis.
Wilkinson County—Dr. C. E. Catchings.

Secretary-Treasurer—Dr. L. S. Gaudet.

Delegates:

Adams County—Dr. J. D. Shields.
Amite County—Dr. W. R. Brumfield.
Franklin County—Dr. C. E. Mullins.
Jefferson County—Dr. W. H. H. Lewis.
Wilkinson County—Dr. J. W. Brandon, Jr.

Alternates:

Adams County—Dr. R. D. Sessions.
Amite County—Dr. W. J. Grady.
Franklin County—Dr. J. L. Calcote.
Jefferson County—Dr. J. C. McNair.
Wilkinson County—Dr. R. J. Fields.

Member Board of Censors, 1928-30—Dr. P. Beekman.

Member Medical Defense Committee—Dr. W. H. Aikman.

Dr. W. K. Stowers who has recently located in Natchez was elected to membership.

Dr. John Darrington made a most interesting talk on the work of the State Association and asked for suggestions regarding the legislative and public health policies of the Association as well as suggestions that would be of benefit to the individual physician. Dr. J. W. Chisholm brought up the question as to the advisability of attempting to have some law passed giving a physician a prior lien up to a certain amount on the accounts of patients. Dr. M. C. Reeves of Vidalia, Louisiana, one of the guests of the society, stated that his state had such a law but that it was seldom found practicable. Much interesting discussion bearing on the problem of the physician followed.

Dr. C. T. Chamberlain presented the following paper: "A Plea for More Accurate Diagnosis in Our Routine Surgical Work."

Dr. J. W. D. Dicks, who was to have presented a paper on "Subphrenic Abscess," requested that on account of the lateness of the hour the reading of his paper be postponed until the next meeting.

HEART DISEASE IN CHILDREN.

Heart disease in childhood, when acquired, is the result of some infection, in most cases an infection of the upper respiratory tract, and needless to say all foci of infection in children with heart disease should be cleared up to prevent reinfection. Chorea, arthritis, tonsillitis, and heart disease is a well-known syndrome in pediatric practice. In chorea or arthritis the doctor always looks for foci of infection, as one attack is frequently followed by a recurrence and there is always danger of heart complications.

A child with heart disease may live and develop normally. On the other hand, when compensation fails the outlook or prognosis is usually hopeless. While it is difficult to prevent infection and heart disease in the individual child, much can be done to prevent it by immunization and vaccination against certain preventable diseases, and also much may be accomplished to prevent the child with cardiac (heart) disease having a break in compensation, first by removing foci of infection, second by preventing overstrain. This is difficult in childhood as the normal growth puts a strain on the heart.

During the pubescent years the heart normally doubles its size. The communicable diseases are most common in childhood with their concurrent infections; and the natural instinct of the child is to romp and play, and any of these factors may bring about a break in compensation. Often the best criterion of the heart condition is the state of the general nutrition, and this is possibly the best guide to the severity of the lesion, as well as to the degree of activities which may be allowed. Better have the child in bed for weeks or months than to allow a break in compensation. The physicians' advice, or better asy his orders, must be carried out to the letter if a tragedy is to be averted.

(The editor of this column is indeed pleased to see the publication of this bulletin by the State Board of Health. It has often seemed that undue stress or prominence has been laid by the Board on oral hygiene to the neglect of other conditions of childhood. The editor has always been a

staunch supporter of the State Board of Health and its good work but it must not be forgotten that there are other organs in the body that require attention besides the teeth. Too much stress cannot be laid on the discovery and the clearing of foci of infection wherever that may be. The point that immunization and vaccination will do much to prevent disease is so well known that perhaps many of us have neglected to stress to our clientele how much good may be done by this procedure. If we can train children to recognize the idea of periodic examinations not only of their teeth but of the rest of the body as well, we shall be making great advance in this important work.)

Dr. W. H. Frizell, Brookhaven, Councillor of the 8th District, has been confined to his bed recently by an attack of sciatica.

The Issaquena-Sharkey-Warren County Medical Society held its regular monthly meeting in Vicksburg on October 11. The dentists of Vicksburg were invited to be present at this meeting. The following program was presented:

"Pyorrhea Alveolaris; Its Relation to Medicine," Dr. Normal Stout.

"Splenomegaly," Dr. A. Street.

"Whooping Cough." Open discussion, led by Dr. C. J. Lewis.

"Medical Ethics." Discussion opened by Dr. E. F. Howard.

Dr. L. S. Lippincott, Secretary of the Issaquena-Sharkey Warren County Medical Society, does not tell us who the author of the following poem is but that does not detract from its value.

THE ALWAYS FAITHFUL FEW.

When the meeting's called to order,
  And you look around the room,
You're sure to see some faces
  That from the shadow loom,
That are always at the meeting,
  And stay till it is through,
The ones that I would mention
  Are the Always Faithful Few.

They fill the vacant offices,
  As they're always on the spot,
No matter what's the weather,
  Though it may be awful hot;
It may be dark and rainy,
  But they are tried and true;
The ones that you rely on—
  Are the Always Faithful Few.

There's lots of worthy members
  Who will come when in the mood,
When everything's convenient,,
  They can do a little good;
They're a factor in the Order,
  And are necessary, too,
But the ones who never fail us
  Are the Always Faithful Few.

If it were not for these faithful,
  Whose shoulders at the wheel,
Keep the Order moving onward,
  Without a halt or reel,
What would be the fate of others
  Who have so much to do?
They surely would go under
  But for the Faithful Few.

The Central Medical Society held its first meeting after vacation at Jackson, September 30. Its program was as follows:

"The Toxemia of Intestinal Obstruction," Dr. Julius Crisler.

"A Paper on a Surgical Subject, name not given," Dr. A. E. Gordin.

The program of the staff meeting of the Vicksburg Sanatorium, held October 10, was as follows:

"Gastro-jejunal Ulcer," Dr. A. Street.

"Tetanus Following Severe Burns," Dr. G. M. Street.

"Snake Bite Successfully Treated by Anti-Venim," Dr. J. A. K. Birchett, Jr.

"Calcareous Deposits in the Placenta," Dr. J. A. K. Birchett.

"Furunculosis of the External Ear Canal Stimulating Mastoiditis," Dr. E. H. Jones.

"Carcinoma of the Breast with Metastases in the Hand," Dr. J. A. K. Birchett, Jr.

"WHEN SMALLPOX VACCINATION FAILS TO 'TAKE.'"

With fresh vaccine, kept at the proper temperature and applied in the proper manner, there should be very few failures to "take." However, an occasional case is encountered in which the child seems to be very resistant to the vaccine. In these instances it is permissible, after *three* unsuccessful attempts, to issue a certificate for *one year* only, permitting the child to attend school. This applies in those schools where the School Board has been wise, progressive, and humane enough to pass an order requiring vaccination of all children before entering school.

Most of the school vaccination ordinances say successfully vaccinated. It has been our repeated experience to find children in school with no evidence of vaccination, yet with certificates from physicians stating that they are vaccinated. We

find that it is the practice of some physicians to issue a certificate at the time the vaccination is done, not waiting to discover whether is has been successful or not. These certificates mean very little and we believe that no certificate should be issued until sufficient time has elapsed to be able to say that the vaccination was successful, or until three vaccinations have failed.

This means full protection and also means that parents must take the children to the physician or health officer in time to do the work in a thorough manner. "A thing worth doing at all is worth doing well."

DIPHTHERIA.

Diphtheria begins to increase about this time of the year and continues to rise steadily through the month of December.

As we all know, diphtheria is a definitly preventable disease. There is no excuse for either cases of, or deaths from, diphtheria if we provide for our children the preventive treatment—Toxin-antitoxin—and then six months later check up with the Schick Test to make sure that immunity has been produced.

Although some people of all ages are susceptible, by far the most susceptible ages are from six months through seven years. The majority of cases and by far the greatest number of deaths occur among children of these ages. It follows that these are the children who are most urgently in need of protection.

Toxin-antitoxin gives permanent protection against diphtheria, probably for life, but it does not give immediate protection. Eight weeks and sometimes a longer period are required, after the treatment is given, before protection is assured. Since the diphtheria season is just commencing it is therefore of the utmost importance that Toxin-antitoxin is given immediately.

Some people are not made immune by the single series of Toxin-antitoxin treatment. Whether or not protection has been conferred can be determined by having a Schick Test six months after Toxin-antitoxin has been given. If the Schick Test is negative, the child is protected. If the test is positive, he needs more Toxiin-antitoxin.

We, therefore, urge:

1. Have Toxin-antitoxin immediately for your children, especially those between six months and eight years of age.

2. If your children have already had Toxin-antitoxiin six or more months ago make a Schick Test to be sure that protection has been developed.

See your physician about Toxin-antitoxin and the Schick Test.

Dr. B. R. Heninger, who was formerly a member of the staff at Touro Infirmary, New Orleans, is now head of the Medical Department at Columbia Hospital, Columbia, Mississippi.

Dr. W. K. Stowers of Pine Ridge, Mississippi, has recently completed his fifteen-month service as Medical House Officer in gynecology at Johns Hopkins Hospital and has located for practice at Natchez, Mississippi. He will at the same time serve as resident physician at the Natchez Sanatorium.

DIED: Dr. Oliver F. Partridge, Laurel, Mississippi; University of Louisville (Kentucky) School of Medicine, 1893; aged 58; died August 13 as a result of a cerebral hemorrhage suffered some time ago.

DIED: Dr. Horace Hamilton Kinney, Tupelo, Mississippi (licensed Mississippi, 1904) aged 50; died August 27 of cerebral hemorrhage.

Dr. George Rembert of Jackson, Mississippi, was in attendance at the Harvard Medical School in Boston during the summer doing post-graduate work in disease of the heart with special reference to diagnosis. Dr. Rembert expected to return to Jackson about October 15.

I have said that considerations of surface are of paramount importance in biology. Nature has found a means of producing very large surfaces by the aggregation of countless cells, as in leaves, root tendrils, capillaries and innumerable other structures. Krogh has calculated that if we suppose the total weight of a man's muscles to be 50 kilograms and his capillaries to number 2,000 per square millimeter of cross section, the total length of the capillaries of our muscles alone would be something like 100,000 kilometers, and their total surface 6,300 square meters. Our lungs, when collapsed, are small organs, but in them are found 725,000,000, more or less, of little pockets or alveoli where our thin-walled capillaries exchange carbon dioxide for oxygen. The total internal area of these lung terminals or alveoli is close to 100 square meters, enough for thirty suits of clothes, as Sir Arthur Shipley puts it in his valuable little book entitled "Life." The thin-walled capillaries of the lungs, one thousandth of a millimeter in wall thickness, make it possible for the slow process of diffusion to do the work necessary for the maintenance of life in less than the four seconds of each respiratory act. And so everywhere throughout the body we find these enormously extensive areas of cell surfaces—mechanisms for effective absorption, secretion and excretion in the unit of time. Abel, J. J.: Science, 66:318. 1927.

BOOK REVIEWS

Overcoming Tuberculosis: An Almanac of Recovery. By Gerald B. Webb, M. D., and Charles T. Ryder, M. D. 3d ed. rev. New York, Paul B. Hoeber, Inc. 1927. pp. 80.

Many readers will remember this little book by its former title, "Recovery Record." Its popularity is attested by this—its 3rd edition. This book of seventy-nine pages of reading matter is written primarily for the tubercular patient, for his guidance and information. The last half of the book consists of weekly charts whereby the patient may keep a record of his temperature, pulse, weight, etc. The essential lesson of the little book is rest, physical and mental, and more rest. It is replete with good, wholesome advice and is the most satisfactory book of its kind that I know of to place in the hands of the patient. One can read it in an hour and any physician who has not read it will find it well worth his time.

RANDOLPH LYONS, M. D.

Saving Eyesight After Middle Life: By John Herber Waite, M. D., S. M. Cambridge, Harvard University Press. 1927. pp. 48.

This volume is one of a series of booklets written by competent medical authors to help the intelligent and interested lay reader understand more about preventable blindness, especially in older persons. The author has a thorough knowledge of the subject, as well as a marked ability to express simply rather complicated ideas.

The first part of the volume is devoted to a statistical resumé of the one hundred thousand blind persons in this country, of whom forty-five per cent are afflicted, due to extra ocular causes, and fifty-five per cent to intra ocular causes. Glaucoma being accountable for about one-third of the blindness in middle life or after, is given a rather liberal discussion involving its diagnosis, pathology and treatment.

Physicians will make no mistake in recommending this small volume to those of their patients who are possibly interested.

Not many years ago the medical profession believed that a little medical knowledge was a dangerous thing. The patient was supposed neither to understand nor question the orders of the physicians. Today we realize that our mission is basically to help the public get the best out of its health and therefore happiness, primarily by educational methods, which means understanding and practical corrective living.

The older Me and God medical concept has gone by the boards, and a newer intelligent health cooperative service has taken its place.

CHARLES A. BAHN, M. D.

PUBLICATIONS RECEIVED.

Oxford Medical Publications: "Healthy Growth," by Alfred A. Mumford, M. D. "The Ear, Nose and Throat in General Practice," by D. A. Crow, M. B., Ch. B. "The Essentials of Otology," by George Birmingham McAuliffe, A. B., M. D., F. A. C. S. "Everywoman a Nurse," by Edith Newsome, S. R. N. "Treatment of Venereal Disease in General Practice," by E. T. Burke, D. S. O., M. B., Ch. B. "The Diagnosis of Pancreatic Disease," by Robert Coope, M. D., B. Sc., M. R. C. P. "The Tongue and Its Diseases," by Duncan C. L. Fitzwilliams, C. M. G., M. D., F. R. C. S.

C. V. Mosby Company, St. Louis: "Clinical Case-Taking, Supplement to Methods in Medicine," by George R. Herrmann, M. D., Ph. D. "Gonococcal Infection in the Male," by Abr. L. Wolbarst, M. D. "Emergencies of a General Practice," by the late Nathan Clark Morse, A. B., M. D., F. A. C. S., revised and rewritten by Amos Watson Colcord, M. D. "Getting Well and Staying Well," by John Potts, M. D. "Minor Surgery," by Arthur E. Hertzler, M. D., F. A. C. S. and Victor E. Chesky, A. B., M. D., F. A. C. S.

Lea & Febiger, Philadelphia: "Surgery, its Principles and Practice," by Astley Paston Cooper Ashhurst, A. B., M. D., F. A. C. S. "Modern Medicine, its Theory and Practice," edited by Sir William Osler, Bart., M. D., F. R. S., re-edited by Thomas McCrae, M. D., Volume V. "A Treatise on Orthopaedic Surgery," by Royal Whitman, M. D., M. R. C. S., F. A. C. S.

P. Blakiston's Son & Company, Philadelphia: "Practical Bacteriology, Blood Work and Animal Parasitology," by E. R. Stitt, A. B., Ph. G., M. D., Sc. D., LL. D.

The Surgical Publishing Company, Chicago: "Cancer Control, Lake Mohonk Conference, 1926."

J. B. Lippincott Company, Philadelphia and London: "International Clinics, Volume III, Thirty-Seventh Series, September, 1927."

F. A. Davis Company, Philadelphia: "Fistula of the Anus and Rectum," by Charles John Drueck, M. D., F. A. C. S. "Feeding and the Nutritional Diseases in Infancy and Childhood," by Julius H. Hess, M. D. "Surgical Diseases of the Gall-Bladder, Liver and Pancreas and Their Treatment," by Moses Behrend, A. M., M. D., F. A. C. S.

New Orleans Medical

and

Surgical Journal

Vol. 80 DECEMBER, 1927 No. 6

PERIODIC HEALTH EXAMINATIONS IN THE PREVENTION AND EARLIER RECOGNITION OF CANCER AND OTHER SERIOUS DISEASES.*

JOSEPH COLT BLOODGOOD, M. D.

BALTIMORE, MD.

It seems strange that the profession of medicine is really so late in either practicing or preaching the fundamental importance of periodic examinations. Apparently at the present time both the public and the profession are in a receptive mood, and now, therefore, is the time for those who have the correct information to join together and endeavor to bring helpful information to both the professional and the lay mind. As I have been interested and participant in the educational effort in regard to cancer, and as my records for more than a quarter of a century are filled with very suggestive facts, I will attempt briefly to review the more fundamental evidence with the hope that it will aid in increasing the number of these examinations among not only the people, but among the doctors themselves. I will consider the subjects in the following order: breast, uterus, abdomen, oral cavity, skin and bone.

The Breasts. When Doctor Halsted made his first complete report on his then considered very radical operation for cancer of the breast in 1895, every patient of whom we had a record in the clinic was written to and those not personally examined by Doctor Halsted or myself were examined by their physicians in their home cities. In 1898 one of these patients returned for her annual examination and I found the beginning of retraction of the nipple not present at the past examination and of which the patient was unaware. In addition there was a slight thickening in the left remaining breast beneath this retracted nipple. The complete operation was done the next day. The microscope found a very early cancer in the center of the breast, not larger than a pea. The cancer cells were not found anywhere else in the breast and not in the glands in the axilla. The patient had been operated on by Dr. Halsted one year previously for a tumor in the breast known to have been present at least six months, and after the complete operation cancer cells were present in all the axillary glands. The striking fact is that this patient is living today. We know that her chances of a cure after the first operation in 1897 were from ten to fifteen per cent, because the high glands were involved, and after the second operation in 1898 if there had been no other operation, seventy per cent, because the glands were not involved. We also know that this is the first patient to be permanently cured after the complete operation for cancer of both breasts.

Women are warned of trouble in the breast chiefly by feeling a lump, now and then by observing some irritation about, or bleeding from, or retraction of, the nipple. We have positive evidence that if patients report for an examination at

*Read before the Mississippi State Medical Association, Jackson, May 10-12, 1927.

once, and if a definite lump is found, and when this lump is explored and cancer is revealed, and the complete operation follows at once, the chances of a permanent cure are seventy per cent and more. We will not know how much more until a larger number of women report for an examination within two weeks after the first symptom.

We also know, from insurance statistics, that every woman over thirty runs the risk of cancer of one breast in from one to two per cent. This increases slightly as she grows older, reaching its height perhaps between forty and fifty. When a woman has had the complete operation for cancer of the breast, no matter how early or how favorable her condition, she runs perhaps ten per cent chances of cancer of the remaining breast. If the women are operated on in a clinic or by surgeons who urge repeatedly periodic examinations, every three months the first year and twice a year for five years, and then once a year for the remainder of their lives, this woman who has been operated upon for trouble in one breast, although she runs a greater probability now of the same trouble in the other breast, nevertheless if she obeys the recommendation of these periodic examinations, her chances of a permanent cure should cancer start in the remaining breast, are far better than after the first operation. The figures in our clinic show this.

Now that we have educated women to seek an examination the moment they are warned by lump, irritation of the nipple, bleeding, or retraction of the nipple, I find that in my own clinic since 1920, in seventy-five per cent of the cases, the trouble in the breast is not malignant, while previous to 1900 only twenty per cent were non-malignant. Therefore, in the practice of any surgeon, or any clinic, in which the follow-up system is working, every woman first observed in that clinic who follows the advice will be protected from future breast trouble by the periodic examination. In twenty-five per cent the patient will have been operated upon for cancer, in twenty-five per cent a benign tumor will have been removed from the breast, and in fifty per cent no operation will have been done. Therefore, in protecting twenty women who have recognized their cancer early, this modern clinic will be given an opportunity at least to try to influence seventy-five per cent more women whose breasts have not been the seat of cancer. I am confident that the periodic examinations established by Halsted in his clinic in 1895 for breast cases is largely responsible for the splendid results which have been improving every year in this clinic and among the patients of surgeons influenced and trained by Halsted. Our British colleagues give the Johns Hopkins Hospital Surgical Clinic the credit for the best record and the best results of any clinic in the world, and there are two factors here: the complete operation as devised and practiced by Halsted, and the yearly periodic examinations. Letters have gone out to these patients and their physicians since 1895, even during the war it was one of the activities of the surgical pathological laboratory of the Johns Hopkins Hospital which continued to function.

It is a fortunate thing, therefore, for a woman to have a pain in the breast or a discharge from the nipple, or to feel the indefinite lump in a lumpy breast, or a "shotty" breast, or the equally innocent worm-like tumors beneath the nipple, because she will seek an examination and be given the pleasant news that there is nothing serious in what she had felt or seen. But this woman will now be given the protection of a periodic examination and the educational conversations that go along with it. Ultimately, every clinic will have its instructive facts in printed form.

Now, as we will discuss next, every woman who has borne children, if she desires protection from cancer of the breast, should submit after the birth of her children, at regular intervals, to an examination which had been essential and made during her expectant period and directly

after the birth of her children. These women, therefore, when they come for this periodic examination, should insist upon a survey of the breasts.

There is one other fundamental conclusion of which I am positive and for which I have the evidence—that is, in those clinics in which the per cent of malignancy is less than fifty and approaching twenty-five per cent, the physicians and surgeons are becoming far better diagnosticians. Their ability, by touch of the fingers, to distinguish between the definite and the indefinite lump, is rapidly improving. Women who go to such a clinic have a better chance for a correct diagnosis and proper treatment, and when, in addition, this clinic really endeavors to carry on with its patients periodic examinations by their family physicians, those women have an increased protection against cancer of the breast and uterus.

Cancer of the Uterus. My studies show that if you compare the results of treatment of the early stages of cancer of the breast with those of cancer of the uterus, the per cent of five-year cures in the breast group is larger. That is, if women correctly informed, seek an immediate examination after the first warning of trouble in the breast or in the pelvic organs and cancer is found, the woman suffering with cancer of the breast has a better chance of a permanent cure. There is no question as to the figures, and I doubt whether there is much difference of opinion as to the explanation. The warning of cancer of the breast is a lump, that of cancer of the cervix of the uterus something unusual in the monthly discharge, or its reappearance after the menopause and—very important to remember—whether it is bloody or not. We all know that cancer does not begin as cancer. There is always something else first that is not cancer. Then if we can get patients to come to examination before the condition is cancer, we can offer a positive prevention. This seems possible in cancer of the skin and mouth, but in the breast and in the cervix of the uterus, the lump may not be felt in the breast, or the change in the discharge be evidence, until cancer has started in the local condition which preceded it, and in cancer of the cervix the distance between the point of origin and the point to which, if the cells migrate, there is no hope of a cure from operation, is so much shorter than in cancer of the breast, that the chief hope of further reduction of incurable cancer of the cervix rests upon periodic examinations.

The results of education do not proceed by leaps and bounds—they often move like the tides—forth and back. The medical profession can make recommendations, but our best results are obtained when we are able to get the people to make the thing we recommend acquired habits. It is true, the best results will be obtained when the education begins with the children but we shall always have the adults to educate, because, as modern science and medicine move there will always be much that is new which the grown-ups could not have gotten when they were children. It is not only wrong, but illogical to conclude that adults are a hopeless proposition in regard to teaching them at this late stage habits of prevention, better health and periodic examinations.

Let us take the case of the expectant mother. A tremendous change has taken place. In twenty-five years obstetrics has become one of the great specialties. We now know that if an expectant mother is under the care of a properly trained obstetrician and is periodically examined and advised as to diet and hygiene of life, she is really safer from the dangers of bodily ills than any unpregnant woman. This country may not have made the world safe for democracy, but the great obstetricians with other scientists in medicine have made this country safe for the expectant mother.

And this safety is based upon periodic examinations.

Now, cancer of the cervix attacks women who have given birth to children, and the origin of that cancer is an injury

or a wound of the cervix due to the trauma of the birth of a child. That wound, like any other wound, will heal properly if treated properly. Therefore, when women are under the care of properly trained physicians, the injuries of child-birth will be repaired. But this is not enough. Women who have borne one or more children and whose injuries of childbirth have been repaired as far as it is possible to do, still run the risk of cancer and in a certain per cent of cases the condition which precedes that cancer gives no definite symptoms. Almost simultaneously with the first discharge the conditions of the cancer may have extended beyond both surgery and radium.

There is absolutely no doubt that when women are protected by the repair of the injuries of childbirth they run less risk of cancer, and when, in addition they report at once after the first warnings of an unusual discharge or its reappearace after the menopause, nevertheless their protection becomes greater if they submit to periodic examinations.

I feel quite confident that ultimately the women of this country will be better insurance risks than the men. Their maternal instincts makes them more sensitive to the protection of their children and of themelves for the benefit of their children. Women today are reacting to the correct information given them by the medical profession better than the men. The per cent of hopeless cancer of the uterus and of the breast is rapidly declining, while the per cent of permanent cures is equally rapidly rising, and more women who have had trouble with the breast or uterus are coming under the protection of periodic health examinations. More women attend the lectures and more read the literature. So far the benefits of periodic examinations are best illustrated when we study the records of any great clinic of this country, and read what has happened to those groups of people whose diseases have so interested some member of the clinic that the patients have been written to once a year and advised to see their physician or to report to the clinic. Periodic examinations are the logical result of a follow-up system and a follow-up system was one of the great beneficial results of the introduction of science into medicine. It was only the scientific members of great medical faculties that became interested in what happened to their patients after they left the clinic or the hospital. I feel confident that the best answer to the statement which for years has been frequently made, that scientific medicine was not practical, is that scientific medicine developed the follow-up system and is now behind periodic examinations.

Cancer Within the Abdomen. We have educated the people on the danger of appendicitis if an operation is delayed. When I came to Johns Hopkins in 1893, the majority of cases of appendicitis who entered the hospital were in the stage of peritonitis rarely cured by operation. Today it is as rare to see peritonitis from delayed appendicitis as it was to cure peritonitis in those former days when the public was unenlightened. In 1897 at Johns Hopkins, a relative of mine entered the hospital after an attack of appendicitis, and after careful consideration it was decided that it was safer to wait for another acute attack before taking the risk of an operation. Today most of us have acquired the habit for the operation of appendicitis as we have for the removal of the tonsils and the filling of a cavity in a tooth. When anyone dies with appendicitis today someone has blundered. Now the remarkable thing is, that when one is taken with an attack of appendicitis the decision as to an operation should be made within twenty-four hours, at the longest forty-eight hours, best within twelve hours, and the marvelous thing is that we have educated most people to send for their family doctor at once, and he is educated to recognize at once, and the patient wants to go to the hospital at once, and the surgeons operate at once no matter how inconvenient it is to

himself or how tired our operating room force.

On the other hand, as yet we have made very little impression on those diseases within the abdomen which are chronic. Most patients suffering from acute diseases within the abdomen, like appendicitis, send for their doctor the moment they are warned, and thus their lives are saved. Cancer within the abdomen is one of the chronic diseases. Its early and first symptoms are not urgent as in appendicitis, and for this reason there is delay. It is interesting to study those first cases of cancer of the stomach and colon which were cured by operation. They were forms of cancer which quickly produced obstruction to the passage of food. For this reason the symptoms were acute, and both patient and family physicians were forced to go to the hospital and seek relief from a condition called obstruction of the bowel. Then, at operation, the early obstructing cancer was found and removed, and most of these patients are living today, some of them more than twenty-five years since the operation. Unfortunately, obstruction with cancer usually comes late, often too late for a permanent cure.

Periodic examinations of adults, from my studies, will have a tremendous influence for good because, at these examinations, indigestion will be discussed, the common cause of indigestion which may have no relation to cancer removed, and these enlightened adults will soon acquire the habit of paying attention to the least symptoms of indigestion, and seek an immediate examination within forty-eight hours, just as the public has already been educated to get medical advice at once when there are acute abdominal symptoms.

We do not seem to be able to repeat the publicity which appendicitis received. Between 1890 to 1900, which is the first decade of modern abdominal surgery, appendicitis and ovariotomy were the chief operations, and appendicitis gave rise to the greatest public interest. It became a very common procedure and, on account of the large operating fees of some prominent surgeons, and the excited discussion among the profession as to the possibility of unnecessary operations, the public were well informed, and there is no doubt that this publicity accomplished good to the greatest number.

Operation for cancer of the stomach and colon have never excited or achieved publicity. If we can get for periodic examinations the publicity that we got for appendicitis there is no doubt of its good effect on increasing the number of cures of cancer within the abdomen.

The public must know that when they are warned by any type of indigestion, there must be an immediate roentgen-ray examination of the stomach and colon. If there are any symptoms pointing to the lower bowel, such as unexplained constipation and diarrhea, with or without blood, there must only be an examination with the roentgen-ray, but an actual inspection of the lower bowel with a search light called the proctoscope.

There are many other reasons which encourage delay and procrastination in people who suffer from indigestion. There is no doubt that in the vast majority of cases of indigestion cancer is not the cause, so only a small per cent suffer when there is delay. In the early stage when cancer can be cured, only a thorough examination will distinguish between the indigestion due to cancer, and the indigestion due to things that are not cancer and may never be cancer.

Even if the indigestion is not due to cancer it is always a good plan to have some curiosity and ask your physician to find out its cause. The most important thing to do first is to make an examination and search for the cause.

The search for the cause of indigestion is one of the most interesting adventures of diagnostic medicine, and one of the most helpful things for any adult, because in

this investigation the patient learns the fundamental truth of preventive medicine, preservation of health, and the earliest recognition of serious diseases.

To repeat, my investigation of a very large group of cancer within the abdomen lead to the conclusion that the quickest solution rests upon periodic examinations.

Today, we have the means of directing trouble within the abdomen, and we have the methods of including surgical operations of relieving these troubles, but in the majority of instances the third factor, the patient in time, is conspicuous by its absence.

Oral Cavity: There is no better proof of the preventative value of periodic examinations than in a study of the causes of cancer within the mouth.

Adults who see their dentists at regular intervals, and have their teeth cleaned and smoothed and who, when they smoke in excess and produce in the mucous membrane in the mouth white patches, called leukoplakia, are warned by their dentists to stop smoking, never die of cancer.

In my studies of all the records of diseases of the oral cavity in the surgical pathological laboratory of the Johns Hopkins Hospital which have accumulated since 1899, the two most striking facts in every case of cancer of the mouth, are first, that patient suffering with cancer had really never had proper dental treatment, many patients had never seen a dentist, practically all had not seen a dentist within a year or more, and, second, tobacco in one form or another including snuff had been used continuously up to the time, and since the beginning of the local sore in the mouth ultimately developed into cancer. In addition, the examination revealed ragged dirty teeth. Another cause is neglect of ill fitting plates.

We have already made tremendous progress in reducing the number of cancer within the mouth by giving the people the correct information in regard to teeth and tobacco. In the records in the Johns Hopkins surgical pathological laboratory up to 1900—the first decade when the people were unenlightened, the per cent of the inoperable cancer was more than fifty per cent; today it is less than five. Before 1900 the per cent of cures was less than ten, today it is more than sixty. In addition, we are preventing cancer of the mouth by this publicity. Up to 1900 in less than three per cent of all the cases was the lesion of the mouth precancerous, that is, the white patch of leukoplakia or the wart, or the fibroma, or the ulcer of the area of irritation, or the hypertrophied papillae, all lesions which precede cancer. Now in more than seventy-five per cent we are seeing these cases in a stage in which cancer could be absolutely prevented. Periodic examinations of the teeth and oral cavity not only prevent cancer but also all the results of neglected infections in the region of the teeth and mouth. The thorough examinations of the oral cavity includes the tonsils, adenoids, nasal cavity and sinuses.

More people have acquired the habit of periodic examinations by their dentist and oculist than for any other type of examination. It is up to the medical profession to work out an organization so that these well informed individuals will reap the benefit of complete examination. Seeing your oculist prevents blindness. Your dentist prevents cancer and focal infection of the teeth. The nose and throat specialist prevents deafness and the results of delay when there are infected tonsils, adenoids or sinuses. More fear blindness and toothache than deafness. If we can educate the people to fear deafness more, the habit of a thorough examination of the nose and throat will be more quickly acquired.

Skin. No one should die of cancer of the skin. Study of cancer here illustrates the value of periodic examinations. But the great fundamental fact on which we base the hope of eradicating cancer, is that cancer never begins as cancer. There is always a local condition (lesion) first that is not cancer. On the skin this local lesion

which is not cancer will be seen and felt long before cancer starts. We are born with skin defects and the obstetrician should make a note of them and tell the mother of the kinds of skin defects that should be removed immediately or later. For example, many little birth marks called naevi should be watched carefully, and if they grow removed at once. There is no danger and no difficulty in removing these little red vascular birth marks (called hemangioma), while on the other hand if the obstetrician fails to tell the parents about them, and the parents are ignorant, these blood-vessel tumors may grow to such a size that their cure is more difficult, in some instances even dangerous, and in most cases when cured leave an unsightly scar. If there are pigmented moles the parents will be told that they should be removed before the age of twenty, and there are other skin defects and palpable tumors at birth that should be found by the obstetrician's thorough examination.

Later in life, at any age, the appearance of a new skin defect of any kind should lead to an immediate examination. When periodic examinations are in vogue these skin defects will always be revealed, and those that have dangerous possibilities properly removed. The most difficult part of the problem apparently is to teach the doctors what kind of skin defect should be removed, and to teach the public and medical profession that these little skin moles, warts and other types of skin defects are best treated by complete removal, which can be done best under local anesthesia with a knife, in some instances with the cautery, and leave practically no scar. We also must teach the surgeons that these little skin defects must be given a good margin of healthy tissue so that enough has been done should the microscope reveal the beginning of cancer.

The study of cancer of the skin teaches us as in cancer of the mouth that irritation is one of the fundamental causes of cancer. It is important to protect the skin from irritation, to keep the skin clean by frequent bathing with soap, and in some instances the addition of toilet water containing alcohol, and when there is a little irritation of the skin we must all learn the value of placing a little vaseline or cold cream on the irritated spot after cleansing. Chapped hands from frost bites when neglected may lead to cancer. Fortunately, for some obscure reason, cancer in corns on the feet is a great rarity, but it is unnecessary to have corns, and it is up to the medical profession in their periodic examinatons to teach how to prevent corns, or to cure them if they are present.

Paget's Disease of the Nipples. Although mentioned in the discussion of the breast it is well to repeat it here because it is a problem in cancer of the skin.

Paget's cancer of the nipples begins in the irritated nipple. Any woman can recognize an irritated nipple at once. They need not wait for the extreme degree of weeping of the nipple, or the red granular nipple, or the formation of a wart or keratosis of the nipple, or an exzema, but the moment they feel an irritation of the nipple by pain itching or smarting or see any signs of irritation, the following treatment should be employed at once. Wash with warm water and soap (any kind of soap), rinse off with toilet water or medicated alcohol, cover the nipple with vaseline (no objecton to borated vaseline), put on a piece of clean gauze, fix it with adhesive straps. Do this at least twice a day. See your doctor.

The relaton of these irritations of the nipple to the cancer described by Sir James Paget in 1850 is the same as the abscess of the breast to the sore nipple of the nursing mother. Both diseases are prevented by care and cleanliness of the nipple. In every periodic examination of the expectant mother during nursing, and later in life, the patient should be told about these irritations of the nipples and how to treat them.

In my own clnic I have seen the life saving results of this knowledge by women.

Paget's cancer of the breast is disappearing in my clinic, and when the isolated case does come it is always in an individual still ignorant of the danger of an irritated nipple.

Bone. We have been very slow in recognizing the importance of taking a roentgen-ray of a bone or joint immediately after a slight injury, or at once when there has been experiences pain or a tenderness, or when a swelling appears, or when there is a limp, or a slight contraction of a joint, or any loss of function. The people have acquired a habit for a roentgen-ray examination when there has been a fracture of a bone, but not so universally for these slight symptoms. It is too often called rheumatism, and treated with medicine without a roentgen-ray examination. The immediate examination with the roentgen-ray of a bone after these early symptoms offers the best chances of a cure if it is cancer, and the best chances of saving the limb with good function whether it is cancer or not. Delay even of a few weeks increases the danger of death if the bone disease is cancer and of loss of function if the disease is not cancer.

A remarkable change has taken place since 1913 in the number of cancer of bone cured, and the number of disease not cancer cured without loss of limb or function. Periodic examinations will only be helpful here in giving the correct information, because one would not take a roentgen-ray of the entire skeleton as a routine procedure.

PERIODIC HEALTH EXAMINATION.*

J. H. MUSSER, M. D.,

NEW ORLEANS.

Almost a year ago, at the yearly meeting of the Louisiana State Medical Society, Dr. William Haggard, at that time President of the American Medical Association, in a somewhat facetious but extremely practical, sensible and careful address on "How to Add Years to Life and Life to Years," concluded his talk with the following aphorism: "Neglect your business if you must, neglect your golf if you can, neglect your wife if you dare, but don't neglect your physician and a yearly physical examination and health inventory on your birthday." This sentence is so pregnant with good sense that it might be well for me to take the last portion of it as a text for my talk this evening—*don't neglect the yearly physical examination.* The reasons for this examination are obvious and I shall attempt to dwell upon them for a few minutes a little later on this evening, but before doing so, I should like to recall to your minds the origin of the movement, as I presume that the subject has been presented to you many times before in the past few years. Most certainly, in a group such as is represented by this audience, the subject of health examination is not a new proposition. As I say, I should like to present to you a brief historical resumé of what has been done in the past in regard to periodic health examinations.

The first physician of whom I have record who advocated such examinations was Dr. Horace Dobell, who, in 1861, at the Royal Infirmary for Diseases of the Chest in London, pointed out the necessity of frequent examinations so that slight deviations from normal health which are not commonly considered of much importance might be recognized early and measures taken to prevent their becoming advanced pathologic lesions. He wrote at this time that there should be instituted as a custom a system of periodical examinations to which all persons submit themselves and to which they should submit their children. Despite this earnest plea of Dr. Dobell, at least as far as we are able to gather from the literature, no further effort was made, certainly not by the medical profession, to encourage the yearly check-up of the bodily system until 1900, when Dr. George Gould, a well

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known editor and ophthalmologist of Philadelphia, addressed the American Medical Association on this subject. His views were apparently received with hearty endorsement and the members of the Association who heard his address believed that what he said was right and practical, but never put into effect his preachings. In 1909, Dr. Foster recommended that policy holders in insurance companies should be given the opportunity to be examined every five years and this was adopted by the Provident Life Insurance Company. In 1911, other life insurance companies were urged to extend this service to their policy holders by an appeal of the actuary of one of the large companies. In 1914, Dr. Goldwater, a name well known to all of you interested in social service, instituted yearly examination of employees of the New York City Health Department. In the same year, the Life Extension Institute was launched in order to provide an organized service of physical examination. This organization was founded with a large and distinguished number of patrons, including Ex-President Taft as Chairman of the Board, and it was supported in part by the Metropolitan Insurance Company and certain eleemosynary institutions. With the founding of this institution and with the awakening of the medical profession throughout the country, the propaganda in favor of this type of examination became much more widespread. Many large institutions offered to their employees the service of bi-yearly examinations; the Army and Navy, at the instance of President Roosevelt, had already required annual examination of all officers, and in 1922 the American Medical Association, which represents the organized medical profession in this country, went on record as endorsing the movement whole heartedly and it has put its shoulder to the wheel with great vigor in order to encourage the acceptance generally of the idea of a periodic health examination for every person. At the present time, public health organizations, state and county medical associations, insurance companies, and so on are enthusiastically endorsing the medical profession's campaign of educating the public to the benefits, to the purpose and to the necessity of a yearly survey of the body's needs and misdeeds. Yet I regret to say that despite all that has been done, the average physician looks with a certain amount of skepticism upon the examinations and the general public has failed to take advantage of what qualified medical men felt would be of tremendous benefit to the individual. It might be said that the Metropolitan Life Insurance Company, with its enormous number of policy holders, offers to all of them free yearly examination, yet only two and one-half per cent of the policy holders have taken advantage of this offer. At the present time, organized routine physical examinations at definite intervals are made in many public schools, as well as private schools. in colleges, universities, and many governmental services, but the individual adult who on his own responsibility has such examinations made is an exception.

In discussing the need of such examinations, it might be well to point out what has been accomplished in the past fifty years in the control of certain diseases and the diminution of the yearly death rate per 100,000 population throughout this country. Within the past comparatively few years, the span of life has increased fifteen years or more per individual, so that now the average life expectancy of a new born babe is 55 years, whereas twenty years ago it was but 40 years. This increase in the average span of life has been accomplished how? It has been accomplished by the reduction of the infant mortality rate—in six years alone a reduction of 25 per cent. It has been accomplished by the reduction in the morbidity and mortality rate of the acute infectious and contagious diseases, and it has been accomplished by public health services, such as the control of milk and water supplies of a community, which has diminished tremendously the incidence of such a disease as typhoid fever, which prior

to the widespread utilization of filtration to purify the water supply of a city was responsible for an appallingly large number of deaths. Tuberculosis, as a result of the active campaign against this disease, has been so greatly reduced that 50 per cent less people die of this disease than did a few years ago. The campaigns against malaria, against hookworm, against syphilis and other animal parasitic diseases, have reduced the mortality and morbidity rate of these diseases. All these organized efforts of a public health nature, which have been communistic rather than individualistic, have added years to the expected life span of a small child, but they have added little if any to the life expectancy of the individual past the age of 40. Indeed, it has been said that an individual who now has reached the age of 45 has less chance of surviving a given period of years than the man of that age had twenty years ago. The individual past the age of 45 is the one who is subject to the degenerative diseases of mid-life. This individual is he or she who will suffer from the effects of the stress and strain of modern civilization, with its manifold complexities. This individual is the one who will soon show the wear and tear of everyday life by degenerative processes in the heart, the blood vessels and the kidneys, the early manifestations of which may have occurred years before the onset of the active symptoms which arise so late in the cycle of disease as to bring the sufferer to the physician when little can be done to stay the steadily progressing already advanced disease.

The why and wherefore of periodical examinations are plain to the discerning mind. There has been an enormous increase in the degenerative diseases and disorders of early, mid and late life. These diseases may be prevented if they are discovered early, or at last their process materially delayed. Furthermore, certain disturbances which we speak of as functional diseases before actual pathology has occurred often represent disorders which are but the forerunner of anatomical destruction of the tissues. These functional disorders often result from faulty habits of life. The examination of an individual should not only include the examination of his body, but also an examination as to his manner of living and methods of conducting his daily occupation and the habits he has formed in regard to eating, sleeping, exercising and relaxing. All these conditions should be gone over periodically; stock should be taken yearly. The average individual knows comparatively little about his body and apparently little about the proper hygiene of that important structure. There is no better way that he may be educated than by discussing once a year with a physician his way and manner of living. Dietetic and hygienic errors can be pointed out by the physician. Early manifestations of heart disease, kidney disease and disorders of the blood may be detected sufficiently early possibly not to prevent them, but to cause them to procrastinate and to delay appearing. The writers who have advocated periodical examinations call attention to the fact that the average civilized individual visits his dentist once or twice a year. They have been taught well by the dental profession. All types of machinery are periodically surveyed. Engines, elevators, automobiles, bridges, all mechanical instruments, are examined regularly to see if structural defects have developed, and yet the most delicate machinery in the world, the most wonderful of all mechanisms, the human body, is neglected and only exceptionally gone over unless the symptoms and signs of diseases have put in an appearance. Even when the manifestations of pathologic change have appeared, it is sad to relate that the average physician will confine himself only to that organ which is dysfunctioning. A thorough examination of the well is of prime importance; of still greater importance is the thorough examination of the unwell. It is Dr. Cabot, I believe, who has said that more mistakes are made through lack of examination than through lack of knowl-

edge. Dr. Frank Billings, of Chicago, the nestor of clinical medicine in these United States, has written that the greatest curse of the medical profession is the failure to make a thorough physical examination. Two years ago he wrote, "I have always been struck by the fact that patients who stripped thus, did it reluctantly and then later remarked that they had never been unclothed for an examination before, so for two years I gave my secretary every night the number of new patients who had never been disrobed for an examination. Over 75 per cent of the total patients, members of doctors' families included, had never had their clothes off in an examination and every one had suffered from a chronic disease." If Dr. Billings can write thus about the individual who is diseased, what can be said about the individual who does not have the evidence of disease who has had a thorough physical examination?

In considering the scope of the examination, I can best illustrate it by reading to you from the form which has been gotten out by the American Medical Association in order to simplify these examinations and yet to have them thorough and complete. It will be noted that on one side of this there is a very large series of questions, all of which must be answered by the individual to be examined and which can be scanned by the physician and studied by him at his leisure. On the other side of the sheet, cut down to the irreducible minimum, is the examination of the patient to be recorded by the physician. These forms should be filed away and should be kept for future record. It is invaluable to the physician to know what the blood pressure was at various intervals, what the examination of the urine has shown, what the heart rate has been, and so on. With these forms preserved and kept, there will be a yearly diary which will be invaluable to the patient as well as to the man who tends this person when he becomes sick.

The question arises as to how frequent periodical examinations should be performed. It is my own feeling that they should be carried out regularly every two years between the ages of 20 and 40. Up to the age of 20, developmental faults are likely to occur. Small children should be examined up to the age of 12 every six months; old children and adolescents, once a year. After the age of 40, again examinations should be made every year. When an individual has passed the age of 50, I would recommend that a thorough examination be made every year and every six months the blood pressure should be taken, the heart ausculted and the urine examined chemically and microscopically.

The result of periodic health examinations may not be studied statistically because, of course, it is impossible to state in definite and round numbers just how much has been added to the life of an individual as a result of these examinations. Certainly it would prove to be enormous, not only in aggregate number of years saved an individual, but also in the reduction of morbidity incidence. It is possible, however, to show the number of defects found in large series of examinations of the apparently well and healthy. It is appalling to read the figures of preventable defects found in examinations of men for the draft. In the examination of the individual who is more advanced in years, the most valuable statistics are those of Drs. Dublin and Fisk, who report on a series of nearly 17,000 white males examined in the year 1921. The examination of this large number of individuals showed that nearly all of them reported errors in personal hygiene, nearly one-fifth of the group suffered from faulty posture; 16 per cent from flat feet; 13 per cent were over 20 per cent over weight; 30 per cent suffered from defective vision; 26 per cent from septic and buried tonsils; 14 per cent from heavy dentistry; 14 per cent showed thickening of the arteries; 20 per cent elevated blood pressure; 40 per cent suffered from chronic constipation; 22 per cent had urinary abnormalities. I could

Form A HISTORY FORM

Use check mark (✓) in making affirmative answer to questions whenever possible.

1. **Name** **Country of Birth**
2. **Address** **White** **Colored**
3. **Age** **Religion** **Single** **Married** **Widowed** **Divorced**
4. **What is your present occupation**
5. Have you changed your work frequently. **Why**
6. **What are the conditions of your work**

Regular	Dangerous	Dark	Smelly	Seated	Hours per day
Satisfactory	Fatiguing	Light	Noisy	Standing	Days per week
Monotonous	Indoors Out	Dusty	Crowded	Walking	

7. Are your earnings sufficient to support yourself and dependents comfortably.
8. **What are your home conditions**

In a family	Congenial	Quiet	Room and bed to yourself
Alone	Depressing	Irritating	Time to yourself

9. **What are your sleeping conditions**

Hours in bed	Windows open	Restful	Disturbed

10. **How often do you eat**

Regularly	Where	Between meals	Time of meals

11. **Are you a moderate or hearty eater,** taking one or more helpings at a meal of

Meat (including fish and eggs)	Pie, Cake or Pastry	Salads
Baked beans	Sweets or Sugar	Bread
Green vegetables (spinach, cabbage, etc.)	Fruits	Butter
Potatoes (rice, macaroni or cereal)		

12. **How much do you drink daily of**

Milk	Tea	Soft Drinks
Water	Coffee	Alcoholic drinks

13. How frequently do you use candy How much tobacco
14. **Do you have a movement of the bowels daily** With the use of drugs
15. What exercise do you take in addition to your work
16. What are your social, religious, political, club or trade associations
17. What are your pleasures Recreations Hobbies
18. **Are you subject to worries** **Moods** **Periods of alternating gloom and cheerfulness**
19. **Have you ever been ill with any of the following, or any other severe illness and at what ages**

Tuberculosis	Scarlet Fever	Frequent Colds
Malaria	Diphtheria	Convulsive Seizures
Rheumatism	Typhoid Fever	Nervous Breakdown
Syphilis or Gonorrhea	Tonsillitis (Sore Throat)	Migraine or Neuralgia

19A. **Do you ever have**

Headaches	Colds	Nausea or vomiting
Loss of appetite	Cramps	Palpitation
Shortness of breath	Swellings	Boils

20. **Have you ever been protected against smallpox typhoid diphtheria or other diseases by vaccination and when**
21. Have you had any accidents, broken bones or surgical operations
22. How often do you consult your dentist When last
23. **Are your parents, brothers and sisters living**
    If not, what were the causes of death and at what ages
24. Have either of your parents or any brother or sister had consumption cancer
    Insanity epilepsy gout diabetes
25. **Do you consider yourself in good health** If not, what is your complaint

For Women

26. **Are your monthly periods regular** Prolonged Excessive
27. **Have they interfered with your occupation** In what way
28. **Have pregnancies and confinements been free from acci dent**

Form B PHYSICAL EXAMINATION RECORD

Name Case No. Date

1. Height Weight, Present Pulse Bl. Pres. { Sys. / Dias.
Usual Sitting
Standard After exercise Temp.
(for age and height) 2 minutes later

Hearing R / L Vision R / L Corrected R / L

Urine: appearance Sp. Gr. Alb. Sugar

Feces (when indicated): appearance Blood Parasites

Record only abnormal conditions

2. **Standing**
Posture
Musculature
Nutrition
Skin
Superficial Glands
Female Breast
Hands
Arms
Male Genitalia
Hernia
Legs
Feet
Romberg sign

3. **Sitting**
Hair
Eye reflexes
Nose
Teeth
Gums
Tongue
Tonsils
Pharynx
Ears
Chest
Heart
Lungs
Visceral Ptoses

4. **Lying down**
Abdomen
Reflexes
Sensation
Liver
Spleen
Kidneys
Prostate Gland
Female genitalia
Rectum (hemorrhoids

5. Summary: Defects of function and structure and errors of habit

6. Advice given to the patient:

continue indefinitely to recount to you the physical impairments from which this large group of presumably normal individuals suffered. The same unhappy total of defects may be the result of the next 20,000 who are reported upon or the 20,000 after that.

SUMMARY.

I have attempted to point out the necessity of periodic health examinations. It seems to me that in an audience such as this the necessity is too obvious and too pertinent to require much delineation. It is, however, a great fault of the human race that we are accustomed to put off till tomorrow what we should do today. I have no doubt that all of you or many of you have said to yourselves time and time again when you have read over the literature and have heard the propaganda of the health examination enthusiasts that you will have such an examination immediately, but have put it off, and put it off to the future that never comes. Therefore, let me urge upon you that you take yourselves in hand and say that you will have such an examination made immediately. If not immediately, determine in your minds that you will follow the slogan of the health enthusiast—"Have a health examination on your birthday."

AN EXAMPLE OF A THOROUGH AND COMPLETE PERIODIC HEALTH EXAMINATION.*

W. A. DEARMAN, M. D.

LONG BEACH, MISSISSIPPI.

In 1922, at the meetng of the American Medical Association in St. Louis, the House of Delegates passed a resolution, that, I believe, was most important, and one which initiated the most important steps to be taken in public health, in recent years. This resolution was passed because requests had been brought to the Association from both medical and lay sources that there be some procedure devised for determining the health status of any given individual. The resolution designated the Council of Health and Public Instruction, of which John Dobson was chairman, to prepare forms which could be used by physicians as a guide in making such examinations.

Later on there were a number of resolutions passed, not only at this meeting but at subsequent meetings of the American Medical Association, in which the Association urged that physicians prepare themselves to make these examinations, and after they were prepared, to notify the public that they were ready and willing to make these keen, searching examinations, on persons believing themselves to be perfectly well. They requested also that a form be prepared by which a more definite and substanatial past history could be outlined in connection with the examination. In view of the above requests, it was deemed wise by the Chairman of Public Health and Hygiene to make a place on the program for an intensive demonstration of a Periodic Health Examination.

In order to make a more thorough and complete examination it is of vital importance that a complete history be developed and recorded. The initials and name of the individual, with the street address and telephone number, should be recorded, and, if a child, the parents' initials and name, with the address, should be recorded. The examination applies not only to adults, male and female, but to children as well.

The following specific instance of an examination may be utilized as an example of the scope and extent of the history and examination with the impressions obtained as a result of the procedure.

Dr. Blank states that he had three month colic in infancy. He was otherwise a healthy, happy normal child. He was born in the country, and from one to five years of age he was plump and healthy. He went barefoot, never had ground itch, and was never examined for hookworm. At the age of six years he entered school. He liked his school work, made good grades, no work being repeated. He played with boys of his own age, and had no fights. His deportment was good. He finished the tenth grade and then entered college. He gives a history of enuresis until twelve years of age, which is the beginning of a psychoneurotic trend. He had no night terrors, no somnambulism. He spent three yearrs in college, finishing at twenty-two years of age. Following this he worked for a year in a newspaper office and then studied medicine for three years, in Kentucky for the first year, and at Tulane for two years. He was graduated from Tulane in 1900, and successfully passed the Mississippi State Board Examination in 1899, one year before graduating, obtaining his license in 1899. He has never failed an examination in his life. His maximum weight was 165 pounds, minimum weight was 137 pounds. At present he weighs 144 pounds, and there has been no recent gain or loss in his weight. The patient is 34 pounds under his calculated ideal weight. He takes plenty of exercise, recreation and diversion, and has been doing this all his life. He says he never gets worried, blue or despondent, and has no troubles, home life being congenial and happy. He is not given to excessive ideation, is not nosophobic, has no hobbys and is not introspective. He retires early, gets up early, sleeping well seven hours out of twenty-four. He has no horrible dreams. He perspires in the summer, is not hypothermic, and likes to work. He has had all the diseases of childhood, though none have been severe, no complications, convalesence uninterrupted. He has had two mild attacks of malaria, pneumonia in 1890, influenza in 1898, and has had tonsillitis for years. He developed a peritonsillar abscess, and had a tonsillectomy performed in April 1925. About twenty years ago he fractured some ribs. About two years ago he developed a duodenal ulcer, which gave rise to a gnawing sensation in the stomach, and was relieved by the in-

*Read before the Mississippi State Medical Association, Jackson, May 10-12, 1927.

gestion of food. He suffered pain about three hours after the intake of food, and a recurrence of the pain with an empty stomach. There was no melena, no occult blood in the stools.. He had several specimens of feces examined after these attacks. Roentgenologic study brought out a deformity of the duodenal cap. No gastric titration, no cholecystography were made, and he was on a restricted diet for a long while, possibly eight or nine months. His habits are excellent, drinks a half cup of coffee in morning, tea occasionally, used tobacco until fifteen years ago, no drugs, no alcohol, no coca colas.

The family history reveals the fact that his father is living at the age of 83 years, in good health, a Minister of the Gospel. His mother died at the age of 49 years with pulmonary tuberculosis. He was exposed to her during her illness in 1894. He has no brothers living, one was shot in a target gallery. He has three sisters living, who are married and have children. One sister is dead, a house fell on her when she was a child. He married at the age of 26 years, has seven children, six of whom are living. The oldest is 25 years of age, and the youngest is 10 years of age. One died at two years of age of laryngeal diphtheria His wife is 48 years of age, and in good health. There is no history of miscarriages.

SPECIAL INQUIRY.

Head: Memory and concentration are good. No headaches, no vertigo, no edema of the face; the special senses are normal. No otitis, no tinnitus, no diplopia. Has been wearing glasses for seven or eight years only to read. His eyes were refracted recently, and he did not need a changing of glasses. No sinus trouble now. Had left maxillary sinus trouble for years and an extraction of one of the bicuspids relieved it. The teeth have been roentgen-rayed several times, one or two apical abscesses were found and removed. No nose bleed. Began turning gray at the age of thirty, hair has been falling out all life, but does not thin out. *Chest*: No cough, no dyspnea, no asthma, no tachycardia, no arythmia, no anginal attacks, no hemoptysis. *Gastro-Intestinal*: Appetite good, big meat eater all his life, eats lots of vegetables and fruit, and is especially fond of milk, drinks about half a gallon a day. No sore mouth, no coated tongue, secretions normal. No dysphagia, no indigestion, no nausea, no vomiting, no gas, no sour stomach, no heart burn, occasionally before supper has a premeal nausea which is not relieved by eating. It is relieved only by going to bed. He has had two or three such attacks each year, during his adult life. No jaundice, no biliary stasis, no appendicitis. Bowels move regularly every day in the year, about twenty minutes after breakfast, movements are normal in color and consistency. No hemorrhoids, no undigested food, no melena, no pruritis. No polyphagia, no polydipsia. *Genito-Urinary*: No history of venereal disease, enuresis until a big boy. Nocturia one, for the past years, no polyuria, no dysuria, good stream, bladder empties freely, urine normal in color, no hematuria. There is no edema of the feet, there is no orchitis, no epididymitis, no backaches, no varicose veins.

Had traumatic sciatica for several years until he had his tonsils removed. Sprained his hip in a camp. He had a burning sensation of the feet for a number of years, so much so that he had to stick his feet out from under the covers at night. This has been better since his tonsils have been removed. Blepharospasm; has to spit frequently. Runs his hands through his hair and throws it on the floor.

PHYSICAL EXAMINATION.

The patient lies on the couch without any unusual shortness of breath or discomfort. He is brunette in type. The hair is abundant, not unusually dry, and the scalp is in good condition. The forehead is prominent, there are no cavities. There is a slight facial tic, especially of the orbicularis muscles, slight enophthalmus, and an unusual prominence of the superciliary ridges. The ciliae are normal in amount and distribution. Superciliae are normal in amount and distribution and meet in the midline with a fuzzy-like growth, rather coarse and canitic. Rosenbach is positive. Joffry's is negative. There are no thyroid eye signs. There is no nystagmus. Conjunctivae are normal in appearance. The sclerae are abnormal in appearance, being slightly muddy, yellowish and injected. Convergence is good and the patient holds it well. Pupils react to light and accomodation. The neck is not stiff. The head is normal in contour, no evidence of past injuries. Facial symmetry is good, there is no facial edema. Nasal ventilation is good, nasal septum intact though slightly deviated to the right. There is no discharge. There is a scar on the upper lip due to a former injury, well healed. There is a rather marked hypotrichosis. The skin is moist and warm, no eruptions, and the muscle tone is good. The external ears are negative, no tophi, no discharge. Hearing in both ears is normal to watchtick. The mastoids, frontal sinuses and antra are negative to pressure. The lips are normal in color, oral hygiene is good, no pyorrhea, several filled teeth, several devitalized looking teeth, approximation is good, mastication not impaired. The tongue protrudes in the midline with a coarse tremor. There is some coat distributed over the tongue. The throat is normal in appearance, tonsillar beds are clean, no marked evidences of post nasal dripping. The soft palpate moves normally. The trachea is in the midline. There are no unusual pulsations in the neck. There is no thyroid struma. The glands in the posterior triangles are

not important, the submaxillaries, supraclavicular, axillaries, epitrochlears and inguinals are not important. The hands are normal in size and shape, long and spade like, palms are moist and warm, no evidence of onychophagy, no dystrophy. His grip in both hands is good. The radial vessels are not important. The radial pulses are synchronous, of good volume, tone and rhythm. The rate is a little slow, pulse rate 66, symptomatic bradycardia. The radial vessels are not felt in diastole. The brachial vessels are not important, no evidences of artero-sclerosis. The biceps, triceps and radial periostial reflexes are active in response. The costal angle is narrow, and the chest is flattened a little on the left side. The supraclavicular spaces are a little retracted and the infraclavicular spaces are a little depressed. There is no retrosternal dullness. The relative cardiac dullness is not apparently increased. The point of maximum intensity is distinct and situated well within the mammillary line. The heart sounds at the apex and base are clear, no shocks, thrills or murmurs. Hirci is normal in amount and distribution. Crines triangular. Arm pits are deep and moist. There are no adventitious sounds heard in the anterior or lateral chest, either before or after coughing. The cervical spine moves equally in all directions without pain. The cervical, dorsal and lumbar spines are straight, and are not tender to percussion. The cervical, dorsal and lumbar spines move equally in all directions without pain. There are no adventitious sounds hard in the posterior chest either before or after coughing. The abdomen is somewhat relaxed. There is a slight tendency to gastro-enteroptosis. No masses or undue points of tenderness or rigidity are palpated in the abdomen. The liver and spleen are not apparaently enlarged. The right kidney cannot be palpated in the dorsal decubitus. The epigastric and abdominal reflexes are active in response. No herniae are noted. The gonads are normal. The cremasteric reflex is active. The lower extremities are apparently equal in size, there is a congenital shortening of the right leg of about ¼ inch There is some trichosis of the lower extremities. The arches are fair, the nails are normal. There is some tendency to corns, no dystrophy, soles are moist and cool, no ankle-clonus. No Babinski, joints are normal, move equally in all normal directions without pain, no edema, no petechiae, no nodes on the tibiae. Muscle tone is good. Patella reflexes are a little sluggish but can be brought out with reinforcement. Heel-knee test done well. Blood pressure systolic 100, diastolic 65. Height, 71 inches, weight 144 pounds.

It is very important that the laboratory work be done in the interest of the case. There is nothing especially interesting in Dr. Blank's laboratory work. Erythrocytes 5,060,000, hemoglobin 90 per cent, leutocytes 7,200, polymorphonuclears 68 per cent, small lymphocyctes 27 per cent, large mononuclears 4 per cent, eosinophiles 1 per cent, blood was negative for malaria. The Wassermann with cholesterin antigen was negative, with acetone antigen also negative. The Meinicke test was negative. The feces was negative for parasites, ameba and occult blood. Both night and morning urine specimens were negative.

IMPRESSION.

Undernutrition 34 pounds; moderate psychoneurosis; congenital shortening of the right leg ¼ inch; symtomatic bradycardia pulse rate 66; suspect mild myocarditis; blood pressure 100/65; healed duodenal ulcer.

HEART DISEASE AND PUBLIC HEALTH.*

GEORGE R. HERRMANN, M. D.

Heart disease is the paramount problem of present day preventive medicine. Heart disease has become the undisputed captain of the men of disability and death. The importance of the subject is forcibly indicated by the Statistical Studies of the American Heart Association, drawn from various sources.

THE "STATISTICS."

Combined statistics put the estimate conservatively at 2 per cent, that is one out of every 50 individuals has heart disease, 2,000,000 of our citizens of the United States have heart disease or 10,000 citizens of New Orleans.

Last year our fair city ranked first among the cities of this nation in deaths from heart disease with a shocking rate of 321 per 100,000, while the nearest companion in distress was Albany, New York, with a rate of 283. During this same year, 1925, the average rate throughout the United States was 186, and thus stands as the principal cause of death. Louisiana has risen from twenty-third rank in 1921,

*Read by invitation before the Louisiana State Conference for Social Betterment, New Orleans, March 17, 1927.

with a rate of 122, to eighteenth place in 1925 with a rate of 168. The death rate from heart disease has increased from 132 in 1900 to 157 in 1921 to 186 per 100,000 in 1925.

The reasons for the rise are suggested from comparative studies of mortality statistics. For New York City the mortality statistics given by Dr. A. E. Cohn in the De Lamar Lecture showed that in 1868 the ratio of deaths from chronic diseases to the total death rate was about 1 to 15, while in 1921 the same ratio was 1 to 2. From this it seems quite apparent that the chronic diseases have assumed a position of importance. Cohn also found the curve of chronic diseases of the circulation rising gradually to 1896 and abruptly since that date. The fall in the death rate of the acute infectious diseases had begun in 1881, while the death rate for pneumonia and tuberculosis began to fall only in 1906 and most conspicuously since 1920. The death rate from heart disease has mounted consistently since 1920, while that for tuberculosis has consistently fallen and that for pneumonia has slowly fallen and has not equalled that of heart disease since 1910. In this same time the cancer death rate has gradually increased, but is still just a bit over half of that for heart disease. In the 1920 statistics for death rate due to heart disease only 1-16 of the cases, and in 1925 perhaps only 1-20 were under 40 years of age. It seems, therefore, that the populace has been spared from death from acute infectious diseases only to succumb to the chronic degenerative diseases. The average expectancy or length of life has been increased to 55 years.

Heart disease is responsible for 1-8 of the deaths of all ages and 1-5 of the deaths of persons over 40 years of age. The mortality or death rate statistics suggest that present conditions continuing, one out of every five of the population living at the age of ten will die of heart disease. The child of ten is three times as likely to die of heart disease as of tuberculosis.

Heart disease has been found to reduce the span of life practically to one-half according to statistics of the Metropolitan, Prudential and New York Life Insurance Companies. 16 per 1000 of large series of school children carefully examined showed serious heart defects. 20 per 1000 of industrial workers were found to have heart disease. 20 per 1000 of insurance applicants were rejected because of heart disease. 40 per 1000 in the army draft were disqualified because of heart disease.

THE SOCIAL ECONOMY.

The economic loss and individual suffering from heart disease is enormous. Heart disease impairs the efficiency of the worker, reduces his output and earning capacity. A certain degree of disability exists for a great many years and a period of complete disability lasting for months or years often ensues. During the periods of disability, often the patient and his family become dependent upon the community.

In Charity Hospital during the year 1925, 1008 cases of chronic circulatory diseases were treated, totaling at the average of 30 hospital days each, 30,000 hospital days, which even at the minimum expense of $1.50 a day cost $45,000. Adding to this the loss in wages, calculated at $3.00 a day, we have a gross loss of $75,000 yearly. This is a minimum estimate and without doubt the cost to the community for indigent cardiac cripples alone is $100,000 yearly. We have no means of even approximating the total economic loss due to heart disease in New Orleans, for the other 9,000 patients are of the middle and upper classes in which the financial figures mount rapidly because of the greater incomes and greater sickness expenses of the afflicted individuals.

There is, however, in addition to the financial losses incurred, an infinitely more distressing aspect, that of the suffering and anguish of the afflicted one, which excites the compassion of even the most unsympathetic soul. The misery and sadness wrought by heart disease often strikes

one as the cruelest irony of fate. Especially is this true when the afflicted one is an innocent child, or a young bread-winning father of an absolutely dependent young brood.

THE CAUSES.

As stated at the outset, the prevention of the ravages of heart disease is the great medical and sociologic problem of today. In order adequately to understand the proposed measures that will be mentioned later, we must have some clear conception of the causes of heart disease. In the first place there are two great groups of cardiac cases, the young adults and the middle aged individuals, who are afflicted. In the young adults certain infectious diseases such as rheumatic fever, inflammatoroy rheumatism, chorea or St. Vitus' Dance, and tonsillitis are the chief exciting agents. These are bacterial in origin, caused by germs, most probably streptococci, such as have finally very recently been established as caustive agents in scarlet fever, erysipelas, and measles. In rheumatic fever affections, there seems to be a predilection of the organisms or their toxins for localizing effects on the heart valves and in the heart muscle. Twenty-five per cent (25%) of the cases of heart disease are due to the results of this infection.

Syphilis plays a second most important role in the production of heart disease in later adult or early middle age. Syphilis accounts for about fifteen per cent (15%) of the general run of heart cases. I believe, and I am quite sure many will agree, that the percentage would be distinctly increased if we had at our disposal more elaborate means and opportunities for microscopic studies. Most certainly a part of the cases classified as of unknown cause, and even some of those classified as arteriosclerotic, are of syphilitic origin. In middle life, that is after the age of forty, the degenerative diseases of the vessels of the heart itself and the muscle deterioration seem to be the chief causes of heart affections.

Arteriosclerosis, which is primarily the chief degenerative disease, is generally held accountable for forty per cent (40%) of the cases of heart disease. As pointed out above, this group of arteriosclerotic heart affections, is the one which accounts for the gradually mounting death rate due to heart disease, and is the group against which we must direct our efforts if we hope to curb the rising tide of cardiac deaths at what is considered the prime of life. Miscellaneous and unknown causes, unfortunately, must be recorded in the remaining twenty per cent (20%) of cases.

THE PREVENTION.

With this information as to the causes of heart disease, we may undertake the outlining of preventive measures. In the first place, it must be evident that the problem is one of such scope that individual activities, uncorrelated and undirected by a central social agency of many departments, are hopeless. There must be a close relationship between physicians, health boards, school boards, social service, employment bureaus, etc.

The American Heart Association, with its branches in several large centers, is such an organization. This is patterned after that of the American Tuberculosis Association. The latter has been encouraged and supported by the laity and has attacked its problems with ample funds and has accomplished much. The control of heart disease has barely been attempted; the field has been virtually untouched.

By proper preventive measures, the incidence of heart disease can be reduced. A considerable number of those having heart disease make practically complete recovery and regain health. Others with damaged hearts will suffer very little or no incapacity if they secure and follow the physician's advice and adapt their mode of living to accord with the rules which long study and wide experience have proven effective.

To touch upon some of these measures in certain specific instances is about all that

we can hope to do. In the rheumatic group of cardiac invalids, the close cooperation of the family physician and of school authorities is essential. First, the search for cases should be started as early as possible. Adequate and prolonged treatment of the rheumatic fever is essential to the prevention of further cardiac damage. If cardiac damage can be established, prolonged rest, preferably in a sanitarium, is the one great hope of preventing invalidism later in life. The removal of the infected tonsils or other foci of infection is considered by many to be a good measure in the prevention of recurrences.

The routine examination of school children reveals, also, often unsuspected valvular changes, the scars of previous infections. The discovery of these evidences of damaged hearts is of the greatest importance, for then the life of the child may be molded so as to spare the dangerous strains incident to adolescence, strains that would tend to cause a progression of the lesions. Besides the possible relief of much of the strain of school life; the cardiac child can be guided into the vocation most suited to his condition and himself. Opportunity is also afforded for the instruction of the child and young adult cardiacs in the avoidance of infections as much as possible and in the prompt bed treatment of his every infectious illness, no matter how insignificant it may appear to be.

Congenital heart lesions are likewise often discovered during school examinations, and the same points above indicated should apply to an individual with this type of heart disease.

Syphilis is a great social problem in itself. Syphilitic heart disease can probably be prevented in a large percentage of cases by thoroughly adequate, intensive and prolonged antisyphilitic treatment. There is great need here for the social follow-up, for unfortunately the early manifestations are without symptoms sufficient to inconvenience the patient. The disappearance of the primary painless lesions often without treatment or with only inadequate local applications causes all too many patients to consider themselves cured and to seek no further medication. The serious heart damages often do not become apparent to the patient for a decade or two. After the symptoms once appear the progress is unfortunately rapid and the process can be arrested only with the greatest of difficulty.

The problem of the degenerative causes of heart diesase is the one least clearly understood. There is little doubt that the mode of life one leads has much to do with one's span of life. Some families are endowed with good wear and tear resisting hearts and blood vessels, while others have the prematurely aging types of arteries. In both types abuse and indiscretions will produce damages with, of course, an unfair partiality. It is safer for one to consider himself in the prematurely aging type and live accordingly, with as a reward added years of activity and comfort.

Foci of infections, chronic in nature, such as abscesses at the roots of the teeth or about the teeth, even low grade infections of the tonsils, sinuses, gall bladder and prostate, may in time contribute to vascular degenerative changes. The modern high tension of business life with little sunshine, fresh air, and exercise, but with much rich protein and fat food and some spirituous liquors to add to the pleasures of the table, and an excessive use of tobacco are conducive to high blood pressure, hardening of the arteries, and the resulting cardiovascular damage. A program of rigid reeducation is necessary to reduce the number of individuals falling victim to heart disease of this type.

In this connection, the value of the periodic health examination should be emphasized. The detection of the early slight changes and the change of the mode of life, before irreparable damage is done, is what must be accomplished. The average man would not think of running his motor car year in and year out without ever having

it looked over. The general rule is to send the car to an expert mechanic to be carefully inspected and minor adjustments made every 5000 miles, yet many of these same careful men will drive their own selves not a few months, but often ten to twenty years without inspection. They await the onset of troubles (symptoms), which usually appear sufficiently disturbing only after the damage is extensive.

In the case of many patients, the symptoms appear just at a time in life when responsibilities are great. The curtailment of the income is a serious matter. In many of the laboring class, the first cardiac break spells the doom of self support. It is just in this group that great difficulties arise. An organized heart association, with an employment bureau controlling the sedentary and light occupations, would be of infinite value. Civilian rehabilitation is a neglected social responsibility. The workmen's compensation act and health insurance are given as the reasons by some employers for not employing some handicapped men. Others point out that they have physicians employed for the specific purpose of guarding against the employment of such individuals.

What, of course, is to become of our partially disabled patients. If they were given any of the many sedentary positions they might carry on comfortably on an economic level for years. If forced to take up their hard physical work, they will break down again shortly and become hospital bed patients.

The method of meeting this problem of the cardiac cripple for the community and the individual alike is to face the facts and act accordingly. With a wider dissemination of the knowledge concerning the causes of heart disease and a wider recognition of the importance and the means of detecting the abnormalities in the early stages and with a whole-hearted determination on the part of the community as a whole organized in a group such as a chapter of the American Heart Association, a very large part of the economic waste and of the individual suffering can be abolished.

INDICATIONS FOR SURGICAL PROCEDURE IN SPHENOIDITIS FROM OPHTHALMOLOGICAL STUDIES.*

M. EARLE BROWN, M. D.
NEW ORLEANS.

Since the publication of Doctor Greenfield Sluder's compilation of studies in 1918 upon "Headaches and Eye Disorders of Nasal Origin," the sphenoid and its diseases, occupying as it does, a position of great importance in the etiology of diseases affecting the visual pathway, has been the subject of much discussion in recent years among rhinologists and ophthalmologists, especially as regards diagnosis.

One can easily visualize the purulent type with its drippings observed during routine intranasal examinations, and its confirmation by comparison of the densities, and shadows contributed by the radiologist. The difficulty of diagnosis then, is restricted to the hyperplastic type, where many rhinologists are confronted with patients suffering from that train of symptoms, the sphenoidal syndrome, from which thtey can obtain only temporary relief from internal medication (opiates). In these cases the intranasal examination is negative and consultations with the radiologist elicits pathology in the sphenoid as manifested by changes in the Granger line. Here are some of the contentions of many of my confreres.

Could not the patient be suffering from hysteria, or an intracranial tumor, and the bone changes be coincident with a previous disease? Is it not possible that esotropia is the etiological factor, producing the violent headaches which is the chief complaint? Has the patient been refracted and does he wear correcting lenses?

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*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

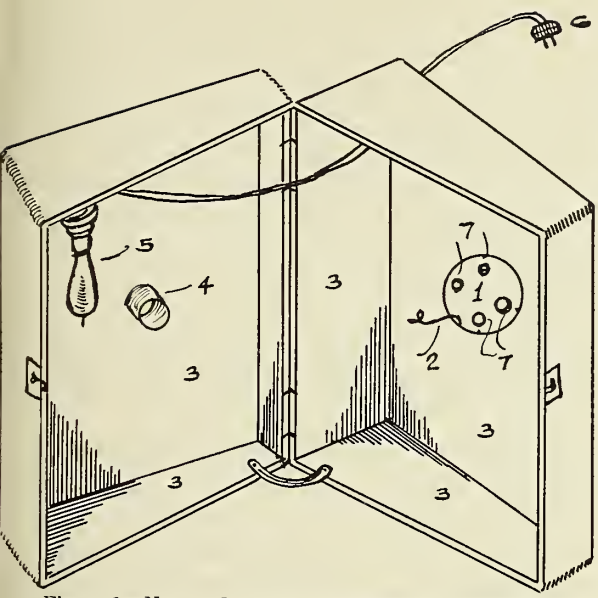

Figure 1—No. 1. Revolving disc, painted a neutral gray, containing four apertures. No. 2. Centering spring and lock for disc. No. 3. Inner surface of box painted dead black. No. 4. Central visual aperture 2 inches in diameter. No. 5. Electric day light filter Mazda, 10 w, 120 v. No. 6. Socket for wall attachment. No. 7. Apertures, Red, 3mm; Green, 5mm; Blue, 7mm; Yellow, 3mm.

Again, some excellent rhinologists doubt the existence of membranous changes in the sphenoid, and its ability to cause symptoms. I am sure many of you have operated upon mastoids diagnosed from clinical symptoms only, and found diseased bone cells but no pus and the patients were relieved from their symptoms. The pathological studies of McMahon, both macro- and microscopical, made upon diseased sphenoids and published in October, 1926, should convince the most skeptical.

We see patients who state that they have been chronic sufferers of upper half headaches for years, presenting as a terminal result evidence of permanent blindness due to paraocular disease (retrobulbar neuritis) and optic nerve atrophies, also cases of fifth cranial nerve irritation (trifacial neuralgia) whose etiology has been traced to the hyperplastic changes within the sphenoid bone and which could have been prevented by an early diagnosis and the proper treatment.

Hysteria would present a type of peripheral fields, tubular in character with interlacing of colors, red, green and blue, or occupying a false position in the fields. Intracranial tumors would in addition to the behavior of colors, present one of the many types of anopsia, and the usual demonstrable pathology so well known that its repetition here seems useless. Esotropia is a symptom of muscle imbalance, present in sphenoiditis of the hyperplastic type due to defective innervation. Asthenopia dolens (pain in the eyes) and asthenopia cephalalgia (headache) is a symptom grouped under the terminology of "Sphenoidal Syndrome" being produced by interference of the innervation to the exterior eye muscles in hyperplastic sphenoiditis. Errors of refraction, and especially is this true of hyperopia and the astigmatism of similar types, produce headaches generally experienced after prolongd use of the eyes, and as a rule are relieved by sleep.

In hyperplastic sphenoiditis, normal vision is a cardinal symptom. Then, by eliminating all the factors which are capable of producing such symptoms, there remains now as in the beginning two subjects for the rhinologist to study, namely, clinical symptoms and the radiograph. Let us now outline for you the diagnostic points in the hyperplastic type of sphenoiditis from ophthalmological studies.

1—Central vision is normal, the form sense.
2—Color perception is normal, the color sense.
3—Color acuity (central) showing reduction of the threshold.
4—Marriotte's blind spot is normal.
5—Esotropia is present in varying degrees.
6—Concentric contractions of the peripheral field for form and colors.
7—Sphenoidal syndrome (clinical).
8—The absence of pathology in the fundus.

Having then arrived at the diagnosis by all the collateral methods at your command and having definitely decided the condition to be one of hyperplastic sphenoiditis, bilateral or unilateral, upon what information will you outline the treatment and formulate your prognosis. The symptom complex

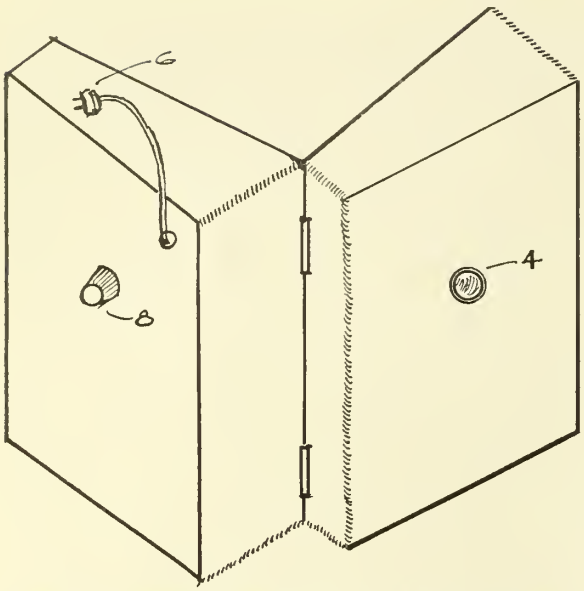

Figure 2—External surface of box painted a neutral gray. No. 4. Central visual aperture 2 inches in diameter. No. 6. Socket for wall attachment. No. 8. Thumb screw to revolve disc. See figure 1, number 1.

is of course very important, but also very inconsistent, descriptions of pain by patients being exaggerated by some and modified by others, then the severity and extent of the disease cannot be determined from the symptom complex. Shadows upon the graph, with their interpretation, can definitely locate the disease and determine whether it is unilateral or bilateral, and no more. As the color acuity threshold becomes lowered before the threshold for visual acuity, we have here a method of determining affections of the optic nerve before their manifestation by a lowered visual threshold or by pathological changes within the eye ball as observed with the ophthalmoscope. In order that the test may not become confused with the one for color perception a brief description follows.

The apparatus, Figures 1 and 2, consists of a box painted a neutral gray externally in order that the retina will be pre-exposed to a natural gray the same brightness as the colored stimuli before the targets are revolved into the visual aperture. The inner surface of the box is painted a dead black in order that cross shadows will become absorbed. The source of light is so arranged as to stimulate that of a pure north sky of approximately the intensity of the sun's rays at ten o'clock in the morning, free from shadows and flooding upon the disc which contains the colored targets. Inasmuch as natural illumination is ideal but inconstant, we use artificial illumination with a daylight filter, producing the ideal light with constancy.

The colored stimuli are made with colored papers of the type used in the targets of the De Zeng standard perimeter.

In order that the environment may be perfect the walls of my examining room are painted a neutral gray, in addition to the external surface of the test box and the disc within the box, so making the retinal pre-exposure complete.

Color Acuity: Patients are required to determine the color of the test,—objects placed six meters away upon a plane at the same level of the eyes. Patients with normal vision recognize a red test object three millimeters in diameter, a green test object five millimeters in diameter, and a blue test object seven millimeters in diameter. By reducing the distance between the patient and the test object the threshold for each color is determined.

Concentric contractions of the peripheral fields show definitely the degree of percipient screen deficiency as a result of the perineuritis, the origin of which lies within the diseased sphenoid.

Surgical interference is indicated to prevent progression from perineuritis to diffuse and axial neuritis, which of course, causes permanent blindness.

DISCUSSION.

Dr. Carl Granberry (New Orleans): The diagnosis of sphenoiditis in some of its types, notably the hyperplastic type, has always been a rather difficult problem for some of us, and any assistance from sources other than have been at our command is certainly welcome.

Hitherto we have had to rely on the clinical symptoms, as have been so well outlined by Dr. Sluder of St. Louis in his classic, "Headaches and Eye Disorders of Nasal Origin", and the

roentgen-ray picture. Dr. A. Granger, of New Orleans, has given us most valuable information with his noted "G" line.

Before we began recognizing hyperplastic conditions of the sphenoid, some form of discharge from this sinus was necessary as a sign before diagnosing sphenoiditis, but in this particular type (hyperplastic) the direct vision into the nose with the nasal speculum and the examination with the naso-pharyngoscope reveal nothing that will assist us in such a diagnosis. Therefore when Dr. Brown came out with his "Color Acuity" test we immediately seized upon it as a valuable adjunct to our diagnosis. Not only has this test been valuable as an aid to diagnosis, but the visual fields of such taken after the operative procedure have revealed to us startling results, as have been demonstrated by Dr. Brown in his lantern slides. The rhinologists have also been able to relieve some of the "mystifying" headaches, which in itself is quite gratifying.

I do not pretend to suggest any particular method of performing a sphenoidectomy, but will say that in this type of sphenoiditis the anterior wall of the sphenoid is dense and firm, and it is difficult, and extremely difficult in some cases, to make the initial opening. Dr. Homer Dupuy, of this city, demonstrated a long handled burr at a recent meeting of the New Orleans Ophthalmological and Oto-Laryngological Society which at the time was looked on by me with disfavor, but in some recent cases I quickly realized the feasibility of having such a strong instrument at hand.

Again I wish to commend and thank Dr. Brown for giving to us another "Indication for Surgical Procedure in Sphenoiditis," as has been demonstrated by his color acuity test.

Dr. G. W. Blackshear, (Opelika, Ala.): It has been with a great deal of pleasure that I have received the slides presented by Dr. Brown, and have listened to what he has had to say in regard to surgical interference in sphenoiditis from opthalmological study.

It was my good fortune to co-operate, to some extent, with Dr. Brown in some of his earlier experiments along these lines, and I am sure that he has given us a most valuable aid in the indications for surgical interference.

While associated with the Eye, Ear, Nose and Throat Hospital, of this city, Dr. Brown frequently referred patients to me with the diagnosis of sphenoiditis—made by his visual field studies. Often, after the most careful and painstaking naso-pharyngeal examination, I would be unable to verify his diagnosis. All of these cases were then referred to the roentgen-ray laboratory. Invariably, without a single exception, his diagnosis would be confirmed by the Granger line, and a sphenoidectomy be done. Then, following the operative procedure; the concentric contraction of the peripheral field for form and color, would either return to normal, or be rapidly approaching normal, in from four to six weeks.

To you who have access to the modern roentgen-ray laboratory, the making of visual fields on suspected cases of sphenoiditis might seem superfluous, and to be of no use. But to us, situated in localities where the Granger technique has not yet been adopted, the visual fields, as described by Dr. Brown, will be of inestimable value.

How often are we confronted with situations in which, from the history, we are sure we are dealing with sphenoidal involvement, but, due to lack of evidence on inspection, and to the lack of satisfactory radiographs, we hesitate to recommend surgical interference. In all cases, or situations like this, I feel that the visual fields, as pictured by Dr. Brown, can be relied on wholly.

We are all governed more or less, in arriving at conclusions, by personal experience and observation; and from the results that I have seen, from the work and studies of Dr. Brown I have no hesitancy in recommending sphenoidectomies to all who show the concentric contraction of the peripheral field for form and color, as presented and demonstrated by Dr. Brown.

Dr. E. Weiner (New Orleans): I am an intern at Charity Hospital. If I may have permission I would like to say a few words about hyperplastic sphenoiditis—the symptoms, treatment and the result as obtained in my own particular case.

I had this condition for some time without having had it recognized; and, while often examined, roentgen-ray pictures were not taken because the symptoms did not seem to point to any special condition. I suffered with frontal and occipital headaches, most of the pain being in the root of the nose, not very severe, nor did they last long. They would come for a month or two, then go away and return later. There was associated nausea and loss of appetite. After having undergone several different examinations, all negative, I was finally left to go my way as a probable neurasthenic.

But everything came to a climax last November. While making my rounds in the hospital, I suddenly became very dizzy and had severe frontal pain. I did not think much of it, but the pain was continuous and would not go away; it lasted several hours. I attempted to do my work but felt rather sick and very nauseated. Most of the pain was in the root of the nose and some in the occipital region. X-rays were taken of the sinuses and the report came back, "Bilateral Hy-

perplastic Sphenoiditis"—according to the roentgenograms it was definite.

I was advised to consult Dr. Brown and have my vision tested. There was marked contraction of both visual fields, more pronounced on the left side, but on the right there was also considerable contraction.

I was then told to consult an ear, nose and throat specialist. Rhinoscopy revealed a slightly deviated nasal septum and a small bone spur in the posterior nares. Nasal douches were tried, but the symptoms were hardly relieved by them. I finally consented to a submucous resection and removal of the bone spur and when this was done soon experienced relief. The sinuses were not touched. Twenty-six days later another visual field was made and this showed a marked improvement (about 300 per cent better than before operation). Another taken two months later showed still further improvement to almost normal.

I am no longer nauseated have gained six pounds and weigh more now than ever before. I feel better in every way, in fact, I am in tip top shape and have had no recurrence of the symptoms. I think I have been cured.

Dr. Homer Dupuy, (New Orleans): Of course I feel flattered that my sphenoid burr was called into use to enter the anterior wall. The relation of the sphenoid sinus to its surrounding intra-cranial structures certainly makes it a real "danger zone". Any diagnostic method which will help point the way to the sinus deserves our consideration. I have co-operated with Dr. Brown in the Charity Hospital. It is a highly refined method depending on the personal equation of the observer, yet I am impressed that there may be something in it. Let me emphasize that we are not so cocksure that the sphenoid causes so many eye disturbances. White, of Boston, an authority, is now reversing his former position. We now know that there are other factors just as important, tonsils and the teeth for instance. These give rise to blood stream infections. But when the sphenoid does become a causative factor, let us hope that this method sponsored by Dr. Brown may aid us in making an early diagnosis. We need all the help possible before venturing into the sphenoid.

(Discussion abbreviated by Dr. Dupuy.)

Dr. M. Earle Brown (closing): One must not get the impression that peripheral visual fields are so difficult to make, in fact they are not as difficult as Dr. Dupuy thinks.

My technician, Miss Octavia Prejean, makes all of my field studies, both with artificial light and natural (North blue sky at ten in the morning). Of course I check her fields but never find errors.

The difficulty lies more with the technician than with the subject, and requires great patience and much persistence.

The color acuity test has taught us that a 20/20 vision no longer means normal vision.

We have grouped many scientific conclusions, the sum total of which we believe to be the definite diagnosis of hyperplastic sphenoiditis.

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SOME OBSERVATIONS MADE IN A RECENT VISIT TO SEVERAL EUROPEAN EYE CLINICS.

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NEW ORLEANS.

The clinics which I visited in Europe were those of Paris, Freiburg, Munich, Vienna, Budapest and Prague. The time of my visit was during the fall and winter months. This season, though not the most beautiful in Europe, was chosen because during the summer when the climate in most of those countries is very pleasant,

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the chiefs of clinics are on their vacations. Probably spring would be best, for then the weather is delightful and there would be no Christmas holiday to interrupt the work.

I found that Americans were welcome everywhere except in Munich where the professor seemed to have some animus towards his colleagues from across the sea. My reception elsewhere was extremely cordial, and I believe one of the most valuable lessons one can learn in these places is the art of extending the hand of friendship and aid to the visitor from foreign countries. America is too apt to consider herself self-sufficient, and to be indifferent to foreigners when they come without title or distinction. Not only the doctors in the hospitals, but also the man in the street, never hesitates to assist the stranger seeking help and guidance. These kindnesses which I was shown are amongst the most pleasant recollections of my visit to Europe.

The hospitals in Paris which I attended were the Lariboisiere, Hotel Dieu, Rothschild Clinic, Quinze Vingt, and Dr. Poullard's Clinic. The institutions are excellent in equipment and in the character and the amount of clinical material. Their staffs represent the best in the City of Paris, although there are other good men here like Magitot and Rochon-Duvigneaud. The men of these staffs are the leaders of ophthalmology in France, together with men like Lagrange of Bordeaux, whose name is familiar to all students of glaucoma. Morax, Terrien, Valude, Kalt, Chevallereux, Chaillou, Dupuy-Dutemps, D'Esperville and Poullard are the men I saw at work in Paris. The most striking feature of their surgical work is its independence and originality. Their work calls forth your admiration for its utter sacrifice of all useless and unnecessary measures, and for the ability of some of these men to do a tremendous amount of work with great skill, with marked rapidity, and in some instances with very little assistance. French surgery is different. It is quite a thing apart as compared with the surgery of other countries. It is artistic and brilliant, and never fails to interest and to instruct. Though there are certain orthodox procedures common to all ophthalmic clinics, one meets with examples of surgical methods which reflect the originality of the operator. So far as equipment is concerned, there is one particular thing which is common to all clinics and this applies to all the departments of surgery. I refer to the use of dry heat for the sterilization of instruments. This method of sterilization has been used in France for a number of years and the French surgeons cannot understand why it has not been adopted in America. The advantages of this method are the prevention of rust, the retaining of the sharp cutting edge of instruments, and the consequent longevity of all instruments.

Preparation for operation on the eyeball in most of the clinics includes a smear and culture of the conjunctiva in a search for pathogenic organisms. Morax tells me that he must obtain a negative culture before operating. In some of the clinics the skin in the neighborhood of the field of operation is aseptisized by a solution of tincture of iodine. I believe that the combination used in Paris is that of iodin, alcohol and glycerin, though I have forgotten the exact proportions. A mixture of iodin with tincture of krameria is used in Budapest where even the eye lashes are painted with the antiseptic. In all of the European clinics the conjunctival sac is irrigated with a weak solution of oxy-cyanid of mercury as a last step in the preparation for operation. The anesthetic of choice in all European clinics for intraocular operations is cocain. One could not fail to be impressed by the large amount of cocain used in all clinics. It is the belief of all American observers that this must be accounted for either by a less toxic cocain or by the ability of European patients to withstand the drug. It might be advisable at this point to mention also that in some European clinics adrenalin

solution was frequently instilled into the conjunctival sac before and during operation, a procedure which is not looked upon with favor in this country. In one particular clinic where this practice was common there was a coincident apparent increase in the number of cases of postoperative hyphemia.

In intraocular operations, Morax always uses akinesis and a retro-bulbar injection of novocain and adrenalin with the needle passed through the skin near the outer canthus. By this method he obtains a paralysis of the orbicularis and a dependable anesthesia. One objection to the retrobular use of novocain is the occasional hemorrhage which follows and which may cause the postponement of the operation. In the Paris clinics the lid speculum is used in operations on the eyeball and, as an additional safeguard, the hand of the assistant keeps the speculum under control in order to prevent pressure on the eyeball. In this connection I wish to say here that Blashcovics has devised a speculum which, though complicated, is useful in many cases. This instrument prevents lid pressure by holding the lids away from the eyeball. Meller, in Vienna, contends, however, that even a poorly trained assistant can control the lids better with his fingers than can be done with the best speculum ever devised. Morax, in his cataract extractions, prepares a conjunctival flap or a bridge. In the latter case a longer corneal incision must be made. Kalt, always, and Chevallereux and Chaillou sometimes, make a corneal flap after having introduced a silk suture in the cornea and episclera. This suture is sometimes placed vertically in the cornea and sometimes horizontally, depending upon the personality of the operator. The first loop in the suture is made and then the incision is done, entirely in the cornea, the knife passing through the two anchorages of the suture which are a millimeter to a millimeter and a half apart. One may thus see that the incision requires much accuracy and much skill. Kalt then proceeds to remove the cataract in its capsule by means of his forceps, quickly ties the suture, introduces a hook to the edge of the pupil, withdraws the iris and performs a small iridectomy. I saw him once fail to bring out the knife in its proper place and the suture was therefore removed. In the performance of this operation one must use a special needle and special silk.

The use of the capsule forceps in cataract extraction is almost universal in Europe, though there are some operators of the old school who will prefer to use the cystotome. It is my opinion that the employment of capsule forceps makes removal of the immature cataract very much easier. The American visitor is surprised to find that a large percentage of cataract extraction is done on those with immature cataracts. When I was in Vienna an American woman came all the way from Atlantic City to have an immature cataract operated because she did not believe that it could be done in this country. When the cystotome is used in Europe the operator spends more time incising the capsule than is customary over here. In connection with the question of maturity of cataracts I was amused one day when Morax asked me if I could tell when a cataract was mature. When I answered him that I could tell, he smiled and said, "I cannot," and turned away. In soft cataracts it is customary in some Parisian clinics to use the aspirator, one end of which is placed in the anterior chamber and the other end in the mouth of the operator. Some men prefer an aspirator with a syringe attached. The aspirator is not a new instrument having first been invented many centuries ago and rediscovered a number of times. For the use of this instrument it is necessary for one to have complete confidence in his patient.

One striking observation made by all American visitors to European clinics is the complete co-operation between patient and physician. Another important factor in the excellence of their results is the feeling of loyalty which exists among the

members of the staff. These men work together during a long period of years, the chief holding his professorial chair usually for many years from which he is removed only by death or promotion, and the juniors holding their positions for as long as they feel that they can learn, or until they are called elsewhere. The nurses are women whose training is practical, and who work continuously in these ophthalmic clinics year after year. Even the orderlies remain in their positions for a long time and acquire a great deal of practical knowledge in the preparation for ophthalmic operations and even in some cases prove useful in the room during the operation. The last is noticeably so in Vienna.

One does not fail to observe in all European eye clinics the care which is taken to operate on a perfectly dry field. The assistant is kept busy sponging the fluids from the conjunctival sac in order to prevent aspiration of infected material into the anterior chamber.

Opportunity in Paris to see plastic surgery for the correction of entropion or ectropion was not very great and the only surgery of this kind I saw there was at the Lariboisiere. Morax is a very skillful surgeon. He wields his scapel with as much grace as a painter does a brush, and the exactness with which his flaps are formed and the consequent nicety of adaptation of wound edges is an accomplishment which the ordinary visitor can never hope to attain. Therefore, one is at a loss which to admire the most—his cataract extractions or his plastic surgery, or indeed, his operation of dacryo-rhinostomy. It was interesting to note the great number of silk sutures used in the closure of his wounds for lid defects. At the Lariboisiere and at the Rothschild I saw several operations performed for the cure of dacryocystitis. In all cases the above mentioned operation was performed. Both Morax and Dupuy-Dutemps do this procedure beautifully and their technic is about the same. The only difference I could see was in the use of the short curved needle by one and the Riverdin by the other. The exposure of the lacrymal sac, the incision in its medial wall by a knife introduced through the canaliculis, the making of a window in the lateral wall of the nose, incision of the nasal mucous membrane and finally the lateral anastomosis of the sac and nasal mucous membrane, are the steps of a beautifully conceived and executed operation. Chaillou at the Quinze-Vignt extirpates the lacrymal sac and cauterizes the mucous membrane of the nasal duct with an electric cautery, obtaining good results in all cases.

In the Parisian clinics, the American visitor could not fail to notice the hearty welcome extended him. One is greeted with a smile and a hearty handshake and receives a cordial invitation to come again. When Professor Terrien discovered that an American was present, he insisted upon giving the visitor the best place to observe the operation. Prof. Terrien was received very cordially in America and he wishes to reciprocate the courtesies shown him over here.

Both he and Morax are surgeons of the first rank and authors of valuable contributions to ophthalmic literature, and one can therefore appreciate the difficult task it was to fill the vacancy occurring last year. The appointment was finally made on length of service. I regret that on the occasion of my second visit to Paris, Prof. Terrien was sick and unable to operate.

In order to show the originality of the French ophthalmologists I will cite the operation for corneo-scleral trephining done by Chevallereux in which the conjunctival incision was made at the upper limbus, the conjunctiva undermined above and sutured to the conjunctiva below instead of the orthodox Elliott flap. This made an easier operation possible though it did not strike me as being as safe as the older method. In order to demonstrate the skill and the rapidity which some of these men use I can tell of witnessing besides minor operations, eleven cataract

operations performed by Valude one afternoon. This operator's method of enucleating eyes is quite different from that done by any other operator I have ever seen. He seizes the cornea with a modified volsellum forceps, pulls the eyeball forward, circumcises the cornea with a sharp scissors end, pushes back the conjunctiva with the scissors and divides the tendons with the same scissors from his position in front of the patient.

My visit to Freiberg was a memorable one for it introduced me to Professor Axenfeld with whose accomplishments all students of ophthalmology are familiar. Freiberg is extremely difficult to reach from Paris but it proved to be very worth while when the goal was finally attained. Situated on the edge of the Black Forest, its location is very beautiful and its climate should be very delightful in the summer time. In the winter, however, this latter leaves much to be desired, and that is probably true of all parts of Europe, for it was cold and wet everywhere. In the absence of the warm hotels, which are so dear to the hearts of all Americans, this feature of my trip was not very attractive. Freiberg is a beautiful and remarkably clean old town of 80,000 people. It is the home of the University of Freiberg which is one of the largest and best known schools of Germany and which has an attendance of 5,000 students. Prof. Axenfeld's clinic is situated in the Ophthalmic Hospital, as is the case in other German universities. His private office is here and his private patients are interned in the hospital.

I would be very ungrateful and unappreciative if I did not again feel called upon to testify to the cordiality of my welcome. Prof. Axenfeld overwhelmed me with courtesies and it was with great regret that I had to leave Freiberg at the end of a week. Axenfeld is a first class operator and an excellent clinician. His book on the bacteriology of the eye has made us acquainted with his standing in the department of microscopical research. His treatise on diseases of the eye is a classic with which most of us are familiar. Attention in this clinic was called to the wide use of light therapy and a great deal of importance was attached to its use in certain diseases like phlyctenular keratitis. One noticed great care in the operating room to avoid infection in the operative work, and attention was directed to the use of rubber overshoes by the chief and the first assistant in the operating room. In all of his cataract extractions, Axenfeld performed canthotomy and superior rectus tendon fixation. He does not attach importance to the necessity of obtaining a negative smear and culture of the conjunctiva in intraocular surgery. He believes that a macroscopically clean conjunctiva is all that is necessary.

In Vienna Professor Meller occupies the chair of ophthalmology in the University and is in charge of the first eye clinic in the Allgemeine Krankenhaus. The death of Professor Dimmer made vacant the senior position of the second clinic and Dr. Guist is temporarily in charge there. He and Dr. Pillat do the surgical work in this clinic.

Ophthalmology in Vienna continues to be a popular subject for post-graduate study by visiting Americans, though my personal opinion is that it is not in the preeminent position that it occupied in 1922, so far as concerns attendance by American students. Professor Lauber, Profesor Linder, together with Privat-Docent, Bachstez and Fuchs and Sofar, constitute, with the others above mentioned, the larger part of the teaching staff in whom Americans are interested. Professor Meller teaches only those Americans who are entered in the autumn class of sixteen men, which annually attracts to Vienna those interested in our department of medicine. Prof. Fuchs delivers only a few lectures to this class. It was my privilege to see Professor Meller operate several times and to admire his brand of surgery. Meller is not a man of fads and his methods are those which have been found dependable

by all teachers of the German school. His skill in the operating room is something to be admired. He makes ophthalmic surgery appear to be extremely easy, but when one considers the tremendous amount of experience he has had and the enormous clientele, one ceases to wonder at the facility with which the operations are performed. Dr. Guist and Dr. Pillat are younger men. They are both very careful operators, deliberate and painstaking in their thoroughness. The cataract operations done here were performed after the method of Hess. Guist is perfecting a new method of cataract extraction wherein the operator makes a short corneal incision with a keratome, and then proceeds to break up the lens in the anterior chamber, evacuating the trituated lens from the chamber and completes the operation by perforating the hyaloid membrane. This last step is done in order to prevent anterior synechia by filling the cavity with vitreous. One may see that he violates several ideas which we have held concerning cataract extraction. I saw the operation performed a couple of times and also saw cases where it had been done recently. The results seemed excellent though there was marked posterior keratitis following the operation.

Amongst the allied branches of medicine in which visiting ophthalmologists are interested and which are particularly well represented in Vienna, are ear, nose and throat surgery, and radiology of the head. Dr. Hirsch in the Hajek Clinic and Professor Schuller in radiology, were found to be wonderful teachers and their classes were always easily filled. Hirsch has done more pituitary operations than any other man and his mortality is therefore lower than one usually finds in this branch of surgery. His method of teaching anatomy of the nose and sinuses is very striking and extremely practical. He has been teaching this subject for more than twenty years and his anatomical specimens are more than adequate.

Professor Schuller is a radiologist and an anatomist and his demonstrations are explicit and thorough. He never hesitates to name a line or a point and his judgment of the values of shadows and fine differentiations of shadows cannot fail to strike one with admiration for his ability. It was with a great deal of pleasure that I heard him speak with enthusiasm of the work of Granger.

Leaving Vienna, my next visit was to Budapest—in order to see the clinics of Groscz and that of Blascovics. We were far from home (I now say "we" for Dr. Smith joined me in Vienna), and we were made to feel welcome in these clinics in a way that warmed our hearts. Prof. Groscz is a man of great reputation in Hungary and, aside from his professorship in the university, he holds a place in the hearts of his countrymen. Everybody feels that he is a good man and one who has done much good for his country. In entertaining us he not only made every effort to show us his hospital, his methods of instruction to his university students, and his methods of performing ophthalmic operations, but he went beyond this and did that which most men do not, he assisted in making it possible for us to see the work done in other clinics in Budapest and thereby showed his truly generous nature. Professor Groscz is an extremely expert operator. His cataract operations are performed with great dexterity and celerity and are the most perfect examples of smoothness which I have ever seen in ophthalmology. His enucleation operation done according to the Vienna method and with short, straight scissors, is a thing of beauty. Six snips of the scissors are all that he requires to complete the operation. He always uses a superior rectus fixation in his cataract work and makes a conjunctival flap to complete his section. Both here and in the second eye clinic of Professor Hoor, we found the dry heat method of sterilization of instruments.

In Professor Blascovic's clinic we expected to meet one of the world's plastic surgeons and a man of great originality and resource. We were not disappointed.

He is a man of great affability and makes his visitor welcome at once. His clinic is a haven for those seeking practical instruction under one of the world's great masters and so popular is his work that arrangements must be made several months ahead of time. Professor Blascovics does not speak English and, therefore, the instruction is carried on in German. For our benefit he spoke with great distinctness and very slowly so that it was possible for us to understand most of what he said in explanation of his operative work. Where we failed to understand, his chief assistant who is a man of great accomplishment and who also speaks English, made it possible for us to comprehend the explanation. Blascovics is a very deliberate operator who never becomes flustered or excited. He is a man of great self-possession made possible, no doubt, by a phlegmatic nature and a world of experience. His method of performing cataract extraction is by preparing a conjunctival flap above, which is drawn over the corneal wound and anchored below to the bulbar conjunctiva. He completes his operation by the introduction of several drops of a steriile 20 per cent solution of argyrol into the anterior chamber. His method of operating for entropion is called "turning the tarsus" and consists in freeing the anterior and posterior surfaces of the fibro-cartilage of the lid from the skin and mucous membrane, dividing the elevator of the lid excepting three or four millimeters of the middle portion, turning the anterior surface of the fibro-cartilage backwards and closing the wound by tying previously introduced silk mattress sutures from the conjunctiva through the skin border at the cilia. It makes a very efficient entropion operation. His ptosis operation consists of doing a resection of the elevator of the lid. It produces a beautifully executed cosmetic and functional result. In performing his strabismus operations Blascovics does not hesitate to excise 11 to 12 mm. of tendon. His method of advancing the attachment of the muscle by forming a groove in the sclera to which the tendon is fixed, is unique.

In Prague we visited the clinic of Professor Elsching than whom no greater exponent of ophthalmology lives. Prague is situated in the heart of a beautiful country which promises to be one of the most prosperous and enterprising states of Europe. It is a very interesting old town, quite different from any town which I visited in Europe. We discovered December the worst possible time to visit this city for the weather was cold and wet and the inadequate hotels did not encourage us to prolong our visit. There are two universities in Prague, one German and one Czech and Prof. Elsching holds the chair of ophthalmology in the German university. He is a very learned man and one who has accomplished great things in eye diseases and is in my opinion the incarnation of modern German ophthalmology. He is painstakingly careful and thorough, an intense student, an indefatigable worker, wide awake to every source of knowledge and an excellent teacher and operator. That he is a first class clinician also, we learned in a very short time. That his staff co-operates with him and that his methods are so thoroughly designed and executed, is demonstrated by the fact that he does not hesitate to operate both eyes for cataract at the same sitting. That he is a great teacher, the world knows. Like all the clinics which we were privileged to visit, we received here great cordiality and assistance at every move. The men in this clinic were anxious to go into great detail in the explanation of their methods, clinical and operative, and were much more polite and painstaking and manifested a much more friendly spirit than we would have experienced in our own American clinics. If we failed to understand what was shown us in these clinics, it was not through any lack of effort on the part of the staff to make us understand and to help us. When we remember that so much of this occurred in countries with which we were recently at war, it cannot fail to

make us appreciate the fact that there is a brotherhood in medicine which delights in keeping alive the old Hippocratic spirit.

DISCUSSION.

Dr. Victor C. Smith (New Orleans): I had the pleasure of making part of this trip with Dr. Blum and, as he states, our reception in the various clinics was in every instance quite cordial. English is spoken by nearly all the chiefs. When at times it was not easy for them to explain in English what they wished to say, there was always an assistant who could speak English very well and who freely and willingly explained the operations.

The clinics seem to be better equipped with diagnostic instruments than the American clinics, and this applies to all clinics we visited. These clinics are more spacious than ours, and their patients are much more submissive. The medical and non-medical assistants seem to take great pride in their work and usually have been attached to the service for years. This of course makes the work faster, smoother, and more satisfactory in every detail.

In our clinics we often have a scarcity of medical assistants, and the non-medical assistants are frequently changed every two or three months, which makes the surgical work rather slow at times, and often very unsatisfactory.

Three facts stand out in the cataract surgery of European clinics:

First: That they operate on cataracts that are not mature.

Second: That they nearly always try to have a large conjunctival flap.

Third: That they rarely put the patient in bed after the operation and in most instances allow the patient to walk out of the operating room.

I believe their results are about the same as ours.

There is no one method of sterilizing pointed eye instruments which is apparently 100 per cent efficient, as is illustrated by the many different methods in use. The denaturing solutions used with alcohol often affect the edges. The use of high melting point iols is now being extensively used in this country.

The value of a smear and culture depends not so much on a totally negative finding as upon the quantity and kinds of organisms found. We must not forget that a few staphylococci are found in the conjunctiva of practically all normal eyes.

Retrobulbar injection for local anesthesia is one of the more important advances in ophthalmic surgery and properly used does not increase risk of operation. For the cleansing of skin of lids and the lashes, 5 per cent iodin or other solutions is more frequently used than in America. The almost identical end results lead one to believe this is rather a minor detail.

Of the various methods of immobilizing the eye, ocular fixation by forceps or suture through the superior rectus tendon has been especially developed and is extensively used by European ophthalmic surgeons. In a discussion with one of the assistants at the Elschuz Clinic, he told me that they never use cycloplegia. The speculum of Blascovics seems to hold the lids away from the eyes, but in a deep set eye it would interfere with the incision; the lids are so far forward it would be difficult to keep the knife away—nevertheless, it is a very ingenious instrument.

In a discussion of surgical methods used abroad, we must not lose sight of the fact that many variations of technic which are advantageously used in foreign countries are relatively impracticable in the hands of American ophthalmologists. This is proven by the fact that our visual results compare most favorably with those obtained anywhere in the world.

THE DIFFERENTIAL DIAGNOSIS OF HEMOLYTIC JAUNDICE.*

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and

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NEW ORLEANS.

The term "hemolytic jaundice" may be defined as a jaundice or pigmentation pertaining to a degeneration of the blood. As a name for a symptom complex or disease it specifically designates a condition in which there is a congenital or acquired abnormality in the structure of the erytrocyte whereby these corpuscles are more prone to destruction by the normal scavenger cells of the reticulo-endothelial system, resulting in anemia, pigmentation of the epithelium, enlargement of the spleen, debility, weakness, and death from some intercurrent disease made posssible by the generally lowered resistance of the patient.

*Read before Louisiana State Medical Society, April 26-28, 1927.

For a modern and complete review of the acquired type of this condition which was first described by Hayem in 1898[1] we would call attention to the book written by Drs. Pearce, Krumbhaar and Frazier on "The Spleen and Anemia."[2]

While there may be some doubt as to whether the increased fragility of the red corpuscles is more to blame than an increased destructive action by the endothelial cells of the splenic sinuses, it has been definitely demonstrated that a prompt alleviation of the symptoms follows the removal of the spleen, in which the greater portion of active blood destruction occurs. While there is some increase in this function on the part of the remainder of the reticulo-endothelial system following splenectomy the gross symptoms of the disease do not recur.

We have personally been able to observe the almost complete relief of the anemia in several operated cases, and have been thus stimulated to draw attention again to this disease, and further to point out the unfavorable results obtained by the ordinary medicinal measures directed toward a "stimulation" of the blood forming organs in a condition in which the bone marrow is already overworked in an endeavor to keep up with the increased destruction.

Hemolytic jaundice may apparently occur in two types—the chronic "familial hemolytic jaundice," and the more severe "acquired hemolytic jaundice." The typical clinical picture of acquired hemolytic jaundice may be exemplified in the following cases:

Case No. 1. Mrs. McC., aged 45 years. The patient came under observation in January, 1926.

Following the usual diseases of childhood she contracted yellow fever at 18. She was married the same year, and has borne six children. When 23 years old she suffered with a severe metrorhagia for two months. She contracted influenza in 1918, since which time she has complained of general ill health, pain in the right arm, palpitation of the heart and inordinate bleeding from the uterus. In 1925 radium was applied in the uterus followed by a complete cessation of periods, but with no relief with regard to her general condition.

During the past year she has lost 25 pounds in weight, has had a constant attack of sore mouth, muscular cramps at night, occasional periods of loose bowels, and marked dyspnea on exertion. Her present weight is 125 pounds.

The physical examination shows a yellowish skin and sclerae. The face is wrinkled, the skin being dry. The blood pressure is systolic, 132; diastolic, 80. There is a soft systolic blow over the cardiac area. The lungs are normal. The spleen is enlarged to at least 3 times the normal size and is easily palpable. The liver is 4 centimeters below the costal border in the mid-clavicular line. The uterus is normal by vaginal examination. The reflexes are sluggish.

The blood shows the following: Erythrocytes 3,280,000. hemoglobin 29 per cent; color index, 0.44. Marked anisocytosis and poikilocytosis, moderate polychromatophilia and slight stippling. Hemolysis began at 0.42 per cent saline, and was not complete at 0.32 per cent. The platelets are normal. No malaria plasmodia were found. The leucocytes were 1750, with small mononuclears, 27 per cent, neutrophiles 71 per cent, eosinophiles 1 per cent; and basophiles, 1 per cent. The Wassermann reaction was negative.

The urine was normal, showing no urobilin or urobilinogen. The feces contained no parasites, but the meat remains were excessive.

Diagnosis: "Hemolytic jaundice" based on the findings of enlarged spleen, hematogenous jaundice increased fragility of the blool cells, an anemia with a low color index and evidence of blood production by the presence of polychromatophilia (basophilic staining cells, which are indicative of "newly" formed cells).

Splenectomy was advised and refused. A transfusion of blood was accepted. Following this, and with iron, arsenic and diet she gained 22 pounds in weight during the subsequent few months.

CASE NO. 1
Mrs. M. McC. Age 45 years

	Jan. 1926*	Dec. 1926
Erythrocytes	3280000	4675000
Hemoglobin	29%	49%
Color index	0.44	0.53
Anisocytosis	Marked	Marked
Poikilocytosis	Marked	Marked
Nucleated reds	None	None
Polychromatophlia	Moderate	Marked
Stippling	Slight	Slilght
Fragility of reds	0.42 to 0.32%	——
Platelets	Normal	——
Leucocytes	1750	——
Wassermann	(——)	——

*During this interval one transfusion was given, + full dosage of iron and arsenic.

In December of 1926 the blood picture showed 4,675,000 erythrocytes, with 49 per cent hemoglobin, and a color index of 0.53, and with the same abnormalities in morphology and staining reaction. The spleen had apparently decreased slightly in size. The general condition was about the same as when she was first seen.

Case No. 2. Mrs. P., aged 38 years, first seen in consultation in April, 1921.

There were no serious illnesses recalled during childhood or adolescence. She was married at 20, and has given birth to three children with one miscarriage. At 34 she contracted diphtheria followed by a phlebitis of one leg which lasted for one month, since which time she has felt fatigued constantly and has had frequent headaches. She has lost 25 pounds during the past 6 months. Her present weight is 117 pounds.

The physical examination revealed a noticeably yellowish discoloration of the skin. There were signs of old tubercular scarring of the right lung apex. The heart was slightly enlarged, but with no murmurs. The blood pressure was systolic, 115; diastolic, 78. The liver and spleen were both palpable.

The erythrocytes were 4,480,000, hemoglobin, 65 per cent, color index, 0.73. There was marked anisocytosis and moderate poikilocytosis, but no polycromatophilia was noted. The leucocyte counts were normal. The urine was found to be normal.

One apical tooth abscess was treated by removal of the tooth, and the patient was placed on iron and arsenic by mouth.

In October, 1921, a gain of 5 pounds in weight was reported. There was some little general relief of symptoms.

An operation on the cervix for laceration, and the removal of a small fibroid was performed in March, 1922, and she became pregnant two months later.

In November, 1922, during the sixth month of gestation, the blood examination showed the following: Erythrocytes, 3,130,000, hemoglobin, 43 per cent, color index, 0.69. Anisocytosis and poikilocytosis were present. There was also marked polychromatophilia, but no nucleated erythrocytes. The leucocytes were 1,175, 80 per cent of which were neutrophiles.

With a blood pressure of 85 mm. of mercury systolic, a soft blow at the apex, the above history and the present physical appearance of the patient a therapeutic abortion was strongly urged and was refused. The pregnancy was carried through to a successful termination.

In July, 1923, the general picture was as follows: Erythrocytes, 3,400,000, hemoglobin, 40 per cent, color index, 0.59. Some anisocytosis and poikilocytosis. Slight regeneration only was noted in the small amount of polychromatophilia. The leucocyte count was normal. The blood pressure was systolic, 106; diastolic, 64. Her weight was 112 pounds.

With intensive treatment of iron, and hypodermics of cacodylate of sodium the blood count by November, 1923, was the following: Erythrocytes, 4,245,000, hemoglobin, 31 per cent, color index, 0.36. Marked anisocytosis, poikilocytosis and polychromatophilia were present. The fragility test showed a beginning hemolysis at 0.48 per cent saline, and not quite complete hemolysis at 0.20 per cent. No nucleated erythrocytes were found. The leucocyte count was normal.

The spleen was now easily palpable. The diagnosis of hemolytic jaundice was stressed, and an operation for the removal of the spleen was urged. This was refused by the patient.

The iron and arsenic were continued and in September, 1924, with a weight of 114 pounds, marked dyspnea and fatigue on the slightest exertion the following blood picture was obtained: Erythrocytes, 4,430,000, hemoglobin, 39 per cent,

CASE NO. 2

Mrs. P. Age 38 in 1921

	April, 1921	November, 1922	November, 1923	September, 1924	March, 1925	November, 1926*
Erythrocytes	4800000	3130000	4245000	4430000	3650000	4490000
Hemoglobin	65%	43%	31%	39%	——	54%
Color index	0.73	0.69	0.36	0.44	——	0.61
Anisocytosis	Marked	Marked	Marked	Marked	——	Marked
Poikilocytosis	Moderate	Marked	Moderate	Moderate	——	Moderate
Nucleated reds	None	None	None	None	——	None
Polychromatophilia	Slight	Marked	Slight	Marked	——	Marked
Stippling	None	None	None	None	——	None
Fragility of reds	——	——	0.48—0.20%	——	——	——
Platelets	——	——	Normal	——	——	——
Leucocytes	——	1175	——	——	——	4250
Wassermann	(——)	——	——	——	——	——

*During the above period one transfusion as well as many forms of iron and arsenic were given. Various special diets were also of no value.

color index, 0.44. Anisocytosis, poïkilocytosis and polychromatophilia were present. The leucocytes were 4,250, with a normal differential count.

In March, 1925, the erythrocytes had dropped to 3,650,000, and in July a blood transfusion was given to check the extreme weakness. This was followed by a severe reaction with fever for one week and then a gradual improvement in her general condition.

When last seen, in November, 1926, the blood count was: Erythrocytes 4,490,000, hemoglobin, 54 per cent, and color index, 0.61.*

Both of these patients present the definite symptom complex of hemolytic jaundice, i. e., anemia, hematogenous jaundice, spenomegaly, secondary type anemia, increased fragility of some of the erythrocytes with an increased resistance to hemolysis by the young cells present, evidences of blood formation, and no repsonse to medication which ordinarily affects the production of erythrocytes or hemoglobin. Gastric analysis in these cases showed the presence of free hydrochloric acid.

The diagnosis of hemolytic jaundice is differentiated from somewhat similar conditions for the following reasons:

Pernicious anemia is characterized by a high color index, megalocytosis, evidence of achlorhydria, apparent non-production of blood, and no splenomegaly.

*(Nov. 4, 1927.) Case No. 2 had to be transfused again in October on account of increasing anemia and general debility.

Chlorosis shows much the same blood picture with the exception of a normal fragility test and a ready response to iron.

Banti's disease presents a greater enlargement of the spleen followed by liver enlargement and ascites. Hemorrhages from the gums, stomach and kidneys are more marked. There is no jaundice or altered fragility of the erythrocytes, and the anemia is seldom quite as marked.

Malarial splenomegaly can only be diagnosed by the finding of the parasites during one of the frequently recurring paroxysms of fever. This condition is certainly extremely rare and presents very little difficulty in its exclusion.

Hodgkin's disease, when primary in the spleen, may present a very similar clinical picture. There would, however, be an absence of much evidence of active reproduction of erythrocytes and a normal fragility test would be obtained.

Thrombopenic purpura with splenomegaly would show the definite reduction in blood platelets during the active hemorrhagic stages.

The usual severe secondary anemias following typhoid fever, pneumonia, acute rheumatic fever and dysentery all give a very sallow complexion or anemia, and occasionally a palpable spleen—but in these conditions the etiology of the process is usually evident and there should be no confusion.

CHART NO. 3

Important Differential diagnostic features of:

	Ac. hemolytic jaundice	Pernicious anemia	Chlorosis	Banti's	Hodgkin's
Anemia	Moderate to severe	Marked	Moderate	Moderate	Slight
Color index	Low	High	Very low	Low	Normal
Fragility	Increased	Decreased	Normal	Normal	Normal
Jaundice	Present-hematogenous	Very rare	None	None	None
Young reds in circulation or evidence of blood production	Present Polychromatophilia Reticulated reds +	Noticeably absent except during remissions	Slight	Slight	None
Splenomegaly	Moderate	None — Diminished	None	Enlarged	Enlarged
Achylia	None	Always present	None	None	None

In conclusion we would like again to emphasize that all cases of severe chronic anemia, especially with splenomegaly or with marked evidence of blood production as shown by moderate or marked degrees of polychromatophilia in the stained blood smears, be carefully differentiated by all clinical and laboratory means with the hope that a diagnosis of hemolytic jaundice can be secured and surgical treatment instituted early enough to forestall the years of miserable existence of these persons as portrayed by the two case histories here presented.

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DISCUSSION.

Dr. A. A. Herold (Shreveport): This condition I believe is comparatively rare, although in the past we may have made the mistake of diagnosing some cases at Banti's disease or splenomegalia.

It seems that the essential points, so far as we can learn, are vulnerability of the red blood cells to hypotonic saline and a jaundice, the symptoms of marked secondary anemia, low color index, polychromatophilia and poikilocytosis.

I don't know that there is a thing I can add to the diagnosis except what Dr. Elliott brought out. It ought to be comparatively easy to distinguish it from pernicious anemia. I think the fine point is when you distinguish it from such conditions as Banti's disease and other marked secondary anemias.

I know we all feel that Dr. Elliott's paper is very timely because it will keep us on the lookout for such conditions which can be remedied, provided they are diagnosed early enough.

Dr. J. H. Musser (New Orleans): I enjoyed very much indeed the opportunity of hearing Dr. Elliott's paper. I thought at first, from the title of his paper, that he was going to discuss the acute types which are represented by an increased destruction of the red cells such as we see most typically in acute bacterial endocarditis.

As I see it, I think there are really two different types of disease which exhibit very much the same phenomena. In the familial type, for example, I think that, just as Dr. Elliott has brought out, there is undoubtedly some disturbance of function of the spleen. In the secondary type, whether the spleen is overactive or not, whether it is destroying the red cells more rapidly or not as a result of inherent function of that organ, or whether it is because of the increased fragility of the red cells, it is quite possible that the spleen is simply overfunctioning and does not have an inherent dystrophy as it does in the familial type. For that reason I am rather of the opinion that the two diseases are not essentially the same, although the spleen plays an important part in the manifestations of the disease.

Of some value in this condition, of course, is the estimation of the amount of bile in the serum. I think of particular value, which Dr. Elliott did not stress, is the increased number of so-called skein forms of the erythrocytes. I happened to pick up last night an article reporting on some other condition. The author mentioned a case of hemolytic jaundice in which the highest figures he had seen at any time for this particular cell were present.

The fragility of the red cells, as Dr. Elliott pointed out, is sine qua non for the diagnosis. I quite agree with Dr. Elliott that this first case probably represents a case of hemolytic jaundice. I think that the low level shows an appreciable reduction in the resistance of the red cells and I think in conjunction with the clinical findings it is only fair to consider this case a case such as Dr. Elliott has done.

The increased fragility of the reds occurs, of course, not only in hemolytic jaundice, but in other conditions, but there is usually not very much difficulty in making the diagnosis. Incidentally, I think that it was Dr. Elizabeth Bass who has told me that there is a family in New Orleans in which there occurs true familial jaundice. Some members of the family exhibit very beautifully indeed a persistent jaundice, which is apparently this typical inherited dystrophy.

Dr. W. S. Kerlin (Shreveport): I can't add anything to what has already been brought out in connection with the diagnosis of hemolytic jaundice. Dr. Elliott mentioned the fact that in the splenomegalies the association with malaria, that it, the demonstration of the malaria organisms was rarely ever observed. I believe that to be true, but about six months ago we had occasion to observe a case in the Charity Hospital at Shreveport, a little boy about three years of age with a typical syndrome of myelogenous leukemia in which the blood showed a fairly good number of the ring form of parasites with about, I think a total count of 100,000 leukocytes, with a typical differential count of quite a large percentage of myelocytes in the blood. I just mention that case for Dr. Elliott's information.

Dr. J. A. Crawford (Lake Charles): I want to say that just at present I have in my charge a baby that came to me when it was a month old. I examined it and wrote down an absolutely normal child. At two months old my partner examined it and wrote down possibly enlarged spleen. At three months the spleen was definitely enlarged. That mother then gave me the history. I had seen, forgetting it, in a clinic here, a child about five years ago that died of enlarged spleen and I don't know the diagnosis. About two years before she had a child die in the Charity Hospital with an enlarged spleen and the diagnosis was splenomyelogenous leukemia. I looked up the record and it did not look like that from the blood count.

I saw the second child and diagnosed it as hemolytic jaundice. I did not have the test made on the increased fragility of the red blood cells. This child I am now seeing in the clinic is about six months old, has the blood count, the white cells varying from ten to twenty thousand, the differential count practically normal, has many reticulated red cells, acidosis and fever. Both of them were .3½ to .3, which would be against hemolytic jaundice, but she has lost two children from that and the third one will go and she has not given authority to have a splenectomy performed.

Dr. J. B. Elliott (closing): The sole object of making this report was the fact that Dr. Johns and I feel that patients are being treated with iron and arsenic and transfusions that should be operated upon. In other words, Banti's disease and this disease of jaundice should not be treated by the physician, they should be turned over to the surgeon and the spleen removed. That is the only way to cure. Otherwise they drag along five or six years and sometimes eight years and they are not well and are carried off by any inter-current diseases. When you make the diagnosis, please don't wait; have the spleen taken out and discuss the case later.

Dr. Allen Eustis (New Orleans): Before Dr. Elliott sits down I would like to ask one question. In advising operation would his hemoglobin percentage be a guide to advise prompt operation with as low a percentage of hemoglobin as thirty per cent?

Dr. Elliott: When you see a patient gradually going down hill; see a patient treated with different hypodermics and getting a little better and then going down again; dragging along from year to year; you must do something for his condition. We have a case on hand right now. Four months ago Dr. Maes tried to take out the spleen but couldn't get it out, it was so adherent, and even though he couldn't take it out entirely that man has improved a little bit. I saw a case, in the past year, of Banti's disease brought to the office with hemorrhage from the stomach and hemoglobin down to nineteen per cent. We gave the boy two transfusions and operated. That was last year and you should see that boy now. In other words, you have got to run some risk with these cases. They are going down hill and are going to die or be carried away by chronic disease of the liver and kidneys after a long period of misery. Run a risk on the patient though the hemoglobin is a little low and operate.

REVIEWS

THE ROLE OF LIGHT IN PHYSIOLOGY AND PATHOLOGY.

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Those interested in the biological action of radiation (ultra violet, visible and infra red) are often discouraged because of inconclusive or conflicting results, and above all because of an inability to more than hint at plausible reasons for the reactions obtained on normal and abnormal animals and men. The physiologist, however, is not alone in this. A reading of the literature dealing with the "chemical action" of "ultra violet rays" impresses one with the need of more research on even the simplest reactions and there are but few instances of photochemical effects where the physical process is understood. Furthermore, as Haberlin and his co-workers (1923) have pointed out, the lack of agreement between practical or therapeutic results on the one hand and scientific or experimental on the other is due to the fact that the experimental observations have been made for the most part on healthy men and animals and the practical or therapeutic results have been obtained on diseased persons. The sick organism is a much more

delicate mechanism than the well, there being considerable evidence to show that diseased tissue is more susceptible to radiation than normal, while the animal skin is an entirely different organ from the skin of man.

It has long been recognized as a commonplace fact that the health of human beings is affected by sunlight and that the effect is not due merely to the heat of the sun's rays. The summer exodus from the town to the hills and the seashore, and the migration for a period of the dark winter months, by those who can afford it, to the sunshine of the hills or the coast is at bottom an expression of a natural instinct to seek the life-giving rays of the sun.

Industrial developments during the 19th century tended to deprive people of sunshine. During this period the progress of civilization, which was due to the invention of mechanical devices rather than to increased wisdom in the art of living, was such that an increasing proportion of both working and leisure time is now spent indoors. Even out-of-doors in industrial areas the smoke cuts off much of the sunshine and as we now know, it is especially effective in cutting off the wave lengths 290 to 330 millimicrons which are effective in rickets and in the production of pigment. (See, for example, Bundesen, Lemon, Falk and Coade, 1927). During the past few years an intense interest has developed in heliotherapy or curing by sunlight and the use of radiant energy, either from the sun or from an artificial source, has become an important branch of clinical medicine and a large amount of research work is being done to determine more fully the effects of these rays in health and disease and the best methods of producing and using them.

The results of exposure to the radiation of the sun, the C arc and the Hg arc in quartz are no longer in doubt. It has been established that light treatment is excellent for surgical tuberculosis and rickets and the effects on many other diseases show that we have in this therapeutic measure a powerful stimulant to general health and in particular of the defensive mechanism of the body against chronic infections. Skin diseases such as psoriasis, ichthyosis, eczema, and boils, chronic anemias of obscure origin, nutritional weakness and wasting in infants, chronic bronchitis and the fat flabby condition of the sedentary, over-fed, middle aged person, chronic phthisis, the debility following acute infectious disease, etc., are greatly benefited (Hill 1926), and the healing of refractory wounds of all sorts (gun shot, burns, frost bites) is accelerated (Bernhard, 1917, 1926). While darkness, particularly when the diet is adequate, seems to exert no detrimental influence over long periods of time (as evidenced by the physical condition of the members of polar expeditions, etc., and mine horses), the lack of intense daylight, if not of sunlight or of quartz lamp or carbon arc radiation, when the diet is even slightly unbalanced as to Ca, P, and the vitamines A and D, on general physical well being and nutritional condition is abundantly evident. It has been clearly demonstrated that the growth of animals and children on a diet badly balanced as to Ca and P (rickets, tetany) is benefited and that the absorption of Ca and P in the lactating animal is increased by irradiation but the physiological mechanism by which these results are produced is by no means established.

The curative action of such radiation in rickets and its beneficial effect in the treatment of surgical tuberculosis has led to the general conclusion that it might be expected to increase the resistance of animals and man to all infection. This conclusion is not materially supported by any experimental evidence. Although ultra violet radiation can cure and prevent rickets, this is a disease due to a dietary deficiency, not to an infectious organism, and other dietary diseases such as xerophthalmia and scurvy are not benefited by radiation (Hill and Clark, 1927).

Sonne (1922) believes that specific toxins (e.g., diphtheria) may be destroyed by virtue of the action of luminous rays in heating the blood to above fever temperatures (47° to 48° C in and below the skin), but Leonard Hill (1926) reports experiments by Hartley showing that light baths have not the least effect on specific immunity, although they do increase the general resistance of the body to infection by increasing the bactericidal power of the blood.

Pearce and van Allen (1926) have obtained definite indication of a relationship between the nature or character of light and the physical state and functional activities of animals under controlled conditions of light and have demonstrated that (1927) an environment of constant and continuous light, excluding the ultra violet rays shorter than 300 to 310 millimicrons, and of constant darkness influences the course and character of a malignant disease of rabbits induced by a transplantable neoplasm, (see also Pearce and Brown, 1927). In general the periods of maximum and minimum sunlight corresponding with summer and winter are associated with relatively low levels of malignancy while the periods of greatest malignancy occur at times of abrupt and rapid changes in the hours of sunshine coinciding roughly with the spring and autumn months. Brown and Pearce (1927) report that in rabbits innoculated with Treponema pallidum, in general, the efficiency of the reaction to the infection increases with the amount of light received and with the constancy of the exposure but that it is evident that changing conditions of light environment are a disturbing factor and may counterbalance the beneficial effects of the light itself.

C. M. Hill and Clark (1927) investigated the effects of quartz Hg vapor lamp radiation on the resistance of albino rats to a Pneumococcus I infection. They found no change in the erythrocyte or leucocyte count and while there was a consistent increase in platelets in all the irradiated animals there was no correlation between a high platelet count and subsequent resistance to a general infection with Pn. I. They conclude that the use of ultra violet radiation is not justified as a general therapeutic agent and that there is little to support the belief that it is capable of increasing natural resistance in normal individuals.

There is a general lack of appreciation of what radiant energy embodies, of how the radiation of the quartz lamp and of the C arc differ from that of the sun, of the importance of the intensity of energy, its duration of action, or its dosage. We can not always depend on the sun because, aside from its being often obscured, it is a variable star, so we must have recourse to artificial sources. Helio—and phototherapy must be based on a strong foundation of physics. It should be obvious that if we are trying to copy sunlight we should know something about it as well as about the energy emitted by artificial sources. Effects are sometimes attributed to ultra violet radiation when visible radiation is present. What effect may the latter have had? Often when screens are used it is assumed that the light as it appears to the eye is the only radiation present, but most screens transmit many wave lengths besides those seen. Such procedure is responsible for much of the confusion found in the reported results of the use of radiant energy.

Of the many available sources of the sun, the Hg arc in quartz, and the C arc burning solid or cored carbons filled with mixtures of rare earths are of practical importance. There is a common belief that the radiation of such sources is solely or mainly active because of the ultra violet fraction. This may be so, but it has been demonstrated in only a very few instances, such as the cure and prevention of rickets, and the formation of melanin in the skin. On the other hand there is much evidence that the effects observed are due to the entire spectrum. In some cases the evidence points to the visible portions as be-

ing particularly active (Sonne, 1921, 1926; Loewy and Dorno, 1925). In others the action of certain wave lengths in the ultra violet has been shown to be increased by the simultaneous action of the visible and infra red. The appreciation of this intensification of the action of ultra violet by visible and heat rays is demonstrated by the placing of a cluster of incandescent lamps around the hood of quartz Hg arc lamps.

The sun's spectrum is a continuous one. The shortest waves in the solar spectrum are about 290 millimicrons while the longest are about 5 microns, although there is very little energy beyond 2 microns. Solar radiation is often described as extending from 0.3 to 3 microns. Many artificial sources contain much shorter and much longer wave lengths. The spectrum of Hg vapor in quartz is discontinuous (strong emission lines on a background of a weak continuous spectrum) the shortest lines getting through the quartz and air being 185 millimicrons. The white flame C arc spectrum consists essentionally of two: a line spectrum from the metals added to the carbon (the radiation of the arc vapors) upon which is superposed the continuous spectrum of the incandescent positive crater. The spectrum of the snow white flaming arc extends in the ultra violet to 218 millimicrons, though most of the energy is at wave lengths longer than 290 millimicrons and to the neighborhood of 6 microns in the infra red.

Several methods for determining the amount and character of radiation from different sources are in use at this time. The most accurate is that combining the spectroscope and the thermophile or the pyrhiliometer. Other methods are based on various photochemical and thermometric reactions. In general these methods are cumbersome and inaccurate. But one, that of Clark (1924), wherein use is made of the effect of ultra violet light on lithopone, gives promise of practical value. Webster, Hill and Eidinow (1924) and Hill (1924) take the amount of bleaching of methylene blue in an acetonemethylene blue mixture in quartz tubes as indicative of the intensity of ultra violet. Pohle (1926) uses a method based on that of Bering and Meyer in which a solution of hydriodic acid in water frees iodin under the influence of energy. However, at present the thermoelectric method is the simplest accurate method available for use in the field under consideration. By this method radiant energy is transformed by a thermophile into electrical energy which is easily measured accurately (Mayerson, Gunther and Laurens, 1926).

Comparison between sources shows the importance of specifying the percentage distribution of the energy emitted. An air cooled quartz mercury vapor lamp has a percentage distribution about as follows: 30 percent ultra violet, 53 percent visible and 17 percent infra red. In the water cooled lamps the ultra violet equals the visible. The energy of a 28 Amp. flaming C arc is 15 per cent ultra violet, 59 per cent visible, and 26 per cent infra red. Sunlight at sea level contains from 1 to 4 per cent ultra violet, 42 to 53 per cent visible, and 57 to 43 per cent infra red. Sunlight on Mount Wilson contains from 2 to 5 percent ultra violet, 50 to 55 per cent visible, and 48 to 40 per cent infra red and on Mount Whitney, 3 to 6 percent ultra violet, 54 to 55 per cent visible, and 43 to 39 per cent infra red.

Owing to the fact that ordinary window glass absorbs wave lengths shorter than 320 millimicrons there have been developed in recent years, in imitation of quartz, a number of substitutes for window glass, letting through a considerable proportion of the ultra violet of sunlight. Some of these are the Corning glass G 980 A (clear), Vitaglass, Quartzlite glass, paraffin cloth glass, wire-mesh screen glass (celluloidinous material), etc.

There are indications that light can act in more than one way: it may inhibit pathologic processes or destroy pathogenic organisms, or it may conceivably promote

some of the bodily functions that are perhaps dependent on a stimulus from without. Irradiation, with the wave lengths that we are interested in, has two effects, stimulative or biologic and lethal or abiotic. In general the first is exerted by wave lengths to as short as about 290 millimicrons, the second by those shorter. Put another way it may be said that the longer ultra violet rays between 400 and 300 millimicrons do not produce the marked effects obtained from those shorter than 300 millimicrons. Finsen at first thought that the radiation with which he cured lupus acted as a bactericide. Later the question arose as to whether the radiation did not rather act as a stimulant to the tissues than as deadly to the bacilli. In the action of radiation we have two elements, a "photochemical" and a "biological" one. The photochemical effect ends with the production of dermatitis and its local effects; while the biological, the effect on circulation, metabolism, etc., may last for some time.

Hinrichs (1925) has briefly reviewed the various views as to the action of ultra violet radiation. It produces primarily a surface effect; it inhibits the action of hormones and enzymes; it kills protoplasm by coagulation and not by the inhibition of enzyme action; its effect is due to sensitization to heat; its action interferes with the time relations in a system of interdependent, progressive processes; its effect is due to the precipitation of the proteins of protoplasm following electron emission; certain constituents of protoplasm, as tyrosin and phenylalanin, act as optical sensitizers rendering living cells susceptible to the toxic action of ultra violet radiation. According to Petersen and Ottingen (1927) irradiation may act directly on the skin producing an increase in permeability, precipitation of cell proteins and changes in the lipoids which result in the production of cholin (parasympathetic stimulation); secondly it may influence the capillary endothelium and nerve endings; and thirdly it may directly affect the blood proteins. At one time there was considerable argument as to whether radiation could act directly on deep seated organs, and there are still some who believe that this is the case although the evidence is very strongly against it.

Sonne (1921) holds that the view that the therapeutic effect of the universal light bath is essentially due to the ultra violet rays is not sufficiently warranted. Based on the specific absorption relations of the "visible heat rays" during irradiation of the human skin the following theory is advanced; the curative effect of the universal light bath (arc lamp) is due to the capacity of the luminous rays to heat a very essential portion of the aggregate blood volume of the organism to a temperature possibly exceeding the highest ever measured fever temperature without causing the body temperature, owing to its heat regulating capacity, to rise to any measurable degree. The specific heat of this blood circulating in the organism acts as a curative agent.

Hill and his co-workers (1924) have conclusively demonstrated that melanin acts as an absorption screen and not as a sensitizer, the energy absorbed being converted into heat. By this conversion the sweat glands are stimulated and the moisture acts as a further protection. Owing to pigment the black man can have a thinner skin and so lose heat by convection more easily; he also is excited to more active sweating than the white man (see also Hausmann, 1923).

One view regards the various effects as due to chemical changes in the skin, which bring about influences on distant parts either by reflex action or by diffusion into the blood stream and transport to the parts affected. Cellular degeneration is a frequent sequel to irradiation of tissues, the degeneration consisting in various abnormal features appearing among the cells at differing times after irradiation. The changes in structure may be due to direct action upon the internal constituents of the

cell or to some interfacial action; Harris (1925), Hill (1924), Kroetz (1926). Lewis (1926) and Lewis and Zotterman (1926) have shown that the action of ultra violet radiation on cutaneous vessels like other agents such as freezing, burning, etc., which cause tissue injury, sets free in the skin vasodilator substances with histamin-like action which diffuse into the surrounding skin to be then conducted away by lymphatic channels. The vessels become dilated because they lose contractile power and are more or less irresponsive to vasoconstrictor substances and to histamin.

Rothman's observations (1923) go to show that the tonus and irritability of sympathetic nerves is decreased by the cutaneous inflammation, there being for some time after a reduction in blood pressure, decreased blood sugar, increased sugar tolerance, a decreased secretion of adrenalin, decreased blood Ca and a relative lymphocytosis and eosinophilia (see also Petersen and Ottingen, 1927).

Intestinal absorption certainly plays an outstanding rôle in the effects of radiation, Orr, Holt, Wilkins and Boone (1923, 1924), Telfer (1924, 1926), Grayzel and Miller (1927). During active rickets considerable amounts of Ca and P are absorbed from the bowel and re-excreted into it and irradiation prevents much of the abnormal re-excretion, as well as promoting absorption from the intestine. Park (1923) and Park, Guy and Powers (1923) point out that in animals on ricket producing diets it is obvious that the beneficial action of radiant energy and of cod liver oil is not limited to the rachitic processes. Their action is by supplying something which makes metabolism more efficient, causing the organism to operate with increased economy. They do not bring new processes into operation, but rather permit the organism to have full use of processes which are natural to it but not effective at the time.

The identity of the influence on Ca metabolism of exposure to radiation and the administration of cod liver oil is due to the fact that there are two methods by which the body may acquire the same "antirachitic factor," that by the action of light this substance can be formed either in the cells of the living creature or in its food stuffs and that many substances can be imbued with the antirachitic factor by exposure to radiation. Of more than usual interest is the demonstration that certain substances, inert in so far as antirachitic, bone calcifying and growth promoting power are concerned, may have these capabilities bestowed upon them by irradiation, Hess (1924), Steenbock and Black (1924). The fact that organs such as skin, liver, lung and muscle, as well as body products such as eggs, milk and feces also have calcifying and growth promoting properties imparted to them is a matter of scientific and clinical importance. That an animal when irradiated has constituents in its body affected in such a manner that they become antirachitically active has far reaching implications in connection with our ideas as to the mode of action of radiation, as has the fact that diets which are deficient in certain respects may be made complete by irradiation or by the addition of irradiated substances such as cholesterol. A list of the substances which have been activated includes the following: olive oil, linseed oil, cottonseed oil, corn oil, nut sterol, cholesterol, phytosterol, ergosterol, skin, dextrin, wheat, wheat flour, milk, milk powder, chicken mash, hay, spinach, lettuce, orange juice, and sawdust. Some of the things that have proven refractory to activation following irradiation are the following: a solution of chlorophyll, Hb, red blood cells, cream, oleic acid, egg phosphatide, mineral oil, casein and agar.

The question as to whether irradiation of the mother produces a protective quality which can be transmitted through the milk to the young or to other animals has received considerable attention, Luce (1924), Chick and Roscoe (1926) etc.

Hess, Weinstock and Sherman (1926) show that human as well as cow's milk can be thus activated. Hart, Steenbock, Scott and Humphrey (1927), however, report that ultra violet radiation is not, through direct impingement on the animal, a factor of consequence in the Ca and P metabolism of the dairy cow. The cow derives its antirachitic vitamine from the feed and is different in this respect from man, the goat, the chicken and the rat, all of which can be favorably influenced directly by the short wave lengths of solar radiation.

The work on the activation of food stuffs as well as of animal tissues and organs (skin, liver, etc.) points to a possible mode of action through the intermediation of an active substance which circulates in the blood stream. The epidermis contains a large amount of cholesterol in its deeper layers in close approximation to the prickle cells, and Hess, Weinstock and Sherman (1925) have shown that human and calf skin can be antirachitically activated by quartz lamp irradiation. The presence of cholesterol and its derivatives in the skin and its fatty secretions, together with easy absorption by the skin of fats rich in cholesterol, point to the conclusion that a vitamine activated in the skin by radiation is absorbed by the blood stream.

In the activation of cholesterol the changes depend on the presence of the double bond—of the unsaturated carbon linkage. The importance of the secondary alcohol group in the sterol molecule in connection with activation has been demonstrated although the alcohol group does not have to be intact and may be replaced by certain acid radicals. (Bills and McDonald, 1927).

Ergosterol (an optically active sterol possessing three double bonds and a hydroxyl radical), a recently discovered product of great potency, is, in all probability, the naturally occurring parent substance of vitamine D. It, of all sterols irradiated and tested for antirachitic power, is the only one which acquired antirachitic activity (Hess and Windaus, 1927; Rosenheim and Webster, 1927). Hess and Windaus report that when irradiated with a quartz Hg lamp it has antirachitic action when as little as 0.003 mg. per capita is fed to rats. Approximately 1 mg. of cholesterol is needed to initiate healing.

In connection with the activation of skin cholesterol recent work showing that the efficient agent can be absorbed otherwise than through the intestinal wall is of importance (see Soames, 1924; Garland, 1926; Kramer, Kramer, Shelling and Shear, 1927; Wilkins and Kramer, 1927).

It is extremely difficult to formulate any all-inclusive scheme of the action of light on living organisms. The effect of light for which we have explanations, based particularly on analogy with non-living substances, are either physicochemical or chemical in nature. Between the two there are many phenomena which are only explicable on the basis of a shift from one or the other of these two points of view.

One conception of the effects of radiant energy upon living matter is that the heat effect is due to increased molecular motion while the "abiotic" effect exerted by wave length shorter than about 295 to 300 millimicrons is due to direct atomic disintegration of the molecules with immediately resulting chemical changes. The effect of radiation of given wave length is directly proportional to the coefficient of absorption of the protoplasm for the wave length.

All radiation transfers energy to molecules which absorb it and produce heat, but certain frequencies fall into step with the oscillation periods which depend on the molecular structure and so break up the molecule when the energy absorbed is sufficient. The particular kind of radiation which produces this direct action depends on the character of the molecules.

Bovie and Hughes (1918) and Bovie (1922-1923) demonstrate that rays from

widely separated regions of the spectrum, provided their ability to penetrate the organism is such that similar parts are radiated, produce similar physiological effects regardless of the difference in wave length. In other words, it is the instability of the physiological mechanism rather than the wave length which determines the nature of the physiological effect produced. Bovie postulates, therefore, that the differences observed in physiological effects are due to differences in penetrating power rather than to any action specific for wave length. In the visible and ultra violet regions absorption depends upon molecular composition, in the roentgen and gamma regions, upon the atomic composition of the irradiated protoplasm.

Clark (1922) has given a theory of the action of radiation based on atomic structure, configuration of electrons, etc. The effect of radiation is due to the chemical changes which it causes. With simpler chemical substances light is seen to act as a powerful oxidizing and reducing agent and it may do so with the more complex chemical compounds in the living cells. All photochemical reactions are initiated by a change in configuration and velocity of the electrons of the substance absorbing the radiant energy. If the incident energy has small enough wave lengths to produce vibrations in the electrons, instead of in the molecules and atoms, the absorption of energy may result in the activation of electrons. The activated electrons may be ejected from the molecule as the result of absorption of energy, in which case the molecule is ionized; or they may be displaced to an outer orbit, in which case the atom or molecule is activated. In either case it will show altered chemical reactions. In a paper dealing with the coagulation of egg albumin Clark (1925) gives evidence that the changes in viscosity and surface tension are probably associated with a change in charge due to loss of electrons on irradiation, or with a change in state of aggregation or both. Saidman (1925) reports that a man loses a negative charge more quickly when irradiated with a quartz Hg lamp than when simply remaining in ordinary room light. Koenigsfeld (1921) and Hill (1926) likewise believe that the action of radiation consists essentially in the setting free of electrons which leads to a disturbance of cells and therefore also of the chemical equilibrium. The pathological action of radiation consists in the knocking down of the entire arrangement of the electrons so that their proteins attain an isoelectric state and coagulate.

But, even if the effects of irradiation are photoelectric, it is clear that radiation produces some substance or substances in the skin which eventually pass to the blood so that all the observed effects are the expression of photochemical change.

Some mention should be made of the action on the nervous system with particular reference to psychic influences as exemplified in the sensations of well-being. Sunlight is unquestionably one of the various factors having to do with the sensation of bodily and mental well-being. Striking results are also reported following irradiation with Hg and C arc lamps. Even after so mild a dose that there is no erythema there is a feeling of exhilaration expressing itself in the joy of work and of living, Hausmann feeling as if he had been on a mountain trip. Hasselbalch described his sensations following a two hour irradiation with a strong C are producing a marked erythema. Instead of the usual evening fatigue with frequent yawning he felt lively and indefatigable. The feeling of exhilaration and of desire and ability to work usually lasted two days, the "light mania" being followed by deeper depression than usual. Hasselbach suggests that the "light mania" may be a kind of immunity against depression. The action on the nervous system is evidently indirect and depends upon improvement in circulatory and metabolic conditions.

The nervous effects of an overdose of radiation, well known and personally

familiar to most of us, are accompanied by feelings of unrest, more or less vague apprehensiveness, sleeplessness, etc. In many these symptoms appear long before the erythema does. It should never be forgotten that too much radiation may be definitely harmful. A recent editorial in the Journal of the American Medical Association (1927) calls attention to a demonstration of this.

I feel that the view expressed by a clinician (Mayer, 1926) who has had considerable experience with solar and quartz lamp radiation is apropos and I am going to quote from a recent article of his (Mayer, 1927) which, although with reference to a particular condition, is applicable to others. "Light of any form by itself is not curative but comprises only one of the important adjuvants in the treatment of tuberculosis. To believe that sunlight or artificial sources of light will cure all forms of "surgical" tuberculosis, to be unduly optimistic about that treatment and to consider it a specific form of treatment; to use it without sound medical guidance and adequate equipment, and finally to employ it to the exclusion of rest and hygienic-dietetic regimen, eliminating orthopedic measures or the occasional necessary surgical intervention in bone and joint tuberculosis, is bound eventually to dishearten many sufferers and to bring discredit on an otherwise desirable method of treatment."

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CASE REPORTS AND CLINICAL SUGGESTIONS

UNUSUALLY LARGE FIBRO-ADENOMA OF BREAST IN TWELVE-YEAR OLD GIRL†

THOS. B. SELLERS, M. D.
NEW ORLEANS.

CASE HISTORY.

Complaint: Swollen left breast; lump in right breast.

F. H. Her parents living and well. There is no knowledge of tuberculosis, cancer, heart or kidney disease in the family None of the family have had eruptive lesions. The patient is the only child.

P. H. Patient's general health has always been excellent and development normal in body and mind. She is now in the 7th B grade of school. She has had measles and mumps in earlier years,

†Read before Baptist Hospital Clinical Staff Meeting, October 1926.

Fig. 1—Left Breast. Note glazed skin due to enormous enlargement; freely movable on chest wall.

and no other severe illnesses. Her right wrist was broken in a fall about 5 years ago; healing was satisfactory, function good. No other injuries. Tonsillectomy about 4 years ago. Has had very infrequent headaches, and occasionally toothache. Her appetite is voracious and the digestion entirely satisfactory. Her bowels are regular without medication.

Her menses have not begun and there has never been any sort of vaginal discharge.

P. I. In the early part of June, 1926, the patient noticed a firm lump in the left breast, much like the one now felt on the right side. This was not tender and showed no tendency to increase in size. About July 28 she was seen in Charity Hospital and admitted. A puncture of the left breast was done. Only a bloody discharge was obtained. There was never any discharge from the nipple. Late during her stay in the hospital (August), a piece of tissue was removed. The patient and her mother do not know of the report on this. Since that time the incision in the breast has never healed, and recently a "slimy" discharge has been noticed from the wound. It has been treated with a dark salve. Since the puncture and incision the breast has been increasing rapidly in size, but without pain or tenderness. Her general health is unimpaired. Her appetite is excellent. Within the past two weeks the patient has noticed a lump in the right breast of the same sort as appeared in July on the left side. There is no pain nor tenderness and no discharge from the nipple. The patient calls attention to the fact that the skin veins on the left breast have become much larger than previous to the present illness. Her mother states that the patient was born with a secretion of milk from the left breast, but that there has never been any since.

P. E. The patient is a colored girl of good development (12 years) and excellent nourishment, who walks into the hospital in perfect physical comfort except for the annoyance of an enormous breast. She is mentally alert and entirely co-operative, answering questions intelligently and promptly. She has no complaint aside from the much enlarged breast, and no other gross anomaly was observed. Except for a blowing systolic murmur loudest at the base of the heart, and occasionally heard at the apex, and the abnormalities of the breast described in detail, the physical examination is essentially negative.

N. B. In the right breast, which is very slightly large for the patient's age, there is a firm, discreet, mass-like induration in the upper half of the breast, not bound to the skin or the deeper tissues, not fixed to the nipple. The left breast is swollen to about eight times the size of the other and is discharging a thick, mucoid material from an ulceration directly anterior. The breast is almost spherical, freely movable from the underlying tissues, with the skin tightly stretched, showing many dilated veins over its

Fig. 2—Showing comparative size of two breasts. Left breast eight times as large as right.

surface. There are no points of fluctuation nor is tenderness elicited anywhere. No glands are palpated in the axilla.

Impression. Hypertrophy of puberty, with mild sub-acute mastitis superimposed. A fast growing neoplasm must be considered, but the general condition seems to eliminate malignancy in our thoughts. Wassermann reaction negative.

On September 24, 1926, the patient was admitted to the hospital, and on September 25, there was a radical removal of the right breast by Holstead incision. Glands in axilla were found to be enlarged and were removd by an extensive dissection of tissue in that area. The right breast was enlarged but was not removed on account of the patient's condition.

On October 4, 1926, a fibro-adenoma of right breast was removed under local anesthesia. The patient was discharged October 10, 1926, following an uneventful recovery. Fibro-adenoma of both breasts was shown in the final diagnosis.

ESSENTIAL THROMBOCYTOPENIC PURPURA*

B. G. EFRON, M. D.

Synonyms: Idiopathic Thrombocytopenic Purpura, Thrombocytolytic Purpura, Primary Purpura Hemorrhagica, Essential Purpura Hemorrhagica, Essential Thrombocytopenia.

The purpuras form a very interesting and as yet unfathomed chapter in medicine. A few entities have been isolated, and in these, at least a clinical interpretation has been reached. Some of the best understood are the thrombocytopenic purpuras.

Essential thrombocytopenic purpura is relatively rare, but within a week of each other two cases were admitted to the Touro Infirmary. These are presented here.

Case 1. Mrs. T. R., aged 76 years, white, residence New Orleans. Her chief complaint was swelling of the jaw. Three days previous to her admission to the hospital she suddenly felt fluid in her mouth, and upon expectoration discovered it to be blood stained; at the same time she noted a small mass inside of the left cheek. The next morning there was a large ecchymotic spot covering the right side of the face and neck. There was no pain.

P. H.: For the past thirty years she has been suffering from what she terms rheumatism; however close questioning revealed the fact that pain was in the feet, coming on after exertion and that the pain was not very severe. Swelling, redness, or stiffness never appeared about the joints. Her menopause occurred at 45 years and was uneventful except that she states she was "blind" for three weeks at its onset. She had had the usual childhood diseases.

Examination showed a rather well developed white female, advanced in years. Numerous purpuric spots covered various portions of the body. One, dark purplish in color, covered the skin over the angle of the mouth and jaw, and extended downward on to the neck. Numerous purpuric areas were present on the abdomen and the upper and lower extremities. They varied in size from that of a pin head to that of the palm of the hand, were neither painful nor tender, and did not disappear when pressure was applied. A mass, oval, brown, flattened from side to side, firm to the touch, occupied the area between the gum and the right cheek. It was sessile, and attached to the mucosa of the mouth.

The area of cardiac dullness was within normal limits, the apex beat, being neither seen nor felt. The heart rate was regular; the heart sounds were rather distant, and a soft systolic, untransmitted murmur was heard at the apex. The lungs were clear. The abdomen was relaxed, and no masses, tenderness or rigidity were noted. The liver and spleen were not palpable. The capillary pressure test was negative. *Laboratory Reports*: Urinalysis was negative except for a few pus cells. The total erythrocytes were 4,490,000, total leukocytes were 5,000, Hemoglobin 70 per cent, and the color index was .89. The differential count showed neutrophils 66 per cent, small mononuclears 28 per cent, and large mononuclears 6 per cent. The total non-protein nitrogen content was 33.3 mg. per 100 cc. blood, urea nitrogen 16.6 mg., creatinin 1.36 mg., uric acid 3.6 mg., and dextrose 103 mg. The carbon dioxide combining power was 50.3 per cent. The bleeding time—estimation showed that at 17 minutes the patient was still bleeding freely. The coagulation time was 3¾ minutes. Blood culture was negative for organisms. A blood clot was not retractile at the end of 28 hours. The platelet count (with Pratt's solution) was 50,000 per cu. mm.

Course: Because of the age of the patient an operation was deemed inadvisable. Two days after admission, a very large purpuric spot appeared on the right thigh. The same day there was bleeding from the gums. The platelet count on the following day was 90,000 per cu. mm. Within a week the ecchymotic areas were undergoing retrogression, no new purpuric spots having appeared; nor was there a recurrence of bleeding from the mouth, and at the time of discharge almost all purpuric areas had disappeared. The

*Read before clinical meeting, Touro Infirmary Staff, May 6, 1927, New Orleans, La.

platelet count during this period showed variations between 90,000 and 30,000. No relationship could be established between an increased number of platelets and the cessation of bleeding. On the day of her discharge from the hospital, the patient's count showed 30,000 platelets per cu. mm. The patient had no treatment whatever for the purpura. When seen one and a half months after the date of discharge, she was up and about, attending to her household duties. There was no evidence of purpura. The platelets at this time numbered 245,000 per cu. mm.

Case 2. Miss E. D., aged 21 years, white single, complained of bleeding from the gums, black and blue spots over the body, and weakness.

The present illness dates back three years; during which time she has noted blackish blue spots on various parts of the body. These were painless, could not be ascribed to trauma, and as a rule, gradually disappeared in two to three weeks. Bleeding from the gums first started seven months previous to present admission to the hospital and the black and blue spots persisted. At that time the hemorrhage was profuse, lasted three days, and caused her to become weak and exhausted. Then she became somewhat better. Two months before admission to the hospital she developed a very severe pain in the right iliac region. This pain radiated upward and culminated in twenty-four hours with general abdominal soreness. Numerous spots similar to those previously described appeared at this time, and have persisted to the present. A week later bleeding from the gums recurred and has continued since then. The patient was given four injections of horse serum in a Meridian, Miss. hospital; the last dose being given eight days ago.

Past History: She had pertussis at 10 years of age. At about 13 years of age she was confined to the bed for two months for "hip trouble", characterized by pain in the right hip and inability to walk; subsequently she was on crutches for two months. No other joints were involved at that time or later. She has not been troubled since then. She had malaria several years ago and influenza last year. Tonsillectomy was done in 1923, with no complications or sequelae.

Examination showed a very pale, emaciated, young white female. The pallor was waxy. There was bleeding from the nose. A continuous ooze was observed from the gums; the lips were covered with dry blood. She expectorated blood constantly. Numerous pin-head to pea sized purpuric areas were scattered over the back, arms and legs, as well as the face, abdomen, and chest. There were also a number of large ecchymotic areas present on the extremities, varying in color from dark brown to light yellow. A number of wheals were noted, located on the chest and abdomen. The lungs were clear. The heart was not enlarged, the sounds were fairly well heard and a soft, untransmitted, systolic mumur was heard at the pulmonic area. The abdomen was flat and the spleen was not felt. No tender areas or masses were noted. The capillary pressure test was positive. *Laboratory Report:* Urinalysis was negative. The total erythrocyte count was 2,050,000, total leukocytes 8,250, hemoglobin 23 per cent, color index .41. The differential showed neutrophils 68 per cent, small mononuclears 22 per cent, large mononuclears 8 per cent, and eosinophiles 2 per cent. Some anisocytosis and poikilocytosis were present, but no megalocytes or normoblasts were noted. The platelet count (with Pratt's solution) was 100,000 per cu. mm. The bleeding time was more than half an hour. The coagulation time 3 minutes. The blood clot not retractile at the end of 30 hours.

Course: A transfusion of 500 cc. of whole blood was given. Despite the transfusion the bleeding from the gums continued. The platelet counts during this period varied from 30,000 to 45,000 per cu. mm. A week later splenectomy was performed by Dr. R. E. Stone after a preliminary transfusion on the previous day. The platelet count just before the splenectomy was 80,000 per cu. mm. The patient made an uneventful operative recovery. All bleeding stopped. Three days after operation the platelet count was 155,000 per cu. mm; within a week it rose to 240,000 per cu. mm. She was discharged apparently well.

Discussion: The nomenclature in purpura is very confusing, various names having been given to similar conditions, and the same name to entirely different conditions. The classification so often met with of Purpura Simplex, Purpura Hemorrhagica and Purpura Rheumatica is untentable. It is incomplete. There is no provision made for the important group of purpuras with thrombopenia.

A classification which may be adopted is as follows:

A. Thrombocytopenic Purpuras

I. Symptomatic or Secondary—

When occurring in the course of other diseases as:

- Aplastic Anemia
- Pernicious Anemia
- Benzol Poisoning
- Acute Sepsis, especially Diphtheria
- Miliary Tuberculosis
- Nephritis
- Lymphatic Leukemias
- Tumors of Bone Marrow

II. Essential or Primary

- a. acute
- b. chronic
  - 1. continuous
  - 2. intermittent

B. Non-Thrombopenic Purpuras:
1. Symptomatic or Secondary

When occurring in the course of other diseases, such as

Meningitis
Acute Bacterial Endocarditis

II. Idiopathic
a. Simple
b. Rheumatic or Arthritic
Schoenlein's disease
c. Visceral
Henoch's Purpura

The idiopathic non-thrombocytopenic purpuras are not sharply defined groups. Cases are seen in which all types are manifested in the same or in subsequent attacks. They are perhaps different forms of the same disease. They also appear to be closely related to such conditions as erythema multiforme, angioneurotic edema, and urticaria. The same patient may have all of these conditions. In this group hemorrhages occur particularly into the skin; bleeding from the mucous membranes occur rarely.

The chief pathological feature of the thrombocytopenic purpuras is the diminution of the platelets. The pathogenesis of these conditions has not been fully explained. The role of the platelet is still in dispute, some maintaining that it is etiological in causing the hemorrhages, others that it is merely an associated phenomenon. Both groups have equally good experimental evidence for their contentions. The role of the spleen and hematopoetic system in general is also shrouded in mystery; however, there is a suggestion that splenic activity and diminished platelet counts are closely associated in some way.

The chief difficulty in the proper understanding of the purpuras is that the process of blood coagulation is not fully understood. All workers in this field agree that the final step is the reaction between thrombin and fibrinogen to form the fibrin, but the steps preceding this are litle understood, and rest principally on theoretical grounds. That calcium is necessary for the reaction is also known. It is probable that only after coagulation is more fully understood will the pathogenesis of the purpuras be adequately explained.

Criteria for Diagnosis: The thrombocytopenic purpuras, whether primary or secondary, are characterized by:

1. Reduction of platelets. The normal counts by present methods average between 200,000 to 400,000 per cu. mm. It is to be noted that these methods of platelet counting are rather inadequate. The counts vary a great deal from day to day, and marked variations are encountered in the same preparations. In thrombocytopenic purpura the platelets usually vary between 0 and 100,000 per cu. mm.

2. Coagulation time is normal or very slightly increased.

3. Bleeding time is definitely increased. (Method of Duke was used).

4. Non-retractile clot. Retraction of the clot does not occur when platelets are greatly diminished. Cases, however, have been reported where non-retraction of the clot occurs when platelet count is supposedly normal.

5. Positive capillary pressure test. The application of a tourniquet, or the blood pressure cuff to arm, with the mercury set at midway between the systolic and diastolic pressure, produces within a few minutes, when the test is positive, small petechial spots below the level of application. In the cases reported here the capillary pressure test was positive in one instance and negative in the other.

Treatment: Transfusion is of great value in maintaining the general condition but almost all writers advocate splenectomy for the chronic type of essential thrombocytopenic purpura. Splenectomy yields uniformly good results in the chronic cases. In acute cases, the results have not been so encouraging. The mechanism by which removal of the spleen brings about at least a clinical cure has not been explained. Following splenectomy, the platelet counts are variously reported; some state that they remain high, others that the platelet counts return to the preoperative level, and yet the patient remains clinically well. Immediately after operation, the number of platelets in the circulation is usually increased.

DISCUSSION.

Dr. C. L. Eshleman: I had occasion to look up the records of Touro recently, and we have had only five cases of this type during the past three years. One of them was a case reported by Drs. Cohn and Lemann a year or two ago and the other four have come under my own observation. Of these five cases three had splenectomies done and all are well. One other was "cured" by medicine to correct headache and constipation. One other had eleven blood transfusions and died without splenectomy. This has been the result of the five cases. I believe that Whipple has done the most recent and extensive research on this particular disease. He has combed the literature and obtained the results in 81 cases. He has divided them into two types, the acute or fulminating and the chronic. In the fulminating type he believes that the disease is due to some disorder in the reticulo-endothelial system, that is the spleen, liver, lymph glands or any where this system is present. He contends that in these cases splenectomy is a failure because it is unnecessary to remove a spleen where the disease is directly due to the reticulo-endothelial system. Of these 81 cases, 8 were of this type. The mortality was 88.5 per cent. The

other cases were of the chronic recurrent type which after the removal of the spleen resulted in a mortality of only 8 per cent. He believes that so far as splenectomy is concerned this set of figures is the answer to the question of whether the spleen is the organ at fault or the reticulo-endothelial system. Transfusions do not seem to cure. They improve the patients and put them in a condition to make the splenectomy a less serious operation. The case which had eleven transfusions, I think should have been splenectomized. It certainly was of the chronic recurrent type and was in the hospital for two months and had transfusions from two different donors with no marked benefit resulting. Why he was not splenectomized I do not know, unless the family objected, as Dr. Cohn was very anxious to have it done and Dr. Lemann thought it should have been done and I was of the same opinion.

Dr. Randolph Lyons: All I have to say is this. Dr. Efron has made a very important suggestion. There is not much reference in the literature to this disease. I remember in the old days we used to call it purpura hemorrhagica and while there have been only five cases here I am sure the records of Charity will show a much larger number of cases. Three I have had in my own service. They were before the days of splenectomy. Two of these cases recovered spontaneously. I recall one in particular. Three injections of horse serum were given. This was injected in both sides of the abdomen. Hemorrhage took place where the needle went through the subcutaneous tissue. There are those cases that do well without any thing at all, but where no contra-indication exists splenectomy should be performed.

Dr. A. I. Weil: If there is no further discussion, Dr. Efron will you kindly close the discussion?

Dr. Efron (closing): With reference to the diagnosis, purpura itself is not a diagnosis. It is a symptom. Purpura hemorrhagica means hemorrhage into and from the mucous membrane. It does not designate whether a cause for the purpura is known. It should be abandoned as a term, or at least modified, so that the etiological relationship is stated. I wish to thank Drs. Maes and Eshleman for the privilege of presenting their cases and also the other members of the staff for their co-operation and discussion.

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Synthalin in Diabetes.—Synthalin has an action like insulin in so far as it appears to cause sugar to be stored and to be used. The German workers offer proof of this in animal experiments and clinical investigations seem to support it. Confirmation of the former is awaited with interest. Although it resembles insulin it acts very much more slowly, and is not nearly so consistent—large doses sometimes producing no appreciable effect and comparatively small ones occasionally giving rise to marked toxic symptoms, which, however, soon disappear on withholding the drug. The great advantage of the treatment is that it is taken by the mouth. Out of 13 cases tested, five seem to have done well so far, one fairly well, two uninfluenced, and five were unable to take an adequate amount of the drug without developing symptoms of poisoning.—Calvert, E. G. B., Lancet, Sept. 24, 1927, p. 651.

Fractures About Elbow.—Nathaniel Allison, Boston, points out some positive facts about elbow fractures which he feels should be the common property of practitioners of medicine. These facts are that: Elbow fractures imply: (a) bone injury; (b) nerve injury; (c) circulatory disturbance. Haste is not necessary. Roentgen-ray plates should show two views of the region. It is essential to have a rough estimate of the condition of the peripheral nerves and an accurate estimate of the condition of the circulation in forearm and hand. Treatment in simple fracture is simple—acute flexion, as a rule. The fracture must be reduced before it is put up. Due regard must be had for the circulation in hand and forearm. Difficult fractures at the elbow, when the joint is involved, when there is much comminuation or displacement, and when there is dislocation, require the utmost of surgical skill in a hospital for good results. In after-treatment, functional use should be allowed and exercise encouraged. Restoration of motion by "pump-handle" methods, when the stiffness is due to muscle spasm, is condemned.—Journal A. M. A., Nov. 5, 1927, p. 1568.

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PERIODIC HEALTH EXAMINATIONS.

The first week in the month of December the Orleans Parish Medical Society is staging a "Long Life Week", in which systematic endeavor will be made to interest the medical profession and more particularly the laity in the necessity of periodic health surveys. Because we feel that this effort should be heartily encouraged, the Journal is devoting considerable space this month to various phases of this particular action of the local organized medical profession. We feel also that periodic health examination is of sufficient importance, and should be of sufficient interest to the members of the profession throughout the State of Louisiana and the State of Mississippi, that attention again should be directed to the wisdom of such examinations. For the furtherance of this plan, several articles which have been contributed from four different sources are published in this current number, showing in part not only why the examination in general is advisable, but also the especial applicability in certain disorders of such examinations. The methods of health examinations are outlined by a Mississippi contributor. In addition to this outline, the Journal is reprinting a form supplied by the American Medical Association, which shows the simplicity of the examination, and which may be readily followed by all practitioners of medicine. More detailed information, as to the general diagnostic procedures, the advice that should be given to the patient and the findings in the thousands upon thousands of examinations already made, may be obtained from the book, recently published, writen by Dr. Fisk and Dr. Crawford.

It hardly seems necessary to emphasize to the medical profession the various reasons why health surveys are important. But despite the active propaganda which has emanated from various medical organizations, notably the American Medical Association, the average physician does not seem willing to encourage his clientele to come to him periodically for a yearly overhauling, nor does he himself in most cases set such an example. It is for this reason that we are willing to reiterate again and again the statement that periodic health examinations of his patients should be encouraged by every physician and incidentally performed upon every physician yearly or bi-yearly.

A CHANGE IN PERSONNEL OF JOURNAL COMMITTEE.

As will be noted on another page of this issue, Dr. Oscar Dowling, President of the State Board of Health, has, for reasons as stated in his letter to the president of the state society, seen fit to resign from the

Journal Committee. It is with profound regret that we chronicle this event, for Dr. Dowling is peculiarly well qualified for this position, which he has filled so acceptably ever since his appointment to membership on the first Journal Committee, by President Lester J. Williams; first, he was made chairman and it is due, in great measure, at least, to his foresight and keen business sense and executive ability, that the Journal has been able to make such long strides, both ethically and financially; it was he who always held out for the highest ideals in journalism and in accepting advertisements; having had previous experience in medical journalism, his advice was sought and always cheerfully given in all matters of policy.

Last year, when he was not very well, he asked to be relieved of the chairmanship and has since then always assisted Dr. Gessner and the committee in every way possible. The Journal formally acknowledges its debt of gratitude to Dr. Dowling and regrets to part with his services.

As the successor to Dr. Dowling, President Herold has very wisely seen fit to appoint Dr. S. M. Blackshear. The affairs of the Journal are not very new to Dr. Blackshear, he having been ex-officio member of the committee, while serving as president of the society in 1926-7 in addition, he became familiar with many pertinent matters, during his tour of the state with Drs. Fishbein and Gessner, last winter. The Journal congratulates itself that Dr. Blackshear has seen fit to accept the appointment, as it always feels safe in such conservative hands.

THE RADIOLOGICAL SOCIETY OF NORTH AMERICA.

The last of the past month and the first of this month has witnessed and will witness a gathering in New Orleans of a large number of physicians primarily interested in radiology. To these men and to their organization, the Radiological Society of North America, the New Orleans Medical and Surgical Journal offers warm greetings. It is the hope of the Journal that the enjoyment of the members of the Society in the excellent scientific program will be tinctured with the pleasures of the attractive old City of New Orleans.

The doctors of New Orleans, Louisiana and Mississippi are indeed fortunate to have this large organization meet with them. A glance at the program of the Radiological Society shows that over a hundred papers are to be presented, as well as many clinics. He would indeed be a remarkable physician who could not gain much knowledge from a program as broad in scope and as comprehensive as is the one prepared by the Chairman of the Committee on Scientific Business of this organization. Many of the local and nearby physicians have taken advantage and will take advantage of this wonderful opportunity to hear at first hand the leaders in many branches of medicine, not only from this country but from Europe as well. The City of New Orleans and the doctors of the surrounding country, particularly Louisiana and Mississippi are to be congratulated in having in their midst the old city, the fame of which attracts many large and prominent medical organizations to migrate here for their Annual Conventions.

Epidemiology of Rural Typhoid.—D. G. Gill, Montgomery, Ala., reviews the typhoid situation in Alabama, especially in small towns. He says that it is the small town and strictly rural districts that supply most of the cases. The highest rates occur in the towns with populations under 1,000, while 80 per cent of the typhoid occurs in the rural areas and towns with populations up to 5,000. Sanitation and water supplies are defective in this group. Typhoid carriers are common. Approximately 10 per cent of those who have had typhoid become permanent carriers, and are probably the source of most rural typhoid. —Journal A. M. A., Oct. 8, 1927, p. 1198.

TRANSACTIONS OF THE TOURO INFIRMARY STAFF

At the monthly Staff Meeting of the Touro Infirmary held October 12, 1927, the following papers were reported:

First: Metastatic carcinoma of the left Clavicle by Dr. Isidore Cohn; second: Carcinoma of the Transverse Colon, by Dr. D. C. Browne and Dr. Isidore Cohn; third: Absence of the Vagina with Double Uterus, by Dr. Temple Brown; fourth: An interesting case of Malignancy of the Abdomen, by Dr. A. B. Pitkin.

The first paper presented by Dr. Cohn was that of a patient operated on in 1925 for malignancy of the breast; radical operation was done and metastatic lymph glands in the axilla removed. Following operation the patient received deep X-ray therapy. She was apparently well until June 1927 when a metastasis to the left clavicle was found. Clavicle was removed and the patient was last seen in August, apparently well.

The interesting features present in this case were, the rarity of the metastasis to the clavicle from the breast carcinoma; the complete excision of the clavicle followed by an excellent functional result with little or no drooping of the shoulder; and third, the operative approach which consisted of an incision over the clavicle and along the anterior border of the sternomastoid at an angle of 60 degrees. This incision, with the reflexion of platysma and sternomastoid muscle gave an excellent exposure of the great vessels in the neck. In discussing this paper, Dr. Gessner told of a case of the removal of the entire clavicle with a good functional result.

The second paper, presented by Drs. Cohn and Browne, was that of a case in which the resection of the transverse colon was done for carcinoma. Following operation six months ago, patient has gained considerable weight and has had no return of previous symptoms.

The outstanding features in this case were marked emaciation, anemia and weakness produced by the relatively small carcinoma and the response to transfusion before operation. Dr. Cohn pointed out that the essential factor in the production of the anemias in cases of carcinoma of the colon is the presence of a large ulcerated area from which blood can ooze and through which bacteria can enter. It is to be remembered that carcinoma of the colon with the presence of a marked anemia has not the same contra-indication to operation as that of carcinoma of the stomach. The operation done was an end anastomosis following the technique of Kerr.

The paper presented by Dr. Temple Brown was that of a case of absence of the vagina with double uterus. The double uterus was found at an operation for chronic appendix. These two congenital anomalies found in the same patient are quite rare and it was interesting to note that the patient had no pelvic symptoms other than that she had never menstruated.

The last paper presented that of Dr. Pitkin was that of a case of carcinoma of the stomach discovered at operation. The correct diagnosis of this case was masked by a huge retro-peritoneal metastasis and the operation was an exploration. Metastasis of the gall-bladder, liver and lungs was also found.

WARREN L. ROSEN,
Secretary.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of November the Board of Directors has held its regular meeting, and the Society has held two Scientific Meetings.

At the meeting of the Board the routine business was taken up and dispensed with.

Dr. Loyd J. Kuhn was selected to Interne Membership.

At the Scientific Meeting held Monday, November 14th, the following papers were read and discussed:

"Subphrenic Abscess," by Dr. Alton Ochsner. In the absence of Dr. Ochsner, Dr. I. M. Gage read his paper, which was discussed by Dr. Jos. A. Danna and closed by Dr. Gage.

"Bichlorid of Mercury Poisoning per Vaginam," A case report. By Dr. Lucien A. LeDoux; discussed by Drs. J. F. Dicks, Adolph Jacobs, H. B. Alsobrook, J. B. Guthrie, A. F. Hebert, J. D. Rives, E. L. King and closed by Dr. LeDoux.

"The Kielland Forceps," by Dr. E. L. King; discussed by Dr. LeDoux and closed by Dr. King.

At the Scientific Meeting held Monday, November 28th, the following papers were read and discussed:

Moving Picture Film of: (a) Johannes Gad's Famous Experiment Showing the Action of the Heart Valves; (b) Howard Ruggle's Fluoroscopic Study of the Movements of the Human Heart; by Dr. George A. Herrmann.

"Cleft Palate: Its Treatment and Prognosis," by Dr. E. D. Fenner.

"Primary Sarcoma of the Spine with report of a case," by Dr. H. Theodore Simon.

At this meeting the Delegates to the Louisiana State Medical Society were elected, and the nominations of offiecrs for 1928 took place.

The attendance at both of these meetings was very gratifying.

During the past month the Committee on Periodic Health Examinations has been very active in launching a campaign to be known as "Longer Life Week" the week of December 5th to 10th inclusive. The members are asked to cooperate in this campaign to the fullest.

The Stanford Memorial Oration will be held on the 6th of December, Dr. M. G. Seelig of St. Louis being the Orator.

The Membership of the Society to date is 490 of whom 475 are active members.

REPORT OF TREASURER

Actual Book Balance, 9-27-27	$ 661.35
Receipts during October	$ 432.78
	$1,094.13
Expenditures	$ 744.39
Actual Book Balance	$ 349.74

REPORT OF LIBRARIAN

210 books have been added to the Library during October. Of these 172 were received by binding, 16 by gift, 6 by subscription and 16 from the New Orleans Medical and Surgical Journal. A list of new titles of recent date is attached. Gifts have been received from Dr. S. M. Blackshear, Dr. Waldemar Metz, Tulane University School of Medicine, Dr. J. H. Musser and Dr. Allen Eustis .

A meeting of the Library Committee was held October 27th, with a free discussion of work done and prospects of library advancements.

A bibliography on Medical Botany was prepared. The preparation of fewer bibliographies does not mean that the reference work has been less, but rather the contrary. The room reference work has been so heavy, owing to approaching medical meetings that the Assistant Librarian has had no time to formulate the various groups of material into lists. It has been all that one person could do to collect the actual references for use.

NEW BOOKS

Southern Surgical Association Transactions. 1926.

N. Y. Academy of Medicine—Catalog of an exhibition of early and later medical authorities. 1927.

Cullen—Early medicine in Maryland. 1927.

Keiller—Nerve Tracts of the Brain and Cord. 1927.

American Pediatric Society. Transactions. 1927.

Sarnoff—Human Body in Pictures. 1927.

Fishbein—New Medical Follies. 1927.

Sutton—Tiger Trails in Southern Asia. 1926.

Faber—Lectures in Internal Medicine. 1927.

Waite—Saving Eyesight After Midlife. 1927.

Deutsch—Heart and Athletics. 1927.

Cabot—Physical Diagnosis. 1927.

Theobald—Normal Midwifery. 1927.

Burnet—Diseases of the Newborn. 1927.

Medical Society of the County of Kings—Practical Lectures. 1927.

Rudolf—Therapeutic Malaria. 1927.

Malcolm-Smith—Examination of Urine. 1926.

Rundle—Ker's Manual of Fevers. 1927.

Drueck—Fistula of the Anus and Rectum. 1927.

Jackson—Bronchoscopy and Esophagoscopy. 1927.

Webb—Recovery Record. 1927.

H. Theodore Simon, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

DR. DOWLING RESIGNS.

November 5, 1927.

"Dr. A. A. Herold, President,
Louisiana State Medical Society,
Ex-Officio Member N. O. Med. and Surgical Journal,
Shreveport, Louisiana.

Dear Doctor Herold:

It is approximately eighteen months since I asked, through you, to be relieved of the chairmanship of the Publication Committee of the New Orleans Medical and Surgical Journal. Since then I have given the best there was in me to the committee under the intelligent leadership of Dr. H. B. Gessner. Being frequently absent from the city and because of the difficulty experienced in attending meetings, and further feeling you can name some one as well or better qualified for the position, I am asking that you accept my resignation and name my successor at your earliest convenience.

Rest assured of my continued good wishes for the prosperity of the Journal with the hope the day is near at hand when every eligible physician in Louisiana and Mississippi will be enrolled among their respective memberships and regular readers of the Journal, I am,

Cordially and fraternally yours,

(Signed) OSCAR DOWLING.

C. C. Dr. H. B. Gessner, Chairman,
Dr. H. W. Kostmayer, Secretary,
Dr. P. T. Talbot, Secretary,
Dr. T. N. Dye, Secretary."

November 7, 1927.

"Dr. Oscar Dowling,

Louisiana State Board of Health,
New Orleans, Louisiana.

Dear Doctor Dowling:

It is with much regret that I feel compelled to accept your resignation as a member of the Journal Committee of our State Society—a position which you have filled with such loyalty and zeal ever since the original committee was appointed by President Williams.

As you know, I have had the honor and pleasure of being associated with you in medical journalism at various intervals for the past twenty years, beginning with the "Medical Recorder," later the "Journal of the Southern Medical Association," which was finally merged, with other publications, into the "Southern Medical Journal"; when the first Journal Committee was appointed, I rejoiced that I should again have the pleasure of serving under your chairmanship. With the above experience, therefore, I feel that I am well qualified to say that your great executive ability, natural intuition along these lines and unbounded enthusiasm for all that is best and ethical in medicine and in journalism will cause you to be sorely missed in the future deliberations of this committee.

In accordance with your request, I shall proceed at once, to appoint your successor and I believe that you will applaud my selection.

With renewed assurances of my kindest regards and best wishes, I am,

Fraternally yours,

(Signed) Arthur A. Herold,
President, La. State Medical Society."

November 8, 1927.

"Dr. S. M. Blackshear,
Title Guarantee Building,
Baronne Street,
New Orleans, La.

Dear Doctor Blackshear:

Dr. Oscar Dowling has tendered his resignation as a member of the Journal Committee and same has been accepted by me, effective upon the appointment of his successor.

I have the honor and pleasure of tendering the appointment to fill Dr. Dowling's unexpired term to you and trust that you will advise me of your acceptance by return mail.

With kindest regards, I am,

Fraternally yours,

(Signed) Arthur A. Herold,
President, La. State Medical Society."

Nov. 11, 1927.

"Dr. Arthur A. Herold,
President, Louisiana State Medical Society,
1166 Louisiana Ave.,
Shreveport, La.

Dear Doctor Herold:

I take pleasure in accepting the appointment to fill Dr. Dowling's unexpired term as a member of the Journal Committee and will do my best to fulfill the duties that accompany the position.

Sincerely yours,

(Signed) S. M. Blackshear."

THE INTERSTATE POSTGRADUATE ASSSEMBLY OF NORTH AMERICA.

This organization held a very successful and instructive meeting at Kansas City, Oct. 17-22. The Louisiana physicians in attendance were: Drs. Bamber of New Orelans; Baker of Minden; Ellis of Crowley; Garland and Lewis of Eunice; Arceneaux of Welch; F. Frater, Cassity, Gowen and Herold of Shreveport; Watkins of Lake Charles.

The Fourth District Medical Society held its fall meeting in Shreveport, Nov. 1, in conjunction with the Shreveport Medical Society. Interesting papers were read by Drs. Larue, Knighton and Caldwell, all of which provoked much discussion. The following officers were elected for 1928: President, Dr. Wren of Vivian; Vice-Presidents, Drs. C. M. Tucker of Haughton and J. A. Hendrick of Shreveport; Sec-Treas., Dr. Leroy Scott, Shreveport, re-elected; Delegate to State Society, Dr. J. L. Scales of Shreveport, the retiring president.

The LaSalle Parish Medical Society held one of its rousing meetings—for which the genial secretary, Dr. W. V. Taylor, is famous—at Olla on Nov. 3d. Besides a full membership from the parish, many visitors were preesnt, including Senator Hardtner of Urania, President Herold of the La. State Medical Society, Drs. J. Q. Graves, C. H. Moseley, George Wright, Councilor F. C. Bennett and Dr. Tisdale of Monroe; Drs. R. D. Simmons, J. A. White, M. H. Foster, Peters, Holloman and Meyers of Alexandria.

Dr. Herold read a paper on "Some Remarks on the Early Diagnosis of Pulmonary Tuberculosis;" Dr. Tisdale on "Salpingitis". Both papers provoked lively discussion .

After completion of the scientific part, a gastronomic program was furnished by the domestic science department of the Olla High School (a building which, by the way, would do credit to a place of several times the size of the town) and the visitors departed, deeply grateful for the excellent refreshments.

The Lafourche Valley Medical Society entertained the Third District Medical Society at the Country Club in Houma, La., on November 9. More than 50 physicians were present.

The Scientific Program included the following:

1—"Common Diseases of the Eye", by Dr. R. B. Buffington.

2—"Electro-Cardiograph", by Dr. A. E. Fossier.

3—"Retention Urine", by Dr. Paul Gelpi.

4—"Focal Infection", by Dr. J. R. Olivier.

5—"Scarlet Fever Prophylaxis", by Dr. Wm. Seemann.

Dr. Will Mayo of Rochester, Minn., was among the honored guests of the evening, and his presence and words of wisdom were a feature of the occasion. A duck and game banquet was participated in at the close of the scientific program.

The next meeting of the Third District Medical Society will be held at Lafayette in January.

The St. Tammany Parish Medical Society held its regular monthly meeting at Mandeville on November 11th, at 8 p. m., with the following members present: Drs. C. F. Farmer, President; H. D. Bulloch, Secretary-Treasurer; J. K. Griffith, F. R. Singleton, J. F. Polk, L. R. Young, N. M. Hebert and R. B. Paine.

The Medical Essayist failed to show up, probably because of the holiday (note the date). However, Mr. J. M. Burns of the local bar read a most interesting paper on "Medico-Legal Jurisprudence", which was much enjoyed and discussed by the entire membership. At times the discussion grew very animated, especially when "Chiropractics" entered the debate; against the latter the Society took a decided and unanimous stand, and the President appointed the following Committee to act in conjunction with the Committee on Public Policy and Legislation of the State Society: Drs. H. D. Bulloch, J. K. Griffith and R. B. Paine.

Dr. A. G. Maylie, delegate, submitted a communication elucidating the position of the House of Delegates and its Judiciary Committee on "Chiropractics" (especially) and a few other matters.

The next meeting of the Society, at which will take place the election of the 1928 officers, will be held at Slidell on December 8, 1927, at 7:30 p. m.

The LaSalle Parish Medical Society met in regular session November 3, 2:30 p. m., Olla Standard High School. Following members were present: Drs. T. M. Butler, W. V. Taylor, T. E. King, O. F. Matthews, H. S. Holloman, R. B. Taylor, R. O. Simmons, J. Q. Graves, F. C. Bennett, G. W. Wright, C. H. Mosley, J. A. White, M. H. Foster. Visiting physicians: Dr. A. A. Herold, President Louisiana State Medical Society; Dr. A. D. Tisdale, Dr. A. L. Peters, Dr. D. B. Barber, Dr. B. W. Thompson, Dr. J. M. Kitrell and Miss Jung, LaSalle Parish Health Unit; Dr. Fred Mecom and Dr. L. A. Myers.

Meeting was called to order by President T. M. Butler, M. D.

Hon. Henry E. Hardtner, Senator 3rd District was introduced and outlined the fight made in last Legislature by chiropractors. Mr. Hardtner told of his opposition to Chiropractic Bill, and stated that he was a candidate for re-election, and if selected that he would always be found in line with organized medicine and against special cults and irregular practitioners of medicine. Mr. Hardtner's

address was interesting and illuminative, and was liberally applauded. Dr. W. V. Taylor, Secretary, informed the Society that both Senator Hardtner and the nominee for Representative would cooperate with organized medicine in the coming Legislature. Dr. Taylor stated that the time to begin this fight against the Chiropractors was before the primary and not on the floor of the Legislature. Dr. Taylor urged those present to interview candidates for Senator and Representative, and if necessary oppose those who were against us.

Dr. Herold was introduced and gave a plain, practical, interesting and instructive lecture on the "Diagnosis of Pulmonary Tuberculosis". The lecture was impressively illustrated by X-ray pictures. It was a great lecture, timely, terse, up-to-date, delivered in Dr. Herold's best vein. It was a wonderful exhibition of present day knowledge and scientific achievement. Dr. Herold was applauded spontaneously and enthusiastically. The discussion was opened by Dr. R. O. Simmons, who was followed by Drs. C. H. Moseley, G. W. Wright, J. Q. Graves, J. A. White and W. V. Taylor. The discussion was a splendid symposium. Many diagnostic points were brought out by those who participated. Dr. R. O. Simmons stated that there was a master X-ray man present, and suggested that the Society hear Dr. L. A. Myers of Alexandria. Dr. Myers made a blackboard demonstration. His drawings and explanations were remarkable and settled some mooted points. Dr. Herold in closing congratulated the LaSalle Parish Medical Society and returned his personal thanks to those who so intelligently discussed his lecture.

Dr. A. D. Tisdale read a practical and instructive paper on "Salpingitis". The discussion was opened by Dr. M. H. Foster. His talk was possibly the most able, interesting, instructive, and enjoyable of the meeting. He was followed by Dr. G. W. Wright, Dr. Tisdale closing. After the scientific program the Society adjourned to the Domestic Science Building and enjoyed a delicious beautifully served lunch, prepared by Miss Fincher, her girls, Mrs. R. E. Prestridge, and Mrs. L. H. Taylor. Every doctor as he entered the lunch room had pinned upon him as favor a bottle of sugar pills with directions for taking, prescription by Dr. Physic.

The after dinner speech of Dr. M. H. Foster caught everybody. The meeting was greatly enjoyed by all present. They left with their fund of knowledge increased, the cares of life and the strenuous work forgotten for the time being; friendships renewed, fraternity strengthened by the warm grasp of hands.

FIFTY PHYSICIANS AT BIG MEETING.

Approximately fifty doctors from cities in the Sixth Louisiana Congressional District, met in Bogalusa Wednesday for their annual fall meeting. Scientific papers were read by Dr. Joseph A. Danna, of New Orleans, on "Recurrent Duodenal Obstruction"; Dr. George S. Bel, of New Orleans, on "The Heart"; Dr. F. F. Young, of Covington, on "Mental Disorders and Society"; Dr. J. H. Slaughter, of Bogalusa; Dr. R. B. Payne, of Covington, and Dr. Carruth, of De Ridder.

Dr. J. H. Slaughter, commissioner of public health, of Bogalusa, tendered the visitors and delegates a welcome in behalf of the city, and presented Dr. A. G. Maylie, president of the Sixth District Medical Society, who presided.

After the business meeting, report of Secretary Dr. T. C. Paulsen, of Baton Rouge, and the reading of the scientific papers and discussions, the delegates were tendered a luncheon at the Pine Tree Inn by Mayor Sullivan. Following the luncheon, the Elizabeth Sullivan Memorial Hospital was visited and inspected, and a trip was made through the Bogalusa Paper Company and the reforestation plantation.

Vice-presidents of the society in attendance were: Dr. D. T. Martin, Donaldsonville; Dr. T. J. McHugh, Baton Rouge; Dr. E. M. Toler, Clinton; Dr. B. O. Leblanc, St. Gabriel; Dr. J. A. Thom, Livingston; Dr. M. C. Bernel, New Roads; Dr. H. A. Tynes, Grangeville; Dr. L. B. Young, Covington; Dr. Lucien McGehee, Hammond; Dr. J. H. Slaughter, Bogalusa; Dr. A. F. Barrow, St. Francisville.

The attendance was pronounced by President Maylie as one of the largest in the history of the Society, and the papers read were of an exceptionally high order.

DR. FELIX R. HILL TAKEN BY DEATH.

Dr. Felix R. Hill, 46 years old, a leading Alexandria physician, died at 1:45 o'clock a. m. Oct. 28. Dr. Hill suddenly became ill the day before and was removed to a hospital where he succumbed. He was a native of Henderson, Texas, where he was born July 13, 1881. He moved with his family to Alexandria, when a small child. He was a son of the late William Hill, for many years a leading cotton buyer of Central Louisiana.

Dr. Hill was graduate of the Tulane Medical School. He served fifteen years in the medical corps of the United States army and attained the rank of major. He served two years in France during the World War. He returned to Alexandria in 1925 and has since been engaged in the practice of his profession, specializing as radiologist. He was a member of the Masonic fraternity and a Shriner. Alexandria Masons attended the funeral in a body. Services were conducted at the family home on Vance avenue, Alexandria by Rev. W. S. Slack, rector of St. James' Episcopal Church.

Dr. Hill was a brother of Walter D. Hill, local banker. Other surviving relatives are: His mother, Mrs. William Hill, Walter D. Hill, Robert Hill, John Hill and Harold Hill, brothers, and Mrs. Lottie Herkenrath and Miss Louise Hill, sisters.

Died at Goodpine, La., Oct. 17th 5 p. m. of chronic nephritis, Dr. William Fred Wade, aged 48 years. He leaves a wife (nee Miss Mary Futtrell), and three sons. Dr. Wade was a graduate of Memphis Medicine College, 1906. He was a member of the American Medical Association, Southern Medical Association, Louisiana State Medical Society and the LaSalle Parish Medical Society. He was a Mason of high standing. The funeral services were held at Jena Methodist Church, Rev. A. B. Moses, Good Pine Baptist Church, officiating. Interment, Jena Cemetery, services being conducted by Carietta Lodge No. 320, F. & A. M., of which Dr. Wade was a member. He was a Royal Arch and a Shriner. Dr. Wade practiced his profession from graduation to death at Good Pine, La. His funeral was one of the largest ever held here, thus attesting his popularity, as man and physician. The LaSalle Parish Medical Society extends unfeigned heartfelt sympathy to the bereaved family. We shall miss his counsel, his loyalty, his work for organized medicine and his friendship.

The following information regarding changes of assignment of Medical and Dental Reserve Officers residing in Louisiana is submitted:

Major Duncan MacCalman, Med-Res., New Orleans, La., is relieved from Field Artillery Group and assigned to the 87th Div.

Capt. Richard R. Bailey, Dent-Res., Jackson, La., is relieved from 563rd Engrs. Auxiliary Battalion and assigned to the 87th Div.

Capt. Eugene C. Stamm, Dent-Res., U. S. Marine Hosp. No. 14, New Orleans, La., is relieved from the Field Artillery Group and assigned to the 87th Div.

1st Lt. Edmund C. Quirk, Jr., MA-Res., is relieved from Sta. Hosp. No. 70 and assigned to the 87th Div.

Capt. Lewis H. Levy, Med-Res., 92 Moss St., New Orleans, La., from 4th C. A. Dist. to 14th Wagon Train.

Examinations of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C., February 6, 1928; Chicago, Ill., February 6, 1928; New Orleans, La., February 6, 1928; San Francisco, Cal., February 6, 1928.

Candidates must be twenty-three years and not over thirty-two years of age. They must have been graduated in medicine at a reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written, and clinical tests before a board of medical officers, and undergo a thorough physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. Cumming,
Surgeon Geneal.

UNITED STATES CIVIL SERVICE EXAMINATIONS.

The United States Civil Service Commission announces the following open competitive examinations: Associate Pathologist, $3,000; Assistant Pathologist, $2,400.

Applications for associate and assistant pathologists must be on file with the Civil Service Commission at Washington, D. C., not later than December 6.

The examinations are to fill vacancies in the Bureau of Mines, Department of Commerce, for duty in Washington, D. C., or in the field. A vacancy exists at Pittsburgh, Pa.

The entrance salaries are indicated above. A probationary period of six months is required; advancement after that depends upon individual efficiency, increased usefulness, and the occurrence of vacancies in higher positions.

The duties are to make pathological studies to determine the effects on man and animals of various poisons found in the mining industry, which includes the effects of poisonous gases, liquids, and solids; to make autopsies of animals exposed under known conditions, making reports upon both gross and microscopic findings; to examine occasionally bacteriological specimens when received from the field; to cooperate and assist in other scientific research when needed, and to prepare reports for publication.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience; and writings to be filed with the application.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the United States civil service board of examiners at the post office or customhouse in any city.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The Issaquena-Sharkey-Warren County Medical Society is making extensive plans for its annual meeting, December 13th, at the Y. M. C. A., Vicksburg. In addition to the election of officers and adoption of a budget for the coming year, the program will include papers by Joseph Hume, Professor of Genito-urinary and Venereal Diseases, Tulane University; C. Jeff Miller, Professor of Obstetrics and Clinical Gynecology, Tulane University and New Orleans Polyclinic; John Joseph Shea, Otology, Laryngology, and Rhinology, Memphis.

The committee in charge of the program is Drs. W. H. Parson, A. Street, and G. P. Sanderson.

Mr. Arthur J. Strawson, Supervisor of Field Service of the National Tuberculosis Association, was the guest of Dr. Henry Boswell at Sanatorium on October 4th. During Mr. Strawson's stay he visited all departments of the institutions.

On October 5th Dr. Henry Boswell made two speeches in Newton County, speaking both at the Newton County Fair at Decatur and at the Newton County Agricultural High School. Both times he spoke on the subject of "Tuberculosis" and stressed its relation to the problem of both county and state.

The State Tuberculosis Association met with the Hinds County Tuberculous Association at the Edwards Hotel, Jackson, Mississippi, on the evening of October 6th. County representatives were present from all over the state and there were many earnest and worthwhile speeches during the dinner which preceded the executive session. The progress of the work for the eradication of tuberculosis in Mississippi was the theme of the talk of Dr. Henry Boswell of the Mississippi State Tuberculosis Sanatorium. He gave a group of highly significant figures demonstrating the results being felt in Mississippi because of the organized fight against this dread disease. Dr. Boswell made statement regarding further steps necessary to better bring the scourge of tuberculosis under proper control. As statistics show that most of the deaths from tuberculosis occur in persons between the ages of 10 and 29, thus snatching the youth of our country and state, this renders more necessary proper preventoria and health education of the young.

Mr. Arthur J. Strawson made one of the leading speeches of the evening. Dr. Felix Underwood served as toastmaster for the occasion.

Mrs. Robert Phifer, State Executive Secretary of the National Tuberculosis Association, made a very earnest plea for the coming Christmas Seals sale and spoke in this connection of the Children's Health Camp which has now successfully terminated its third season.

The following physicians have been among those who have recently called at the Mississippi State Tuberculosis Sanatorium either to bring patients for examination or to go through the various departments of the institution and call upon friends there: Dr. Monroe of Lake, Dr. Lampton of New Hebron, Dr. Roberts of Poplarville, Dr. Beacham of Hattiesburg, Dr. Steen from Florence, Dr. Flynt of D'Lo, Dr. Kittrell of Laurel, Dr. Pope of Zama, Dr. Glover, Dr. Johnson of Pensacola, Florida, Dr. Castles of Meridian, and Dr. Schwartz, superintendent of Robert Koch Hospital, St. Louis, Missouri. Dr. Schwartz is formerly from Sumrall, Mississippi.

The Central Medical Society met on Tuesday evening, October 18th, as guests of Dr. Henry Boswell and the Medical staff of the Mississippi State Tuberculosis Sanatorium. Members of the staff made a number of interesting and worth while presentations during the program of the evening.

The program of the evening was opened by a talk on tuberculosis by Dr. Henry Boswell, superintendent of the Sanatorium. The theme of this address was the value of co-operation between the general practicing physician and the medical staff of the Mississippi State Tuberculosis Sanatorium. He also discussed briefly some of the many problems confronting the medical staff and head of the institution daily.

Dr. C. E. Walker, assistant superintendent of the Sanatorium, followed Dr. Boswell with a presentation of case reports. X-ray pictures were shown to demonstrate various phases of these cases.

Dr. Jesse L. Roark then read a paper on "Tuberculosis of the Mammary Glands." In connection with this he gave detailed report of one case at present under his treatment and also gave a resumé of the literature extant upon this particular phase of tuberculous disturbance.

His paper was followed by discussions of the paper by Dr. M. L. Flynt of D'Lo and Dr. Henry Boswell.

Dr. B. B. O'Mara next presented in clinical demonstration a man and a woman, both patients

of the institution. Particular stress was placed during this presentation upon the unusual ability of certain patients to recover from far advanced stages of pulmonary tuberculosis.

Dr. E. D. Kemp then showed a number of X-ray pictures and gave a talk upon pulmonary X-rays.

Dr. Hugh Anderson followed with "Uses and Abuses of Artificial Pneumothorax."

Dr. Felix Underwood of the State Department of Health closed the meeting with a brief talk upon certain matter of importance to the medical profession.

The program was followed by a short business session.

Mrs. Miriam Ogden, Editor of The Thermometer, official publication of the Mississippi State Sanatorium, is in charge of the Christmas Seals Sales for Simpson County. Much work is being put forth to interest the school children, business people and everyone in making a success of this important drive as upon its success in a large measure depends the amount of good which may be accomplished by the Children's Health Camp in the coming summer. It is hoped that Women's Clubs and other organizations will interest themselves in this exceedingly humanitarian enterprise.

Dr. B. B. O'Mara and Dr. Henry Boswell attended the Ole Miss Alumnae banquet given by the Simpson County Alumnae at the Sugar Moon Cafe at Magee on the evening of October 26th. Dr. Boswell made one of the out-standing speeches of the evening.

Mr. John Rowan, Business Manager of the Mississippi State Sanatorium, went to Milwaukee to attend the American Hospital Association which was held during October 10th to 14th inclusive. While on this trip Mr. Rowan visited at Oak Terrace, Minnesota, Glen Lake Sanatorium and also Presbyterian Hospital at Chicago, Illinois, observing methods of hospital and business management in both places. One day of this association was devoted to the interests and problems of tuberculosis institutions.

Mrs. Eleanor Moss, superintendent of Nurses of the Mississippi Sanatorium, and Misses Mamie King and Alpha Ishee of the nursing staff attended the State Nurses Association which was held in Meridian during the last week in October. Mrs. Moss was Chairman of the Hospital Division of the Association and presided at one of the sessions. She has also recently been elected Sixth Vice-President of the Association which carries with it the chairmanship of the Nurses Relief Fund Committee.

A strong effort is being made to have a Red Cross Roll Call this year in Simpson County. This work is under the direction of Miss Gertrude Butler, who is chairman of Red Cross Activities for Simpson County. Miss Butler is the secretary of Dr. Henry Boswell of the Mississippi State Sanatorium.

THE PHYSICIAN AS A TEACHER OF HEALTH.

In our Mississippi program of preventive medicine, the periodic examination of apparently healthy persons is considered an important and fundamental procedure. The time was in this state that a well person could not get the attention of his doctor. It was necessary to be sick in order that anything approaching a thorough examination could be had. A mother taking her well baby to the physician for advice and feeding schedule was asked, "What is the matter with the baby?" or "How long has he been sick?" And when he realized that the youngster was not ill at all, with a pinch on the cheek the doctor would say to the mother, "Oh, he is all right. You need not worry about him—if he gets sick, let me know." How different today. The medical profession is interested in keeping well babies well and mothers get sympathetic attention in keeping their well babies well.

Only a few days ago I was standing on the street in Jackson talking to a prominent member of the medical profession, and while engaged in conversation with him, one of the best lawyers in the city walked up and said to this physician, "Doctor, I think I am hitting all six but I would like for you to check me over. I have not had an examination this year; when can you take me?"

The examination is, however, only the first step and must be followed by advice to the one examined as to his health habits and conduct. This advice should have to do not alone with his personal welfare, but also with that of his family and with that of other persons in the community in which he lives. The mere physical examination, no matter how thorough, accurate, and comprehensive, is of little value unless it is supplemented by information as to what steps need to be taken to bring about the maintenance and often the betterment of the health of the client and of his family. The advice, moreover, should be so impressed on him and so followed up as to insure his acting on it. In other words, the physician who makes the examination should be the health adviser and teacher of those whom he examines.

In no other way can advice and instruction be so effectively given as in the intimate, face to

face contact of the doctor and his client in the privacy of the physician's office or his client's home.

On October first the Warren County Health Department was organized with Doctor F. Michael Smith, native Mississippian, but formerly of Pine Bluff, Arkansas, as Director of the Department. Doctor Smith has had eight years training in public health work in Louisiana and Arkansas. The organization of this Department was due largely to the efforts of the medical profession of Vicksburg. This is most unusual, but is as it should be. The medical profession should lead everywhere in the establishment of adequate public health service for the people.

Dr. Hugh L. McCalip of Yazoo City entered into training for a public health career on November first. After a period of training at the Training Station at Indianola, Mississippi, Dr. McCalip will be made Assistant Health Officer of Hinds County and later will be placed in charge of a county.

Lauderdale and Monroe Counties have made provision for full-time health work to begin January first.

Dr. Wm. E. Noblin of Yazoo City, who for the past eight or nine years has served Yazoo County as Health Officer, will be placed in charge of the Hinds County Health Department on November fifteenth.

Dr. Fred T. Foard of the United States Public Health Service has for the past four months been assisting the Director of County Health Work, Dr. C. C. Applewhite, in organizing full-time health departments in the Delta counties. Dr. Foard came to the Mississippi State Board of Health from the San Joaquin, California, county health department.

Dr. Edmund T. Lentz of the United States Public Health Service, who for the past four months has been attached to the Missisippi State Board of Health engaged in flood relief work, left on November first for Portland, Maine, for hospital work.

Dr. R. R. Kirkpatrick, former Chief of the Coahoma County Health Unit, has resigned his position and at present is serving an interneship in the Eye, Ear, Nose and Throat Hospital, Memphis, Tenn.

Dr. D. V. Galloway, formerly of Jackson, is now Chief of the Health Unit of Coahoma County.

The Issaquena-Sharkey-Warren County Medical Society held its regularly monthly meeting, November 8th, in Vicksburg, Mississippi, at which time the following program was presented:

1. "The Treatment of Prostatic Lesions by Radium." Dr. B. B. Martin.

2. "Artificial Pneumothorax as a Method of Treatment of Lesions of the Lungs." Dr. J. A. K. Birchett, Jr.

3. "Report of the Recent Meeting of the American College of Surgeons." Dr. I. C. Knox.

4. "Medical Ethics." Discussion to be opened by Dr. E. F. Howard.

The Delta Medical Society met in Greenwood October 12th, 1927, with the following essayists on the program (titles of papers not reported): F. M. Acree, Greenville; F. L. Jelks, Memphis; B. F. McNeal, Moorhead; R. E. Wilson, Greenville, and Henry Hill, Memphis.

The following officers were elected for the ensuing year:

President: Dr. R. M. Donald, Moorhead.

Vice-Presidents: W. P. Shackelford, Hollandale; R. C. Smith, Drew; W. A. Carpenter, Cleveland; L. F. Ferguson, Greenwood; G. M. Barnes, Belzoni.

Delegates: C. W. Patterson, Rosedale; U. S. Wasson, Moorhead; L. K. Mayfield, Greenwood; A. J. Ware, Greenville; J. C. Higdon, Belzoni.

Secretary: R. C. Finlay, Greenville.

The next meeting will be held in Belzoni, April 11th, 1928.

Dr. T. J. Safley of Drew, Mississippi, a graduate of Tulane in 1906, died October 5, 1927.

Dr. W. E. Peek of Morton, Mississippi, died October 14, 1927.

The Vicksburg Sanitarium and Crawford Street Hospital reports the following program of its staff meeting, November 10, 1927:

1. "Calculus of Ureter." Dr. S. Street.

2. "Premature Ventricular Contraction." Dr. L. J. Clark.

3. "Submucous Resection and Tonsillectomy at One Operation." Dr. Edley H. Jones.

4. "Case Report." Dr. W. H. Parsons.

Dr. S. H. Hairston of Meridian announces that he will shortly begin the construction of a modern fire-proof, three-story building for his private hospital. It will contain thirty-six beds and will cost $100,000. The hospital will be fully standardized in accordance with the regulations of the American Medical Association and American College of Surgeons.

The Clarksdale and Six Counties Medical Society held its annual meeting in Clarksdale November 9th. Their program was as follows:

1. "Acute Osteomyelitis." Theo. Mitchell, Clarksdale.

2. "Acute Ileocolitis (Dysentery)." H. E. Day, Duncan.

3. "Light Therapy in General Practice." A. J. Brown, Clarksdale.

4. "Acid Milk in Infant Feeding." W. S. Slaughter, Jonestown.

5. "Otitis Media in Infants and Young Children." D. H. Griffin, Clarksdale.

6. "The Diagnostic Consideration of Acute Epigastric Pain." J. A. Crisler, Jr., Memphis.

7. "Some Unusual Throat Infections." Chas. D. Balssingame, Memphis.

8. "Some Observations on the Toxemias of Pregnancy." Percy W. Toombs, Memphis.

The following officers were elected for the ensuing year:

President: J. D. Biles, Sumner.

Vice-Presidents: Boliver County, L. L. Brookshire, Hushpuckena; Coahoma County, D. H. Raney, Mattson; Quitman County, none elected; Tallahatchie County, J. A. Harris, Swan Lake; Tunica County, L. H. Brevard, Dundee.

Secretary: D. V. Galloway, Clarksdale.

Censor for three years: A. G. Everett, Friars Point.

Member Medical Defense for three years: J. W. Grady, Clarksdale.

The next meeting will be held in Clarksdale on March 28, 1928.

THE ROLE OF THE PHYSICIAN IN THE CAMPAIGN AGAINST DIPHTHERIA IN MISSISSIPPI.

The week ending October 29 showed ninety-seven cases of diphtheria with several deaths. There were eleven cases in one county, eight in another, six in two others, four each in four counties, three each in three counties, two each in eleven counties, one each in nineteen counties. Thirty-three of the counties had none and six of the counties did not report.

Several of the states have adopted the slogan that they will have no diphtheria by 1930. In none of these states are the physicians more interested in the health of their people than in Mississippi.

Diphtheria must go! We know absolutely how to control it; it is just a question of the parents realizing the importance of giving each child between the ages of six months and ten years toxin-anti-toxin. Three little injections given under the skin, just as any other hypodermic is given will protect eighty-five to ninety per cent of the children from diphtheria for life.

The State Board of Health for the past three years has been urging that this be done immediately, and many of our full time Health Officers have been diligent in this matter. It is perfectly proper and right for the Health Officers to do general vaccinations and immunizations in the prevention of disease, but with the active support and assistance of the medical profession the job will be put over quicker and many lives will be saved. In the fifty-eight part-time counties very little will be accomplished in this matter unless the medical profession is interested and active. Many physicians have shown a splendid interest in this matter.

There is no excuse for ninety-seven cases of diphtheria in the State of Mississippi except our failure to take advantage of a protective agent that has been thoroughly tried out and proven. There is no danger in the giving of this protection even though the child comes down with the disease before the immunization is completed and has to be given the curative agent antitoxin. If Mississippi is to be freed from the bondage of this enemy of early life the general practitioner of this state must be the modern Moses to lead the children of Mississippi from the bondage of diphtheria.

Don't put this matter off. Get the children protected now.

BOOK REVIEWS

Clinical Case-Taking: Supplement to Methods in Medicine: By George R. Herrmann, M. D., Ph. D. St. Louis, The C. V. Mosby Company, 1927, pp. 90.

The development of this concise, yet comprehensive little volume has been followed with a great deal of enthusiasm. The need for such a work has been fully realized. The book has been in use since the beginning of the present session, and an immediate improvement has been noted in the students' work in bedside medicine.

In the past, the work of the instructor has been a monotonous task of rehashing of students' records, in an attempt to develop symptomatology, and to repeat with each clinical section fundamentals which are not to be found in text books. The present volume will serve to eliminate such a task and will aid the student to develop symptomatology more effectively.

The students are usually taught the proper form of recording the anamnesis and the status praesens, but little or no emphasis is placed on a most important part of the record—the progress sheet. This is brought out forcibly in "Clinical Case-Taking."

The use of the section, Review of Systems, will serve to obviate to a great extent the so often repeated phrase, "The errors of omission are greater than those of commission."

The book will also find a place on the desk of the general practitioner who may, at intervals, have occasion to refer to it in the development of obscure symptomatology.

Russell C. Pigford, M. D.

Intracranial Tumors and Some Errors of Their Diagnosis: By Sir James Purves-Stewart, K. C. M. G., C. B., M. D. (Edin.) F. R. C. P. London, Oxford University Press, 1927. pp. 206.

A collection of reports on the author's cases told in a very interesting manner and emphasizing the great difficulties encountered in the diagnosis and localization of cranial neoplasms, particularly emphasizing a number of the pitfalls which are to be avoided. It is a book that may be read with great benefit by anyone, but particularly by the neurologist or the surgeon who has a leaning towards cranial work.

E. McC. Connely, M. D.

Modern Practice of Pediatrics: By William Palmer Lucas, M. D. New York, The MacMillan Co. 1927. pp. 962.

The author intends in this book to correlate the clinical side of pediatrics with the laboratory side of pediatrics and, therefore, he has given the name of his book as "Modern Practice of Pediatrics."

The book is divided into two parts. The first is headed "Infancy," the second part "Childhood." At the close of each chapter there is a comprehensive list of references. The illustrations are quite numerous. Some are rather good, but others are very poor. The entire makeup of the book is not altogether pleasing, for one finds that some subjects stand out in bold type, while others of far greater importance are printed in an insignificant way. I have reference to the chapter on infectious diseases. Here, the different diseases follow one another without due spacing, etc.

Under the title of "Infancy," the author includes such subjects as history, physiology of digestion, intestinal disturbances, hypersensitivity, and other allied subjects. It is true that some of these problems belong to Infancy, but surely not all of them. The division of Infancy is certainly not accurate, as shown by the various subjects which are discussed.

The second part of the book covers what the author calls "Childhood." Here, too, there are several subjects which certainly do not belong under this heading—for instance, a plan for feeding during the first year, and special methods of physical examination during infancy are discussed, even some of the illustrations are those of an infant. Some of the chapters, however, are most excellent, such as the chapters on Diseases of the Blood, Genito-Urinary Diseases. In this latter chapter, the author does not mention the value and importance of the cystocope in the diagnosis of the genito-urinary conditions The chapter styled "Mental Problems" is rather a new one to be considered in a text book on Pediatrics, and certainly the author is to be commended on including it. The author has failed, however, to mention anything about child guidance problems, which the reader feels might have been included in this chapter.

The concluding chapters are devoted to a detailed consideration of different therapeutic and diagnostic methods in pediatrics, and they are very complete in parts. For instance, the ketogenic diet in epilepsy, with model diet lists is taken up in detail.

Julian Graubarth, M. D.

Obstetrics and Gynecology: Yearbook for 1926 (Practical Medicine Series), edited by Joseph B. DeLee, A. M., M. D., and J. P. Greenhill, B. S., M. D., F. A. C. S., and John Osborn Polak, M. D. Chicago. Year Book Publishers, 1927. pp. 598.

One of the Practical Medicine Series—a volume comprising a review of the year's publications in Gynecology and Obstetrics under the able editorship of DeLee and Polak. It is a most valuable addition to the library of those engaged in these specialties. Numerous articles are reviewed, a few of which because of their importance are published fully. Almost all are incorporated with valuable comments by the editor. This volume facilitates considerably the work of one who has to be posted on matters pertaining to these branches.

Adolph Jacobs, M. D.

Surgical Diseases of the Gall-Bladder, Liver and Pancreas and Their Treatment: By Moses Behrend, A. M., M. D., F. A. C. S. Philadelphia. F. A. Davis Co. 1927. pp. 278.

This treatise deals with subjects that are much discussed at present and the subject matter is handled very thoroughly. It is to the point, eliminating uncalled for references, making the book enjoyable reading.

The initial chapter is on embryology, followed by the anatomy of the liver, biliary apparatus and pancreas. The anomalies of the arteries and ducts are gone into at length with the assistance of many plates showing the pitfalls of surgical technique, behooving one to be wise and careful.

Following in order are the physiology of the liver and pancreas, pathology of the gall-bladder, origin of gall-stones, symptomatology of gall-bladder disease and gall-stones.

Chapter 7 deals with the diagnosis of gall-bladder disease with a discussion of cholecystography. The author prefers the intravenous use of the dye.

Very little consideration is given to the medical treatment of duodenal drainage; as to surgical treatment, the author prefers cholecystectomy, emphasizing a technique of exposure of the ducts and vessels (open method of removal of the gall-bladder) i. e., from below upward. He considers empyema of the gall-bladder; allowing cases to cool before operating is advised. Here the subject of unexplained deaths following operation is discussed, referring under heading of blood chemistry to the estimation of blood sugar, and especially urea nitrogen. A criticism at this point is that the urea nitrogen might be shown to greater interest by the work of Heyd and Killian (Ann. Surg. 79:55), demonstrating that the relation of the Co^2 combining power in the blood stands out foremost as a post-operative guide. I might suggest that a thorough reference to the work of these authors would increase the value of subsequent editions.

The next chapter is devoted to cholemia and operations for its relief. In the case of stone in the common duct the open method of aspirating the ducts is advocated. A statement to substantiate the latter is that there are found in the anatomical room, 25 per cent variation in the relation of the ducts to each other and to the blood vessels. Also in this chapter is discussed the repair of common duct injuries and the internal drainage operation (i. e., anastomosis of the gall-bladder and other viscera) for tumors causing obstruction within or without the common bile duct.

Chapter 11 is devoted to a few remarks on prognosis, also remote results and complications following cholecystectomy, the salient one being subphrenic and subhepatic collections. The other complications are mentioned in very few words.

Chapter 12 considers injuries and diseases of the liver: (a) trauma and treatment; (b) infections, which are discussed under headings of abscesses, single, multiple and amebic; (c) acute yellow atrophy; (d) carcinoma; (e) cirrhosis; (f) hydatid cyst. The chapter that follows considers diseases and treatment of the pancreas, acute hemorrhagic pancreatitis are discussed at length. Chronic pancreatitis is treated briefly, advocating internal drainage. Abscess of pancreas is mentioned as a rare condition. Carcinoma and cyst are discussed in brief, the chapter concluding with diagnosis of diseases of the pancreas.

The final chapter is on the results of ligation of the hepatic artery in animals, with a general conclusion that ligation of the hepatic artery is dangerous at all times.

The author should be complimented on handling such a large subject in such a thorough manner, holding the interest of the reader throughout.

Emile Bloch, M. D.

Normal Midwifery for Midwives and Nurses: By G. W. Theobald, B. A., M. D., B. Chir. (Camb.) F. R. C. S. (Ed.), M R. C. P. (Lond.) L. M. (Rot.). London, Oxford University Press. 1927. pp. 258.

One follows with pleasure the author's simple yet clear presentation of this most important subject. The chapter on The Mechanism of Labor is especially good. In this book Dr. Theobald not only

takes up normal midwifery but he devotes several chapters to abnormal cases, and infant feeding. On the whole the work should prove a splendid guide to the midwife.

JOHN F. DICKS, M. D.

International Clinics, June, 1927. Philadelphia, J. B. Lippincott Co. 1927. pp. 308.

Like its forerunners this issue of International Clinics is filled with most interesting and illuminating articles on the medical subjects vital to the everyday practice of medicine. Of great interest, as reflecting foreign medical opinion, are the travel clinics. This issue contains an address by President Coolidge. The book merits the attention and consideration of any physician interested in medical progress.

I. L. ROBBINS, M. D.

Practical Lectures on the Specialties of Medicine and Surgery: 2d series, 1924-26. New York, Paul B. Hoeber. 1927. pp. 589.

C. A. Gordon and T. S. Welton present 37 lectures on the specialties of medicine and surgery delivered by men recognized masters of their subjects. These lectures were originally given before the Medical Society of Brooklyn (County of Kings). Every year for 5 years (though the society itself is 105 years old) a Spring course of 10 lectures on consecutive Fridays is offered to its 1700 members. The book under discussion is the second collection of these.

The reviewer urges all to read this unique book. The articles are in the form of attractive talks on subjects widely apart on every branch of medicine and surgery, and besides being interesting and exceedingly pleasant to read, furnish up to date information which it would take time and great energy to gather elsewhere.

These talks are further attractive in being individual and not a rehash. They represent the subject as focussed by the specialist who gives it but who has used judgment and a wide experience in reaching this focus.

Several of the subjects stand out most prominently:

Abdominal palpation in labor.

Fits; the temperosphenoidal lobe as a repository of memory pictures of very early life.

The doctor in court. This is a short collection of hints as to what to say and how to say it in court.

The surgical and puerperal aspects of septicemia.

The talk on pneumonia and that on the heart is short but full of new and valuable information.

The article on inherited syphilis is presented in an unusually attractive form, short but very useful.

In conclusion, the writer will cite some subjects to indicate the wide field covered by this book: Hayfever; Newer Remedies; Common Skin Diseases; Public Health Service; Surgical Abdomen; Goitre, etc.

NARCISSE F. THIBERGE, M. D.

Potassium and Tartrates: By Ralph W. Webster, Ph. D., M. D. Chicago, Commonwealth Press. 1927. pp. 168.

A small volume reviews first the physiologic effects of potassium and tartrates in 30 pages, and then the remainder of the volume contains abstracts of literature concerning the action of these two drugs. The book should prove of immense value to the inorganic chemist, the pharmacologist, and the biochemist as a complete summary of the literature of the subject matter.

J. H. MUSSER, M. D.

Tiger Trails in Southern Asia: By Richard L. Sutton, M. D., Sc. D., LL.D., F. R. S. (Edin.). St Louis, C. V. Mosby Company. 1926. pp. 207.

Physiciains who are desirous of availing themselves of a real hunting trip, the unusual information and detailed description of the various wild animals found in Southern Asia, will find in this contribution material which will be of inestimable value to them in developing their plans. It is especially characterized by many beautiful wild life photographs, with plain description of the peculiarities of the country and people of the hunting locality.

P. T. TALBOT, M. D.

Bronchoscopy and Esophagoscopy: By Chevalier Jackson, M. D. 2nd ed. Philadelphia and London, W. B. Saunders Co. 1927. pp. 457.

For many years bronchoscopy and esophagoscopy were concerned chiefly with the problem of removal of foreign bodies. In recent years, however, diagnosis and treatment of diseases of the esophagus and the tracheo-bronchial tree by direct inspection endoscopically have attained increasing importance, and the field has become equally as important as the foreign body problem and far more extensive in the work which it demands of the endoscopist. These newer phases of bronchoscopy and esophagoscopy have been most thoroughly covered in this edition. Particularly help-

ful are the plates of pathological conditions. These plates are reproductions of illustrations in colors by the author and are beautifully done. Being the recorded mental impressions of the artist-author they are undoubtedly more accurately descriptive than illustrations would be from the hand of a lay artist.

In foreign bodies of the air and food passages the solution of the mechanical problems are described. Dr. Jackson pleads for constant practice on the cadaver, manikin and dog, in acquiring skill in the removal of foreign bodies, and insists on thorough bronchoscopic training before the beginner attempts bronchoscopy. Inadequate training is doomed to result in failure or tragedy.

The author has been responsible more than any other individual for advances made in bronchoscopy, yet he modestly makes no claim to priority in anything.

The book is unquestionably the best work extant on this subject.

H. Kearney, M. D.

A Text-Book of Histology: By Frederic T. Lewis and J. L. Bremer. Philadelphia, P. Blakiston's Son & Co. 1927. ix+551 pp.

This book is a revision of the second edition of Lewis and Stohr's Text-Book of Histology, based on the fifteenth German edition of Stohr's text. It is designed as a text-book for routine courses in Histology (inclusive of Microscopical Organology as well as Histology proper). Clarity of description, conciseness, and an abundance of instructive illustrations are, as formerly, notable features in the makeup of the work.

The embryological approach to Histology, introduced by Lewis in the first American edition, is retained, with the just contention that "the tissues and organs of the body can be best understood by the student if they are followed from their early beginnings through their development to adult form." Functional considerations are accorded greater emphasis than in preceding editions, and the assembling of all endocrine glands in one section represents a distinct advance from this point of view. A brief section on the use of the microscope is a welcome addition, particularly because it includes a discussion of certain fundamentals of microscopical interpretation which are commonly not appreciated by beginning students.

Harold Cummins, Ph. D.

Hunter Tod's Diseases of the Ear: By George C. Cathart, M. A., M. D. 2d ed. Lond., Oxford University Press. 1927. pp. 333.

This is a practical handbook for senior students and general practitioners revised from the book written by the late Hunter Tod and practically re-written by Dr. Cathart. Reference is made to the new Zund Burguet Electrophonoide in use in Paris and London.

The arrangement of the matter, the clear large print and the extremely practical presentation of the subject recommend the book most highly. The anatomy of the ear, a part usually dreary, is most pleasing to read and easily understood from the numerous clear plates and illustrations.

Not many formulas are given, but these are good. The chapters on middle ear inflammation are well presented. The article on otosclerosis and the role of infectious diseases as a factor in producing deafness furnish valuable information to the general practitioner.

A fair part of the 325 pages is devoted to the surgical section. The little volume is handy to keep for reference.

Narcisse Thiberge, M. D.

The New Medical Follies: By Morris Fishbein, M. D. New York, Boni & Liveright. 1927. pp. 235.

Without agreeing with everything the author has to say, the fact remains that this is a valuable addition to the literature of this subject. The encyclopedia of the cults and quackeries in this country is an exhaustive study of conditions as they exist today. Beauty, Rejuvenation, Psychoanalysis, Dieting and other important topics of the day are dealt with at great length. The entire book shows the author to be a true soldier. His attacks on the cults and quackeries are unrelenting though just; merciless though fair. They are parasitic afflictions of an uninformed and credulous public and as such they must be rooted out. Medicine approves the appropriation of any information that can stand the penetrating gaze of scientific investigation, but refuses to indulge in any one system as a panacea for all ills. Logically this can never be. This then is his platform. To expose the fraud and inefficiency of the many irregular practices employed in the treatment of the sick, and the numerous methods employed in the metamorphoses of those not so comely, not so spry. Though space will not permit a discussion of the specific, one feels that there is a tendency at times to be somewhat overbearing, rather haughty and dictatorial. But the merits so outweigh the seeming faults that it can be definitely stated that this is a hard task well done.

I. L. Robbins, M. D.

The Human Body in Pictures: By Jacob Sarnoff, M. D. Brooklyn, Physicians' and Surgeons' Book Co. 1927. pp. 120.

Of this book, one feels very much inclined to say, with the speaker on a certain occasion,

"Ladies' and gentlemen, I am here today to speak to you for no good reason whatsoever." This is supposed to be a visual text of such important subjects as anatomy, physiology and embryology. It may or may not be used in collaboration with moving pictures. The pictures with the exception of a few, not only require a most keen sight, but the imagination of a Poe to decipher some of the enigmata that these pictures demonstrate. The book is exceedingly elementary and has very little in its favor to justify it alike for the use of the high school student and the professional aspirant. To quote the author, "a work of this character is of a pioneer nature, and as such the author feels keenly its difficulties and is aware of its many shortcomings." I am sure with these remarks all those who read the book will agree.

I. L. Robbins, M. D.

Lectures on Internal Medicine (Delivered in the United States, 1926), by Knud Faber, M. D. With forty-three figures and charts. New York, Paul B. Hoeber, Inc. 1927. pp. 147.

The four lectures here presented are entitled:

1. The Etiology and Pathogenesis of Achylia Gastrica.
2. The Intestinal Origin of Pernicious Anemia.
3. Benign Glycosuria.
4. Historical Outline of Medical Therapy: A sketch.

In the first lecture Faber discusses the various theories of achylia gastrica, namely the theory of Einhorn that achylia is functional and occurs without atrophy; the theory of Ewald that it is due to atrophy of the mucous membrane with complete absence of glands, and that of Martius who looked upon achylia as a congenital anomaly, "a constitutional weakness of the organ which could be hereditary and a family trait like other constitutional diseases." Faber himself maintains that chronic achylia is due to an exogenous cause producing a gastritis and consequent more or less atrophy of the glands. He believes, however, "achylia occurs at such an early stage of the gastritis that there is no question of atrophy to say nothing of anadenia. That achylia, therefore, may be found in combination with anatomically preserved glands and undamaged gland cells, although there is a well-pronounced gastritis." In support of his conception he cites clinical experiences, anatomical examinations and experimental investigations.

In the second lecture on the origin of pernicious anemia, Faber supports the theory that pernicious anemia is due to an intestinal intoxication by protein toxin. He regards the achylia gastrica (anacidity) as the most frequent but not the only cause of idiopathic pernicious anemia. He does not regard the disease as an etiologic or pathogenic enterity. He does not definitely place Bothriocephalus anemia, stricture anemia, sprue, as well as anemias arising in pregnancy, sepsis and syphilis in the same class with pernicious anemia but indicates that he believes that all of them are due to a continually occurring intoxication. He considers in the case of idiopathic pernicious anemia the achylia precedes the anemia. It gives rise to deficient digestion in the stomach so that proteins are not broken down in the usual manner and abnormal products inundate the duodenum and jejunum. This in turn gives rise to an abundant abnormal bacterial flora in the uppermost portion of the intestinal canal and this in turn causes production and absorption of foreign proteins. There may be "a different receptivity on the part of different persons, a different capacity for being affected by the toxin, which perhaps does not take place until the organism has become sensitized by the toxin." Not every one, therefore, with achylia gastrica, gets pernicious anemia any more than every one harboring Bothriocephalus worms gets pernicious anemia.

The third lecture on benign glycosuria points out the importance of recognizing innocent forms of glycosuria. Not every one showing more or less constantly sugar in the urine has diabetes. The condition known as renal glycosuria has in recent years been shown to be very much more common than was thought to be the case. These patients have none of the ordinary symptoms of diabetes. Their blood sugar when taken in the fasting state is normal. When they are given glucose on a fasting stomach, the curve of the blood sugar readings made one-half hour, one hour and two hours after the glucose meal resembles the curve of the normal non-glycosuric individual. Most authorities look upon renal glycosuria as due to a habitually abnormally low renal threshold. Faber acquiesces in this view, but, contrary to the generally held opinion, he includes in his group of benign glycosurias patients whose blood sugar rises to an abnormally high point after a glucose meal, provided there is a prompt return to normal level without plateau formation. His observations are not based upon the methods of blood sugar determination in general use in this country but upon micro methods originally introduced by Ivar Bang, elaborated by Hagedorn and Normann Jensen. He calls attention to the fact that renal glycosuria may occur in several members of the same family, resembling in this respect true diabetes.

The fourth lecture represents a rapid sketch of the development of therapy from the time of Louis, one hundred years ago. Faber describes briefly the theory underlying bleeding and the revolt led by Louis against the procedure. Louis

demanded the analysis of the results of therapy in a statistical fashion, namely, the results in cases treated with and without bleeding. This method of study itself represented a revolution against the prevailing doctrine, "Diseases did not exist, only sick persons." "Two cases of disease were never identical. A classification and a calculation of probabilities based thereupon were consequently impossible." It is hard to believe that our present specific conception of disease goes back only one hundred years to the time of Sydenham, Laennec and Bretonneau. Faber then leads us to Magendie, the founder of modern experimental physiology, and his famous pupil, Claude Bernard. Then opened the great vista of the study of abnormal function and close upon it the pharmacological investigation of drugs. Later came the development of substitution therapy as in myxedema and cretinism which has led through many intermediate steps to the last brilliant result, namely, insulin. Faber also sketches the rise of specific therapy based upon the experimental investigations of Pasteur and the triumphal rise of serum therapy beginning with Behring and Roux. Finally came the development of chemotherapy in which field the greatest merit is due Ehrlich.

This lengthy review of a small book is merited. The short time taken for its perusal is well spent and one takes from it many stimulating suggestions both for thought and for further reading.

I. I. Lemann, M. D.

Heart and Athletics: By Felix Deutsch, M. D., and Emil Kauf, M. D. Translation by Louis M. Warfield, A. B., M. D. St. Louis, C. V. Mosby Co. 1927. pp. 187.

The authors have made close observations of a large amount of material accumulated at the Heart Station, Vienna, using as a basis for their studies orthodiagraphy and teleoroentgenography.

Chapters 1 and 2 include a resumé of former works on the subject and a criticism of methods employed. Chapter 4 comprises chiefly statistical data on competitive athletics, that is, swimming, soccer, rowing, wrestling, boxing, heavy, athletics, mountain climbing, skiing, bicycle riding, and fencing. In the next chapter is drawn a comparison of the heart changes in the various sports. Clinical observations of the heart in the various sports are recorded in chapter 6. Following this are two interesting subjects: "Constitutional Disposition to Dilatation of the Athlete's Heart" and "Course of the Dilatation of the Athletic Heart and Case Records." The last chapter is a summary with conclusions. Whenever possible the effect of athletics upon the female heart has been included in the treatise. The book is replete with many interesting facts concerning the effect of physical activities on the heart. It should be enthusiastically received by the profession at large.

Russell C. Pigford, M. D.

Standard Measures of the Division of Laboratories and Research of the New York State Department of Health: By Augustus B. Wadsworth, M. D. Baltimore, Williams & Co. 1927. pp. 704.

Dr. Wadsworth goes into minute details regarding the methods used in the Division of Laboratories and Research of the New York State Department of Health.

The methods described by the author are of the utmost value to the man doing laboratory and public health work, particularly. This book could possibly be made of as much value to the physician doing state and general practice by adding a chapter dealing with the preparation of specimens for transportation to the laboratories.

Monroe Wolf, M. D.

PUBLICATIONS RECEIVED.

D. Appleton and Company, New York, London: "Appendicitis," by Hubert Ashley Royster, A. B., M. D. "American Medicine and the People's Health," by Harry H. Moore, Public Health Economist, U. S. Public Health Service.

Williams & Wilkins Company, Baltimore: "Modern Aspects of the Diagnosis, Classification and Treatment of Tuberculosis," by J. Arthur Myers, M. D. "Diseases of the Skin," by Robert W. MacKenna, M. A., M. D., B. Ch.

MacMillan Company, New York: "Cultivating the Child's Appetite," by Charles Anderson Aldrich, M. D. "Plastic Surgery of the Orbit," by J. Eastman Sheehan, M. D., F. A. C. S.

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OBSERVATIONS ON MALARIA.*

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This paper is to bring to you a report of some local observations on a disease in which we are all interested, in which the people of all Southern States are interested—malaria. It is based on a study of our work in Western Mississippi covering a period of seven years, 1919 to 1926, inclusive.

PREVALENCE.

To read statistics based on the number of cases of malaria reported by the doctors of Mississippi, a stranger would easily be led to believe that our State was overrun with this disease—that everyone had to have it sooner or later. For the period of this report the doctors of Mississippi reported to the State Board of Health 376,807 cases of malaria in whites; 399,751 cases in negroes—a total of 776,558 cases in this State in seven years. It is easy to see the deterrent effect of such statistics on prospective settlers or visitors in Mississippi at a time when everyone is putting forth every effort to bring people to Mississippi to build up our State. It is also easy to see that these statistics do not indicate the true prevalence of malaria.

In our work, we have made a careful study of the blood for malaria in every hospital and clinic patient, without regard to symptoms. In addition, blood smears have been received from the doctors of the surrounding territory and these have also been examined for the presence of parasites. In the seven-year period covered by this report, the State Board statistics for Warren County, which is fairly representative of the territory covered by our report, show that physicians reported 6,342 cases of malaria in whites and 7,461 cases in negroes—a total of 13,803 cases diagnosed as malaria. In this period we actually found malarial parasites 177 times in 13,034 examinations, or 1.36 per cent. This does not seem to bear out statistics.

In a communication from Dr. T. W. Kemmerer, Director of the State Hygienic Laboratory, it is shown that in the seven-year period from July 1, 1919, to June 30, 1926, malaria was found 1,314 times in 27,673 examinations. And while this record does not show all blood examinations, but only those sent in to be examined for malaria, those in which malaria was apparently suspected, and those sent in for other examinations in which malarial organisms were found, the percentage of positive findings is only 4.39 per cent.

I realize that in our work we are open to the objection that we are not finding the parasites when malaria actually exists, either due to previous treatment which has driven the parasites from the surface blood or faulty technic of our own. Both could cause failure. On the other hand Wootton,[1] writing in the Southern Medical Journal, reported as a result of a questionnaire sent to representative practitioners of the South that those men replying expected to find the parasites in the blood in the acute

*Read before Mississippi State Medical Association, Jackson, May 10-12, 1927.

stage of untreated malaria in 50 to 100 per cent of all cases, one-third placing it at 100 per cent. In chronic malaria, a small per cent stated that they expected 100 per cent positive findings; an equal per cent expected 10 per cent positive findings, and the majority placed expected positive findings evenly scattered between these two extremes.

Judging from the opinions of these men, and provided our examinations were of average accuracy, we should have found 50 per cent or more of the actual cases of malaria by blood examination. Admitting that we may have missed the other 50 per cent, our positive findings would not go over three per cent of all cases examined, which figure still shows an incidence much lower than statistics for this State would indicate.

PERIODICITY.

Our studies show the year divided into periods as regards the prevalence of malaria—an epidemic period from June to August with the tertian type predominating; an epidemic period from September to November with the aestivo-autumnal type predominating; a winter recurrence period with the aestivo-autumnal type predomnating, and a spring recurrence period with the tertian type predominating. The recurrent cases apparently form 16.38 per cent of all infections. These periods are shown graphically below:

PREVALENCE BY MONTHS.

TABLE I.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Tot.
Aestivo-autumnal	3	1	1	1	0	3	5	3	13	28	11	2	71
Tertian	0	2	1	4	13	19	18	20	8	12	8	1	106
Totals	3	3	2	5	13	22	23	23	21	40	19	3	177

MALARIA IN NEGROES.

It has been said that negroes have some natural immunity to malaria and this appears probable in this series, although statistics for the State and for Warren County show malaria predominating in negroes. We found 12.99 per cent of all cases in negroes (23 cases). Of these, the infection was of the aestivo-autumnal type in 13 cases and tertian in 10.

MALARIA IN CHILDREN.

We hear much about the prevalence of malaria in children, perhaps because much of the malarial survey work has been done with school children. In this series, 14 cases (7.91 per cent.) only were found in children. The tertian type was predominant with 12 cases to two of aestivo-autumnal. Deaderick[2] in Nelson's Medicine states that children are more frequently and more severely afflicted than adults.

SEX.

Deaderick[2] also says, "As a general rule, females are less often attacked with malaria than males." Our findings bear this out with 100 positive findings in males and 77 in females. The proportion of aestivo-autumnal infections is slightly higher in females being 44.16 per cent to 55.84 per cent tertian as against 37.0 per cent aestivo-autumnal to 63.0 per cent tertian infections in males.

Of the total number of positive findings in this series, 71 or 40.11 per cent were aestivo-autumnal and 106 or 59.89 per cent were tertian.

TOTAL LEUKOCYTE AND DIFFERENTIAL LEUKOCYTE COUNTS.

Much has been written about total leukocyte counts and differential leukocyte counts in malaria, some observers having gone so far as to state that a diagnosis could be made from these examinations in the absence of positive findings. The most common claims are that the total leukocyte count is diminished in malaria—that there is a leukopenia, and that the percentage of large mononuclear leukocytes is increased.

Three years ago by a careful review of something over 3,000 total leukocyte and differential counts obtained in our work in this locality, we came to the conclusion that the average normal standards for this locality were as follows: Total leukocyte count, 7,000 to 8,000; differential count: small mononuclears, 31 per cent; large mononuclears, 7 per cent; polymorphonuclear neutrophiles, 62 per cent; eosinophiles, 1 per cent; basophiles, 0.1 per cent.[3]

In this series of positive malaria findings, we have found average leukocyte and differential leukocyte counts as follows:

PREVALENCE BY MONTHS.

TABLE II.

Total Leukocyte and Differential Leukocyte Counts in Malaria.

	Normal	Aestivo-Autumnal	Tertian
Total leukocytes	7,000 to 8,000	8,107	7,587
Small monon.	30.60%	24.2%	27.1%
Large monon.	6.50	10.1	8.5
Polym. neutr.	61.85	65.0	63.5
Polym. eosin.	0.95	0.5	0.7
Polym. basoph.	0.10	0.2	0.2

It will be noted that in this series at least there is no leukopenia. Rather the total leukocyte counts are slightly above or within the limits we consider normal. The large mononuclear leukocytes are moderately increased, this being the most characteristic finding in the study of the leukocytes in malaria, and in accordance with the statement of Bass[4] in Tice's Practice of Medicine, "The only change in the leukocyte count is an increase in the percentage of the large mononuclear cells."

CONCLUSIONS.

1. These studies indicate that the prevalence of malaria in this section of the country is much lower than statistics would seem to indicate.

2. The year is apparently divided into epidemic and recurrence periods, with the tertian infections somewhat in excess of the aestivo-autumnal.

3. There are apparently fewer cases of malaria in negroes than in whites, with aestivo-autumnal infections slightly predominant.

4. There are apparently fewer cases in children than in adults, and tertian infection predominates.

5. More malaria infections are found in males than in females. The tertian type is more frequent in both. The proportion of aestivo-autumnal infections to tertian infections is slightly higher in females.

6. Of the total number of infections, there are more tertian infections than aestivo-autumnal infections.

7. These studies indicate that the total leukocyte count is not diminished in malaria, and is slightly higher in aestivo-autumnal infections than in tertian infections.

8. These studies indicate that the large mononuclear percentage is increased in malaria and that this increase is slightly more marked in aestivo-autumnal infections than in tertian infections.

One idea in closing—While Wootton[1] quotes 50 per cent of the representative practitioners of the South who replied to his questionnaire as considering a clinical diagnosis of malaria justifiable, should we not be a little more careful in our reports to the State Board of Health, that we do not include as malaria a large number of cases that may not be malaria at all? Should we not bear in mind that when we report a case as malaria, that that is only the beginning of the harm it may cause? State Board statistics, made up from our reports, are broadcast, and while one incorrect report of malaria from one doctor seems little, one incorrect report of malaria from each doctor in the State makes an impressive list, especially to those outside our State who are considering coming to Mississippi to make their homes and help us to grow.

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VISCERAL PAIN.*

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The following extract appeared in one of our medical journals of recent date, from a prominent surgeon of a neighboring state:

"The community is not being rendered prompt and efficient medical care in the very cases in which it is of utmost importance. Such cases as are ordinarily regarded as amenable to medical and surgical skill are succumbing in great numbers.

"It is generally agreed that the mortality in a certain group of cases is too high; why then, has the mortality in these classes of cases not been materially reduced? Of several reasons which may be advanced there is one upon which all are agreed, viz., the failure to recognize and send such cases to the hospital in the earliest stages when medical and surgical measures would accomplish most.

"It is recognized that the remedy lies in the education of the general practitioner in their early recognition."

To quote from a paper read before this association last year by Dr. Bryan of Nashville: "We must admit the fact that most people who die before their time nowadays die because competent search for the cause of their trouble has not been made, or because improper treatment has been administered before the cause of trouble has been found."

To quote Dr. Bryan further: "Diagnosis is the most difficult thing in medicine. Geography even enters into it, climate, country, nationality, race, and the nearer things personal and family history, employment, and mode of living, habits of travel, personal habits of eating and drinking, then comes his anatomy, physiology, chemistry physical state, appearance, locomotion, strength, physical signs, symptoms. The laboratory findings: chemical, pathological, X-ray, biological, electrical. When all these have been inquired into, all that the merits of the case in hand warrant, the diagnostician must combine them in such a way as to arrive at a warranted conclusion." And Dr. Martin of New Orleans in an address before our Delta Counties Medical Association, on the importance of having a complete record of cases, stressing the importance of a thorough physical examination, stated that after all, clinical findings are worth all the rest: i. e., laboratory findings, chemical, pathological, X-ray, biological, electrical, etc.

The important point is, then, that the general practitioner in the small towns who has not access to laboratories where all these tests can be made should study to make early and accurate diagnosis through the use of his five senses unaided by laboratories. More failures in diagnosis come from imperfect examinations than from ignorance.

In spite of all of the refinements of modern diagnosis, pain remains the most frequent and important single subjective symptom of disease, and its correct interpretation is the greatest essential in successful diagnosis. While the sensation of pain is itself a purely subjective phenomenon, there are a number of objective points of interest associated with it, which in clinical practice, render it almost in the nature of an objective symptom. Often, for example, it has to be elicited by pressure or some form of stimulation applied by the physician.

The question of the precise nature of the pain, where and at what time it is experienced, are important factors; and, in short, however subjective the symptoms may be from the standpoint of the patient, its interpretation always presents to the physician a problem of objective diagnosis.

From a physiological standpoint there are two distinct types of pain which must be reckoned with, in diagnosis and therapy; they have been termed respectively—

*Read before Mississippi State Medical Association, Jackson, May 10-12.

organic and functional pain; organic pain is that which has its origin in the domain of the organic or sympathetic nervous system. Pain which arises in the viscera, in unstriped muscle, such as the bladder, uterus or in the trunk of the nerves themselves, mediated through the sympathetic ganglia, is of this type. Clinically, such forms of pain are recognized by certain characteristics which indicate their seat; as, periodic pain in the unstriped muscle organs, rhythmic pain depending upon vascular function; boring stabbing pain in the nerve trunks or sheath; tension pain due to stretching of visceral capsules. All of these pains are more or less constant, regular and deep seated, as one would expect of the sympathetic nervous system, which is itself regular and automatic in its behavior.

Functional pain is that which originates in the realm of the cerebro-spinal system, such as occur from disordered function, or from abnormal or excessive stimulation of the cerebro-spinal nerves; being mediated so far as the nerves are concerned, in the normal fashion, from periphery to center.

Of all the forms of pain encountered in medicine, visceral pain offers, perhaps, the most perplexing of such quasi-objective problems, partly because the viscera are inaccessible to direct inspection, or touch, and partly by reason of certain peculiar anatomical and physiological conditions which are well known to all medical men. For the same reason there are no structures of the body in which we are obliged to depend so largely on pain for the early detection and diagnosis of diseases as these same visceral organs. Anything, therefore, which tends to shed light upon the recognition of, and interpretation of, visceral pain would seem to be of interest and help to the physician in his daily practice.

All viscera are hollow organs whose function is to hold, and presently to expel their contents; they are essentially muscular organs with an involuntary muscle function. Their normal stimuli are those which bring about muscle contraction and to them and them alone they respond. By the same token, it is excessive muscle stimuli, or muscle stimuli under pathological conditions which produce visceral pain. This simple physiological truth, and its application to pathology, is borne out by the obvious fact that visceral pain, i. e., the painful sensory elements which are referred to the viscus itself, are in their nature, exaggerations of the sensations normally felt in the same viscera. In fact, the one common factor present in all cases of visceral pain is an increase of intra-visceral pressure and muscular tension.

There is a sensory element associated with visceral disease which is not felt in the viscus itself, but is referred to a body area in accordance with Head's law. There is a pathological element in visceral disease which does not manifest itself in either abnormal distention or in painful reaction to normal tension. This is a state of congestion and inflammation, which affects the parenchyma of the organ and attacks its muscular tissues, and to which the viscus itself is not sensorially responsive. It is logical to conclude that it is this inflammatory element which causes pain, referred by the spinal cord to definitely outlined body areas. Ryle sums the matter up in the following statement:—"(a) Visceral pain is due to an abnormal increase in the tension of the muscular element of the wall of the viscus, resulting either from contraction, or from failure to relax on the part of the muscle fiber in the presence of increased intra-visceral pressure. This visceral pain when occurring alone, or dissociable from attendant body pain, may be accurately localized by the patient. (b) Referred body pain and tenderness more frequently expresses an inflammatory lesion of the viscus. This gives us a useful principle of differentiation between the two types of visceral disease based upon the nature and location of the pain."

True visceral pains are in the organ itself and when they are non-inflammatory

are seldom accompanied by reflected superficial pain or soreness. In purely inflammatory visceral lesions, on the other hand, referred body pain or tenderness is observed in the absence of local visceral pain. When both forms of pain occur, the logical conclusion is that both types of pathology co-exist.

The principal value of symptom is to give us a knowledge of the diseased condition we are called upon to treat, and pain is the most important of all symptoms. Again and again we have to base our diagnosis on the patient's own story and in this story the element of pain always occupies a prominent place. It is evident then, that a proper evaluation of pain is an essential factor in diagnosis. Thus the necessity of studying pain as a sympton is but another term for the importance of careful clinical inquiry.

Dr. Bryan asks the question: "Are we diagnosing acute abdominal pain as well as we might, are we prescribing for it over the phone without having seen the patient?" The most important thing about the study of pain is the necessity of seeing the patient when the pain is actually present. The patient's statement as to the nature of pain, and certain "gestures" which they make in indicating the seat of their pain are important. But the more personal the observation we are able to make about pain the more correctly we are able to interpret it. A systematical examination of our patient should never be omitted.

Ryle has suggested the following questions to be asked ourselves as well as the patient, in regard to visceral pain:

(1) The situation.

(2) The extent of diffusion.

(3) The character.

(4) The severity.

(5) The duration.

(6) The frequency.

(7) The aggravating factors.

(8) The relieving factors.

Martinet: "Clinical Diagnosis and Symptoms" divides the abdomen for the study of the viscera into five segments; epigastrium, right and left hypochondria, right and left iliac fossae. To go into the study of the numerous pains occurring in these regions would require more time than I am alloted, even were I capable of such. However, we will take up briefly a few of the diseases of which "so many are dying before their time" because—as suggested by the two eminent men quoted in the outset—of the failure of the general practitioner to make an early diagnosis and institute or have instituted the proper treatment.

Gall-bladder and bile duct pain: Pain in the right hypochondrium. Martinet says that four-fifths of all pain disturbances in this region originate in the liver or gall-bladder.

The true visceral pain of gall-bladder disease, especially of gall-stones, is so characteristically one of muscular tension and so dramatically relieved by the passage of the stone as to be perfectly evident to the patient himself. Of all the visceral pains it is the one most described by the patient. Acute, paroxysmal colicky pains are especially characteristic of cholelithiasis—jaundice occurs in about one-fourth of all cases. Martinet states that only in exceptional instances (one in twenty) will palpitation not induce a characteristic pain at the fundus of the gall-bladder for a more or less long period of time during the intervals between the acute attacks. But in all these cases it is not the character of the pain, but the associated signs and symptoms and clinical course which constitute the basis of the diagnosis.

Appendix pain: Pain in the lower right quadrant revolves chiefly about the diagnosis of acute or chronic appendicitis—yet appendicitis is not the only pain producing disorder met with in this region. Cabot in a report of 1747 cases found 1169 or 66.5 per cent due to appendicitis; of the

remaining cases all but 2 per cent were due to ovarian or tubular disturbances—cases in which sex enters largely into the diagnosis. Every case of appendicitis presents a combination of true visceral pain and viscero-sensory referred phenomena. They consist for the most part of pain in the stomach and epigastrium, tenderness in right iliac fossa, and muscular rigidity. Perhaps no other lesion oftener causes pain in remote parts than does appendicitis. Dr. Ben Johnson used to say that a pain anywhere in the abdomen that can not be accounted for by any other cause is appendicitis. Osler says: "While a very valuable symptom, pain is at the same time one of the most misleading. The tongue is furred and moist, seldom dry. Constipation the rule, but may have diarrhea. Two important signs from the outset are great tension of the right rectus muscle and darting pain on deep pressure, frequently distinct tumor can be felt." Bryan says: "Do not depend on the constancy of any one symptom in appendicitis or other inflammatory lesions. It is not to be ruled out because of normal temperature or leukocyte count." Biliary colic, kidney colic and pains at the menstrual period are diseases most apt to be confounded.

Renal and ureteral pain: The pain of renal and ureteral calculus is usually a mixture of visceral and referred pain, for the reason that in the majority of such cases there is wounding, inflammation and not infrequently ulceration of the ureter. The visceral pain is due solely to the muscular tension of the moving stone and is present only when this is taking place. The pain is similar to that of gall-stones, subsiding and becoming worse in cycles until the passage of the stone relieves it altogether. It may come on abruptly or gradually, is of an agonizing character, starting in hip of side affected, radiating down ureter and into the testicle. There is usually a quick, feeble pulse and profuse perspiration. It may be mistaken for biliary colic, or intestinal colic especially if there is much distention of the abdomen. The direction of the pain down ureter and into testicle, occurrence of blood in urine and the altered character of same are aids to diagnosis.

Intestinal pains offer an example of almost exclusively the true visceral type. Except in cases of extensive ulcerative or inflammatory lesions we do not find any cutaneous soreness, muscular rigidity or reflex phenomena of any kind in intestinal disease. Here we have an exaggerative distention of the musculature. In volvulus and intussusception the pathology to begin with is purely mechanistic, the sensory disturbance is .purely muscular. The pain is entirely visceral, and accurately localized in the intestine, with no referred pain whatever. We have constipation, pain, dry tongue, intense thirst, and vomiting is an early symptom. Time will only permit me to mention uterine and tubal pain; cardiac and anginal pain; cystic and prostatic pain, all of which may enter into the diagnosis of most all of the others.

Bryan says: "Treatment without diagnosis is quackery—sheer, unpardonable experimentation. Some will think that no such absurd thing as treatment without diagnosis exists. The deeds of men indicate otherwise." In inflammatory conditions of the gall-bladder and biliary passages, gall-stones, etc., therapeutic measures are almost always palliative, they are not curative. They are to be removed and are referable to the surgeon. Dietetic, hygienic and medicinal measures should precede, accompany and supplement the operative treatment. The same can be said about appendicitis; there is no medical treatment. Rest in bed, diet, measures to allay vomiting, the relief of pain by ice bag. The giving of opium for the pain should be condemned, and remember that the administration of purgatives, far too frequently done, instead of benefiting actually increased the rate of perforation 400 per cent. We are told that the mortality in clean appendix cases is less than 1 in 1000, and yet statistics show that the mortality has increased 30 per cent in the last few years.

Of course we all recognize the danger of purgatives and opium in volvulus and intussusception.

Admitting as a fact that "most people who die before their time do so because competent search for the cause of their trouble has not been made, or because improper treatment has been administered before the cause of trouble has been found," we as general practitioners must plead guilty to the charge that the public is not receiving the efficient medical care which it has a right to expect, for it is to us to whom it appeals first. That we may remove the stigma let us study symptoms more closely, that we may interpret them more intelligently by the use of our five senses, hard study and common sense. And to quote Dr. Bryan again "Diagnose before the disease has had time to show too many of its characteristics, before it advances far enough to be typical, and you will be great; great will be the reward to your patients in reduced morbidity and mortality." What ails the patient? Can it be relieved? Is it a medical or surgical case? If surgical, is the remedy more dangerous than the disease? Where and when this kind of diagnosis is made mortality, particularly from surgery, is less; unnecessary operations are fewer.

DISCUSSION.

Dr. E. H. Linfield (Gulfport): Just a word in the discussion of general abdominal pain, don't let's overlook the fact that intestinal parasites cause visceral pain, which may be acute, may be sub-acute, or may be chronic. Intestinal parasites can give the same pain that an acute appendix can.

The doctor brought out that kidney stones give severe pain. Another thing we should not overlook is that pathology in the ureters (I mean by that, kinks, strictures, or any other obstruction in the ureter itself) other than a calculus can also cause pain, which may be acute or may be recurring pain. Always keep in mind the fact that you can have an obstruction in the ureter itself that can give this same pain.

I want to congratulate the doctor upon having given a good paper covering a very important subject.

Dr. Holloman (closing): I wish to thank the doctor for his discussion.

I wanted the Association to consider the idea of pain because of the fact that when the general practitioner is called he ought to make a thorough examination of every case that comes under his care and not leave anything undone. I do not want to minimize the value of laboratory work, but many of us do not use our five senses, upon which our forefathers had to depend altogether. I thank you.

DOUBLE EMPYEMA OF THE PLEURAL CAVITIES.*

J. Q. GRAVES, M. D.,

MONROE, LOUISIANA.

Single or unilateral empyema of the pleural cavity is one of the frequent complications of infections of the pleurae. Scarcely a winter season passes without the surgeon encounterinig quite a number of these cases, which vary more or less in degree and severity. Yet we must recognize the comparative infrequency of double empyema of the pleural cavity, since the records for the past twenty years show only twenty cases that are readily available. Seventeen of these cases are taken from the literature, and three cases were brought into St. Francis Sanitarium, for one of these I am indebted to Dr. D. I. Hirsch of the St. Francis Sanitarium of Monroe. This latter case presents such typical features that its study may be interesting and profitable. The other two cases were referred to Dr. Adams and myself, and were handled in a similar manner with the same satisfactory results.

In the study of the twenty available cases it is of importance to know that the frequency of its occurrence is greatest in children under ten years of age. It occurs at any age but, according to the limited and inadequate statistics of the reported cases, it is shown that it is also frequent in adults beyond middle life.

In the report of the twenty cases we find that:

* Read before the Louisiana State Medical Society at New Orleans, April 26-28, 1927.

13 or 65 per cent occurred in the 1st decade
2 or 10 per cent occurred in the 2nd decade
2 or 10 per cent occurred in the 3rd decade
3 or 15 per cent occurred in the 5th decade

Many organisms attacking the respiratory tract may be found in the pus taken from the pleural cavity. It is gratifying indeed to know that the staphylococci and pneumococci were the predominating organisms found in the larger number of cases.

The patient, whose history I will give you, was a small white female child, about six years old, of good nutrition, and previous good health except for pertussis at four and parotitis at three years; there was no family history of cancer, tuberculosis or insanity.

She was admitted to St. Francis Sanitarium on May 25, 1926, having been taken ill two days before with gastric cramps, which persisted after treatment with calomel and oil, and were complicated with nausea and vomiting, abdominal pain, headache, constipation and fever. The temperature was 101 2/5, pulse 120, and respiration 20. The skin was dry and hot, the tongue covered with white debris, and there was slight dyspnea; no enlarged cervical glands were palpated and there was no cervical rigidity. The chest expansion was equal and regular; no increase of excursions was noted, and the accessory muscles of inspiration were not being used. Percussion was negative throughout, and auscultation disclosed nothing unusual in the pulmonary examination. The apex impulse was normal in position, the quality of cardiac tones good; there was no apparent enlargement on percussion and no change in the heart sounds. The abdomen was slightly distended, with good muscle tonus; the upper region was negative, but the lower showed a board-like rigidity, with great tenderness on palpation.

There was no mass palpated, and the percussion note was tympanitic throughout. There was no vaginal discharge, and no inflammation of the external genitalia. The reflexes were regular throughout; no joint or muscle disturbances were noted. The leucocytic count was 13,000, of which 79 per cent were neutrophiles.

The pre-operative diagnosis was acute appendicitis and the patient was taken to the operating room at 3 p. m. for appendectomy. The appendix was found to be retrocecal in type, with slight dilatation of the serosal vessels, and reddening and edema of the walls; the tip was infiltrated, but there was no exudate. The pelvic viscera were in good condition, and no diverticulum was found. The operation was a low right rectus incision, with splitting of the rectus muscle. The appendix and mesentery were ligated, a purse string inserted, the base tied off, clamped and the appendix removed with actual cautery, the stump inverted and mesentery sutured over it, and the abdomen closed in layers.

The microscope examination showed a submucosal infiltration with neutrophiles, and a hyperplasia of the lymph follicles, with slight dilatation of the capillaries.

The condition of the patient during the anesthesia was poor, and 500 cc. of normal salt solution was injected subcutaneously during the operation. Ether was used as anesthesia, and the operation concluded at 3:30. Considering the history of the case and the examination, the patient's condition seemed more serious than could be accounted for by the pathology revealed at the operating table.

On the following day, May 26, the patient seemed slightly improved, resting fairly well, with temperature 102 and pulse 110. The urine showed infection of the renal pelves.

On June 1, examination of the blood showed a tertian malarial infection, and the condition of the patient was not improved. Quinine therapy was begun.

The temperature and pulse continued high on the following day, the respiratory rate increasing, with dyspnea. Pulmonary examination showed a dull area in the upper right thorax, with physical signs of consolidation, which was more marked on the day following. On June 5, however, there was no improvement, with lower pulse, temperature and respiration.

The wound of the abdomen was dressed on June 7, healing by first intention. There was a slight abdominal distention, but the general condition of the patient was about the same. Physical examination of the right lung indicated a probable empyema of that side.

The consultant verified the diagnosis of right empyema on June 8 and advised operation. Incision was made over the 10th right rib, and 4 cm. were resected in the posterior axillary line, after infiltration of 1 per cent novocain. The thoracic cavity was opened and about 200 cc. of thick pus flowed out. Microscopical examination of the pus showed numerous neutrophiles, with a few lymphocytes. Pneumococci were abundant, with a few staphylococci and fibrin flakes. One large rubber drainage tube was inserted and the wound was closed in layers. The general condition of the patient was fair; temperature 102, pulse 120, respiration 30.

The wound in the thorax was draining freely on the following day, but the patient seemed weaker; temperatur 104, respiration 50, and pulse still 120. Widal test returned negative. Quinine therapy was discontinued for the time being. The following day showed an improvement; respiration regular, with only moderate dyspnea; pulse regular and cardiac tones of good quality. Examination of the chest showed another area of consolidation on the right side, but the sounds of fluid were not distinct, and the condition indicated empyema. On June 12 aspiration of the left chest showed thick pus, and the right lung marked impairment of function. Another operation was advised, under diagnosis of left empyema, and the roentgen-ray findings as reported by the radiologist showed that sufficient adhesions had formed to justify the operation.

On June 13 the patient was anesthetised with 1 per cent novocain and about 4 cm. of the left 10th rib resected in the posterior axillary line. About 200 cc. of thick pus was removed, but the patient became very ill on the operating table when the fluid was removed too rapidly, and about 300 cc. more were left to drain away slowly through one large rubber drainage tube. The patient had a severe coughing attack, with slight cyanosis, but improved rapidly when the drainage wound was closed.

The operation was begun at 9:30 A. M. and concluded at 10:15 A. M., the patient's temperature at the beginning being 102, respiration 30, and pulse 120; after the operation temperature was 104, pulse 130. The wound was closed in layers.

Examination of the pus showed pneumococci as the causative organism, with a few staphylococci. The patient returned from the operating room in fair condition.

On June 15 the child's condition showed no improvement. She was taking nourishment well, but the temperature and pulse were remaining very high, despite free drainage of the wounds in the thorax. A catheterized specimen of urine showed the presence of pyelitis, for which treatment was begun at once sodium citrate grains ten every hour. Radiograph of the chest showed the right lung fairly clear, but the left filled with cloudiness indicating the presence of fluid in the thoracic cavity.

The condition of patient improved somewhat on the 17th, the temperature gradually dropping and pulse becoming stronger, although still very rapid. Auscultation failed to reveal any signs of endocarditis. Free drainage from both thoracic wounds continued regularly and on the 20th the general condiiton improved, with temperature 99 and pulse 90; and respiration 40. Patient seemed mentally more acute and the appetite was improved.

On June 28 a radiograph of the chest showed a localized empyema of the right pleural cavity. The wound was opened with the forceps by Hilton's method, allowing improved drainage. The same process was resorted to on the following day, but the pus did not drain freely, and operative removal was advised. The general condition of the patient was better; temperature still irregular, but did not rise over 102, and the pulse averaged about 110.

Under the diagnosis of right empyema due to closure of drainage wound, the former wound in the right thorax was again infiltrated with 1 per cent novocain on July 5, the tissues pushed apart and the wound opened freely by Hilton's method. About 150 cc. of thick pus were removed, followed by a small amount of bloody froth.

The operation began at 9:10 A. M. and closed at 9:20. The condition of the patient was good; temperature 101, respiration 105, pulse 110. Quinine therapy was resumed and all other medication discontinued. The pus showed abundant pneumococci, with a few staphylococci and a thick fibrin content.

On July 9 another radiograph of the chest revealed the presence of a pus pocket in the right pleural cavity, for drainage of which another operation was advised, but in taking the patient to the operating room the pus pocket ruptured through the right posterior chest, allowing the escape of about 300 cc. of dark gray pus. A probe was inserted, and as the drainage was free, the wound was dressed and allowed to run its course.

The patient was allowed to go home on July 11, owing to the insistent pleas of the parents. The child was eating heartily and seemed greatly improved, with pulse 110, respiration 25, and temperature 100. The left chest had healed, but the right was draining freely.

On July 18th the patient was readmitted to the hospital with suspected hookworm infection. The stools showed the presence of numerous uncinaria ova. A blood test showed the hemoglobin 70, with a red cell count of 4,000,000, white cell count of 10,000, with 25 per cent small mononuclears, 7 per cent large mononuclears, and 68 per cent neutrophiles; no eosinophiles. Physical examination of the lungs was negative, and both scars in the thorax had healed fairly well. Radiographic examination of the lungs showed both lobes clear and nothing pathologic in the findings. The parents stated that the child was normal, except for difficulty in concentration on subjects.

Acute infectious diseases of the chest, when coming under the observation of the physician should have diligent care and attention. The chest should be gone over in a very deliberate manner, and studied carefully by the stethoscope and trained ear. Examination should be made frequently and all changes should be noted. When in doubt as to the possibility of an effusion or an empyema of the pleural cavity, the roentgen-ray should be used in a confirmatory manner. If these cases are diagnosed early, and the proper treatment instituted, many serious and possibly fatal complications can often be prevented.

Among the most frequent complications we have as a sequela to the empyema of both pleural cavities are those of pyemia, trophic neuritis, mastoiditis, etc. Unfortunately graver complications than those mentioned here are possible. For instance, Dr. Durham, in a 1920 Journal of the A. M. A. reports osteomyelitis of the ilium complicating his case, which was a delayed one, four and a half months after the onset of the disease.

In one of my two cases infection of the pleural cavities began nine months before she came under my observation. She was then referred to me for osteomyelitis of both tibia.

It may be said in general that the occurrence of double empyema, instead of being a contraindication of treatment by drainage, renders such an operation more urgent. It is probably better to drain the pleura before operating as much as possible, in order to relieve the pressure upon the heart and lung. It is better to allow a few days to elapse before the second operation.

Double empyema in children, when treated by free drainage, is usually followed by complete recovery.

The period of convalescence intervening between the operation and the healing of the wound for thoracotomy in these series of cases vary from ninety to one hundred and fifty days, an average of eighty-five days. While resection with free drainage is unquestionably the proper way to handle all cases of double empyema, it has been shown that the after care of the patient has largely to do with the saving of the individual's life, and the rapidity of its recovery. For instance, keep the wound draining freely and in a healthy condition. Patient should enjoy the privilege of fresh air, and an abundance of well regulated and properly planned diet. Heliotherapy and rest properly administered are indispensable adjuncts.

THE ETIOLOGY OF MEASLES.*

CHARLES W. DUVAL, M. D.,

NEW ORLEANS.

There are few infections and no exanthematous diseases as common as measles. All races and ages seem to be susceptible, though children are more often attacked, and the discrepancy between adults and children is probably because adults have had the disease before they attain adult life. Susceptibility of those who have not had measles seems to be practically universal. This was clearly demonstrated by the statistics of concentration camps during the world war, which show that definite exposure to measles of an uninfected person invariably resulted in an attack.

Measles is communicated by the secretion from the nose and throat and not conveyed indirectly. There is no evidence to show that the virus under ordinary conditions is capable of infecting after more than a short sojourn outside of the living host. The mode of transmission is direct from person to person through what is termed the droplet method. It has been determined experimentally that the disease is highly infectious as long as four days before the "rash" appears, which corresponds to the early acute stage when the mucous membrane of the

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upper respiratory tract is the site of inflammatory reaction, and since at this period the patients are rarely very sick this is the most dangerous time for transmission of the virus.

So called uncomplicated measles is attended with a very low mortality. Fatal cases are commonly attributed to complications such as pneumonia, otitis media, encephalitis and sepsis, which are not generally regarded as due to the virus of measles but to secondary pyogenic invaders. It is a matter of common knowledge, in this connection, that measles complicated by pneumonia is usually at times when ordinary colds and upper respiratory infections are prevalent which is an indication that the specific excitant of measles is not directly responsible for the pneumonia. This is substantiated by the results of animal experimentation. For example, the experimentally induced disease in animals not susceptible to infection with the common respiratory flora of man, is never attended by pneumonia. It would seem that the pneumonia of human measles is not caused by the spread of the measles virus of the bronchial lesion but is due to streptococcal and other pyogenic organisms which normally inhabit the upper air passageways of man. The pneumonia in measles is in all respects like that complicating influenza.

In regard to the causal excitant of measles one of the most important facts to be borne in mind by those attempting its isolation and cultivation is the infectiousness of the naso-pharyngeal secretions in the pre-exanthematous and eruptive stages of the disease. This feature, more perhaps than any other, has lead some investigators to regard the specific excitant as an agent different from those of other infectious diseases. Although such a preconceived idea has, of course, no scientific basis, it is largely responsible for the skepticism and lack of interest in the reports of those who claim etiological relation for their cultures recovered from cases of measles. In the opinion of the writer it is a mistake to condemn a culture isolated from the lesion of measles as of no causal significance because its morphology happens to be like that of some well known species common in the throat of man. However, in defense of the criticism, it must be said that the mere presence of a microbe in the inflamed mucous membrane of the upper respiratory tract, and particularly streptococcal-like organisms which are known to be normal inhabitants of this region, does not justify the conclusion that it has causal relation without other strong corroborative evidence.

Since the normal flora of the naso-pharynx offers many difficulties in the separation of the measles excitant it is preferable to utilize the circulating blood for cultural purpose. Early in measles the blood is free from extraneous microorganisms and is known to contain the specific virus of the disease .

The lesion of measles is a non-suppurative process, therefore pyogenic organisms cannot be considered as playing the productive role. However, the constant presence of large numbers of streptococci or other pyogens deep in the lesions, especially those of the respiratory mucous membrane, is evidence of a superimposed process and one produced by secondary invaders. In this connection it may be said that since the discovery of the streptococcus of scarlet fever, the work on the causation of measles has attracted more attention than would have been the case otherwise. There are those who are now inclined to indict the streptococcus as the causation of measles.

That the blood and the naso-pharyngeal secretion of patients suffering from measles contains the virus is at present unquestioned. Guinea pigs, rabbits and monkeys injected intravenously with the filtrate of human measles, blood and naso-pharyngeal secretion, react in a characteristic manner. This reaction consists in pyrexial changes, leukopenia and rash which corresponds to the symptom complex of the human disease.

Goldberger and Anderson[1] in 1911 succeeded in producing in the monkey,

injected intravenously with filtered pharyngeal secretions, a symptom complex which they interpreted as mild manifestations of measles. Blake and Trask,[2] more recently, working with the unfiltered naso-pharyngeal secretions introduced intratracheally into the monkey, confirmed and extended the observations of Goldberger and Anderson. Grund[3] in 1922 by intratracheal injections of filtered and unfiltered naso-pharyngeal secretion, obtained from the human case during the pre-eruptive and early eruptive stages of the disease, succeeded in producing a series of reactions in rabbits which were considered suggestive of the human disease. The author[4] in the same year reported the successful production of measles in the guinea pig and rabbit with the filtered blood and naso-pharyngeal secretions obtained from the human case during the eruptive stage of measles. Thus it is seen that the symptom complex of measles including the exanthem and enanthem may be experimentally induced in the lower animal with either the filtrate of blood or naso-pharyngeal secretions. The transmission experiments have definitely established that the causal excitant of measles is transmissible from man to lower animal, is filterable and exists in the circuating blood and the naso-pharyngeal secretions during the pre-eruptive and eruptive stages of the disease.

Although the virus of measles can be propagated in the lower animal, its cultivation in vitro has not been established. No culture extant today is accepted as the real primary excitant of measles. Various intracellular protozoal-like bodies, bacilli and cocci have been reported and etiological relationship claimed, but these reported successes have not been corroborated. While much valuable information has been gleaned concerning the nature of the measles excitant, the specific factor in culture still remains questionable. Of the various cultures isolated from cases of measles that of Tunnicliffe[5] is entitled to special consideration. This author in 1917 reported the cultivation of a diplococcus from the blood of patients suffering with measles which was capable of inducing the disease in the experimental animal and fulfilling other requirements necessary to establish causal relations. A recent epidemic of measles in New Orleans has afforded the writer[6] the opportunity of investigating the claims of Tunnicliffe. The results of our studies confirm in part the work of Tunnicliffe in that a similar diplococcus was cultured from the blood of human measles. It appears that this coccus is not only filterable but apparently invisible for that period in which it is living in the host. Aside from the question of its possible causal relation to measles, there is no doubt that it exists in a filterable form in the circulating blood during the eruptive stage of the disease.

In regard to pyogenic micro-organisms in measles severe streptococcal infection may be a common accompaniment, and since there is a lack of knowledge of the primary cause of measles there are those who would ascribe to the streptococcus a primary causal role. In this connection it is apropos to mention that the histopathological study shows innumerable streptococcal-like organisms that are intimately associated with the coryzal and pharyngeal lesions of measles. Infection with this group of organisms is to be regarded, in the opinion of the author, as coincidental and secondary because filtrates of the infected tissues will induce measles in the experimental animal, while pure cultures of the cocci fail to do so. The fact that the virus of measles is filterable has been the greatest barrier to the acceptance of any microbe which is non-filterable as the causative factor of measles. In the light of our recent studies (Duval and Hibbard) upon the coccus isolated from measles by Tunnicliffe, it would seem that changes in size from visible to invisible and vice versa are properties possessed by this culture. In the living host this organism is apparently not within the range of visibility and a non-filterable form is

cultured from the filtered infectious material. This observation removes at least one objectionable feature that has stood in the way of the Tunnicliffe coccus being seriously considered as having any etiological significance. Aside from a possible causal relationship its filterability conforms at least, to our conception of the virus of measles.

In attempts to isolate the virus of measles from naso-pharyngeal secretions we must not lose sight of the fact that streptococci and other pyogenic organisms are confusing factors by virtue of their position and the part they may play as secondary invaders in diseased conditions of the respiratory tract. The mucous membrane lesion of measles is likely to become augmented by other and secondary infections, the most common of which is streptococcal. The latter is distinguished when the inflamed mucosa of measles becomes sprinkled with hemorrhages, covered with macroscopic exudate, ragged ulcers and pyriform sinuses. The streptococci may burrow deep into the underlying tissues and produce a phlegmonous infiltration, while the lesion of measles in this situation is a mild inflammatory process.

The pneumonia in measles is due to secondary pyogenic micro-organisms which have gained entrance to the lung tissue from the measles' lesion of the bronchial mucous membrane. Complicating streptococcal pneumonia becomes an extremely severe infection and assumes peculiar characters which make it easily recognizable in that it is progressive and often rapidly fatal. It is very doubtful whether the virus of measles ever gives rise to a true pneumonia. The lesion of measles, in so far as the respiratory tract is concerned, is confined to the mucosal lining.

In conclusion I would say that as a result of experimentation it has been definitely established that the blood and naso-pharyngeal secretions of human cases of measles contains the specific excitant. The reaction in the experimental animal is characterized by a complex of objective and subjective signs which closely resembles measles in man. Leukopenia is always a constant change, appearing about the time of temperature rise and lasting throughout the period of pyrexia, which feature precludes the streptococcus and other pyogens as primary causal excitants. Exanthems and enanthems are also frequent in measles experimentally induced.

A filterable form of a living micro-organismal agent (Tunnicliffe's coccus) occurs regularly in the circulating blood of measles and is cultivatable as a non-filterable coccus. While this coccus gives rise to significant reactions in the experimental animal and the human skin of those susceptible to measles, it remains yet to establish its etiological role in measles.

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DISCUSSION.

Dr. W. H. Harris (New Orleans): Mr. Chairman and Members: I appreciate very much the invitation to open Dr. Duval's discussion. On the other hand, I do not know that there is much that I could add to what he has already said. I have had no personal experience in experimentation with measles and as a consequence my remarks can only be based upon contact with the experiments that Dr. Duval has carried out in the laboratory, together with the data obtained from the literature and personal interpretations.

There seems to be no doubt, as Dr. Duval has already said, that the disease has been successfully transmitted to man and also to animals. Holmes of Edinburgh, back as far as 1759, took the nasal secretion of measles cases and rubbed it onto scarified areas of human volunteers and apparently successfully transmitted the disease.

The later experiments that Dr. Duval has mentioned, carried out by Goldberger and Anderson, Blake and Trask, and Dr. Duval himself, have satisfied us that the disease is transmissible not only through infectious material but through infectious material that has been filtered. Contrary to what Dr. Daspit has said about filtrable viruses, we always are satisfied that we have obtained some information when we can find that an agent will pass through a filter. It affords us at once some knowledge of its general nature.

As regards the organisms received from measles cases, which have been very protean in character, there is no doubt that the coccus isolated by Tunnicliffe, which dates back I think to 1917, seems to hold the field at present for most important consideration. The other organisms have as a whole been discarded as probable etiologic agents. The organism of Tunnicliffe and that of Coronia of Italy, together with that of Ferry and the one that Dr. Duval and Dr. Hibbard have isolated, from descriptions, bear a considerable amount of similarity. They are cocci and diplococci. There are some little variant features as regards the question of pigment production and the matter of the Gram's stain. Just what these particular features mean, if anything, will eventually be cleared up.

The prophylactic experimentation has included the administration of serum, obtained either from convalescents of measles or from immunized animals. The prophylactic experiments obtained by Coronia with the vaccination of his coccus are of interest. For instance, the statement is made that in Italy after vaccination with the Coronia coccus vaccine contact with measles is permitted and that ninety-eight per cent of those vaccinated have shown protection.

Such results, if they are based upon sufficient numbers, are certainly very striking since we know that the disease is a very highly contagious disease. Dr. Castellani, mentioned to me however, that in Italy the Coronia coccus has not been accepted as the cause of measles.

There seems to be one feature that will eventually clear up this situation and that is, since the infectious materials and their filtrates are capable of satisfactorily reproducing the experimental disease in the lower animals, therefore, the use of pure cultures of the organisms considered as being the cause should be more capable of producing this particular disease in the lower animal. From such an infected experimental animal, the organism could again be recovered and thus Koch's postulates could be fulfilled.

I know that Dr. Duval's work and the work of others in this field are of great value. Dr. Duval has been interested in the exanthemata, particularly scarlet fever, dating back to the time he first came to New Orleans in 1909. I remember that his first talk in this lecture hall was upon the etiology of scarlet fever. I believe that if we can isolate, identify and establish this coccus as the cause of measles, it will be the means of saving a great many lives that are lost not through measles per se but through the drastic complications that often occur with this disease.

Dr. J. H. Musser (New Orleans): The evidence I have to bring before you today as to the organism that Dr. Duval has isolated is allied rather with immunological studies than with causal or experimental studies in the reproduction of the disease in animals.

I had the opportunity of testing by means of a toxic filtrate which Dr. Duval prepared for me a goodly number of individuals who had or who had not had measles. The first experiments were carried out in a children's home here in town, testing out eighteen children who had not had measles. The asylum had a very careful record kept of the illnesses the children had suffered while in the asylum so there is not much doubt that these children did not have the measles. Of the eighteen children that Dr. Wirth and I tested, we found that seventeen gave a positive reaction to the interdermal injection of this toxic filtrate. The controls were negative. One child gave a positive reaction, but in going over the records again with the matron of the asylum, we found that this child had had an attack of measles two years ago. When the matron separated the measles children from the non-measles children, she made a mistake and included this child in the list we had of those who had not had the disease.

Eight medical students were good enough to volunteer and allow us to give them an interdermal injection, which is carried out exactly the same way as all interdermal injections are, as a test of immunity. Of course, the Schick test (as well as the Dick test) is the one we know the most about, but the procedure of testing for measles is carried out the same way. A positive reaction manifests itself within thirty-eight hours afterward.

To go back to the students, two of them gave positive reactions although they probably had had measles, the remainder were immune and gave negative reaction.

A series of children in the Charity Hospital were tested. Thirteen children were examined. Eight gave a positive and five a negative reaction. Several of those who had had a positive reaction subsequently developed the disease. One child was sent into the measles ward with a diagnosis of measles and was kept there for a period of three weeks. He did not have measles and he had

had a negative skin reaction. It was thought when he was sent to the ward that Koplik spots were in his mouth, but he never developed any further symptoms, never any exanthem. He had not had the disease and in spite of the fact that he was in close contact with a large number of cases of measles the child did not get the disease.

In addition, we tested out a series of convalescents, fifteen all told, all of whom gave negative reactions. We tested out some children who were seen in the early stages; that is to say, who had been contact cases and who had Koplik spots. We found that we would get a positive reaction before the appearance of the rash and that after the appearance of the rash, very much as with the Dick test, the reaction would become negative and would persistently remain negative.

I think the result of these tests shows quite positively that this organism in the present epidemic at least played an important role.

I think Dr. Duval has been extremely cautious in his interpretation of his results. My own feeling is that he very likely and undoubtedly has the organism that causes the disease.

There was one other thing of interest which came out in the paper, at least of interest to me particularly. He mentioned the complication of encephalitis. Encephalitis is not a complication of measles, which is mentioned in the textbooks, nor have I, in a rather careful survey of the literature, been able to find any reference to this particular complication.

We have had a large number of cases of measles at the Charity Hospital. Five of those cases that came to autopsy showed very distinct growths and microscopical evidence of encephalitis. Furthermore, they showed also clinical evidence of cerebral irritation before their death as manifested by convulsion, tremor, etc.

Dr. Rodger Hibbard (New Orleans): Mr. Chairman and Ladies and Gentlemen: One would think that in the ten years that have passed since clinically isolating this organism some one would have done some work either for or against its etiological significance in measles. The reason that this has not been done is undoubtedly what Dr. Duval has mentioned; namely, that measles is definitely known to be a virus. That is a proven fact and the streptococci in common with all other cocci are not generally considered to be filterable and hence nobody has paid any attention to the isolation of a coccus from measles.

One of the more important factors bearing on the case is that just now brought out by Dr. Musser, the skin reactions. The fact that you get a skin reaction with a filtered bouillon culture of the organism shows that there is some definite connection between the organism and measles. That may be primary; it may be secondary; I won't go so far as to state. However, supposing it is secondary, of what importance is it?

Dr. Duval has explained that the fatalities in cases of measles are not due to measles per se but due to the complications of measles. If that is true and since this organism of Tunnicliffe produces a solvent toxin, it follows in line that there may be an antitoxin that can be developed from it and in this way cut down the incidents of secondary complications and the mortality rate.

As a matter of fact, Tunnicliffe within the last year, working in Chicago with clinical men, prepared a serum from the goat and they state that the incidence of secondary complications was much less in those cases where they injected the serum than it was in the control cases of measles where they did not.

If the organism is the primary factor, and there is evidence that makes us think that perhaps it is, one can see the great importance of it.

Dr. Harris mentioned the results of Coronia with his coccus, which to be sure differs slightly but which may be a difference in the staining technic. If we can duplicate those results with this coccus, I think every one will agree that the study and the isolation of the coccus has been well worth while. So from whatever view one looks at it, I think that everybody will agree that this coccus in some measure, whether primarily or secondarily, is certainly a very important factor in the scientific study of measles.

Dr. Randolph Lyons (New Orleans): I want to say that I have been very much interested in Dr. Duval's work of the last year in measles. While I don't personally see a great many cases of measles and I do not treat children, it seems to me the evidence brought forth today by Dr. Duval and the evidence brought forth by Dr. Musser in his work in the asylums and among the children of the Charity Hospital certainly goes a long way to confirm the proof that Dr. Duval has isolated the specific organism.

I have always had a good deal of respect for micro-organisms and I now have still more. I can remember when I was rather astonished when we discovered first that they could change their form. Now we find they can change their shape and size and become visible or invisible.

Dr. Rena Crawford (New Orleans): I was very much interested in his statement once or twice in his paper that measles organisms do not seem to produce the pneumonia, and the reason that we have so much pneumonia with measles is because measles usually comes at the season of the year when we have the respiratory diseases.

One thing I have noticed is that pneumonia follows more frequently in these measles cases where patients have been exposed to so much heat. All of you know that when you go into a home and you announce the baby has measles or you think the child is getting measles, the mother immediately wants to put it in a hot bath no matter what the temperature, take it out of the bath and roll it in a blanket and keep it there until the rash comes out. The babies that have been so treated, and it is a difficult thing to keep the mother from treating them that way, are the ones who are most prone to have pneumonia.

Dr. C. W. Duval (closing): In reply to Dr. Musser I would say that until quite recently I had not noticed encephalitic lesions in cases of measles; in fact I was not aware that specific changes occurred for the central nervous system in this disease. However, during the epidemic of measles this winter I had the opportunity to observe at post mortem definite gross evidence of encephalitis. Macroscropically the lesions were discrete punctate hemorrhages in the cortical substance of the brain and in the basal ganglion, especially the optic thalamus. Associated with the larger hemorrhagic areas, there was, what apparently seemed to be, necrosis of the brain tissue. Microscopic study of the lesions revealed thrombosis and necrosis of the capillaries, perivascular leukocytic infiltration (mononuclear) and some hydropic condition of the nerve cells of the involved areas. It is remarkable that the lesions are focal in character, resembling in many respects the lesions of so-called encephalitis lethargica. These findings in the brain of the measles substantiate those found by Dr. Hauser, Pathologist at Charity Hospital, who tells me he has noted the same lesions in a number of post mortems held on cases of measles.

As regards the causal relationship of the culture isolated by us, which as stated is identical to the Tunnicliffe coccus of measles, we prefer at this time not to commit ourselves definitely. It can be said, however, that the coccus fulfills the essential postulates required to establish causal relation, and conforms to our conception of the excitant of measles (filterable virus). Dr. Harris points out that it ought to be relatively easy with our present knowledge of the experimentally induced disease, to determine whether or not the Tunnicliffe coccus plays the specific causal role. In this connection I would say that the symptom-complex of human measles, with perhaps the exception of the exanthem, has been produced in the lower animal with the coccus in question both by Tunnicliffe and by ourselves. Furthermore, Dr. Musser and his associates have obtained what appears to be specific skin reactions with the culture filtrate (toxin). While all this is pretty definite evidence of the etiological relation that the coccus bears to measles, more confirmatory work is necessary in order to rule out the presence of some other virus which may be carried in culture along with the coccus.

THE DIAGNOSIS OF ACUTE OSTEOMYELITIS.*

GUY A. CALDWELL, M. D.

SHREVEPORT, LOUISIANA.

The subject I am going to present briefly is the diagnosis of acute osteomyelitis. Doubtless there are subjects which would interest you more; certainly there are others which appealed to me more, but the mortality and disability statistics for this disease in Louisiana are such that it seems imperative that someone who is interested should review the matter for you. Moreover it is evident to all who study these cases that early diagnosis and operation will completely revolutionize the situation as to results. In the larger clinics it is estimated and conceded that, when acute osteomyelitis is adequately drained in the first 48 hours of the disease, the mortality is only 1 per cent, the period of disability is usually less than 3 months, the numbers of secondary and tertiary operations for the chronic stages are reduced 50 per cent or more, and the extensions to joints with resultant stiffness, contractures, and deformities, are almost nil.

The following estimates are based upon the mortality statistics of Louisiana, 1915 to 1925, inclusive, and the reports from the two State Charity Hospitals for the same period. Approximately 700 new cases of osteomyelitis occur annually in this state, with an average death rate of 4 per cent or 30 cases per year. As no statistics of disability are available, I can only estimate them roughly from my observations of the chronic cases and late deformities seen in my practice and in the hospital clinics of the state. I daresay, however, that of the 670 cases who survive annually, only 125

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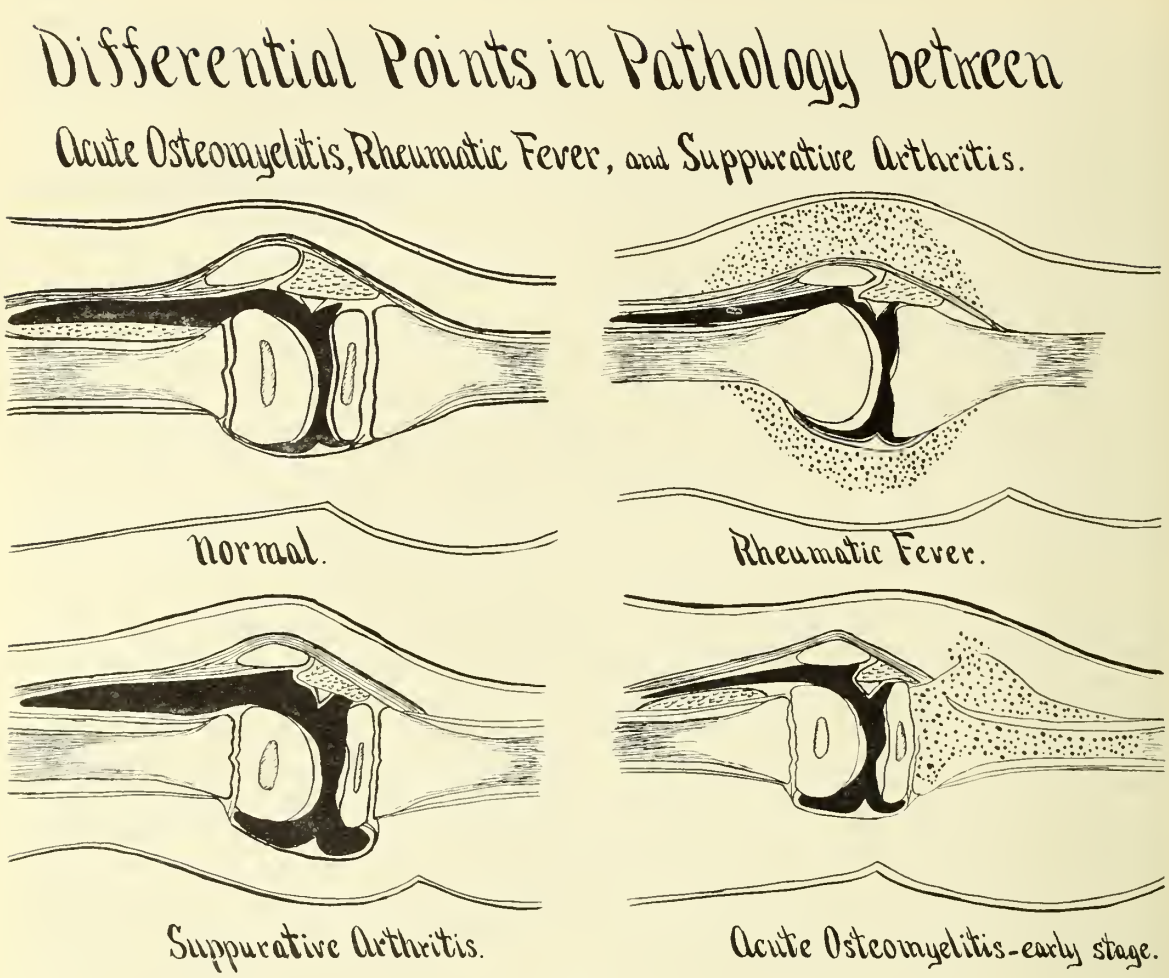

Fig. 1

recover in from 3 to 6 months without appreciable disability. Of the remaining 545 cases, probably another 125 recover without marked disability after 1-5 years and numerous operations, and the remaining 320 recover, after months or years, with a residual deformity or disability that is permanent. At least it can be truthfully said that among the 700 cases developing annually, we are permitting 25 to die who should not die; we are making permanent cripples of between 150 and 300 cases who should be completely cured in 3 to 6 months; and we are keeping the surgical wards filled unnecessarily with difficult chronic cases. (Hospital statistics show that the number of operations being done for chronic osteomyelitis is incresaing yearly at an alarming rate.)

Let us see why the acute cases are not being drained in the first 48 hours. A review of the histories of a large number shows that almost every case is seen within the first 48 hours by a physician, but about 75 per cent of them have been diagnosed and treated as *rheumatism* for 1-3 weeks, before being sent to the hospital! We are forced to the conclusion, therefore, that the majority of physicians who see them in the first 48 hours fail to recognize the difference between osteomyelitis and rheumatism. There are many good excuses that this should happen, as I shall show, but as a matter of fact the differential diagnosis between the two at this stage is not difficult, and one needs little more than his five senses to arrive at the correct diagnosis. Roentgen-rays are helpful only in a nega-

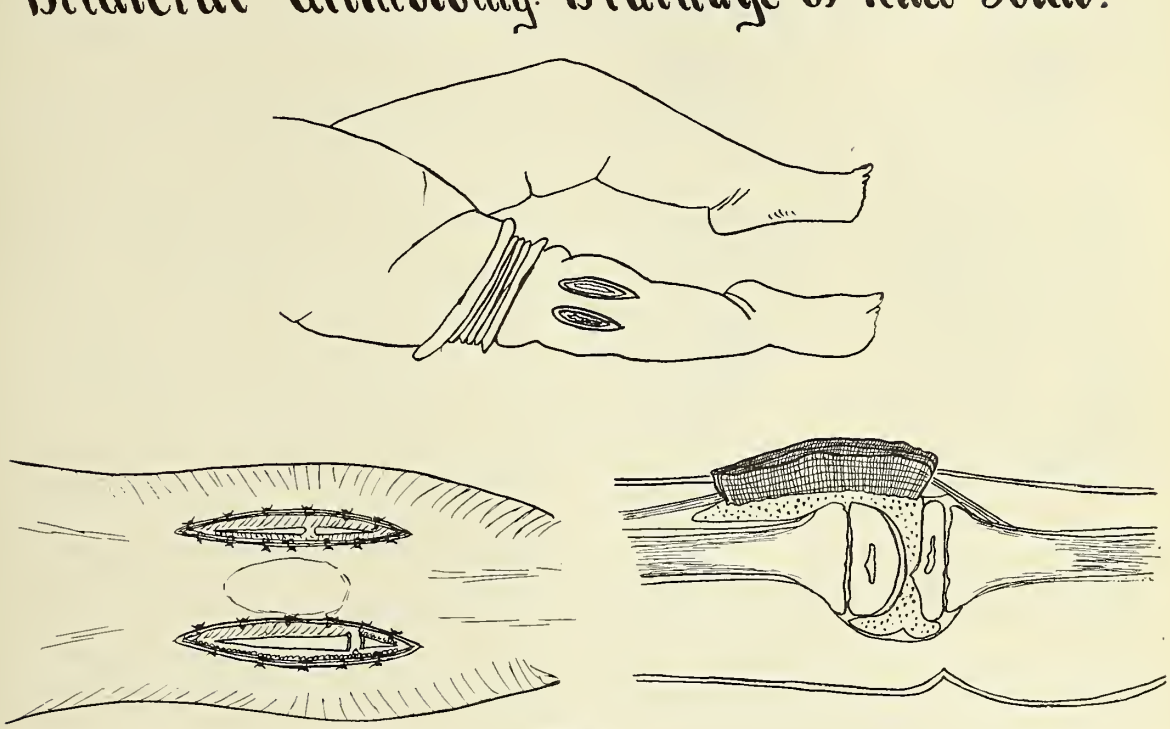

Fig. 2

tive way, and while the white blood count usually is between 20,000 and 30,000 with a high percentage of polymorphonuclear leukocytes, it is not the deciding point in the differential diagnosis.

Two facts alone will almost serve to differentiate and establish the diagnosis, (1) the age of the patient and (2) the location of the pain. Acute osteomyelitis is a disease of the rapidly growing years (5-15), marked by extreme pain and tenderness near but not in one of the larger joints, usually of the lower extremity. Acute rheumatic fever with arthritic symptoms is very infrequent between 5 and 15 years; if pain is present it will be directly in several joints, usually the smaller ones. Rheumatic fever with the joint symptoms of pain, swelling, redness, and heat, progressing from one joint to another, as we usually visualize it, is a disease common to the earlier adult years, 15 to 35, while the primary attacks of osteomyelitis are extremely rare in these years. Hence, if one called to see a child acutely ill with pain in the leg or thigh, he should not expect to find rheumatism, but should carefully examine the case for further evidence of osteomyelitis.

Several other points in the history and examination are important in a confirmatory way. With osteomyelitis, one is usually informed of an injury 1 to 4 days before, a blow, a strained or wrenched joint. A little quizzing usually reveals a pre-existing skin lesion, an infected abrasion, furuncle, or boil. The onset likely was with a chill followed by a high fever without remission. The pain and prostration were intense, constant, unrelieved by local applications or anodyne, and these symptoms are disproportionate to the appearance of the part complained of. On examination at this time, all signs except tenderness are conspicuous for their absence. The tenderness is exquisite and sharply localized to the area of bone adjacent to an epiphyseal line. There is no marked swelling, no red-

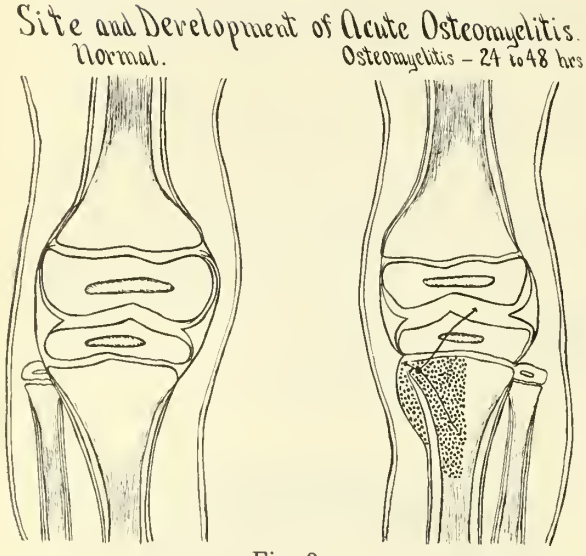

Fig. 3

ness, and little or no heat. The joint expansions and joint lines, if carefully palpated, are found to be not tender or enlarged. If the confidence of the patient can be gained, and the manipulations carefully done, one can move the adjacent joint passively without increasing the pain or producing muscle spasm. Further examination reveals all other bones and joints free of symptoms or signs.

The arthritic symptoms of rheumatic fever, on the other hand, usually follow an attack of tonsillitis or ear infection; they come on more gradually and in general are less intense; local applications and anodynes tend to give temporary or partial relief; the symptoms are accompanied by, if not preceded by, swelling, redness, heat, tenderness, and limited to the joint itself and not present at the epiphyses. All joint movement is absolutely inhibited. Further examination reveals other joints beginning to be involved, or the history that yesterday another one hurt worse.

Another condition which may confuse should be differentiated, viz: acute suppurative arthritis, or pyogenic joint infection. Except for gonorrheal arthritis, and the suppurations secondary to punctured wounds or extensions from a focus of osteomyelitis, this disease belongs to the period of early childhood and infancy, to 4 years. Like osteomyelitis it is usually secondary to skin lesions, is acute in its onset and intense in its general and local symptoms. The mother notes that the baby is sick and sleepless, completely disabled and cries out whenever the affected part is moved. The swelling appears, during the first 24 hours, and is confined to one single joint, usually the knee or hip. The swelling is entirely made up of fluid in the joint; redness and heat are usually absent; tenderness is excessive and joint movement absolutely inhibited; the temperature is high and without remission. This picture is distinguished from the other two by the age of the patient, under 4 years, by the fact that only one joint is involved and it is not red though swollen and distended with fluid, by the fact that the bone above and below the joint is not tender. The diagnosis is rendered absolute by aspirating pus from the joint with an ordinary hypodermic syringe.

The results of adequate drainage in the first 48 hours in these cases are even better than in osteomyelitis. They recover in 6 weeks to 2 months without limitation of the joint motions, but if drainage is delayed a week or more, they are doomed to ankylosis or deformity with disability.

The one point I would like for you to carry home with you is, that if you are called to see a patient under 15 years of

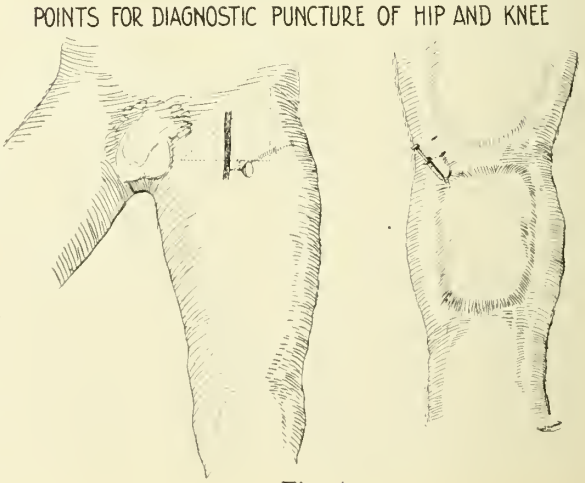

Fig. 4

SUMMARY OF DIFFERENTIAL POINTS IN THE DIAGNOSIS OF ACUTE OSTEOMYELITIS, SUPPURATIVE ARTHRITIS, AND RHEUMATIC FEVER

HISTORY	ACUTE RHEUMATIC FEVER 15-35 YEARS	ACUTE SUPPURATIVE ARTHRITIS—1-5 YEARS	ACUTE OSTEOMYELITIS 5-15 YEARS
Onset	Gradual, often with sore throat	Acute	Sudden with chill
Trauma	Usually none	Often associated	Nearly always present
Predispos. Infect.	Tonsilitis	Ear Infect. and Tonsilitis	Skin trouble and tonsilitis
Pain	Mod. severe — Improved with heat	Severe, sleepless, unrelieved by local measures.	Intense throbbing toothache, heat no value
Temperature	Gradual rise and moderate curve	Rapid rises—High curve	Immed. rise and very high
Pulse	Moderate increase	Rapid, 125-150	Very rapid, 140-180
Prostration	Moderate	Great	Greatest
Examination			
Location	Multiple joints	One joint, usually knee or hip	One focus not in joint—usually tibia or femur
Appearance	Joints enlarged and red	Little or no redness, swelling follows line of joint capsule	Nothing early — general oedema of aff. portion later
Tenderness	General over joints	Excessive over joints	None over joint—acute over bone
Fluid	Little or none	Tense with fluid—Aspirated fluid—pus	None in joint
Movement	Painful	Extreme muscle spasm	Careful movement not painful

age, acutely ill and complaining of sudden, severe pain in the leg or thigh, think first of a pyogenic infection of the bone or joint rather than of rheumatic fever; examine the case most carefully, and if you decide it is probably one of osteomyelitis, do not rest yourself or allow the family to rest until that child is in the hands of a competent surgeon. Telephones, telegrams, automobiles, trains, and all of the other modern modes of rapid transit and communication cannot serve too quickly when one recognizes or seriously suspects acute osteomyelitis or suppurative arthritis. The hours are precious if one is to conserve life, limb, and function. A little alertness in examining these children, a little more forcefulness used to impress the family with the absolute necessity for prompt action, a few dimes and nickels spent in notifying the hospital and surgeon to be in readiness,—and we shall soon see the ranks of the crippled thinning to a remarkable extent.

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DISCUSSION.

Dr. Carrol W. Allen, (New Orleans): We have just listened to a very interesting presentation of this subject and I feel that there can be no controversy or argument with Dr. Caldwell's conclusions. Acute suppurative osteomyelitis is just as much an emergency operation as is acute appendicitis. The infective organism, usually the staphylococcus pyogenes aureus, travelling through the blood stream, usually from some pre-existing focus, is deposited towards the end of the shaft of the long bone. At this stage, the stage where surgery offers the best prospect, the roentgen-ray is practically useless as an aid. To wait for the roentgen-ray to show pathology, which can only take place after bone destruction, is either to sacrifice the shaft of that bone or the patient's life. Take the typical case which comes with sudden onset, high fever, prostration, leukocytosis and a tender point, nothing could be simpler. But we do not always have that tender point, as illustrated by many of my cases. There are many obscure cases. The typical case is as easy to diagnose as a typical acute appendicitis, and they require just as quick action. The differential diagnosis between acute rheumatism and osteomyelitis has been so well brought out by Dr. Caldwell that further elucidation would be superfluous. In acute osteomyelitis you have one focus at first and later may have others. The patients often hurt all over and are too young to co-operate, they are too sick and it is not an easy matter to determine your tender point. Examine your patient carefully and if you find a tender point you are justified in operating, as in acute appendicitis. In appendicitis, when in doubt, operate—so in osteomyelitis.

In making the opening in the bone, if you do not actually reach the focus, but are near it, you will relieve tension and pus will soon appear. After drilling a hole enlarge with a chisel, but never curette. Do not pack; put in drainage tube and fasten it in and watch: if you have not found the focus as freely and frankly as you should, do not rest there, because other foci may develop later, but watch daily for other suspicious points. As soon as you relieve the tension there is abatement in temperature and the prostration is lessened, but still some temperature continues.

Another thing about subperiosteal abscesses. An acute superiosteal abscess is a very rare thing and in finding pus subperiosteally do not rest there, but go into the bone. Personally, I have seen but one or two subperiosteal abscesses and those were due to direct trauma at the point and it was very apparent that the thing was a local affair and not in the bone cavity.

I thank Dr. Caldwell for his very complete presentation of this interesting subject.

Dr. W. F. Henderson, (New Orleans): The gentlemen who have preceded me have left the roentgenologist hardly a leg to stand on when making a diagnosis of osteomyelitis. Their point is well taken. At the time when the case is first presented, or within forty-eight hours of onset of pain, the roentgen-ray is going to be of very little use except in a negative way. The bone is composed of, or has a large number of Haversian canals and infection passes out of the canals and the pus may burrow its way far from the original focus. Pus is not visible in a roentgenogram under these circumstances, not until the Haversian canals are filled and bone destruction starts. Bone destruction does not appear until pressure of pus in the Haversian canals has changed the blood supply causing necrosis. As the infection reaches the periosteum we have a periosteal reaction and nature attempts to put a shingle on the weak spot, the bone thickens and a protection levee is thrown up. Therefore, one has no right to wait until that is visible on the roentgen-ray plate to confirm a diagnosis. We must realize that when the roentgen-ray is called upon at that late stage to make a diagnosis someone has been derelict in his duty. One has to watch these patients for many months and years to realize that osteomyelitis is one of the most deforming diseases that we have.

Do not misunderstand me. I believe that the roentgen-ray should always be called into use in suspected osteomyelitis, but do not depend upon this in early diagnosis—rheumatism and tuberculosis may be found, but these should not throw you off the diagnosis. Very little harm will result from drilling a hole in the bone: how much better to drill a bone occasionally and save the child's life and health than not do it and engender such a risk.

I wish to mention one other point. The more we know about osteomyelitis, the more we realize there are other sources of infection in the bone far removed from the first focus. I have roentgen-rayed many cases of osteomyelitis, some in the early stages, some in the late; it is an exception to find people with normal bones. We always afterwards find silent foci of infection if a routine examination of a patient with osteomyelitis does not reveal it at one point, it will always show evidence at some removed distance in the body that will later break down and create the same symptoms.

Early roentgen-ray, and do not wait for confirmation of your diagnosis—go ahead and operate.

Dr. H. Theodore Simon (New Orleans): Dr. Caldwell should be commended for his interesting presentation of this subject. Aside from the mortality which Dr. Caldwell spoke of, in our

clinics we see deformities, distorted limbs, and stiffened joints following this condition. There is little to add.

I am glad that Dr. Caldwell brought out the fact that signs and symptoms should have more weight than the roentgen-ray in arriving at a diagnosis in these cases. We depend entirely too much on the roentgenogram to determine this condition and when we see a case in consultation we are invariably told that the roentgen-ray report is negative.

The needle inserted in a joint can do no harm, but the physician should remember that often the patient thinks differently for he has been told never to allow a surgeon to put a needle in the joint.

I am surprised to hear Dr. Caldwell say that Willem's method of treatment for acute infections of the joint does not give results: we have been using it here for several years and have had excellent results.

Dr. Urban Maes (New Orleans): Surgeons on the whole are quite well posted on the diagnosis of acute infectious osteomyelitis, and for that reason I have for many years been of the opinion that a paper such as this should not be read before a surgical section, but before general practitioners. Surgeons rarely see a case in the acute stage. In private practice I have never seen a case, and in hospital practice I can safely say that I have not seen a case for twenty-five years. They reach us in the chronic, and too often in the hopeless stage, which is, to my mind, a distinct reflection on the general practitioners who see the cases first and who obviously fail to make a correct diagnosis.

In a paper before this Society four years ago I tabulated my experiences in this condition, and I also looked over the cases recorded at Touro Infirmary. The matter of diagnosis was extremely interesting and illuminating. The majority of patients were admitted with a tentative or definite diagnosis of acute articular rheumatism, a diagnosis which also heads Dr. Caldwell's list. Other diagnoses included, in the order named, monarticular rheumatism in the child, associated with intestinal upset, typhoid fever, and bone tuberculosis. The average stay days of these patients in hospital was four months, and they were all discharged before a cure was effected. I can give you even more striking figures from Charity Hospital. I have at present four patients under treatment there, and the combined time of their disability totals exactly one hundred years, an appalling loss from an economic standpoint if from no other.

Early cases of osteomyelitis are extremely easy to manage, providing certain basic principles are understood. Infection in the bone follows exactly the same processes as infection in the teeth; swelling cannot occur without necrosis, and necrosis cannot be prevented unless the patients can be seen in the acute, or at least in the early sub-acute stage. The operation itself, if done within twenty-four to forty-eight hours after the onset, consists only of relieving the tension. Under anesthesia an incision is made over the infected spot, and with a drill or some similar instrument two or three holes are bored in the bone, to relieve the tension. The employment of this simple measure at a sufficiently early stage will result, in the vast majority of cases, in a quick and permanent cure.

Dr. Erasmus D. Fenner, (New Orleans): I take a deep interest in this subject and I disagree with Dr. Maes in his assertion that osteomyelitis is not a subject suitable for the surgical section. I believe Dr. Maes' experience in never having seen a case of acute osteomyelitis is that the character of his particular service has not brought him much in contact with this condition and when these cases enter Charity Hospital they are usually assigned to an orthopedic ward. I see a number of cases of acute osteomyelitis in the acute stages and I also see many cases in our big hospital here who oftimes are not given the necessary immediate surgical attention because the surgeon is waiting for roentgen-ray confirmation of his diagnosis before attacking the condition.

Moreover, I disagree with Dr. Maes in that anything that will bore a hole in the bone is enough to stop the progress. I have a case now which is causing me much distress, a child brought to the hospital the third day after onset, experiencing great pain and with high fever. It was Sunday and my coming to the hospital that day was purely accidental. After seeing the patient I asked permission to take the case as an emergency and operated. The disease was apparently in the neighborhood of the hip. I bored two or three holes in the femur but got no pus anywhere. Two or three days later the pus began to pour, general sepsis set in and while fortunately this condition cleared there is now partial dislocation of both hips. I have at present four cases of partial dislocation of the hip following acute osteomyelitis, one treated within the fifth day of the onset of the disease, but in the others the condition had existed for quite a long time.

I do not believe that the general surgeon, as a class, is informed sufficiently in the early diagnosis of acute osteomyelitis, nor does he realize the absolute indication for immediate interference. Distinguished men have recently written articles in which they claim that boring the bone is not necessary, that merely incising the periosteum will suffice; my own personal conviction is that we should bore the hole to make sure.

I think the discussion of acute osteomyelitis is a good thing for the general practitioner and a better thing for a great many surgeons.

Dr. Guy A. Caldwell (closing): I wish to thank all who have so kindly discussed the paper; it goes to show that it is a subject we need to keep before us all the time.

With reference to Dr. Allen's points they are certainly true. The tender point is difficult to locate in a child or an adult who is seriously ill with generalized pain. I, like Dr. Maes, have seen but few cases in the acute stage, but those that came under my observation had marked points of tenderness and were old enough to point them out accurately. In taking the history of a patient it is nevertheless true that it does not always have the finely defined points portrayed in the literature.

With reference to the development of other foci referred to by Dr. Henderson, that seems to me to be a question of early operation. Certain experimental work has been done, showing that failure to secure good drainage early in the course of the infection is often a cause, the organism being "driven in," so to speak, leading to the later development of silent foci. Dr. Henderson also touched on the point of making roentgen-rays in all these cases because of their value in a negative way. I have never subjected a case to operation without roentgen-ray and never expect to, but it is of value in the early case only in a negative way. I have seen cases which we found later to be osteomyelitis in which the roentgen-ray, or blood chemistry, or other examinations we make in a hospital, were the deciding point in undertaking operation, but they are few and far between.

Dr. Simon misunderstood me with reference to Willem's treatment of acute suppurative arthritis. I think in this particular group of cases, which are under five years of age for the most part, it is not as necessary and not as practical or simple as extension by attaching a weight to the limb.

Dr. Maes' various points are appreciated very much, that is in dwelling on the long disability, particularly in our femur cases. The femur cases, as we know, are the most difficult, yet they, too, can be saved from these years of complete disability if taken in time.

Dr. Fenner brought up an interesting point well worth dwelling upon. Cases of involvement in the upper end of the femur are difficult to treat. I believe that in nearly every case of osteomyelitis developing in the neck of the femur or close to the epiphysis, the hip joint should be drained; I have drained the joint in two such cases, and failed to do so in one other; the two I drained did well, but the other did not, resulting in complete dislocation of the joint. If we drill and find no pus, I feel we should investigate the joint by aspiration.

APPENDICITIS COMPLICATING PREGNANCY.

AIMÉ PAUL HEINECK, M. D.,

CHICAGO, ILLINOIS.

Appendicitis is frequent and doubly significant during the child-bearing period. It, not uncommonly, complicates and unfavorably influences pregnancy; at times, it provokes the premature termination of gestation. Appendicitis occurring during gestation can prove fatal to the mother, to the fetus, or to both mother and fetus. It is well deserving of study by the gynecologist, the obstetrician and the surgeon. All the various grades and varieties of appendicitis, primary or secondary, acute, subacute, chronic, or recurrent, catharrhal, ulcerative, suppurative, gangrenous, perforative or adherent, and its various complications and sequelae, adhesion formation, abscess formation or peritonitis, localized or generalized, occur during gestation. The morbidity and mortality of appendicitis is greater in the pregnant than in the non-pregnant. Early and correct diagnosis, followed by immediate appropriate and skillful surgical relief, will reduce both the morbidity and the mortality of the disease under consideration.

This contribution is an analytical study of all the operated cases of appendicitis associated with gestation, intra- and extrauterine, reported in the English, French and German medical literature from 1916 to 1926 inclusive.* In the Illinois Medical Journal, April, 1917, I published a similar study of 173 operated cases of appendicitis associated with pregnancy, reported from 1900 to 1915 inclusive.

This analysis of 405 cases of appendicitis diagnosed either at the operating table

*All the medical publications are to be found at the John Crerar Library, Chicago, Ill.

or established by the postmortem findings, amplifies and supplements my previous publication. They occurred in 405 pregnancies, 21 of which were ectopic in location, while the remaining 384 cases were intra-uterine.

Appendicitis complicating the puerperium is not considered in this paper; it imperils only the maternal life and constitutes a separate chapter of appendicitis. Uterine gestation complicated by appendicitis presents two indications: The saving of the fetal life and the saving of the maternal life. Of the two, the latter is all important.

Cases in which the diagnosis of pregnancy was not fully established at the time of operation were also excluded. Tracy[5] removed an acutely inflamed appendix from a stout nulliparous woman. She had missed her menstrual period for a few days. It was not possible, previous to or at the time of operation, to make a positive diagnosis of gestation. Time settled the question; she was delivered at full term.

Cases in which the products of conception were expelled from the uterus previous to the development, diagnosis or surgical intervention for the relief of appendicitis were omitted. In a twenty-one year old primipara,[35] labor pains appeared during the ninth month of gestation; the cervix dilated and spontaneous delivery of a non-viable child occurred. The abdominal pain continuing and the general symptoms becoming worse, appendectomy was performed on the following day. Inflammatory products escaped from the abdominal cavity and death of the mother six hours after from general peritonitis. Needless to say that we also excluded cases in which the removed appendices were found, after careful examination, to be normal.[37]

Pus collections, presumably of appendiceal origin, evacuated by colpotomy were excluded, unless the diseased appendix was exposed to inspection or direct palpation. This explains the omission of cases similar to that reported by Favreau and Chaput[19] in which 500 grammes of dark brownish pus were evacuated by colpotomy. The appendix not having been exposed, the clinical diagnosis of appendicitis was only presumptive and not conclusive.

EXTRA-UTERINE PREGNANCY.

Extra-uterine gestation, aborted, ruptured or in progress, abdominal or intra-ligamentary, ovarian, tubal or tubo-ovarian, calls for immediate removal of the ectopic fetal sac, irrespective of the age of the pregnancy or of the mother's general condition. This is a life-saving indication. In ectopic pregnancy, the life of the fetus is to be disregarded. Appendicitis, irrespective of type, calls for surgical treatment, ablation of the appendix preferably.

Ectopic pregnancy occurs at all periods of the child-bearing age. Ectopic pregnancy and appendicitis are surgical conditions, each calling for immediate operative relief. When the two conditions coexist, the call for surgery is two-fold: The fetal sac and the diseased appendix should be removed at the same sitting. This double removal is the procedure of election; it was instituted in twenty of the cases herein considered and was followed invariably by recovery. Some clinicians follow a different course. Gore's[21] patient presented the symptoms of appendicitis; the point of greatest tenderness was four inches to the right of the umbilicus and about one inch above. Bimanual examination showed a soft cervix, admitting the tip of one finger. Child's head was felt through the lower uterine segment. Patient complained of excessive fetal movements. During examination, vigorous movements were observed through the abdominal wall. The appendix was removed. On the 7th postoperative day, it was decided, after consultation, to deliver the patient. The patient having been etherized, manual dilatation was begun, and the uterus was found empty. A laparotomy was then performed; the peritoneal cavity contained blood-stained fluid and a large, bluish tumor the

size of a six-months' pregnant uterus, attached to the right broad ligament by a small twisted pedicle. This sac-tumor had made two complete turns on the axis of its pedicle and had the odor of degenerating blood. The pedicle was clamped, the stump transfixed and ligated, and the tumor removed. Examination of pelvic organs showed uterus in normal position, enlarged to three times its normal size. Left tube and ovary normal. Drainage; abdomen closed in usual manner. Tumor which included the right tube and ovary contained a six-month male fetus, apparently dead for thirty-six or forty hours. In four cases,[23,25,39] the inflamed appendix and the ruptured fetal (tubal) sac were removed at the same sitting. In these four cases as in all tubal pregnancies that rupture into the peritoneal cavity, peritoneal flooding was present. In three cases[29,39] of incomplete tubal abortion, the tube, the products of conception and the inflamed appendix were all removed at the same sitting. The appendicitis that coexists with ectopic gestation is usually chronic. All but two patients gave a history of having had previous attacks of appendicitis. In most cases, the appendix was found to be adherent to some adjacent organ or structure: Omentum, right tube and ovary, uterus, or urinary bladder.

AGE.

Appendicitis occurs at all periods of the child-bearing age; its incidence is possible in any gestation, first, subsequent or last, uterine or extra-uterine, single, twin or multiple. In the cases herein analyzed, the age incidence is reported as follows:

From 15 to 20 years	46 cases
" 21 to 25 years	107 "
" 26 to 30 years	100 "
" 31 to 35 cases	63 "
" 36 to 40 years	25 "
" 41 to 45 years	3 "
46 years	1 case
Age not stated	60 cases

In the above cases, the age stated is that of the patient at the time of operation. The three youngest patients were 15 years [one-32] and 16 years (two cases) of age, respectively. One of the last two patients was operated after the acute symptoms had subsided;[25] the other, during the acute attack.[39] The oldest patient was 46 years of age.[39]

No relation was observed to exist during gestation between the age of the prospective mother and the extent, virulence and outcome of the appendiceal inflammation. More than one-half of the cases occurred between the ages of twenty-one and thirty, inclusive.

NUMBER OF PREVIOUS PREGNANCIES.

Primipara	36 cases
II-parae	143 "
III-parae	74 "
IV-parae	6 "
V-parae	4 "
VI-parae	2 "
VIII-parae	2 "
IX-parae	1 case
Multiparae	2 cases
Not stated	135 "

One patient[8] presenting a five-month-pregnant myomatous uterus, had never had any living children, but had two miscarriages. Another patient was a three-month-pregnant multipara.[9] In 135 cases, the reporters do not state whether their patients had previously been pregnant. In 143 cases, over one-half of the cases in which the number of pregnancies is reported, the inflamed appendix was removed in the second gestation. Seventy-four cases occurred in III-parae.

PERIOD OF GESTATION.

The more advanced the gestation, the greater the probability of its interruption in the presence of appendicitis. It is hard to establish the exact age of a gestation; it is equally difficult to determine the age of the fetus at the time the symptoms of appendicitis first become manifest. Appendicitis occurs at all periods of gestation. In our collected cases, the maximal frequency was observed during the second (64 cases), third (83 cases) and fourth month (75 cases). It is rare in the last few weeks of pregnancy. The subjoined table shows the age of the pregnancy at

the time of operative relief of the appendicitis.

1st month	8	cases
2nd month	64	"
3rd month	83	"
4th month	75	"
5th month	44	"
6th month	42	"
7th month	23	"
8th month	25	"
9th month	11	"
10th month	5	"
Not stated	25	"

In case 12, an appendectomy was performed during the active stage of labor. The first day of last menstruation and the descent of the uterus in the thirty-eighth week indicated that the expectant date would lie between July 15th and 20th. The symptoms of appendiceal disturbance began on the 15th. On the same day, the patient began to complain of definite, infrequent and irregular girdle pains, beginning in the "small of the back" and migrating forward and downward to the hypogastrium. Examination revealed a beginning dilatation of the cervix. On the 17th, the appendix in the pre-perforative stage of gangrene and containing two drams of pus was removed. Nine hours after operation, labor was complete.

PATHOLOGY.

The appendix, in the gravid or non-gravid state, often presents variations in size, length, mobility, location and contour which are not without influence on the course of appendicitis. Not uncommonly, old or new inflammatory adhesions bind the appendix to contiguous organs; these adhesions may be so firm and so extensive as to make the operative procedure tedious and difficult. Chronic appendicitis is often productive of adhesions that interfere with the enlargement of the uterus, with its emergence from the pelvis, with the uterine contractions at time of labor. These adhesions play an important rôle in the etiology of oophoritis, abortion, subinvolution and extra-uterine pregnancy.

Associated conditions not infrequently occur. They antedate or complicate the appendicitis and aggravate the prognosis. Salpingitis, unilateral or bilateral, was noted by Jerlov[32] in at least 15 per cent of the cases; ovarian tumors: dermoid (37), papillary and other cysts (39) are not uncommon. Case 3 presented, in addition to the appendicitis and the gestation, an ovarian dermoid cyst four inches in diameter, containing sebaceous material, six teeth and some hair; case 7 presented a man's-head sized ovarian tumor. All varieties of ovarian tumor, dermoid cyst in particular, may complicate pregnancy. They call for immediate operative removal, because they increase the probability of abortion and may hinder delivery. Ovarian tumors and cystomata may be the seat of torsion, gangrene from pressure, rupture and suppuration and can determine accidents fatal to the mother and to the fetus[7].

Inflammation has manifold manifestations and various terminations. It terminates either in resolution, fibroid thickening, ulceration, suppuration or gangrene. An inflammation involving the whole thickness of the wall of a hollow viscus, such as the appendix, may result in perforation. Because inflamed appendices present various grades of inflammation, classifications based upon the preponderating lesion lack precision. When gangrene was the preponderating lesion, the appendicitis was classified as gangrenous; if a perforation existed the appendicitis was classified as perforative.

Many serviceable classifications of appendicitis have been proposed. We have adopted the following, though conscious of its shortcomings:

Acute catarrhal, with or without ulceration	108	cases
Acute suppurative without abscess formation	3	"
Acute suppurative with abscess formation	7	"
Acute suppurative with circumscribed suppurative peritonitis	70	"
Acute suppurative with diffuse suppurative peritonitis	28	"
Acute gangrenous	52	"

Acute gangrenous with abscess formation	1 case
Acute gangrenous with diffuse peritonitis	1 "
Acute perforative	5 cases
Acute perforative with gangrene	3 "
Acute appendicitis and acute gonorrheal salpingitis with peritonitis[5]	1 case
Chronic with adhesion formation	14 cases
Chronic without adhesion formation	11 "
Chronic: No mention made of the presence of adhesions	66 "
Too briefly reported	35 "

In the suppurative form, the pus was present either in the lumen of the appendix [12], in its wall or in the form of a peri-[23] or para-appendiceal[3] abscess. Several retro-cecal abscesses are reported[16]. "Large appendiceal abscess extending above to the naval and beyond the mid-line" [10]. The appendix may be adherent to the posterior abdominal wall[3], to the ascending colon[30], to the right adnexa and uterus[7], to the right tube[39], to the fetal cyst [25], to the omentum, intestine and tube[23], may be buried in inflammatory tissue[6], etc.

In operating on cases of appendicitis, one notices the presence of a peritoneal exudate, localized or diffuse, varying in quantity and in nature in different cases: Serous[29], serous with numerous flocculi[6], purulent[22], etc.

DIAGNOSIS.

Appendicitis occurring during gestation often offers diagnostic difficulties not present in the non-gravid state. Mild attacks are often misdiagnosed; they are mistaken for the digestive disturbances incident to the onset of pregnancy or for some of the other discomforts of gestation, such as can be caused by congestion of the ovaries, stretching of the uterine ligaments, etc.

According to the acuteness and duration of the symptoms presented by each individual case, 279 cases were acute and 91 chronic; in 35 cases, the reports are incomplete and do not permit exact classification.

The symptoms of appendicitis in the gravid state are those of the disease in the non-gravid state, with variations, determined by the age of the pregnancy, the fetal movements, the changed abdominal conditions, etc. Coincident pathological conditions modify and blur the clinical picture. Pyelitis (unilateral[37] or bilateral[36]), is reported as having coexisted in a few cases.

During pregnancy, especially from the fourth to the seventh month, pain in the right iliac region is common. Not infrequently it is due to traction exerted on peritoneal bands and adhesions by the enlarging uterus. The ascending uterus can displace the colon, cecum and appendix upward[32], six cases, forward and outward. The upward, forward or backward and outward displacement of the cecum and appendix occurs only in a fraction of the cases; it interferes with proper drainage of the appendiceal region and, in the later months of pregnancy, is of diagnostic and operative concern. Adhesions due to a previous inflammation bind down the appendix, limit its mobility and prevent its displacement. Abdominal pain must not be misinterpreted; its importance must not be misjudged. Pain and digestive disturbances call for proper recognition and interpretation. A patient should neither be subjected to the dangers of a needless operation nor deprived of the benefits of an indicated one. In appendicitis, the site of maximal pain and tenderness always corresponds to the location of the appendix[10, 12, 15, 19, 21, 24, etc.) If the latter be a pelvic organ, the site of the pain is pelvic; if an abdominal organ, the pain is abdominal.

In the non-gravid female, the appendix has been found in all parts of the pelvic and abdominal cavities; in pregnant women, variations of location are less uncommon. The appendix has been found in the right lumbar region[16], in the left side of pelvis [5], immediately beneath the liver[27].

The initial pain is felt in the upper abdomen or epigastrium[15]; in most cases, it becomes gradually localized to the location

of the diseased appendix[20], usually, the right iliac quadrant. In the acute forms, the pain is sharp and lancinating in character and frequently radiates down the right thigh. In the subacute and chronic forms, it is more of a constant dull ache. It may intermit.

The most reliable symptoms are: Localized pain, localized tenderness, and localized muscular rigidity over the region of the appendix, usually, the right lower abdominal quadrant. The symptoms: Fever, rapid pulse, chills[9], leukocytosis, nausea and vomiting are of less diagnostic value, because they are frequently absent in early cases, occur in many other disturbances incident to the period of gestation, and are characteristic only after the infection has begun to spread. If perforation occurs or pus collects, palpation usually detects a tumor mass. In appendicitis, abdominal pressure so made over the descending colon as to force gas toward the head of the cecum, increases the pain (Rovsing). It is most important to elicit a careful history and to obtain an accurate report of previous attacks. Patients who, prior to gestation, have had appendicitis treated non-operatively suffer, more or less, disturbance in the appendiceal region during pregnancy. One hundred and sixty-three cases gave a history of one or more previous attacks[3, 4, 6, etc.] The value of leukocytosis as a diagnostic aid is lessened by the fact that, in pregnancy, a leukocyte count up to 12,000 is not pathologic. Nevertheless a high leukocytosis with a high polymorphonuclear count, if associated with other symptoms of appendicitis, is very suggestive of the existence of the disease. We find reported a leukocytosis of 16,000 with 87 per cent polynuclear[32], of 18,000[18], of 22,000[24], of 23,500[22].

In the latter months of pregnancy, an early and correct diagnosis may prove, at times, very difficult, especially when the appendix is displaced immediately beneath the liver. Diseases of the gall-bladder, of the right kidney, of the stomach, of the liver, of the uterine adnexa simulate appendicitis and confuse the clinician. All these affections must be considered and excluded. In many cases the clinician must be satisfied with a probable diagnosis. Valuable time may be lost in attempting to make an exact differential diagnosis. Careful and repeated examinations of the catheterized urine from each kidney show the presence or absence of unilateral or bilateral pyelitis. In the presence of pyelitis, one notes pyuria, bacteriuria and sensitiveness to pressure of the affected kidney or kidneys.

If appendicitis be mistakenly diagnosed ectopic pregnancy or vice versa, the mistake is negligible as both conditions call for immediate surgical relief, the first step of which, in both cases, is abdominal section and inspection and palpation of the existing pathology. Exploratory laparotomy finds here an urgent indication.

When adnexal and appendiceal disease coexist, accurate diagnosis is more difficult. They may be of separate and independent origin or secondary one to the other; the pathological process extending by continuity or contiguity of tissue, or by lymphatic or vascular routes. Vaginoabdominal examination aids in differentiating a diseased appendix from adnexa the seat of inflammatory, cystic or neoplastic changes.

PROGNOSIS.

There is no fixed relation between the severity of the symptoms presented by the patient and the existing anatomical lesions; therefore, it is difficult to make an exact pre-operative prognosis as to fetal and as to maternal life.

Appendicitis is a dangerous disease. Many cases, apparently mild at the onset, prove fatal. The safety of the mother, be the case acute or chronic, is best assured by an early and immediate removal of the appendix and by non-interruption of gestation. It is universally admitted that early recognition and immediate operation holds forth a far better prognosis for the mother and for the gestation. Generally speaking, the less advanced the ges-

tation, the less likelihood of appendectomy being followed by interruption of pregnancy. Operate, if possible, before the occurrence of suppuration, gangrene or perforation and thereby forestall the development of serious complications. After the fifth month of pregnancy, the operative difficulties are increased: The uterus occupies the larger part of the abdominal cavity, suppuration is more frequent, adequate drainage is more difficult to secure. "Drainage was necessary; abortion followed two weeks after operation"[2]. In the appendicitis of the later periods of gestation, tympanitis, when present, interferes more with respiration and intestinal obstruction and is of not uncommon occurrence. There is increased vascularity and marked lymphatic dilatation of the peri- and para-appendiceal region; phlebitis and thrombosis are more prone to develop; the pus shows a tendency to burrow more widely and there is less likelihood of encapsulation. The omentum and small intestines in this later period cannot as easily protect the appendix.

During gestation, the prognosis of appendicitis is influenced by many factors. Other factors being equal, the morbidity of this condition is more varied and its mortality higher in the pregnant than in the non-pregnant. The pregnant female is an individual of lessened resistance to infectious and toxemic processes; this lessened resistance is most noticeable in the later period of pregnancy and in the presence of a virulent infection.

The pregnant uterus reacts unfavorably on the chronically inflamed appendix; likewise, an acutely inflamed appendix may so disturb the pregnant uterus as to induce abortion and thereby subject the patient to the combined morbidity of uterine abortion and appendiceal inflammation. Appendicitis may initiate abortion previous to, during or after the removal of the appendix. The mother and the fetus may live; the fetus may live and the mother die; the fetus may die and the mother live, or both may die; in some cases, the fetus may be dead previous to operation[32], and in some cases, the mothers have died undelivered[32].

Abortion may result from infection conveyed to the ovum either by the maternal blood or the lymphatic vessels, by the mucosa and submucosa of one or both tubes and the uterus. Abortion, induced or spontaneous, is always an aggravating factor.

The important difference existing between clinical recovery and anatomical recovery must not be ignored. It is that difference that impels us to advocate early operation. The efforts of the uterus to expel its contents may rupture encapsulated abscesses, tear adhesions limiting the spread of the infection and relight slumbering inflammatory processes. To avoid such disastrous accidents and the general peritonitis resulting therefrom, operate all your cases of appendicitis, and operate them early.

There were 32 maternal deaths. They can be attributed to the virulence of the infection, the advanced age of the pregnancy, the late recognition of the disease, the occurrence of abortion and premature labor, and, especially, the tardy and inappropriate surgical relief (8-month pregnancy, operation on 9th day after onset of appendicitis[25]; 7-month pregnancy[36]. The most common cause of death was diffuse peritonitis[10]. Case 26 was in the 8th month of gestation. She was delivered of a living but non-viable six-month infant four weeks after operation and died on the ninety-first post-operative day. One case[36] died on the forty-seventh post-operative day of acute pulmonary edema. In a patient[36] the blood showed, on the fifth post-operative day, streptococci hemolytici. She died on the sixth postoperative day. Some of the thirty-two deaths were due to complicating co-existing conditions: Placenta praevia totalis (child died during delivery)[18] and consequent hemorrhage.

Three hundred and seventy-three patients recovered from the appendicitis and

from the operation; they were restored to normal health. In the early months of gestation, a skilfully performed appendectomy is rarely followed by interruption of gestation. Abortion, miscarriage or premature labor are due either to some complication of the appendicitis or to some adventitious cause and may occur irrespective of the operation employed. With the advent of peritonitis or other serious complication, abortion is not improbable. In the later months, it is difficult to avoid disturbing the uterus, and the operation may contribute to the untimely termination of the pregnancy. Operation does not jeopardize the mother's life; appendicitis does.

In the twenty-one cases of ectopic pregnancy, the products of conception and the appendix were removed at the same operative sitting. In two hundred and five cases, despite the operation, the appendicitis and its complications or sequelae, a living child was born. In eleven cases, including one[11] in which cesarean section and appendectomy were performed at the same sitting, no mention is made of the state or viability of the child.

Premature labor, the expulsion of a fetus at or after the age of viability, is recorded in seventy-one cases. It may occur on the day of operation, on the day following[15], several days later or "four weeks after operation"[26]. A few were induced by the medical attendant for syphilis, pelvic contraction, albuminuria[9, 32], etc. Most always, the premature labor was spontaneous, being due, in part, either to the operation, the infection, some associated pathological condition (Ovarian cyst—[39]—; nephritis, pyelitis—[36]—, etc.), or to the combination of various factors. In almost all of the premature labors, the baby died. "Baby died from apnea"[12]; "infant lived but twelve hours"[16]; "child died after a few respiratory movements"[22]. Jerlov[32] records nine living children in fifty-two interrupted gestations following appendectomy.

In ninety-two cases, either abortion or miscarriage followed, earlier or later, the operation. It is most always a clinical manifestation of severe maternal infection and therefore is more frequently observed after late operation and in individuals of lowered resistance. In septic abortion cases, the raw uterine cavity and its thrombosed gaping vessels increase the dangers of spreading infection. Some cases aborted shortly after operation: 12 hours (30), second day (5), on the fourth day (10), five days (37), others, as long as two weeks (2), etc. Case 5, eight weeks pregnant, was operated at one sitting for acute gonorrheal salpingitis. She did not wish the gestation to continue. She miscarried after being discharged from the hospital. In case 8, fifteen days after operation, a five-month fetus was expelled. There coexisted an appendicitis and a massive fibroid encircling the lower half of the uterus and extending up to the umbilicus.

TREATMENT.

Be the patient pregnant or nonpregnant, the curative treatment of appendicitis is operative in nature. Palliative measures have a wide field of usefulness, but only as pre- and post-operative adjuvants. We know of no valid contra-indication to operative treatment. Women of child-bearing age who have had one or more attacks of appendicitis non-operatively treated, should, at the earliest possible time, submit to removal of the appendix. A pregnant woman whose metabolism is normal is a good surgical risk.

The importance of early and timely operation cannot be overemphasized. The appendix should be removed before it has ruptured. The earlier the appendectomy, the less advanced the pathology, the greater the probability of the patient's uneventful recovery. It is not possible to foresee the outcome of a non-operatively treated appendicitis, therefore the wisest course is to remove the diseased appendix, if feasible. Delay in operating permits the development of complications that are beyond the

control of the surgeon. It has often proven disastrous. In cases of suspected appendicitis, do not wait for a positive diagnosis. When in doubt, you are amply justified in performing an exploratory laparotomy, exposing the appendix and removing it. If a condition amenable to surgical correction is encountered, the exploratory laparotomy is serviceable. The harm resulting from the removal of a healthy appendix is negligible.

Interruption of gestation has no place in the treatment of appendicitis complicating uterine pregnancy. The surgeon should remove the diseased appendix, reduce to a minimum all intra-abdominal manipulations, and see that the gestation be undisturbed. Prolonged traumatizing search for the appendix is to be avoided. Should the delivery of the appendix entail the tearing of protective adhesions and the spreading of the infection, limit the operative procedure to drainage of the appendiceal and other infected regions.

Appendicitis complicating gestation presents to the clinician two paramount indications: The removal of the diseased appendix and the non-interruption of gestation. The attendant should strive to have the pregnancy continue undisturbed. It will not be amiss to tell the patient that, despite the operation, abortion or premature labor may occur, but that it is more probable if the case be treated non-operatively. The probability of cessation of gestation increases with the severity of the infection.

Previous to ascertaining by inspection the nature and extent of the diseased process, one cannot decide what operative procedure is indicated in the case at hand. Operate as rapidly as consistent with the indications and the patient's safety. Reduce all handling of the abdominal organs to a minimum.

If, despite all precautions, post-operative abortion occurs, endeavor to secure the spontaneous emptying of the uterus by tamponade, quinine, pituitrin, etc. Avoid all needless manipulation and instrumentation of the uterus.

Appendectomy is almost always an emergency operation; its technique is simple and easy of execution. Any physician of ordinary experience and skill should be conversant with its performance. When feasible, the center of the incision should correspond to the point of maximal pain and tenderness. We frequently employ the gridiron incision, well to the side. The muscles are split, not cut; thus the abdominal wall is not weakened and is able to withstand the distention incident to pregnancy and the muscular strain accompanying labor.

Septic complications tax the diagnostic and therapeutic skill of the doctor. They prolong convalescence, and often put the already weakened resistance of the patient to a severe test. In complicated cases, the incision must, of necessity, be longer, the trauma is greater, and the post-operative shock more marked than in cases of moderate severity.

Appendicitis occurring within several days of the expected time of labor, influences the obstetrician's choice of method of delivery. It may be necessary to resort to vaginal or abdominal cesarean section. The co-existence of complicating conditions—an exhausted mother, a contracted pelvis, placenta praevia—may require unusual measures.

The removal of the uterus is a needless mutilation and is never indicated in well-managed cases. Hysterectomy, complete or incomplete, is a difficult operation and should not be undertaken by one of limited surgical experience.

The authors refer to drainage in 188 cases: It was used in 119 and omitted in 69 cases. Some operators used cigarette drains[11], a few, rubber tubing[12], others, a glass tube[18], and many, wicks of gauze. Drainage, when indicated, is serviceable. It has disadvantages; it has dangers. Its indiscriminate use is to be condemned. The

enlarged uterus makes the maintenance of adequate drainage difficult. It must be discontinued as soon as the discharge becomes scanty and serous. The gauze, glass or rubber tubing, cigarette drain, or other agents of drainage should not impinge, should not irritate the uterus. Its use is always indicated in para- and peri-appendicular abscesses, in suppurative peritonitis, localized or diffuse, and whenever the peritoneal exudate is copious. The use of drainage, at times, leads to adhesion formation; intestinal obstruction[14] may result therefrom. Other objections are that it is occasionally followed by a fecal fistula[15], by a post-operative hernia[2, 4], etc. If in doubt as to the need of drainage, do not drain.

In 243 cases, the time of operation, with reference to the onset of illness, is not stated. In the remaining 162 cases, it can be tabulated as follows:

Time of operation after onset of illness	Number of cases	Number of maternal deaths	Abortions of premature labor
Within 24 hours	36	1	7
Within 48 hours	35	1	16
Within 72 hours	77	26	43
From the 4th day to the 6th day, incl.	8	1	1
On 9th day of disease	2	2	2
On 10th day of disease	2	0	0
One month later	2	0	0
Total	162	31	69

The above table demonstrates the importance of early and timely operation from both the maternal and the fetal standpoint. Early operation curtails the morbidity and is rarely followed by death of the mother. Involvement of the internal genitalia in the appendiceal inflammation predisposes to abortion.

The operative procedures resorted to admit of the following tabulation:

IN THE UTERINE PREGNANCIES.

	Cases	Deaths	Abortions or premature labors
Appendectomy	371	32	159
Appendectomy and removal of an ovarian tumor	3	0	2
Appendectomy and caesarean section	1	0	0
Appendectomy and vaginal section	1	0	0
Appendectomy and removal of one tube, or of one tube and ovary	5	0	1
Appendectomy and sub-total hysterectomy	1	0	1
Total	382	32	163

IN THE EXTRA-UTERINE PREGNANCIES.

	Cases	Deaths
Appendectomy and removal of fetal sac and tube and ovary of corresponding side at same sitting	20	0
Appendectomy; 7 days later removal val of ectopic sac	1	0
Total	21	0

Some of the patients were operated under local anesthesia, some under splanchnic and local anesthesia combined[18], others under spinal anesthesia[23], and almost all were subjected to general anesthesia, such as gas oxygen[11], ethylene[24], chloroform[12] and ether.

Most of the cases, with few exceptions, made an uneventful recovery. In one case[10], the patient aborted on the fourth post-operative day and had a stormy convalescence. "During the twelve weeks of her stay at the hospital, she had pyelitis on both sides, first on the right and then on the left. She had phlebitis in the femoral and popliteal veins, first on the left side, then on the right. She was very ill several times during her long sepsis; but a secondary laparotomy with good nursing and with repeated irrigations of the kidney pelves through the ureteral catheter finally saved her. After six months, she has regained her color and her weight and is in perfect health."

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REVIEWS

THE ETIOLOGY OF PERNICIOUS ANEMIA.*

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Modern conceptions regarding the etiology of pernicious anemia may be broadly grouped as: (A) A theory of gastro-intestinal infection of toxemia; and, (B), A theory of dietary, perhaps vitamin, deficiency.

(A) *The theory of gastro-intestinal infection or toxemia.*

In 1889, William Hunter[1] emphasized the presence, frequently early, of glossitis in pernicious anemia and expressed the view that oral sepsis is most likely responsible for this disease. His finding of marked siderosia in the liver led him to propound the theory that excessive blood destruction occurred in the portal area as the result of gastro-intestinal toxemia or infection.

In the thirty-eight years ensuing since Hunter's utterance, a good deal of evidence has accumulated to support this theory and today his conception, in a somewhat modified form, has numerous advocates.

THE SIGNIFICANCE OF ACHLORHYDRIA.

The one most striking phenomenon which has been shown to be almost invariably present in pernicious anemia is the absence of the free hydrochloric acid of the stomach. Of 1141 cases of pernicious anemia or subacute combined degeneration of the cord examined by various investigators (Ewald,[2] Zadek,[3,4] Lavine and Ladd,[5] Hurst,[6] MacBride and Carmichael[7]) all but 27 showed the absence of free hydrochloric acid and of these latter cases the diagnosis of pernicious anemia was confirmed at autopsy in only 5.

Bloomfield and Keefer[8] have shown that this is a true anacidity (pH 6.0 to 7.0) and that acid is not secreted after stimulation with histamin. Furthermore, of all the symptoms and signs of pernicious anemia, this is the one single sign which persists unchanged even in very long remissions

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(Hurst[9]). Even the remarkable effects of "liver diet" in producing an apparently complete remission have failed to bring back the acid secretion.[10] On the other hand, Hurst has shown that achlorhydria not associated with pernicious anemia may show, in some instances, some degree of reversibility.

What is probably a still more significant feature as regards etiology is the fact that this achlorhydria appears to precede the onset of the disease. Faber and Gram[11] have reported four cases in which the achlorhydria preceded the definite onset of the disease by from three to twelve years. Nine other such cases have been reported (Sturtevant,[12], Mouzon,[13] Montgomery,[14] Carey[21]), and that more than this number have not been reported can at least in part be explained by the relative infrequency of the performance of a gastric analysis unless indicated by the incidence of the symptoms of the disease.

The cause of the achlorhydria is problematical. In a number of cases Hurst[(6)] believes the achlorhydria is constitutional, "an inborn error of functional activity independent of anatomical changes in the mucous membranes." He considers that 16 per cent of individuals with constitutional achlorhydria ultimately develop pernicious anemia.[9]

Recently a good deal of attention has been focused on the familial or hereditary incidence of pernicious anemia. Thus, Levine and Ladd[5] found a familial incidence in nine of 150 cases or 6 per cent. Klein,[16] Cabot,[17] Patek,[18] Gulland and Goodall,[19] Wilson,[20] Carey,[21] and Maclachlan and Kline[22]—to mention only a few from an ever increasing literature — record instances of from two to eleven cases of pernicious anemia occurring in the same family.

The underlying finding in all these examples of familial pernicious anemia seems to be a familial occurrence of achlorhydria. Weinberg[23] examined twenty-four relatives of twelve patients suffering from pernicious anemia. Of those examined twenty-two were children and two were adults. Nine of the children and one of the adults had achlorhydria. One of the patients had four children and in three of these achlorhydria was present. Todd[24] and Dorst[25] quote other interesting examples of the familial incidence of achlorhydria associated with familial pernicious anemia.

Hurst considers that the achlorhydria may also be secondary, and records cases of pernicious anemia following achlorhydria resulting from alcoholic gastritis and from carcinoma.[26]

A statistical survey of the incidence of pernicious anemia in Western Canada by Montgomery[14] revealed the curious fact that whereas certain localities reported only occasional cases of pernicious anemia, other localities of equal population furnished a very large percentage of cases. These cases, moreover, occurred among the Anglo-Saxon population who had resided in these districts for many years (twenty years or longer) and never among the more recently settled Scandinavian immigrants.

A notable feature of the "high incidence" districts in Western Canada is the fact that they are the districts where, as the result of geological formations, the drinking water contains a very high concentration of the alkaline earths. A natural hypothesis suggested by this discovery is that the continued drinking of alkaline water over a long period of years leads to achlorhydria and thus the avenue is opened for infection leading to the development of pernicious anemia. With the object of investigating the validity of such an hypothesis, the writer examined a number of apparently healthy old time residents, varying in age from 30 to 60 years, and of both sexes, in both a "high" and "low incidence" district. In a village of 400 population, which had reported six cases of pernicious anemia within five years, and where the water contains a very high proportion of alkaline earths, a very high incidence of hypochlor-

hydria and achlorhydria, as well as the mild diarrhea often associated with insufficient gastric acidity, was found. On the other hand, in a district where the disease was exceedingly rare and the water good, hyperacidity, constipation, and piles were much more common.

Conclusions of course cannot be drawn from these findings as they are the result of the examination of only 84 individuals. However, they tend to confirm the conception that water supply may be an important factor in the production of achlorhydria in districts where pernicious anemia is endemic.

The effect of the achlorhydria may be briefly summarized:

(1) Gastric digestion is impaired and this permits unsoftened and hard particles of food to pass into the small intestine. Zadek[4] found (in 200 cases) frequent inflammation and atrophic processes in the stomach and intestines. Hanke and Koessler,[27] in their work on toxic amines, showed that the intestinal tract frequently contains very large doses of poisons which are probably rendered physiologically inert in the passage through the intestinal wall, which, they found, takes a most active part in the chemical processes that render these potent substances harmless. As the result of achlorhydria, the intestinal wall may be injured and its normal viability and impermeability lost.

(2) Incomplete protein metabolism as the result of the absence of hydrochloric acid permits an undue proportion of food residue to remain in the lower ileum in a form readily prone to bacterial decomposition. Furthermore, toxic split-protein products may be formed as the result of incomplete digestion.

(3) The pH of the normal stomach may vary from 1.2 to 7.0. Knott[28] has shown that the gastric juice is a strong antiseptic and that an acidity of pH 4.0 will kill many strains of B. coli and streptococcus. Arnold and Brody[29] found that in normal individuals the reaction of the duodenum varies from pH 4.0, after outpouring of the gastric juice, to pH 8.0 when nothing is passing the pylorus. In achlorhydria the reaction of the duodenal contents remains continuously very close to neutrality, the periodic waves of acidity having disappeared.

The absence of the bactericidal barrier in the stomach, therefore, may not only permit organisms to enter the upper bowel, but what is more important, may permit them to grow and multiply in this highly absorptive portion of the gastrointestinal tract on account of the continuous absence of acidity.

Knott[31] found that in over 90 per cent of cases showing normal amounts of free hydrochloric acid in the gastric juice, the resting duodenal contents were sterile, whereas the corresponding specimens in achlorhydria were always teeming with live bacteria. Van der Reis,[32] and Bogendorfer and Bucholz[33] found fecal types of bacteria normally present only in the lower ileum and large bowel, growing in the upper part of the small intestine in pernicious anemia.

There is, thus, a good deal of a priori evidence to suggest that achlorhydria permits chronic infection of the upper bowel to take place. It is natural to inquire, however, why do not all individuals with achlorhydria develop pernicious anemia? Functional achlorhydria has been found to exist in 4 per cent of normal students[9] and achlorhydria is frequently associated with other diseases such as malignancy, cholecystitis, chronic gastritis, and neurosis.

In attempting to solve this question, the findings of Bloomfield and Keefer, previously quoted, should be noted: namely, that such a condition of true anacidity as is found in pernicious anemia is relatively rare, and the pH of the gastric contents of the normal individual with so-called "anacidity" is frequently just below the end point of dimethyl. In such individuals an

acid barrier is therefore still present. Furthermore, individual resistance and immunity varies. It is well known that, of a number of individuals exposed under exactly the same conditions to a disease, some will develop the disease while others may remain immune. Variation in the toxin destroying powers of the intestinal wall, or an inherent hereditary susceptibility of the bone marrow may be present. Piney[30] considers that the primitive myeloblastic tissue, which normally atrophies, persists in certain individuals and various agents capable of producing a secondary anemia in ordinary persons, will produce pernicious anemia in such individuals as possess the necessary remnant of megaloblastic tissue.

POSSIBLE CAUSATIVE ORGANISMS.

Hurst suggests that in pernicious anemia there are three toxins, namely (1). a neurotoxin; (2). a hemotoxin acting directly on the bone marrow; and (3) a hemolysin. These may be produced synchronously or one at a time. Remissions are due to the development of a certain degree of immunity towards the "infection." This author believes that there is a definite infection of the intestinal tract with a hemolytic streptococcus (streptococcus longus).[6] He found this organism frequently present (77.5 per cent of 40 cases) in the duodenum of patients suffering from pernicious anemia or subacute combined degeneration of the cord and much less often in a series of controls (20 per cent of 145 normal individuals) where the organism, when found, was scanty and slow growing.

Grinker[34] rejects this theory on the grounds that a streptococcus, if existing in the bowel a long time, should produce lesions. In reply, it may be pointed out that this organism may grow in the lower bowel without producing lesions. That it does no harm there may be explained by the fact that there is little absorption from the lower as compared with the upper bowel.

Continental investigators favor B. coli as an etiological agent.[31] Their finding of this organism numerically increased and absolutely predominant in the intestine in pernicious anemia; the decrease in the number of these organisms during remissions[32] the fact that B. coli is known to produce a neurotoxin and a hemolysin,[24] the similarity of the reaction of the hemopoietic system to a related organism (typhoid—splenomegaly, leukopenia, relative lymphocytosis); and the reported ability of this organism to produce hemolysins by its action on proteins (Iwao); are all suggestive. Experimental work, [24, 31] has so far not been convincing.

In America more attention has been paid to B. Welchii, an organism which is capable of producing an exotoxin, a hemolysin, an irritating acid, and neurotoxic substances.[36] This organism has been found in increased numbers in the stools of cases of pernicious anemia,[36] but this has also been shown to be true of the stools of achylic individuals suffering from secondary anemia.[37] Nye found no definite relationship between the spore counts in pernicious anemia and the clinical condition of the patient (remission or relapse) and suggests that the increase in the number of B. Welchii spores is the result of the tendency of this organism to form spores in alkaline media. Normal stools contain at least as many, probably more, vegetative forms of B. Welchii as stools from cases of pernicious anemia and achylia.

Experimental inoculation of B. Welchii toxin[38, 29] or of the virulent organism[40] has been reported to produce an anemia and Cornell, by feeding the organisms to animals, produced degenerations in the nervous system as well as "a pernicious type" of blood picture. Reed, Orr, and Burleigh[41] report the production, by inoculation, of a hyperchromic anemia with anisocytosis, of which the quantitative examination by the method of Price-Jones[42] showed that it resembled that of pernicious anemia.

Wood[43] has emphasized the relation between sprue and pernicious anemia. By feeding guinea pigs with monilia psilosis,

he was able to produce a hemolytic anemia with preponderance of oversized red blood cells and striking polychromatophilia. Scott Warthin,[44] however, was unable to confirm this.

Experimental work to support the theory of gastro-intestinal infection is somewhat meager. Only two instances of pernicious anemia[45, 47] and one of subacute combined degeneration of the cord[46] following complete gastrectomy—an artificially produced achylia—have been reported. Several investigators[48, 49, 50] have reported the incidence of an anemia of the pernicious type in cases of chronic stenosis of the lower ileum leading to the growth of fecal type organisms in the upper bowel, and in 10 cases of pernicious anemia Seyderhelm[51] noted rapid improvement when enterostomy was performed, followed by relapse when the opening was closed.

Some experimental work by Seyderhelm[52] is interesting in this connection. He produced a stricture 10 to 20 cm. above the ileo-cecal valve in ten dogs. Two of the animals developed hyperchromic anemia with megalocytis, anisocytosis, and urobilinogenuria. On autopsy an abundant colonic type of flora was found above the stricture, hemosiderosis in the liver and spleen, and megaloblastic reaction in the bone marrow. In the dog which did not develop anemia, the abundant colonic type of flora was absent above the stricture.

A toxin has not as yet been isolated from the small intestine of pernicious anemia patients. Recently Macht[53] in testing the toxicity of various blood sera to plants found the blood serum of patients suffering from pernicious anemia definitely toxic.

THE PRESENCE OF A TOXIN.

That the "pernicious type" of blood picture, formerly thought to be so specific and even diagnostic of pernicious anemia, may be associated with a number of other conditions, is becoming evident as various diseases are studied in more detail. The method of Price-Jones[42] for measuring the size of blood cells has proven to be of great value in more accurately defining the type of blood picture characteristic of pernicious anemia and yet, even the characteristic "Price-Jones curve" is occasionally found in association with other diseases.

Thus, it is now well known that a certain number of persons harboring dibothriocephalus latus may develop a symptom complex and blood picture so like that of pernicious anemia that at times differentiation may only be possible by the discovery of the parasite.

In most cases, expulsion of the worm is followed by a clearing up of the symptoms and the blood picture. In those cases in which the expulsion of the worm is not followed by complete recovery, the usual explanation is that the morbid processes have progressed so far that a restitution of the degenerative changes has become impossible. It was believed that a strongly hemolytic cholesterol ester of oleic acid is produced by the worm and absorbed from the intestinal tract. Even though experimental work with extracts of the worms and with lipoids from other sources has failed to reproduce the anemia, it is still quite probable that the anemia is the result of the activity of the parasite in the intestine.

Martland[54] and many French writers (Weil, Lacassagne, Mottram, Brule) have shown that prolonged exposure to the rays of radio-active substances (radium, thorium, mesothorium) produces an erythroblastic bone marrow and a hyperchromic anemia with large cell anisocytosis, megaloblasts, and leukopenia. Martland has shown that continued exposure to the emanations of these substances for many years (e. g. dial workers) leads to actual deposits of radio-active substances in the spleen, bones, and liver in close proximity to the erythroblastic and leukoblastic centres with a resulting constant irritation. Similarly, he points out, "In the etiology of obscure blood diseases it might be easy to conceive of various bacterial and cellular toxins in minute amounts, ultramicroscopic organisms, or bacteriophages, producing similar

general or selective action on the hematopoietolytic system."

The occurrence in sprue of a hemolytic hyperchromic anemia with preponderance of oversized red cells in association with a chronic course marked by glossitis and various gastrointestinal symptoms and punctuated by remissions and relapses, has frequently led to difficulties in the differential diagnosis between this disease and pernicious anemia. Even the Price-Jones curve may approximate that found in pernicious anemia. If the conception that sprue is caused by gastro-intestinal infection (e. g. by Monilia psilosis) be correct, it is possible that a similar, though not necessarily the same, factor is responsible for the development of pernicious anemia.

In the latter part of pregnancy or in the early puerperium, a hyperchromic anemia with leukopenia, relative lymphocytosis and abnormal red blood cells may occur[55, 56] together with sore mouth, gastro-intestinal disturbances, splenomegaly, tingling, and even achlorhydria. This is a crytogenic type of anemia not associated with sepsis, hemorrhage, or other complication, and these are not cases of pregnancy supervening in persons already suffering from pernicious anemia. The condition is not always fatal, transfusion being remarkably beneficial and improvement often following expulsion of the fetus. As the cause of this anemia the working of a syncytial hemolysin or some relation to the toxemias of pregnancy have been suggested.

Further suggestive evidence that pernicious anemia is produced by a toxin may be derived from the fact that the symmetrical lesions found so characteristically in the cord in pernicious anemia may also arise in the course of toxic processes due to poisoning with lead, arsenic, ergot, alcohol (chronic); and in pellagra, diabetes, leukemia, cancer, chronic jaundice, tuberculosis, syphilis, diphtheria, malaria, influenza, scarlatina, tetanus, typhoid, and pregnancy. That these lesions found in the cord in pernicious anemia cannot be the result of the anemia per se, is proved by the fact that they may be present before anemia sets in and are never found even with the severest grades of secondary anemia.

(B). *Theory of Dietary, Perhaps Vitamin, Deficiency.*

The remarkable results produced by the Minot and Murphy "liver diet," based on the experimental work of Whipple and his associates, has stimulated along new channels speculation and investigation regarding the etiology of pernicious anemia.

Investigating the nature of the reaction produced by this diet, Murphy, Monroe and Fitz,[57] in ten typical cases of pernicious anemia on the Minot and Murphy regimen, found the diet to cause the delivery into the circulation of new, young, red blood cells, as evidenced by a prompt increase in reticulocytes. At the same time there was a marked decrease of bile pigment concentration in the serum. Medearis and Minot[58] found that the measurement, by the method of Price-Jones, of the red blood cells of pernicious anemia patients on this diet showed a normal, or below normal mean and median cell diameter, whereas the return to normal of the red blood cells of patients in "spontaneous remission" (i. e., not as the result of liver therapy) was not so marked.

According to Brill[59] the results of the liver diet are specific for pernicious anemia and this method of treatment is of little value in secondary anemias.

Just why this diet has proven to be so valuable is still an open question. Whipple has suggested that in pernicious anemia a disease of the stroma forming cells of the marrow exists, or a scarcity of material from which the stroma of the red blood cells is formed, is present. The disturbed pigment metabolism may be due to an overstimulation resulting in more pigment being formed than can be used.

Koessler, Maurer and Loughlin[60] have propounded a theory of vitamin deficiency as the cause of pernicious anemia. These

authors suggest that there is a long standing deficiency in vitamin A (and perhaps B and C) due to chronic underfeeding with these essential foodstuffs for a period of many years or due to deficiency of their utilization. They explain the blood changes as being due to vitamin A underfeeding; the nervous symptoms to an absence or deficient quantity of vitamin B (compare the paraesthesias and combined sclerosis of the cord in pellagrins, the polyneuritis in beriberi); the tendency to hemorrhages, to partial or complete lack of vitamin C. Their experiments show that blood regeneration cannot take place without the presence of vitamin A.

Basing their therapy on such a theory, Koessler and Maurer[61] were able to produce a prolonged remission in 42 patients suffering from pernicious anemia by feeding a high vitamin, high caloric diet, furnishing the meats chiefly in the form of liver, kidney, and other edible viscera.

The item of great difference between the diets of Minot and Murphy and that of Koessler and Maurer consists in the amount of fat given. The former investigators exclude fats as far as possible on the grounds that blood destroying properties are present in certain substances derived from fats, and because excess of fats in the diet may favor intestinal putrefaction. Koessler and Maurer, on the other hand, include a large amount of fat because it is an important source of vitamins. A rather instructive fact is that both groups of investigators have reported very favorable results.

The work of Simmonds, Becker, and McCollum[62] may offer a new interpretation for the remarkable results produced by the liver diet. These workers have shown that vitamin E, which is abundantly found in liver, is in some way associated with iron assimilation and suggest that its deficiency results in the impaired iron metabolism which is so characteristic of pernicious anemia.

Minot and Murphy,[63] as well as Koessler and Maurer[61] claim that the history of patients suffering from pernicious anemia frequently suggests a faulty mode of nourishment, deficient in essential foodstuffs, over a long period of years. On the other hand, in a detailed study of the pre-disease diets consumed by tewnty-six patients with pernicious anemia over a period, especially, of ten years before coming ill, Cornell[64] found that on the whole their diets in most cases were the same as those of their nearest associates who did not develop pernicious anemia.

The theories of gastro-intestinal infection and dietary, perhaps vitamin, deficiency, have been discussed separately, but they are supplementary in many respects rather than the antithesis of one another. The successful use of the liver diet appears to indicate that some essentials to the normal metabolism of the body—essential to the life of nervous tissue as well as for proper blood metabolism—are wanting in pernicious anemia. These essentials appear to be supplied in the liver diet. That the body is deprived of these as the result of chronic infection is quite conceivable.

SUMMARY.

1. *Achlorhydria gastrica* is constantly present, precedes the onset of symptoms, and is probably an essential predisposing factor in the etiology of pernicious anemia. The achlorhydria may be constitutional or secondary. The drinking of highly saline alkaline water for a long period of years has been suggested as a factor in its production, while the familial incidence of achlorhydria may explain the occasional familial occurrence of pernicious anemia.

2. The acid of the gastric juice appears to act as an antiseptic protective mechanism both for the stomach and, by means of intermittent waves of acidity, for the upper bowel. Under favorable conditions various organisms may, in the absence of acid, be permitted to grow and form toxins in the highly absorptive upper bowel. No specific organism has yet been shown to be related etiologically.

3. Both the hemic and the nervous manifestations of pernicious anemia are found in connection with other diseases and therefore, as in these or other diseases, may be the result of chronic infection or intoxication.

4. The successful use of a high coloric diet rich in vitamins, iron, and purin derivatives, may be due to the supplying of material essential to normal metabolism and deficient or absent as the result of improper diet or inefficient utilization of a normal diet as the result of achlorhydria and infection.

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CASE REPORTS AND CLINICAL SUGGESTIONS

CHRONIC PANCREATITIS WITH REPORT OF CASES.*

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SHREVEPORT, LOUISIANA.

It is not my intention to enter into an elaborate or detailed discussion of the disease named in the title of this paper. but simply to make use of the time allotted to me by reporting two cases that seem to be of more than passing interest.

The first patient was a white male, fifty-eight years of age, who was admitted to the Schumpert Memorial Sanitarium December 1, 1926, whose chief complaint was of diarrhea and a progressive loss of weight and strength.

Past History: Patient had had the usual diseases of childhood, had malaria many years ago, and an attack of nausea and vomiting nine years ago, which persisted for twenty-four hours.

Present Illness: Began eighteen months prior to admission to the hospital. The onset was gradual with an increasing number of stools daily, finally reaching as many as ten to twelve stools on some days, but the average being from four to six. These were of loose, mushy character, gray colored, and most copious in quantity. This feature was especially noticeable to the patient, and to quote his own language he wondered where it was all coming from. His appetite was excessive and he suffered no gastric disturbance except for considerable gaseous distension at times. The bowel movements were not accompanied by any griping pain or other distress. These symptoms continued with slight variations for a period of thirteen months, during which time he lost from twenty-five to thirty pounds in weight.

At this time he sought medical aid at the hands of physicians in Little Rock, Ark., and in the course of his examination a large gall stone was demonstrated by the roentgen-ray. A surgical operation was advised and the gall bladder containing a single large gall stone was removed.

He made a good recovery from the operation and for three or four weeks the diarrhea was not troublesome. After this time, however, the same symptoms returned and continued without remission up to the time he came under my observation. By this time he had lost forty-five pounds in weight.

*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

The physical examination showed a very markedly emaciated and anemic patient. There was an artificial upper plate and the lower teeth were rather poor. The tongue was clean and rather red and glazed in appearance. The heart normal except for a faint systolic murmur over the cardiac area. The lungs showed no abnormalities. There was no apparent hepatic or splenic enlargement. There was no marked distension of the abdomen, but a very active visible peristalsis was observed through the thin and emaciated walls. A healthy scar remained from the operation. There was no general adenopathy. The reflexes were normal. The bones and joints were normal and there was no edema.

The laboratory examination showed the urine to be normal both chemically and microscopically. The blood examination gave the usual picture of a rather marked secondary anemia. An examination of the stomach contents showed no indication of stagnation. There was no free hydrochloric acid present and the total acidity was 10. The duodenal contents failed to digest proteins or fats but showed some conversion of starch. This was probably due to the presence of ptyalin in the saliva which may have been swallowed, although the stomach was washed out and the patient instructed to refrain from swallowing during the process of securing duodenal contents. Feces examination showed a copious, bulky, gray colored stool in which no parasites nor ova were found, but many fat globules and fatty acid crystals and other undigested material were present.

Full doses of dilute hydrochloric acid and pancreatic substance were given with no apparent result except that the stools were somewhat less frequent. The patient grew progressively weaker and died twenty-six days after being admitted to the hospital.

This case is reported simply as an example of the many cases of pancreatitis which result secondarily from gall bladder infections, and for the purpose of emphasizing the importance of dealing promptly and appropriately with all gall bladder infections.

The second case is one of pancreatic calculi associated with chronic interstitial pancreatitis, in which both the external and internal secretory functions were disturbed.

The patient was a colored male, age seventeen years, a farmer. He was admitted to the Shreveport Charity Hospital on October 27, 1925, with a tentative diagnosis of diabetes mellitus. His chief complaints were headaches, some disturbance of the stomach, loss of weight and strength, and excessive urinary output.

Present Illness: Onset two years ago with frequency of urination. Recently the urination had been less frequent. During the past two months there had been considerable disturbance of the stomach such as pain, nausea and vomiting at times. His appetite was usually excessive. The bowels were inclined to be over-active.

Past History: Chicken pox, injury to spine by a fall from a wagon when a child and chills and fever three years ago. All venereal disease was denied.

Family History: His mother was living and well, father living and well. Three brothers were living and well, two sisters were living and well. None were dead.

A physical examination showed a fairly well developed negro male, age apparently eighteen to nineteen years, who was rather markedly undernourished and appeared to be quite ill. The scalp and hair were normal; the ears and nose were normal. The pupils were about equal and reacted normally to light and accommodation, the left pupil being somewhat irregular in shape. The sclerae were normal; the mucous membranes were anemic. The teeth were very poor, the gums bad and swollen and bled easily. The tongue was furrowed and very red; the pharynx congested and the tonsils large. Both clavicles were prominent with deep supra-clavicular fossae. There was apparently a depression and an absence of prominences of the spinous processes of the eleventh and twelfth dorsal vertebrae. Expansion was fairly full and equal in both lungs, and no abnormal signs were elicited on percussion or auscultation. The heart was apparently normal in size and position; there were no murmurs. There was slight general abdominal tenderness but no hepatic nor splenic enlargement, and the kidneys were not palpable. No tumors nor masses were felt. The extremities were emaciated, with abrasions on the elbows and knees. Sensation was about normal; no adenopathy.

Laboratory Examinations: Red cell count 3,230,000, white cell count 7,750. Hemoglobin 50. Differential count: Polys 52 per cent; large lymphocytes 12 per cent; small lymphocytes 36 per cent. The Wassermann was negative. The urine showed nothing abnormal except the presence of sugar. A blood sugar on the first examination was very high, being 508 mgms. per 100 cc. of blood. The gastric analysis showed free hydrochloric acid 25, total acidity 47. Radiographic examination of the spine showed an apparent rarefaction and narrowing of the twelfth dorsal vertebra. Radiograph of the sinuses shows an opacity of the antrum and posterior ethmoids on the right side.

The patient was placed on a maintenance diet without insulin. The urine continued to show sugar daily, with some reduction of blood sugar. He was then given insulin, beginning with small doses and gradually increasing until the urine was sugar free. This required fifteen units twice daily, which were given before breakfast and before supper.

An interesting feature of the case was that with the urine sugar free, the blood sugar remained quite high, sometimes 200 or more mgms. per 100 cc. The patient made no improvement, making no gain in weight or strength and appearing quite prostrated. His diet was increased and the insulin dosage increased with no result except an increase of the diarrhea. The stools were soft and large in quantity, gray in color and contained fats and other undigested material. Specimens of duodenal contents were secured by the duodenal tube, the examination of which showed none of the pancreatic ferments present.

The conclusion was then reached that the condition was a total pancreatitis in which both internal and external secreting functions were involved. The patient continued a downward course and died from inanition after being in the hospital seventy-five days.

The autopsy showed the following: The body was that of an extremely emaciated male adult. It measured 64 cm. in length. There were a few small decubitus ulcers on the dorsal bony prominences. The pupils were dilated and equal. There was some edema of the face, especially of the eyelids. On opening the peritoneal cavity, the stomach was found to be somewhat dilated. The intestines were apparently normal, but the mesenteric lymph nodes were enlarged. The foramen of Winslow was patent. The diaphragm reached to normal limits on each side. The left pleural cavity was free of adhesions except for one fibrous band at the base of the lung. The left cavity contained about 30 cc. of straw colored fluid. The right pleural cavity was free of adhesions and contained about 30 cc. of straw colored fluid. The pericardial cavity was apparently normal. The heart was slightly smaller than normal, and many milk colored patches were present on the auricles and ventricles. The left auricular appendage was vermiform. There was no sclerosis of the coronaries. The heart muscle was pale and friable. There was slight thickening of the cusps of the aortic valve; the other valves appearing normal. Both lungs were very edematous, but no other pathology was found. The stomach was dilated, and petechial hemorrhages were present under the mucosa. The pancreas was extremely small, and no normal tissue could be made out. It seemed to be composed entirely of fibrous tissue, and there were many calcareous masses throughout. These calcareous masses could be enucleated very easily, giving the impression that they were deposited in the ducts

or acini. The liver was small, and showed extreme congestion. The gall bladder was atrophic. The spleen was normal in size, but did not scrape on section.

The kidneys were extremely congested, and the markings were indistinct. The capsules stripped easily. The urinary bladder was distended, but otherwise negative. The prostate was not enlarged. Pathologists' report on examination of pancreas was to the effect that the glandular structure was practically destroyed and replaced almost entirely by fibrous tissue.

The small shotlike masses proved to be calculi composed principally of calcium carbonate.

DISCUSSION.

Dr. Allen Eustis (New Orleans): The question of pancreatitis is one that is coming more into the literature in the past few years, and on account of its close association with other diseases, disease of the gall bladder especially, it is often overlooked.

I wish to recall again the two most prominent symptoms which Dr. Knighton has brought out; that is, progressive loss of weight and diarrhea. Our patients will complain of diarrhea but as a matter of fact these stools are not watery stools; they are soft mushy stools, usually light in color and always fatty due to the absence of the fat splitting ferment.

You will realize the difference in the amount of fecal matter obtained from an individual with total pancreatitis and a normal individual when I tell you that the stools of a normal individual on a Smith diet will weigh when dried fifty-one grams; while the stools of an indivdual with total pancreatitis on the same diet will weight 351 grams, showing that the individual without pancreatic function passes seven times as much fecal matter as the normal individual, and that is quite a common complaint. They don't know where it is all coming from.

There is one other symptom of pancreatitis which I called attention to in the past and that is a stomatitis, often going to the ulcerative stage but quite often simply the redness that you find on the tongue. I would like to ask Dr. Knighton whether either of these patients presented this symptom because I find it quite common.

Another condition that we must consider in connection with pancreatitis, as Dr. Knighton has brought out, is the secretion of the stomach. If it is not active you naturally have less digestion and more progressive loss of weight and larger stools than in the individual who has normal gastric secretion, because the gastric secretion can carry on a certain amount of digestion.

An important point to be remembered in connection with pancreatitis is the cause of pancreatitis. In the past six months (it happened that both came at once) I have had two cases of carcinoma of the head of the pancreas within two months of one another. The diagnosis I am glad to say was made prior to operation. In taking the history, they both presented jaundice with diarrhea. Whenever I have a patient tell me he has diarrhea, I ask what is the type. These were not watery. In examining the patients further, it was a definite pancreatic insufficiency. The jaundice in one patient had only been present for three weeks, although he had quite a distinct jaundice, in fact, decidedly green. The other patient had had the jaundice persisting for eight months without operative surgery. How it persisted I don't know, but at operation both of them presented carcinoma of the head of the pancreas. So in obstructive jaundice think of the pancreas as a possible cause of your obstruction.

Another point I would like to call your attention to, is that syphilis can cause interstitial changes in the pancreas just as we find these changes in the liver and in the spleen, and in my series I have two cases in which syphilis was the only etiological factor we could find and which improved and are well today on antisyphilitic treatment.

What the pathology was in those cases I don't know, or how extensive it was, but I mention that as a point to remember; that these pancreatitis cases may be due to syphilis.

However, we know as a matter of fact that gall bladder infection is the cause of the condition in a vast majority of cases, and I am glad to hear Dr. Knighten impress upon you again that the danger in neglecting gall bladder infection is with the pancreas.

In a paper that I read some few years ago I reported several cases of diabetes that had developed under my observation during the past fifteen years, the primary lesion being in the gall bladder and they refusing operative procedure. One case that was operated on, a case of definite diabetes, today is on a maintenanc diet without insulin. The gall bladder was removed.

In these cases there may not be any gross changes in the entire pancreas but sufficient inflammatory changes in the pancreas to produce disturbance in the internal secretion. These cases are potential diabetics but they are surgical cases and not medical cases.

Referring to the medical treatment of pancreatic cases, they are, of course, as a rule very unsatisfactory, but I believe in many instances it is due probably to the lack of conception of the function of the pancreas and the ability of the

pancreas to digest. First of all, let us realize that these ferments are proteins and they are digested and destroyed by the gastric secretions so that if your patient has a normal gastric secretion your pancreatic extract given in powder form or in a soluble capsule is of no more value than if you put it on the skin. In order to obtain any effect from extract of pancreas given to an individual with normal gastric secretion it must be given in a capsule which is not going to be digested in the stomach.

As a rule I do not mention proprietary medicines but Fairchild has on the market a very good extract of pancreas under the trade name of holladin which is marketed in keratin capsules. I have had marked effect from the administration of these capsules but not according to the directions advised by the manufacturers because they advise one to three capsules after each meal. That is ridiculous. If you expect any effect on a whole meal you must use at least six to eight and if you do give that in the vast majority of cases you will find a reduction in the amount of stools and a gain in weight.

However, we must realize that it is a progressive disease and we can't change the interstitial fibrous tissue into a normal glandular tissue, but in the subacute cases and in transient cases secondary to gall bladder disease we can prevent progress of the disease by surgical measures.

Dr. A. A. Herold (Shreveport): I am very much interested in Dr. Knighton's paper, especially as Dr. Eustis emphasized the prophylaxis of it by taking out the gall bladder. I wish to add one more case report to the two which Dr. Knighton reported. I had a patient admitted to the Shreveport Sanitarium about five years ago with a history of repeated attacks of jaundice. He was a large man, stout, and a big eater and rather free drinker. He was seized the day before admission with acute abdominal pain accompanied by diarrhea and vomiting. When we saw him at the sanatarium he was in collapse. I am not sure whether Dr. Knighton saw him or not but his associate, Dr. Willis, was in consultation on the case.

We decided to try to tide him over and we did tide him over to the next day when he died. Autopsy showed a large thickened gall bladder, grumous bile and a marked pericholecystitis, no stones, an acute hemorrhagic pancreas, large swollen and the blood vessels congested, fatty necrosis in the abdominal wall and thrombosis of the mesentery vessels. He had enough things to account for his death.

Referring to Dr. Eustis' remark about the Fairchild preparation, I have under observation for several years a case of diabetes which formerly had acute attacks of abdominal pain with fever and diarrhea, fatty diarrhea. I presume they were acute attacks of pancreatitis associated with the diabetes, and by the administration of this holladin without the coated capsules, I thought I got improvement in his condition. I certainly shortened the duration of these attacks of pancreatitis. But the main thing brought out in the paper is prophylaxis of this condition rather than curing it and prophylaxis is certainly attention to the gall bladder.

Dr. J. B. Guthrie (New Orleans): I am very much interested in Dr. Knighton's report. I was struck with what seemed to me inadequate dose of insulin, if you will permit me. Dr. Eustis suggests an addition in the matter of the external secretion of the pancreas, and let me suggest if we had the case to review and go over again, to give the patient any hope we would have to give a larger dose of insulin than this man received. We are dealing here with a total absence of pancreatic function. The treatment evidently failed to supply the digestive ferments to this man's bowel. The treatment would have continued to fail had he not received a larger dose of insulin than the doctor reported.

If I understood him right, it was fifteen units twice a day, which brought the blood sugar down from the neighborhood of 500 to the neighborhood of 230 and there the doctor was content to rest with his insulin because the man was sugar free.

Now I feel that I am not doing my duty, having worked with insulin considerably, not to raise my voice once more to insist that where possible the urinary sugar be disregarded as the guide for the administration of insulin. In consultation work I encounter daily cases where the doctor has the case sugar free and he is content with the blood sugar at 238, over 200. The majority of these cases that we see, I feel safe in saying, have a high threshold of sugar and are therefore diabetic, notwithstanding that the urine is absolutely sugar free during the twenty-four hours the specimen is taken. I am asking only therefore, that you make the blood sugar the guide and aim to get the patient to at least supply his insular deficiency at a rate commensurate to render his blood sugar something near normal.

We see these cases constantly with a high blood sugar and they are going on, progressive changes in the arteries, in the organs, they are down, down, down with diabetes. I feel that we should get the blood sugar somewhere near normal, and keep it so if it is humanly possible.

Last year I was able to report a scheme or rule of thumb, if you please, for the administration of insulin. Applied to Dr. Knighton's case, I would say that this man needed sixty units more of insulin daily than he was getting. We know that unless we correct the diabetic condition supplementing the insulin deficiency (this man was a diabetic incidental to the disease of the pancreas) we have a very poor chance of doing anything at all for the patient. If the patient needs surgery, if the patient needs medication along other lines, first of all we have got to get him in better condition so far as diabetes is concerned.

The rule that I alluded to was the administration of two and one-half units of insulin per day for every ten milligrams of blood sugar in excess of ninety. In other words, subtract ninety from Dr. Knighton's figures, 238, and divide by four and it gives you the additional dosage of insulin units needed. Then the next subsequent blood sugar observation enables you to make another correction. Divide by four and add it to the dose already taken. This is a pretty safe and conservative figure to govern the control of the dose.

I have tried it on a large series of cases and have occasional reactions, of course. Every one who works with insulin at all gets reactions; but nothing that is serious. Sometimes reactions in ambulant cases have created a certain amount of alarm but we never had any deaths from following out this rule and it errs along the safety side if there is an error.

Dr. Knighton (closing): Regarding Dr. Guthrie's suggestion that larger doses of insulin should have been given, I would state that he probably overlooked the statement in the paper that insulin was increased. However, in this case, it matters not how much insulin may have been given, the ultimate result would have been the same; for there was a total destruction of the glandular structure of the pancreas.

In answer to Dr. Eustis' question as to whether stomatitis was present in these cases, I would state that the elderly patient, had a rather red glazed tongue, very much like the condition seen in pernicious anemia but not a definite stomatitis.

To go back to the patient that had such an enormously high blood sugar, the autopsy findings were quite interesting, particularly with reference to the pancreas. On first appearance, I was sure the pancreas was the victim of tubercular infection. It had those ricelike bodies scattered all through it, observed from the surface, but it was not tuberculosis as was determined later. It was simply a deposit throughout the structure of the pancreas of these phosphatic calculi.

As has been emphasized by one of those who have spoken, the chief thing of importance in a discussion of this kind is the question of prophylaxis. I think most of us would be surprised if we should make observations of the function of the pancreas following all attacks of gall stones, if we would make it a routine carefully to get the duodenal contents during the few days following gall stone attacks, we would be surprised in the great number of cases that would show complete absence or suspension of the function of the pancreas.

Of course, that is the external secretions, but if we have an infection or an irritation sufficient to suspend the digestive functions, the external secretion, we may just as easily get the internal secretion interfered with also.

I thank you, gentlemen, for your discussion.

REMOVAL OF BULLET FROM WALLS OF HEART AND REPORT OF STAB WOUND OF HEART.*

CARROLL W. ALLEN, M. D.,

NEW ORLEANS.

The thoracic cavity occupies much the same position today in the field of surgery as did the abdominal cavity thirty years ago when a few comparatively simple operations were being performed routinely by the pioneers in surgery, foreshadowing the tremendous development of the present time. While the thoracic cavity does not now appear to offer such an extensive field, medical opinion held the same view regarding the abdominal cavity three or four decades ago.

My earliest recollections of intra-thoracic surgery were of such cases as were operated upon by the use of the Fell-O'Dwyer apparatus for artificial respiration, which internes of my time at the Charity Hospital were quite familiar with, when we relieved each other in hourly shifts in keeping up respiration in cases of opium narcosis. This machine paved the way for intratracheal anesthesia which has since given way to much simpler apparatus.

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*Read before the Mississippi State Medical Association, Jackson, May 10-12, 1927.

Another recollection which I have of the beginning of intra-thoracic surgery was the first use of the Sauerbruck cabinet in this country as demonstrated by Dr. Sauerbruck himself.

My own earliest activities in this field were in animal experimentation in operations on the vascular system which occupied a large part of my time daily for a period of four years, during which time I made notes of considerably over 1,000 operations, a large number being intra-thoracic procedures.

One of my pleasantest recollections of this experience was the association with me in this work of Drs. F. R. Gomila, H. W. E. Walther, Ansel M. Caine and M. P. Boebinger, through whose untiring, constant and zealous efforts must be attributed many of the successes accomplished. This work carried on in the laboratory of Tulane University developed an accurate, dependable and simple technic which has been of much value since. All of this intrathoracic work was done by the intratracheal method.

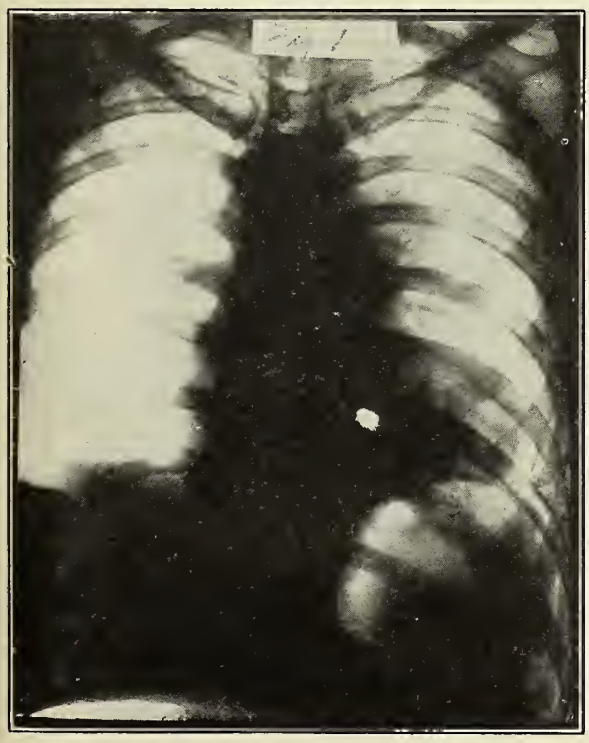

Fig. 1. Bullet in heart

The following case presents points of sufficient interest to justify presentation on this occasion, for which opportunity I must thank my friend Dr. M. L. Flynt.

CASE REPORT.

Mr. R. C. H., aged 24 years, of New Hebron, Miss., was shot at close range by a pistol on December 5, 1926. The bullet fractured the 8th rib in the mid-axillary line and entered the thorax.

Admitted at once to Pineview General Hospital, D'Lo, Miss., the patient showed some shock, but was otherwise in fair condition. The fluoroscopic and roentgen-ray examinations made by Dr. G. C. Russell showed the bullet to occupy a position about the middle of the heart and to move with each heart beat, making an excursion of about an inch from right to left in a wobbly manner. This picture produced quite a thrill for all who saw it. Here was a man in apparently fair condition with a bullet plainly seen within the heart and the heart functioning normally. (Fig. 1.)

Dr. Flynt got me on the phone. I advised its removal and went out immediately. On my arrival an examination showed a robust young man in good physical condition, except that he presented some evidence of shock. The examination of the thorax showed slight dullness in the posterior portion. The bullet wound was located in the mid-axillary line, the 8th rib being fractured at this point. Ausculation of the heart showed its action to be normal and regular, but with a peculiar, sharp, metallic tinkling sound which appeared to be most intense just after the closure of the mitral valves, and lasting with diminishing intensity through the heart cycle.

The patient was then placed under the fluoroscope and the bullet again plainly seen about the middle of the heart and moving to and fro with each excursion. The patient's position was changed to determine the lateral plane in which the bullet lay. It was seen that in rotating the patient slightly to the left the bullet traveled to the right. This observation indicated that the bullet was in the posterior part of the heart.

It was realized that a dependable anesthesia was a most important feature, as any struggling or violent effort on the part of the patient might prove decidedly dangerous. Dr. R. E. Giles of Mendenhall assumed this responsibility and with the gas and oxygen method carried the patient along with a smooth, even anesthesia, without any apparent muscular contraction.

Assisting at the operation were Drs. M. L. Flynt, D'Lo; D. T. Langston, New Hebron, and E. S. Waller, Silver Creek.

A large trap-door flop was quickly raised and reflected laterally. As the thorax was entered the

lung immediately collapsed, the disturbance being apparent in respiration and pulse. A large double towel wet in warm saline was quickly spread over the chest wall and draped down into the thorax, packing it snugly against the chest wall to the side, and behind and above the heart in the mid-line. An ordinary nozzle of a suction apparatus previously placed in the upper part of the cavity occupied by the lung quickly exhausted the air and brought the lung down in contact with the towel which was immediately evident by a quieting down of pulse and respiration. The suction was kept operating throughout the operation.

The heart was now in plain view and freely accessible through the large opening. About one-half pint of clotted blood was removed from the thorax.

The bullet or its point of entrance through the pericardium was not readily found, and each in turn had an opportunity to hold the heart within his hand and palpate its surface.

The heart muscle felt much firmer than the ordinary skeletal muscle, feeling more like the deltoid in a moderate state of contraction, and when held within the hand felt much like a large bull frog, or other animal struggling to get away. Unless held too firmly this did not seem to affect its contractions, and there was very little noticeable effect on the pulse.

The bullet was finally located on the posterior surface about one inch from the lower border of the heart, embedded within the pericardium which it had entered obliquely, penetrating the heart muscle for what appeared to be about one-fourth inch and pinning the pericadium to the heart at this point. The bullet, which proved to be about a 38 calibre, was lying with its external surface about level with the pericardium embedded in a fibrinous exudate which accounts for its having been overlooked when the surface was first hastily examined.

Once located, the bullet was easily removed with the fingers and seemed to have gone about halfway through the pericardium slightly indenting the heart wall just sufficiently to fix the pericardium at this point. There was no bleeding or disturbance following its removal, and the pericardium did not appear to contain any blood.

Having satisfied ourselves that no suturing for the control of hemorrhage would be needed, the towel packing off the thoracic cavity above was removed and the flap returned to its position and quickly sutured in place. The suction tube was allowed to remain in the cavity during these final steps and only removed when the last suture was inserted and after determining by percussion that the lung was against the chest wall.

The patient left the table in good condition and made an uneventful recovery.

The following are notes taken from the hospital record:

"Patient reacted nicely afte operation and rested splendidly during afternoon and night following. Next morning coughed almost continuously, spitting up bloody sputum. Third day feeling very well. Fourth day cough subsiding. Eighth and ninth days up in rolling chair. Appetite good. Discharged on tenth day in good condition, wound almost completely healed. Some dullness over lower portion of left lung." (Figs. 2 and 3.)

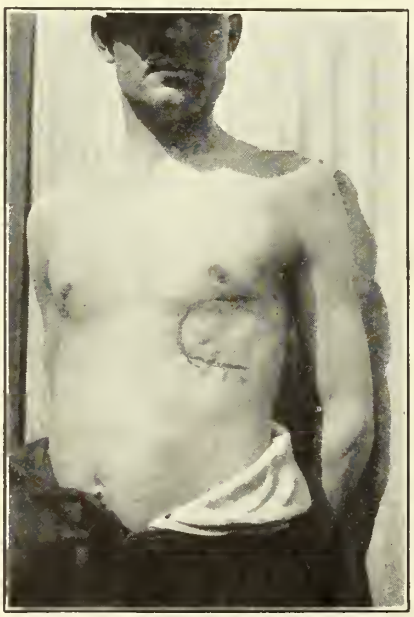

Fig. 2. After recovery

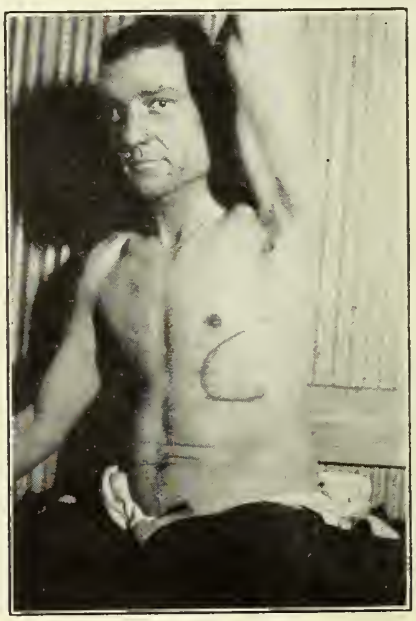

Fig. 3. Showing complete range of motion of arm

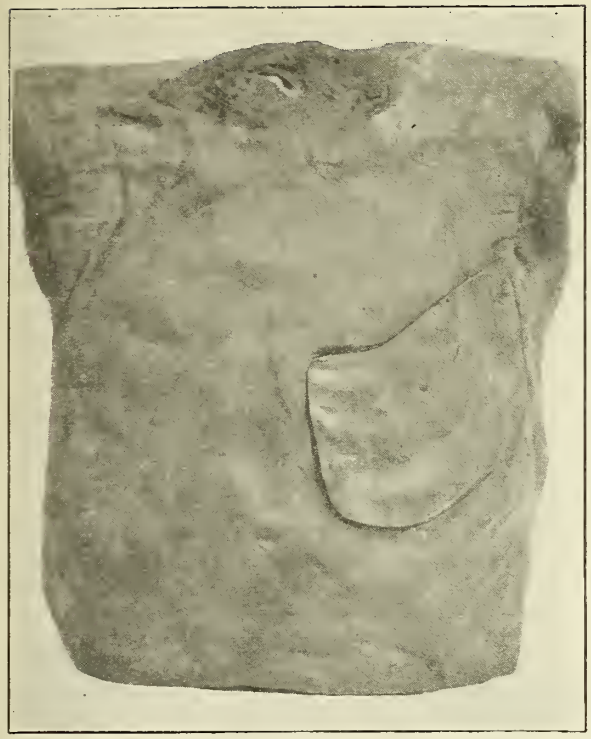

Fig. 4. Illustrating trap door flap on cadaver

Reports from the patient since indicate that he has had no further trouble and has regained his former good health.

Technic of Trap Door Flap. After many different methods and variations I have adopted the following as the simplest, quickest and most satisfactory method for entering the thorax, whether in front or behind. The opening should be made sufficiently large to allow ample room for satisfactory manipulation within as it cannot be enlarged later without impairing a satisfactory closure. The opening will always be the smallest part of the field. Once within the thorax the retraction of the lung affords ample space, just the opposite of what we meet in the abdomen where the viscera crowd into the field and have to be packed off and retracted away. Unless special reasons contra-indicate, the flaps should always be turned from the distal toward the proximal end of the ribs. Flaps should always include three ribs if the hand is to enter the cavity freely and four ribs if much room is needed for manipulation. (Figs. 4 and 5.)

The length of the flap from its tip to its base should be at least six inches. The incision should be horseshoe shaped with its concavity outward, the parallel arms in the middle of the respective intercostal spaces and first carried down to the intercostal muscles all along. Hemostasis should be completed and all vessels tied before going further.

The ribs at the base of the flap should now be divided. They should first be exposed by a short incision in their long axis and a costeotome passed around them from above and made to bite through the ribs almost its complete width. If the bite of the costeotome includes any of the tissues below the rib it may include the intercostal artery which is capable of producing a troublesome hemorrhage and cause unnecessary delay in securing it. If the bite does not include the full width of the rib, it will fracture easily with slight traction. Each rib is treated in a similar way. The ribs at the distal end of the flap are now cut through, the intervening intercostal muscles divided, and the incision carried along the middle of the intercostal spaces to the proximal end of the flap.

The flap is now reflected outward and the lung space packed off with a towel. Further hemostasis is completed and any spicules of bone which may be projecting inward are trimmed off.

I regard the use of the suction apparatus and towel to pack off the lung as described above a valuable aid in keeping the lung distended when suitable mouthpieces for this purpose are not at hand and may prove useful in other procedures.

In closing these wounds, I prefer figures of eight sutures through the intercostal muscles all around, with the usual deep sutures for the skin and subcutaneous tissues. Before closing the last stitch, we should be sure that the lung is against the chest wall. The wound closed in this way will not leak and usually heals firmly.

Fig. 5. Showing degree of exposure of heart and lungs

SUTURE OF STAB WOUND OF THE HEART.

I would like to add to the above the report of a case of stab wound of the heart operated by the same method.

P., age 32 years, was stabbed on April 13, between the 5th and 6th ribs on the left side, the knife entering about two inches from the sternum and passing upward and inward. The patient collapsed and was rushed to town, a distance of about ten miles, and admitted to the Southern Baptist Hospital. He was received and given first aid by Dr. J. O. Lisenby and other members of the staff and admitted to the service of Dr. T. B. Sellers, who immediately invited me to operate and to whom I am indebted for the opportunity of making this report.

On arrival at the hospital the patient showed extreme shock and appeared as if dead several times but responded each time to adrenalin administered by Dr. Lisenby.

During the short delay necessary in getting him on the operating table it was found that the lung space on each side was normal and the area of dullness occupied by the heart and pericardium much enlarged. A hasty roentgen-ray examination made during this interval shows this condition very clearly. (Fig. 6.) The operation was hastily performed with Dr. A. M. Caine anesthetizing. The technic described in the preceding case was followed in detail. When the pre-pericardial tissues were reached much blood was encountered and seen to come from a rent in the anterior surface of the pericardium. This was quickly enlarged and the cavity evacuated of its contents which exposed an incised opening in the right ventricle from which blood spurted at each heart beat. The edges of this opening were quickly but gently secured and closed by a series of interrupted sutures reinforced by several superimposed sutures. After evacuating all blood the pericardium was closed with a soft rubber tissue drain in its lower portion. The intercostal flap returned to its position with a similar drain in the lower portion of the pleural sac.

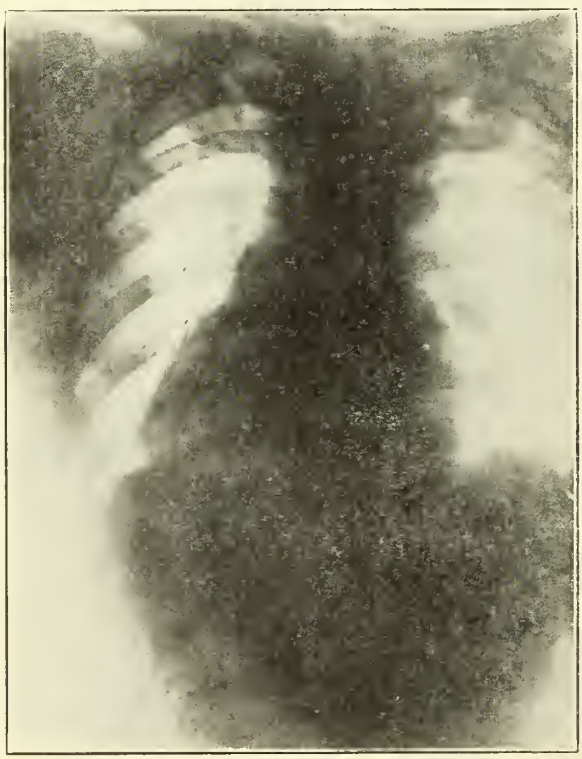

Fig. 6. Showing pericardium dilated with blood

Post-operative notes: Patient rallied considerably with circulation and general condition good during that afternoon and early part of night. Opiates were administered freely.

During early part of the morning he became quite restless with failure in the circulation which did not respond to stimulants. Death occurred about 1 P. M.

Dr. P. G. Cully, resident physician of the Baptist Hospital, was present at the post-mortem performed by Dr. Geo. F. Roeling, coroner, at which the heart was removed and examined in detail. It was found that the suture line was intact and that no leak had occurred following the operation. The left lung was partially collapsed. This may have been due to injury to the lung tissue which was not detected at time of operation or a possible leak around the rubber tissue drain left in the cavity as I am quite sure the lung was against the chest wall at the time of suturing the flap back into place.

Comment: I am somewhat doubtful regarding shock being entirely responsible for death in this case. The patient left the table in fair condition and remained so during most of the following night. The pulse ranged from 120 to 140, the respiration from 10 to 16. Immediately following operation he did not seem to need stimulation or transfusion and both were withheld as I had learned from experience with dogs following operations on the heart or large vessels that the chances of success were greatly increased by keeping the circulation depressed, as a vigorously acting heart or high tension in the large vascular trunks often caused the suture line to give way, while a depressed circulation kept within the limits of safety was much to be desired.

The possibility that the suture line which crossed the ventricle for about one inch may have interfered with innervation must be considered, as well as the possibility of some central thrombosis which was not detected at post-mortem.

The late effect of the hemorrhage must be considered as possible cause, as we frequently see

cases who have suffered severe hemorrhage die several hours after the arrest of all bleeding.

That some embarrassment occurred from the partial collapse of the left lung must be taken into account, but this does not appear to me to be likely as the respiration was at no time over 16, but this could have been influenced by opiates.

Shock plus any of the above causes would seem the most likely explanation of his death.

DISCUSSION.

(Dr. M. L. Flynt read discussion.)

Dr. C. C. Hightower (Hattiesburg): I want to compliment Dr. Allen upon this case and Dr. Flynt for his management of it and for having enough judgment to call Dr. Allen. I should have done likewise had I a case like this. I have had no experience with surgery of the heart, but I am mighty glad to have heard this case reported and especially to hear the technic described, because all of us may be called upon at any time to operate upon the heart and may not have the opportunity that Dr. Flynt had to call Dr. Allen. Minutes may mean life in some cases. The only practical experience I have had was observations I made, and my conclusion was not that the heart can not be operated on but that very often the patient has an opportunity to bleed to death before you have a chance to operate. I was making experiments on dogs while in school to study cerebral localization. I had the dog thoroughly anesthetized and removed a flap of bone from one side of the skull and was using an electric needle to study cerebral localization. After working for a while it became necessary to kill the dog, and as he was thoroughly anesthetized and I wanted to observe the heart I turned down a flap over the dog's heart and thoroughly exposed it. I made a bigger opening than Dr. Allen did. I took the heart in my hand and held it and had the same sensation Dr. Allen had, of hard, firm muscle. I held the heart in my hand for some time, and examined it thoroughly. It was still necessary to kill the dog, so I made up my mind to see how much pressure it would take on the heart to kill the dog. I held it in my hand—took both hands—and as I remember it took three or four or five minutes of firm pressure before the dog died. That experiment convinced me that the heart will stand a great deal of punishment. It is not the injury to the heart itself but the bleeding that offers the most danger in these cases.

Bear in mind that the dog was thoroughly anesthetized and suffered no pain, as that sounds like a very brutal proceeding.

Dr. A. Street (Vicksburg): I wish to narrate briefly one case. While in France at Base Hospital No. 15, Dr. Phillips asked me one day if I wanted to come over and help take a bullet out of the liver. We exposed the track of the bullet and over the fluoroscope we easily put a clamp down to the bullet. Dr. Phillips attempted to pull the bullet out, and it would not come. The reason why it would not come was that it was in one of the large hepatic veins. The bullet slipped out from in between his clamp blades and disappeared. We looked for it and saw it jiggling around in the heart region. It had evidently followed the course of the vein into the heart. We did not do anything more right then but sent the patient back to bed. While the procedure was being considered and we were wondering what we were going to do about that bullet inside the heart, he became suddenly ill; and it developed that the bullet had passed on out of the heart into the pulmonary artery and caused a large embolism. Nothing was done immediately; and the patient withstood the large machine-gun bullet embolism. About a week from that time, while recovering from this embolic process, he developed diphtheria and died.

Dr. M. L. Flynt (D'Lo, Miss.): There is not much I can say in discussing Dr. Allen's paper, as this is the first experience I have had with a heart injury. But I must say it was a very interesting case, indeed. The diagnosis was comparatively easy to make. Here was a stout, robust man, who entered the hospital about 2 o'clock A. M. with a pistol ball wound of the left chest in the mid-axillary line. He was pale and had an anxious expression on his face. He was very much nauseated and vomited a large amount of dark fluid immediately after being put to bed. He was also coughing and expectorating some blood. His radial pulse was 80, very good volume. In listening over his chest, moist rales could be heard all over the upper left lung, and a loud metallic sound could be heard with each second sound of the heart, which led us to suspect that the bullet had probably injured that organ, and under fluoroscopic examination it was plainly seen to be imbedded in the heart structure, as it would move up and down with each pulsation of the heart.

Now, what should be done for the patient was the next question to be solved. Could a man survive an operation for removal of a bullet from his heart, and would he get well by leaving it? After consulting with Drs. Langston and Waller, his family physicians, we decided to call Dr. Allen and get his advice. He immediately advised operation, after we had explained the case to him over the telephone.

The patient was advised of his condition and the necessity of operating and removing the bullet. He was anxious to have it done and felt that he would go through with it all right, which

was a lot in his favor. We kept him very quiet on morphin until Dr. Allen could arrive, which was also a good thing to do as pre-operative treatment.

Wounds of the heart rarely come to the surgeon for treatment because in most cases the patient survives but a few minutes after the infliction of the injury, therefore, it is difficult to estimate their comparative frequency. It is said that the ventricles are more frequently wounded than the auricles, and because of the thickness of their walls, may undergo quite a severe laceration. Or a bullet may even enter the heart and come to rest in the ventricle itself without immediate death, and, indeed, such bullets have been removed at operation with recovery of the patient, as we have had the opportunity to present a case to you today.

Such injuries inflicted in the auricles nearly always involve the chamber because of the thinness of the walls. These, of course, cause immediate death. Wounds of the heart are dangerous in proportion to the size of the injury done and, also, to the location affected. A needle puncture of the walls of the coronary artery near its origin, or through the inter-auricular septum at the bundle of His quickly causes death. Other danger zones are the auricular-ventricular wall where the injuries may be lethal. Also, a wound at the right auricular base near the entrance of the veins is quickly fatal. The walls of the ventricles seem to bear wounding much better, and Elsberg has gone so far as to resect experimentally the apex of the heart with success. The valves of the heart will bear wounding and have been torn without death, but the endocardum is very sensitive to operative procedures.

The knowledge that there may be spontaneous recovery from a cardiac injury should not deter the surgeon from operating in nearly every case in which a recent cardiac wound has been diagnosed, because sometimes a comparativly small hemorrhage will cause distention of the pericardial sac, compress the heart and cause it to stop pulsating. Again, a foreign body may be retained in the heart muscle for a time without many symptoms, and later cause a thrombosis in the heart cavity, and death.

The greatest danger in the cardiac injury cases which reach the surgeon is infection, and by refraining from operation the patient is put in peril of this complicatioon, and Lilienthal says, "All things considered, it is safe to make it a rule that operation should be performed in every case in which there has been recovery from initial shock."

I want to commend Dr. Allen on his operation in this case. It was done quickly and with precision. I was impressed with the incision made, there being ample room to pass the hand into the chest, the trap door flap which made an easy and firm closure. I was also impressed with the use of the wet pack and suction apparatus, this being carried out during the entire operative procedure.

Dr. Allen (closing): I want to thank you all very much. I have nothing more to say, because there is nothing else to bring out. There will be some technical details in my publication, but this thing simply illustrates one point—the value of preparedness. I prepared myself over twenty-five years ago to do this operation. That was my first heart surgery. I have done a great deal of intrathoracic work and some on the large vessels, but this was my first heart case.

A LAYMAN LOOKS AT HOSPITAL COST.

In the papers at this writing is a picture of the proposed plan of the New York Hospital and Cornell Medical College. It is a handsome picture and should be, for the building, over by the East River, is to cost eleven million dollars. Another vast hospital aggregation, as will be recalled, has been erected uptown at 168th Street. It is very, very big and was very expensive. . . . This is a period of construction. It was never so dear as now and there was never so much of it. If this matter of hospital construction was going to settle anything, if we were putting up hospitals enough for everybody, which would continue to handle the job for a generation or two, that would be one thing, but more likely they will be swamped in four or five years by increase of patients. Hospital building seems to be as steady and continuous an expenditure as that of cemeteries. Here is a matter about which it would be nice to be instructed where we get off. How much is life worth in dollars and can we afford the present rates? In so far as spirit can be made to cure the body and save us hospital expenses, by all means let us get it done. The present idea is that hospital charges shall be related to the income of the patient, that the poor shall pay very little and the rich a great deal. That is done and sometimes overdone and usually works pretty well, but for the people who are neither rich nor poor but are used to pay for what they get, a considerable illness alleviated by contemporary skill with all the modern improvements may be a crushing financial calamity. The suggestion that what rich people pay for hospital experiences shall be deducted from their income tax as money spent for charity has really a good deal to recommend it.—E. S. Martin, Life, Nov. 17, 1927, p. 20.

NEW ORLEANS
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THE DISTRIBUTION OF PHYSICIANS IN LOUISIANA AND MISSISSIPPI.

A question that has been agitating certain prominent members of the medical profession the past few years has been the presumed lack of medical service in rural communities. This hypothetical deficiency in medical care in rural communities as a result of the failure of recent graduates of medical schools to settle in such sections of the country has been made the basis of an attack upon the present high standards of medical education. In other words, it is believed that by curtailing the length of the curriculum it will be possible to send incompletely trained men into the rural districts, because they would be content to work there at a smaller remuneration than the men who are taking the full present day medical course with the attendant expenses of time, labor and money. That such an argument is fallacious is shown by the fact that practically all of the poorly and shortly trained cultists migrate at once to the larger centers of population when they have completed the few months necessary to take the courses in their particular cult.

The lack of physicians in the rural communities in New Hampshire, Vermont, and Maine seems to be particularly acute, although this condition exists throughout other States in the Union according to Dr. Pusey. He shows from his statistics that only 9 per cent of 4,410 physicians in 283 rural communities in 41 states were graduates of the last 10 years. These figures apparently indicate that in some sections of the country at least practice in rural communities is looked down upon by the recent graduates. The Southern States apparently have not been fully investigated. It is for this reason that we have made a study of the location of physicians in Louisiana and Mississippi who have graduated in the period from 1915 up to the present date as given by the Medical Directory of the American Medical Association. The figures given below represent practically a 10 year period, as the graduates of 1926 and 1927 are undergoing or have just finished their interneship and have not had the opportunity of being placed in the directory. In Louisiana 36 and in Mississippi 55 graduates in this period have settled in communities with a population of under 250. In communities between 500 and 1,000 population, 19 in Louisiana and 21 in Mississippi; 1,000 to 2,000, 17 and 27 respectively; 2,000 to 5,000, 32 and 33 respectively; 5,000 to 10,000, 10 and 23; 10,000 to 15,000, 23 and 30; 15,000 to 20,000, 11 and 19. The total in cities of over 20,000, 375 from Louisiana and 35 from Mississippi. During this 10 year period, 423 graduates of medicine have settled in Louisiana and 243 in Mississippi.

In Louisiana 40 per cent of the graduates have settled in communities under 20,000. In Mississippi the largest percentage of men have gone to the smaller towns and rural communities. Incidentally, in Mississippi about one-fifth of the physicians settling in that State have moved to localities where there are under 500 population.

The figures for Tulane Medical School, which has supplied about 30 per cent of the physicians in Mississippi in recent years and about 40 per cent in Louisiana, differ somewhat from those given above. In the State of Mississippi most of the graduates have settled in communities fairly well populated. This, however, does not hold true in Louisiana, where we find 27 of 157 graduates in the past 10 years settling in communities of under 1,000 population.

It will be seen from these statistics that in this section of the South there is not the possible acute need of doctors in the rural communities which may prevail in other regions. It has been said that development of good roads, automobiles and rapid transportation facilities has resulted in making one doctor take the place of three. This is probably the solution of the difficulty, a difficulty which is unduly magnified in the North, and which does not exist in the far South.

MALARIA IN MISSISSIPPI.

Elsewhere in this issue will be found an article on malaria that is indeed worthy of the thought of every physician in the state of Mississippi. Lippincott calls your attention to the fact that in seven years a total of 776,558 cases of malaria were reported by the physicians of this state. That would mean that each year 10 per cent of the people of Mississippi had some disease that was diagnosed by the physicians of this state as malaria. It would be equally interesting, if it were possible, for the State Board of Health to tell just how many of these diagnoses were based on blood examinations. A very significant fact is that from the same county that in this period reported 13,803 instances of malaria, parasites were found in blood smears only 177 times.

In the light of such figures it is only natural to ask how many physicians are in the habit of making note of the number of cases of malaria they see from day to day. It is possible that these high figures are due to the fact that, when the County Health Officer sends his card around each month to be filled in, the busy doctor scratches his head a moment and *guesses* that he has seen such and such a number of cases of malaria. How many of these cases of "malaria" are really tuberculosis, or pyosalpinx, or liver abscess, or pyelitis, or any other of a dozen diseases that cause chills and fever and which will naturally run on until such a time as they will be definitely diagnosed and treated?

AGAIN THE CHIROPRACTORS.

At the next meeting of the Louisiana Legislature a bill will be introduced by those backing the efforts of the chiropractors to enter the State. This fact should be noted by every medical man in the State, and efforts to defeat this bill should be begun at once by personal interviews with the prospective candidates of the House and Senate demanding their views and beliefs as to the validity of such a bill with the idea of supporting those candidates intelligent enough to see the fallacy of the chiropractic arguments. This is a duty which should be taken on himself by each member of organized medicine in the State, and should be done immediately. The State of Louisiana has for some years enjoyed a model practice act, an act which has been invariably complimented by thinking legislators as well as medical men all over the country. It would bring tremendous harm to the inhabitants of this State of Louisiana, who are so well protected by this splendid act, were it to be disemboweled at the instance of a cult which represents only its peculiar ideas and has its own remarkably misinformed beliefs; success will be followed by the endeavors of some eighty odd other

cults in this country to attempt in Louisiana to practice their business—it is not a profession in which they are engaged but an out-and -out occupation practiced solely for financial gain. With an influx of these cults whose beliefs are based on absolutely no scientific standard, the people of Louisiana would be subjected to the care and treatment of men untaught, uninformed and ignorant of the very basic principles of anatomy, physiology and pathology, who have received no training to speak of except perhaps a few months in a correspondence school. The very idea of such a happening is repugnant to the medical man with his altruistic spirit and his desire to prevent damage and injury to credulous people who because of ignorance of medical science can readily be proselyted by the sophistry, hypocrisy, and the snivelling cant of these cultists.

1928 DUES PAYABLE NOW.

We wish to call attention of the members of the Louisiana State Medical Society to the fact that dues for the current year are payable in advance; that is, 1928 dues should have been in the hands of the State Treasurer before January 1st, 1928. It is important that this provision of the by-laws be carried out for several reasons, one of which is the matter of medical protection by the State Society. For instance, Dr. A has his dues paid by January 1st and Dr. B gets his in by January 3rd, and they perform an operation on January 2nd, as an outcome of which a malpractice suit is filed, Dr. A will be defended by the State Society whereas Dr. B will not have protection. This is such a small matter that it is well to bear in mind and see that your dues are in in ample time; thereby affording the State Secretary an opportunity of getting up his roster early in the year.

For those who have not attended to this important matter as yet, we would say

DO IT NOW.

A Study of the Course of Rheumatic Heart Disease.—In this study of the course of 160 cases of rheumatic heart disease, it was disclosed that at the time of examination at the Mayo Clinic 81 per cent of the patients were less than fifty years of age. The disease occurred most commonly in the fifth decade, forty-seven cases (29 per cent). Only seventeen patients (19 per cent) were more than fifty. The sex incidence was equal, and no striking differences were found in a comparison of the data divided on the basis of sex. The first attack occurred before the age of thirty in 136 cases (85 per cent) and before the age of twenty in 103 cases (64 per cent). The primary infection occurred in only five cases (3 per cent) after the fortieth year. The average age at the time of death was thirty-two years.

The cases were divided into three groups for comparative study according to the clinical diagnosis of valvular involvement. In Group I with mitral involvement there were 124 cases, in Group II with aortic involvement twenty-one cases, and in Group III with both mitral and aortic involvement, fifteen cases. In Group I, fifty-one patients were males and seventy-three females; the first rheumatic infection occurred before the thirtieth year in 106 cases (85 per cent), and in only three cases (3 per cent) was the first attack after the fortieth year. The average age at death was thirty years. In Group II there were nineteen males and two females; rheumatic infection occurred before the thirtieth year in seventeen cases (81 per cent); the average age at death was forty-three yyears. In Group III there were ten males and five females; in thirteen (86 per cent) the initial rheumatic infection occurred before the thirtieth year; the average age at death was thirty-two years. Recurrent rheumatic infections were most prevalent in the first decade of life in which they occurred in sixteen cases (55 per cent). The greatest number of attacks in any one case was eight. There was no instance of recurrent infection after the thirtieth year. There was only one instance of recurrent infection in Group II. No constant relationship is revealed in this study between the number of attacks of rheumatic fever and the age at which death occurred. There is little difference between the incidence of recurrent infection in the two sexes. In sixty-two cases (39 per cent) there was congestive failure at the time of examination. Auricular fibrillation occurred in sixty cases (38 per cent). Death from gradual heart failure occurred in 147 cases, while sudden death occurred in eight cases. Five patients died from subacute bacterial endocarditis. Willius, F. A.: Am. Heart J., 1927, 3, 139.

TRANSACTIONS OF THE TOURO INFIRMARY STAFF

At the regular meeting of the Staff of Touro Infirmary held November 9, scientific papers reported were:

A case of sacro-coccygeal chordoma, by Dr. L. H. Levy; the report of a small epidemic of fever of undetermined origin, by Dr. I. I. Lemann; fever due to intestinal autointoxication in a case of megacolon with ulceration, by Dr. I. I. Lemann; high nitrogen retention with zero phenolsulphonhthalein excretion without uremic manifestations, by Dr. I. I. Lemann.

The case reported by Dr. Levy was that of an unusual tumor, a chordoma, there having been only about seventy cases reported in the literature. The tumor itself has never been diagnosed except at operation or postmortem examination. It is a tumor which arises from the remnants of the notochord and usually is found on the upper or lower end of this embryonal remnant,—that is, the sphenoid bone or the sacrum. The symptoms are those of pressure either intracranial or nerve pressure if below. It is a malignant tumor which is slow growing as the tissue is fully differentiated with adult cells but at times metastisizes. The case presented here was that of a man of 73 years suffering from a chronic myocarditis, endocarditis, nephritis, and a malignant tumor in the sacrococcygeal region. The operation for removal of this tumor was done only for the comfort of the patient as it was impossible for him to lie on his back in bed. The patient was not disturbed by the surgical procedure but died some ten days later from uremia.

Dr. Lanford in discussing this paper demonstrated the tumor and showed that the most striking thing about chordomas is the similarity in their general appearance to thyroid tissue having much the general appearance of a colloidal goitre, though more firm. The prognosis of these cases is always unfavorable.

The first paper presented by Dr. Lemann was the report of a small epidemic of fever of undetermined origin at the Hope Haven Asylum which occurred between June 14 and August 29. There were twelve cases in all, the average duration was five days illness, the fever ranging usually to 104 or 105 degrees. Patients also presented a general adenopathy with either a normal white blood count or a leukopenia. Some cases presented a rash on the body and some were positive with typhoid agglutination tests only in very low dilutions. Dr. Lanford definitely stated that he was sure these were not typhoid or paratyphoid. The question of Brill's disease (typhus) seemed unlikely. There was no explanation offered as to diagnosis. None of the patients seemed to be sick at any time except for the hyperpyrexia.

This report brought forth much discussion as some of these cases had been seen by Dr. Cole who also offered no explanation for the diagnosis. Dr. Eshleman also saw a few of these cases and offered the possibility of a febrile influenza without respiratory manifestations. Dr. Lanford stated that the Widal test could not be looked upon as diagnostic of typhoid fever in dilutions of 1 to 40.

In closing the discussion, Dr. Lemann showed that these cases all had an adenopathy, a characteristic sudden onset with high fever, a pseudo-crisis with secondary rise of temperature followed by a true crisis, a leukopenia and in some cases, a rash. These cases all went undiagnosed.

The next paper reported by Dr. Lemann was that of a man of 68 admitted to the hospital complaining of headache and drowsiness. At X-ray examination he was found to have a huge colon which, when filled with barium, practically filled the entire abdomen. Upon treatment of daily flushes, the daily rise in temperature which had been present, disappeared. This patient died, however, sometime later of ne-

phritis with arteriosclerosis and upon autopsy the only definite finding was this enormous colon, with some ulceration of the bowel.

Dr. Eshleman in the discussion said that two things which should be thought of to explain the fever was pneumonia and some genito-urinary infection. Dr. Lemann in closing the discussion stated that the fever was apparently due to the absorption from the colon through the break in the mucous membrane as it was later controlled by irrigations.

The last case which was reported was merely to mention another patient with a zero P.S.T. test without uremic manifestations. This patient had a total non-protein nitrogen of 120 mgs., creatinin of 6 mgs., uric acid of 5 mgs. In spite of these findings the boy felt well. Sometime later he left the hospital against the advice of physicians.

Dr. Eustis pointed out in discussion that there are many nitrogenous elements in the blood which we are as yet unable to measure and which may be retained in the body even though we have a low creatinin and uric acid.

WARREN L. ROSEN, *Secretary.*

SMOKE STUDIES.

Smoke in the atmosphere, especially when combined with mist to produce fog, brings about a very great lowering of the daylight. At the present time a great loss of light results in large cities from the effect of smoke. A study of the decrease of light by smoke, now being made by the United States Public Health Service in New York City, at the lower end of Manhattan Island where the air is very smoky, showed an average loss of daylight due to smoke in January of 1927, on sunny days, of 42 per cent at 8 o'clock in the morning, and of 18 per cent at noon. These amounts of loss of daylight decreased, as the year advanced, to 33 per cent at 8 A. M., and 6 per cent at noon, in June. These figures are for clear sunny days; for foggy days, the loss is much greater. The loss of light due to smake in the atmosphere is greatest early in the morning or late in the afternoon, and least at noon. As would be expected, the loss of light is greater in the winter than in the summer. The figures given show the great importance of getting rid of smoke in our great cities. Loss of daylight or the light rays, is not the only evil resulting from the presence of smoke in the atmosphere; smoke also cuts out to a much greater extent the ultra-violet rays which are so necessary for good health.

The amount of light reaching us at different times of the day, at different times of the year, and under different conditions of weather is of interest. Illumination is measured in a unit called the foot-candle, one foot-candle being the illumination on a surface at a distance of one foot from a standard canal. Records of daylight in Washington, D. C., have been made since July, 1924, by the United States Public Health Service. These records show that at noon on a bright day in midsummer the illumination seldom exceeds ten thousand foot-candles. In midwinter at noon on a bright day it seldom exceeds 3,500 foot-candles. The difference in illumination on sunny and cloudy days is illustrated by the average illumination for such days in December, 1924, and in June, 1925. In December the average illumination on cloudy days was found to be about 23 per cent of that on sunny days. In June this ratio was about 26 per cent. Great variations in daylight take place when small clouds pass over the face of the sun on a clear day. In such cases the light may fall from 9,000, or more, foot-candles to 3,000, or less, in one minute's time, and return to the original amount during the succeeding minute.

Large increases of light may be produced by the reflection of light from banks of white clouds to the north of the sun, and very great decrease by the heavy clouds of thunderstorms.

Sunlight is of great interest and importance, since work in the office, shop, schoolroom or on the farm is performed under it; and the preservation of eyesight, the general health, and the prevention of accidents, throughout childhood and adult life, are largely dependent upon having plenty of sunlight both inside and outside the buildings in which we live and work.—U. S. Public Health Service—Health News.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the past month the Board of Directors has held its regular meeting, and the Society has held one Scientific Meeting and two special meetings. At the Scientific Meeting papers were read and discussed as follows:

"Quinidin Sulphate in Heart Disease," by Dr. Henry Bayon.

Discussed by Drs. A. E. Fossier, J. H. Musser, Randolph Lyons, George Herrmann, and closed by Dr. Bayon.

"Observations Upon the Value of Certain Diuretics in Cardiac Edema," by Dr. Randolph Lyons.

Discussed by Drs. J. H. Musser, Warren L. Rosen, George R. Herrmann, I. M. Gage, and closed by Dr. Lyons.

"Post-Operative Treatment: Some Personal Impressions," by Dr. J. D. Rives.

Discussed by Drs. I. M. Gage, O. C. Cassegrain, Alton Ochsner, Marcy J. Lyons, and closed by Dr. Rives.

The second Stanford E. Chaille Memorial Oration was held on Tuesday, December 6. Dr. M. G. Seelig of St. Louis, an internationally known medical historian and Professor of Clinical Surgery at Washington University School of Medicine, was the annual orator, the subject of his oration was "The Rise of Medicine."

During the week of December 5th to 10th "Longer Life Week" was held in this city. "Longer Life Week" was the contemplated Periodic Health Examination Week, and during these days the Mayor of New Orleans issued a proclamation setting aside this particular time. The large electric sign broadcast to thousands the message, "A City's Health Is a City's Wealth." Longer Life Week, December 5-10, 1927. Numerous placards were displayed in the various show windows on Canal street, and banners were hung at the various hospitals of the city proclaiming this week. Slides and film reels were shown in all of the large and suburban movie houses. All of the business clubs in the city were addressed by various speakers, as were practically all of the higher parochial and public schools, together with the Universities and Colleges. The following members spoke at the places designated:

Dr. Frank R. Gomila—Warren Easton Boys' High School.

Dr. P. B. Salatich—John McDonogh Girls' High School.

Dr. J. E. Isaacson—Sophie B. Wright Girls' High School

Dr. Walter J. Otis—Peters School of Commerce.

Dr. C. V. Unsworth—Kohn School of Commerce.

Dr. W. P. D. Tilly—Nicholls Industrial School.

Dr. Chas. Chassaignac—The Normal School.

Dr. E. H. Walet—Sacred Heart Convent.

Dr. H. Theodore Simon—Dominican Convent.

Dr. Homer Dupuy—Tulane University.

Dr. B. A. Ledbetter—Loyola University.

Dr. J. Birney Guthrie—New Orleans Co-operative Club.

Dr. J. L. Lewis—Kiwanis Club.

Dr. A. Jacoby—Lions Club.

Dr. J. H. Musser—Young Men's Business Club.

Dr. P. T. Talbot—Members Council, Association of Commerce.

Dr. Jerome E. Landry—Lumberman's Club.

A more detailed report of this, the first Periodic Health Examination Week, conducted by this Society, will be given at a later date in the report of the Chairman of this Committee, Dr. Paul J. Gelpi.

"There was no contest for officers for the ensuing year. The election was held Dec. 27, 1927." The following is a list of officers for the ensuing year:

President—Dr. J. Birney Guthrie.

First Vice-President—Dr. C. Grenes Cole.

Second Vice-President—Dr. W. D. Phillips.

Third Vice-President—Dr. Frederick L. Fenno.

Secretary—Dr. H. Theodore Simon.

Treasurer—Dr. John A. Lanford.

Librarian—Dr. Daniel N. Silverman.

Additional Members Board of Directors

Dr. Frank Chetta.

Dr. A. E. Fossier.

Dr. Adolph Jacobs.

The group insurance is now in effect, the Master Policy and the individual policies are at

the office of the Secretary and will be delivered to the individual members upon payment of the first quarterly premium.

The Matas Banquet was held Tuesday, December 6, at the Chess, Checkers and Whist Club. At this banquet the program was as follows:

"Dr. Matas—His Influence on the Medical Profession of New Orleans." Dr. A. E. Fossier, President, Orleans Parish Medical Society.

"Dr. Matas—His Early Career." Dr. Chas. Chassaignac, Superintendent, Eye, Ear, Nose and Throat Hospital.

"Dr. Matas—"His Professional Career." Dr. C. C. Bass, Dean, School of Medicine, Tulane University of Louisiana.

Response—Dr. Rudolph Matas.

The Delegates and Alternates to the Louisiana State Medical Society, elected at the last meeting in November for two years, were as follows:

Delegates—Dr. John A. Lanford, Dr. W. H. Seemann, Dr. R. B. Harrison, Dr. D. N. Silverman, Dr. Chaille Jamison, Dr. Fred L. Fenno, Dr. M. T. Van Studdiford, Dr. J. C. Cole, Dr. W. H. Harris, Dr. E. L. Leckert.

Alternates—Dr. C. V. Unsworth, Dr. Homer Dupuy, Dr. Jerome E. Landry, Dr. B. A. Ledbetter, Dr. A. E. Fossier, Dr. Chas. Chassaignac, Dr. O. C. Cassegrain, Dr. John Signorelli, Dr. Paul J. Gelpi.

The Secretary regrets to report the death of Dr. C. A. Adolph, an Associate Member.

The following doctors were elected to membership:

Active Members—Dr. Gilbert C. Anderson, Dr. Bernard G. Efron, Dr. Alton Ochsner, Dr. Elias Weiner.

Interne Member—Dr. Carl A. Weiss.

REPORT OF TREASURER.

Actual Book Balance, 10/31/27	$ 349.74
Receipts during November	233.05
Receipts on Insurance	1,767.63
	$2,350.42
Expenditures	403.44
Actual Book Balance	$1,946.98

The membership of the Society to date is 495.

REPORT OF LIBRARIAN.

24 books have been added to the library during November. Of these 13 were received from the New Orleans Medical and Surgical Journal, and 11 by gift. A list of new titles of recent date is appended. Gifts have been received from Tulane University, Columbia University, Dr. I. L. Robbins, Dr. Allan Eustis, and Dr. Haidee Weeks.

Four Bibliographies have been prepared on subjects as follows:

Endocrines in Gynecology.

Etiology of Arthritis other than Focal Infection.

Blood pictures in Arsenic Poisoning.

Hair ball of the stomach.

New Books.

Sinclair—Thomas Splint, 1927.
Hertzler—Minor Surgery, 1927.
Whitman—Orthopedic Surgery, 1927.
Mayo Clinic—Collected papers, 1926.
Behrend—Surgical Diseases of the Gallbladder, 1927.
Lucas—Modern Practice of Pediatrics, 1927.
DeLee—Yearbook of Obstetrics, 1927.
Stewart—Intracranial Tumors, 1927.
Herrmann—Clinical Case Taking, 1927.
Lewis—Textbook of Histology, 1927.
Wadsworth Standard Methods, 1927.
Meara—Treatment of Infectious Diseases, 1921.
Osler—Modern Medicine, v. 4, 1927.
U. S. Public Health Reports, v. 42, pt. 1, 1927.

H. THEODORE SIMON, M. D.,
Secretary.

The Specialties and Medical Education—There can be no doubt about the current trend of medical graduates to go into the specialties. Recent studies have shown that approximately forty per cent of recent graduates limit their practice to a specialty and that about one-half of these specialists have had no period of general training beyond the regular medical course and interneship. It cannot be claimed with qualification that specialization is undesirable, for no small part of medical progress and of the best type of medical practice can be credited to the efforts of specialists who are trained broadly and who work in co-operation with other well trained physicians to insure a well rounded medical service to the individual and to the community.—W. C. Rappleye, M. D., Bost. Med. & Surg. Jour., 197:548, 1927.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

BE CAREFUL HOW YOU VOTE.

It is becoming more and more important for medical men to take an interest in public affairs, which includes, of course, State politics. It is essential for the interest of the public whose welfare we always have at heart that we should vote for only those men who will definitely promise to consult with regular members of our profession before passing upon matters of public health and medical practice, provided they are elected to their State governing bodies.

Thanks to the efforts of our State Board of Medical Examiners and our State Committee on Public Policy and Legislation, the admission of cults to our State has been kept to a minimum. In this respect Louisiana is looked upon with envious eyes by medical examining boards in many other States which have not been so successful. It behooves us, therefore, to heed the warning of our able Chairman of the Committee on Public Policy and Legislation and thoroughly canvass all candidates for the Legislature, getting a definite committment from them before we pass them as worthy of our support; all those who will not promise should not be voted for by us or our friends. The same thing applies to the candidates for Governor, and we should make sure that the man we are supporting really has the interest of organized medicine(and therefore the public welfare) at heart.

The Journal takes this means of calling this matter to the attention of the local societies, presidents and secretaries, and urges them to attend to this important matter at once if they have not yet done so. A. A. H.

COMMITTEE ON PUBLICITY.

The President has announced that the following composes the Sub-Committee of the General Committee on Publicity of the State Society, said sub-committee being appointed at the instance of the General Committe, namely Dr. C. C. Bass, Chairman; Dr. H. Theodore Simon and Dr. W. Marvyn Johnson. This Committee is to organize and draft suggestions for the General Committee to pass upon at a meeting to be called in the early spring or as soon as the sub-committee is ready to report.

TO THE MEMBERS OF THE LOUISIANA STATE MEDICAL SOCIETY:

Remember that the Louisiana State Medical Society holds its session in the city of Baton Rouge from April 9 to 12, 1928. This is the season in which new budgets are being prepared for the coming year and do not forget to enter the meeting of the Louisiana State Medical Society in your budget of events for 1928. Begin now to prepare for it.

This meeting will occur just as the gloomy winter season will be over and all nature will be flaunting her spring clothes of new green woods and meadow, bursting buds and new flowers. Beautiful birds will warble their glad anthems of praise and delight at the advent of the spring season. Just think of a trip in your car, for yourself, your wife and children, through all this natural beauty, over splendid trunk lines and State Highway gravel roads which connect the Capitol with the remotest community in the state. On the contrary, if you are "fed up" on running your own car and want to come by rail, remember that there are thirty passenger trains in and out of Baton Rouge daily. Certainly enough to accommodate every body.

The location of many State Institutions should contribute to your desire to see Baton Rouge. Every citizen of the state should feel that he or she has a vested interest in the State Capitol and the Great Louisiana State University. They are yours—come and have a look-in at your property—look and grow proud that you are a Louisianian.

The great Standard Oil Plant here represents an outlay of millions of dollars and is a sight that you will not find in any other part of the country. To see the operation of this plant is well worth a visit here for that purpose alone. We have a number of other industrial plants located here that would be of interest to visitors. We have splendid hospitals here. They are Our Lady of the Lake Sanitarium, conducted by the Franciscan Sisters and the Baton Rouge General Hospital, conducted by a Board of Directors from the Citizens of Baton Rouge. In these hospitals are daily exemplified the best traditions of modern medicine and surgery. Clinics will be arranged in these hospitals for the visiting physicians.

The State House, hotels and other public buildings afford ample room for general meetings, section meetings and commercial exhibits. There will be ample accommodations for all in our splendid hotels.

A strenuous effort is being made to have an unusually interesting program this year. Dr. T. J. Perkins, Superintendent of the East Louisiana Hospital, has made arrangements to entertain the society in that great institution one day, at which time the regular program will be carried out, just as though they were meeting that day in Baton Rouge.

We have splendid theatres, play grounds, parks, clubs and golf links, to which our visitors will be welcome. We stand with open arms, on the first highlands, coming up from South Louisiana, to welcome you to this "City of Pure Delight."

J. W. Lea, M. D.,
Chairman, Committee on Publicity.

The following is a list of the personnel of the various Sub-Committees of the Arrangement Committee for the approaching Annual Meeting of the Louisiana State Medical Society to be held in Baton Rouge, April 10, 11 and 12, 1928:

Committee on Arrangements—Dr. C. A. Weiss, Chairman; Dr. L. J. Williams, Dr. W. B. Chamberlain.

Committee on Finance—Dr. E. F. Naef, Chairman; Dr. T. J. McHugh; Dr. Wm. K. Irwin, Dr. John McKowen, Dr. R. G. McMahon.

Committee on Registration—Dr. J. M. Adams, Chairman; Dr. T. C. Paulsen, Dr. H. G. Morris.

Committee on Booths—Dr. Rufus Jackson, Chairman; Dr. W. R. Eidson, Dr. Chas. Duchein, Dr. J. H. McCaa.

Committee on Signs and Decorations—Dr. R. B. Wallace, Chairman; Dr. Harry Johnson, Dr. J. E. Lawton, Dr. T. C. Foreman.

Committee on Badges—Dr. R. P. Jones, Chairman; Dr. J. A. Caruthers, Dr. J. W. Watson, Dr. E. B. Young.

Committee on Scientific Exhibits—Dr. Cecil Lorio, Chairman; Dr. R. C. Kemp, Dr. H. W. Lee, Dr. T. B. Bird, Dr. P. H. Jones, Dr. H. T. Nicole.

Committee on Entertainment—Dr. H. Guy Riche, Chairman; Dr. E. O. Trahan, Dr. T. J. Perkins, Dr. L. I. Tyler, Dr. C. S. Miller.

Committee on Publicity—Dr. Tom Spec Jones, Chairman; Dr. S. D. Porter, Dr. J. J. Robert, Dr. H. W. A. Lee, Dr. F. O. Darby, Dr. L. G. Stirling.

Committee on Hotels—Dr. Edw. K. Hirsch, Chairman; Dr. B. King, Dr. J. W. McGehee, Dr. L. F. Lorio.

Committee on Golf—Dr. C. A. Lorio, Chairman; Dr. W. B. Singletary, Dr. R. G. McMahon, Dr. L. J. Williams, Dr. L. F. Lorio, Dr. T. C. Paulsen, Dr. R. B. Wallace.

Committee on Transportation—Dr. J. A. Tucker, Chairman; Dr. B. O. LeBlanc, Dr. L. E. Bergeron, Dr. W. H. Pipes, Dr. G. W. Sitman, Dr. Edw. Whitaker.

Dr. Chas. A. Bahn of New Orleans left the city during the early part of December for New York, where he will sail on the "Albert Balalin" for Hamburg to attend clinics in Berlin, Prag, Vienna and Budapest, finally returning from Italy about April, 1, 1928.

The Bi-Parish Medical Society met with Supt. T. J. Perkins and Staff in the East La. State Hospital. Dr. Randolph Lyons of New Orleans read a most interesting and instructive paper on "The Uses of Some of the Newer Duiretic Drugs in Cardiac Edema." Col. I. D. Wall delivered an eloquent address on "The Doctor," portraying in learned terms the doctor from ancient to modern times. Dr. Lyons and Col. Wall were elected honorary members of our Society.

Election of officers for 1928: President, Dr. E. M. Toler, Clinton; Vice-President, Dr. J. W. Lea, Jackson; Secretary-Treasurer, Dr. C. S. Miller, Jackson; Delegate, Dr. C. S. Miller, Jackson; Alternate, Dr. D. N. Brown.

In an atmosphere of goodwill and cheerfulness, surcharged with atoms of goodfellowship to the extent of irresistibility impressing one with the thought that after all there was not much wrong with this mundane sphere and that the Brotherhood of Man was not a myth—in such an atmosphere was held the regular December monthly meting of the St. Tammany Parish Medical Society in the Community Rooms at Slidell on the night of the ninth, and inasmuch as this was the annual meeting, scientific papers were dispensed with and the entire membership, including a number of distinguished visitors, participated in a round table talk ranging from medicine and kindred subjects to civic affairs.

The Society unanimously adopted a resolution expressing its goodwill and sympathy in this his hour of illness and conveying the Society's heartfelt and sincere seasonable greetings to that staunch and loyal supporter of medicine in general and this Society in particular, D. H. Mason, Editor of the St. Tammany Farmer, official journal of the Society, whose voice and columns are ever and always at the disposal of practical and scientific medicine.

The following officers were elected for the year 1928: President, F. F. Young; Vice-President, W. E. Stevenson; Secretary-Treasurer, L. R. Young; Delegate to the State Medical Society, A. G. Maylie (re-elected); Alternate, J. K. Griffith (re-elected)

To H. D. Bulloch, the retiring Secretary-Treasurer, the Society voted its keen appreciation and grateful thanks for his attentive, faithful and efficient services during his eight years tenure of office.

The Society is indebted to its Slidell members for a most timely and delicious collation, with the accent on timely, for say "fellows wasn't it an awful night (outside)?"

The next meeting, at which will take place the installation of the new officers and the annual banquet, will be held at the New Fenwick Sanitarium, Covington, on Friday, January 13, 1928, at 7:30 P. M.., when and where the President-Elect F. F. Young will be the host.

Those in attendance at the meeting were: C. F. Farmer, H. D. Bulloch, J. F. Polk, J. K. Griffith, W. R. Singleton, F. F. Young, F. F. Young, Jr., L. R. Young, R. B. Paine, A. G. Maylie; and as guests of honor A. E. Fossier, T. J. Dimitry and Lucien LeDoux of New Orleans.

The writer makes bold to state that it is his opinion that if there were more frequent meetings of a similar character, where professional courtesies, friendly dispositions and goodfellowship prevailed among the various Parish and District Medical Societies, and even the State Society, organized medicine would soon find itself elevated to its rightful and proper pinnacle surrounded by a bulwark of strength, impregnable on the defensive and all powerful in the offensive.

MEETING OF THE AMERICAN COLLEGE OF PHYSICIANS.

The Annual Clinical Session of the American College of Physicians will be held this year in New Orleans the week of March the fifth. Three sessions will be held daily, the afternoon session being devoted to clinics at the various hospitals in the city; the morning and evening sessions will be utilized for the presentation of scientific papers. A distinguished list of speakers has been secured for the meeting. These speakers include such men as Julius Bauer of Vienna, Agramonte of Havana, Allen Krause of Baltimore, Maud Slye of Chicago, Frederick Allen of New York, Arthur Herold of Shreveport, James McLester of Birmingham, Charles Minor of Asheville, Gerald Webb of Colorado Springs, Castellani of New Orleans, Barr of St. Louis, Dochez of New York, and some thirty others. Symposia will be held daily on the following subjects: Tropical diseases, tuberculosis, diabetes, infectious diseases and epilepsy. Membership in the organization is unnecessary in order to attend the meeting. A cordial invitation is extended to all medical men interested in internal medicine to attend the sessions. Last year at the Cleveland meeting nearly 1500 men registered. It is to be hoped that the South will make an equally good showing.

NOTICE.

According to the By-Laws of the Louisiana State Medical Society, dues for the fiscal year of 1928 are now due. Secretaries of the various Parish Societies should begin at once to collect the annual State dues from its members for 1928, and remit as promptly as possible to the Secretary-Treasurer at 1551 Canal street, New Orleans. Any members from unorganized parishes are requested to send in their dues direct to the Secretary-Treasurer of the State Society.

In this regard we would like to call your attention to the fact that the protection under the Medical Defense of the State Society is only covered from the time that individual dues are received by the Secretary-Treasurer of the State Society. It is therefore urgent that these dues be remitted as promptly as possible in order that one may enjoy full protection under our Medical Defense Act.

At the annual meeting of the Society of the Medical and Surgical Staff of the Charity Hospital, New Orleans, held in the Miles Amphitheatre, October 11, 1927, the following were elected to serve during 1927-28.

Dr. Jerome E. Landry, President; Dr. Lucien H. Landry, Vice-President; Dr. Lucien A. LeDoux, Secretary-Treasurer. Dr. A. E. Fossier, S. Chaille Jamison, H. W. Kostmayer, and B. A. Ledbetter, members of the Medical Advisory Committee.

THE AMERICAN BOARD OF OTOLARYNGOLOGY.

An examination was held in Detroit on September 12, during the session of the American Academy of Ophthalmology and Otolaryngology. One hundred and two applicants appeared for examination, with .107 per cent failures.

An examination was held in Memphis on November 14, preceding the session of the Southern Medical Association, with .127 per cent failures.

In the course of the past year, three hundred and sixty-nine applicants have been examined.

In 1928, examinations will be held in Minneapolis on June 11, at the session of the American Medical Association, and in St. Louis on October 15, during the meeting of the American Academy of Ophthalmology and Otolaryngology.

Prospective applicants for certificates should address the Secretary, Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha, for proper application blanks.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The Vicksburg Sanitarium Staff met December 10th, 1927. The following program was given:

1. Fistula in Ano. Dr. A. Street.
2. Urethral Stricture. Dr. J. A. K. Birchett, Jr.
3. Fracture of Femur. Dr. J. A. K. Birchett, Jr.
4. Gastric Hemorrhage. Dr. L. J. Clark.
5. Lipiodol in the Diagnosis of Maxillary Sinusitis. Dr. E. H. Jones.
6. Two Cases of Tetanus Following Burns. Dr. G. M. Street.

At the meeting of the Central Medical Society on November 29th, at Jackson, Mississippi, a pediatric program was given as follows:

1. Pyloric Stenosis. Dr. D. W. Jones.
2. Poliomyelitis. Dr. N. C. Womack.
3. Infant Feeding. Dr. H. F. Garrison.

It was announced that at the next meeting election of officers for the ensuing year would be held and the annual banquet would be given.

MEDICAL DEFENSE.

The Council of the Mississippi State Medical Association calls attention to the fact that last year many applications for defense by the Association against malpractice suit had to be turned down by the Council because the cases were settled before the Council was consulted. The by-laws state that the Council must be consulted in advance and given an opportunity to pass on the merits of the case. The reasons for this are obvious.

The following case is recited as a model procedure:

Dr. A was called upon by a certain attorney noted for his unscrupulous shrewdness and was told that a woman had engaged the said attorney to prosecute a suit for malpractice against Dr. A. It was intimated that for a "reasonable sum" the case could be "hushed up." The doctor spurned this suggestion. The suit was filed.

Dr. A therefore consulted the Secretary of his local society who certified to his good standing. A meeting of the Medico-legal Committee of the local society was promptly called and at once approved the defense of this case. The papers were then sent immediately to the Executive Committee of the Council and in three days' time the approval of the Council had been secured for the defense of this case.

In the meantime, Dr. A, accompanied by his Councillor, called on a lawyer of his own selection, who was asked to take the defense of this case, but on the advice of the Councillor, because this lawyer's charges seemed exorbitant, another lawyer equally competent was consulted. He agreed to take the case for a fixed fee and one that seemed more reasonable to the doctor and Councillor.

Further efforts were made by the plaintiff's attorney to effect a compromise but these were promptly rejected. It was considered better for some of these cases to go on trial for the moral effect on the community and as an example to the shyster lawyer.

This case resulted in a clean-cut victory for Dr. A and the Medical Association.

Dr. J. C. Rush, Waynesboro, has been appointed Health Officer of Wayne County in place of Dr. O. A. Lomax, deceased.

Dr. T. J. Googe, Chief of the Clarke County Health Unit, reports 40 per cent reduction in typhoid fever and 25 per cent reduction in diphtheria for 1927 as compared with 1926. In every municipality the disposal of excreta has been put on a sanitary basis. More than 5000 persons have been vaccinated against typhoid fever and upward of 2000 children have been given toxin-antitoxin against diphtheria. Physical examinations of school children have been done in all schools since the work was started. Follow-up work among schools, with the view of encouraging correction of physical defects, teaching health habits, and outlining a better diet is part of a program planned for the first part of 1928.

The South Mississippi Medical Society met in Hattiesburg, December 8th, and elected the following officers for the year 1928:

President—Dr. H. L. McKinnon, Hattiesburg.

First Vice-President—Dr. R. H. Foster, Laurel.

Second Vice-President—Dr. H. P. Smith, New Augusta.

Secretary and Treasurer—Dr. P. E. Smith, Hattiesburg.

The program given at this meeting was as follows:

1. Pellagra. Dr. Charles Bloom, New Orleans.
2. Fractures of Pelvis and Spine. Dr. T. E. Ross, Jr., Hattiesburg.

3. Rupture of Duodenal Ulcer with Closure and Diet. Dr. L. B. Hudson, Hattiesburg.

4. Achlorhydria Gastrica. Dr. Richard Walker, Hattiesburg.

5. Facial Neuralgia Due to Impacted Teeth. Dr. Guy D. Bethea.

On December 9th the Poplarville Hospital was burned, the fire originating from the explosion of a tank. The patients were removed to the Pearl River Hospital.

The annual meeting of the Issaquena-Sharkey-Warren County Medical Society was held at the Y. M. C. A., Vicksburg, on the evening of December 13th, with 58 in attendance. The scientific program included:

Calculus of the Kidney and Ureter. Dr. Joseph Hume, New Orleans.

The Physician's Responsibility in Carcinoma of the Cervix Uteri. Dr. C. Jeff Miller, New Orleans.

Paranasal Sinusitis—Its Prevention. Dr. John Shea, Memphis.

Dr. Edley H. Jones of Vicksburg, President of the Society, gave the address of welcome and introduced Dr. John Darrington, President of the State Medical Association, who brought greetings to the Society and outlined the duties of the physicians of the State to the State Association.

Dr. Felix J. Underwood, Executive Officer of the State Board of Health, spoke as the representative of that body. Dr. Dudley W. Jones, Councillor of the Fifth District, congratulated the Society on the progress of the year and extended an invitation to the annual meeting of the Central Medical Society. Dr. William G. Gill, Councillor of the Sixth District, extended an invitation to the annual meeting of the East Mississippi Medical Society.

Officers for the year 1928 were elected as follows:

President—Dr. W. H. Scudder, Mayersville.

Vice-Presidents—

Issaquena: Dr. J. B. Benton, Valley Park.

Sharkey: Dr. W. C. Pool, Cary.

Warren: Dr. L. J. Clark, Vicksburg.

Secretary and Treasurer—Dr. L. S. Lippincott, Vicksburg.

Delegates to State Association—

Issaquena: Dr. J. B. Benton, Valley Park.

Sharkey: Dr. A. K. Barrier, Rolling Fork.

Warren: Dr. L. S. Lippincott, Vicksburg.

Board of Censors—Dr. E. F. Howard, Vicksburg, for one year; Dr. W. C. Pool, Cary, for two years; and Dr. W. H. Parsons, Vicksburg, for three years.

For long and distinguished service to organized medicine in this state, Dr. H. H. Haralson of Vicksburg was elected to life membership.

The Society adopted a resolution thanking and endorsing the action of the Attorney General of the State for his splendid interest in the Redmon case at Collins, Covington County, and for his reported statement that he was ready to go after any case of violation of the law as regards medical practice.

PUBLIC HEALTH ACTIVITIES IN THE FLOODED AREA OF MISSISSIPPI.

The State Board of Health has published a most creditable report upon its activities in the Counties of Sharkey, Washington, Humphreys and Issaquena which were totally inundated as well as those that were partially inundated: Yazoo, Sunflower, Bolivar, Holmes, Leflore, and Warren. There was a total acreage of 1,966,943 in which there was an estimated population affected of 131,193. Seven municipal water supplies were cared for and more than 20,000 wells out of 24,000 affected by the flood were disinfected.

These figures will give some idea of the scale on which the State Board of Health was working. The public generally is familiar with the excellent anti-malarial and anti-pellagra accomplishments of the State Board as well as its work of vaccination and immunization.

It must be very gratifying to the profession of this state to know that its organization was not found wanting when suddenly brought face to face with this great problem. The manner of its accomplishments testifies most eloquently to the efficiency of the State Board of Health.

THE ORGANIZATION AND SUPERVISION OF COUNTY HEALTH DEPARTMENTS.

Through the co-operation of the U. S. Public Health Service and the Rockefeller Foundation in pooling funds with State and County funds, a well organized full-time county health department has been brought about in each of the formerly flooded counties in the state. The routine activities of the full-time health department include general sanitation, rural and urban; inspection of dairies and food establishments; physical insepction of school children; the control of communicable diseases; organizing and conducting of infant welfare, preschool and prenatal clinics; supervision and training of midwives, and the conducting of general educational campaigns per-

taining to prevention of disease and the promotion of public health. The personnel and the total budgets of the respective whole-time county health departments in the flooded area are as follows:

County	Annual Appropriation	Health Officer	Public Health Nurse	Sanitary Inspectors	Clerks	Laboratory Technicians
Yazoo	14,100	1	1	2	1	
Sharkey	8,000	1	1	1		
Washington	8,120	1	1	1		
Sunflower	12,500	1	1	1	1	
Humphreys	10,000	1	1	1	1	
Bolivar	13,750	1	1	1		1
Holmes	10,000	1	1	1	1	
Issaquena	7,650	1	1	1		
Warren	16,250	1	1	2	1	
Laflore	13,600	1	3	2	1	

THE PREVALENCE OF COMMUNICABLE DISEASES.

The four diseases which in previous years have been endemic in the flooded area of Mississippi and have been of major importance are typhoid fever, dysentery, pellagra, and malaria. During the six months beginning with April 1st, and ending with September 30, there has been a decrease of 37 per cent in the prevalence of typhoid in the same area during 1926. Pellagra in the flooded area has increased 109 per cent during 1927 over the prevalence of pellagra in the same area during 1926. Dysentery shows an increase of 41 per cent in 1927 over the prevalence in 1926, and malaria shows an increase of 25 per cent in 1927 in the flooded area over the prevalence in 1926.

In view of the fact that a prediction was made by the State Sanitary Engineer in charge of Malaria Control a year ago that malaria would increase throughout the State in 1927, it is interesting to note that at this time the increase in the flooded area is no greater and in some instances not so great as the increase in malaria in other counties of Mississippi which were not flooded.

At the writing of this report the total personnel for all recently organized health departments in each of the flooded counties of the state are on duty with the exception of the permanent health officer for Yazoo county. In Yazoo county a regular officer of the United States Public Health Service is acting as county health officer until the vacancy can be filled.

Total Population, White Population and Colored Population of Flooded Counties in Mississippi—1920 Census Figures Used.

County	Total Population	White Population	Colored Population
Yazoo	37,149	10,519	26,630
Sharkey	14,190	2,392	11,798
Washington	51,092	9,406	41,686
Sunflower	46,374	11,917	34,457
Humphreys	19,192	3,410	15,782
Bolivar	57,669	10,049	47,620
Holmes	34,512	7,879	26,632
Laflore	37,356	8,168	29,188
Issaquena	7,618	702	6,916
Total	305,152	64,442	240,710

The Women's Auxiliary to the Harrison-Stone Counties Medical Society met in regular bimonthly session on December 7 in Gulfport, with Mesdames M. H. Yeaman, J. S. Laird and Isham Kimball as hostesses. The president, Mrs. J. A. McDevitt, presided.

The Secretary presented the program for suggested work for the coming year, as follows:

1. Work for "full time" health organization through your own auxiliary.

2. Study health laws and work for their enforcement, (especially rabies in dogs).

3. Study and work for the control of communicable diseases under direction of the State Health Department.

4. Have "Hygeia" in all schools and public libraries.

5. Stand ready as an organization to answer any call from your medical association.

The program of the November meeting of the Jackson County Medical Society was "Infection of the Paranasal Sinuses," by Dr. McWilliams of Gulfport.

At its December meeting a moving picture, "How Biologicals Are Made," was given by Dr. Wilson of Parke, Davis & Co.

At this meeting the following officers were elected for the ensuing year:

President—Dr. J. N. Rape, Moss Point.

Vice-President—Dr. S. B. McIlwain.

Secretary—Dr. J. N. Lockard, Pascagoula.

Delegate—Dr. J. N. Rape, Moss Point.

DIED: Charles William Bufkin, Hattiesburg, Mississippi; University of Alabama School of Medicine, Tuscaloosa, 1880; formerly a druggist; aged 72; died Oct. 13, of asthma.

DIED: Thomas Jenry Safley, Drew, Mississippi; Medical Department of the Tulane University of Louisiana, New Orleans; aged 51; died October 5, of peritonitis.

DIED: William Eason Peek, Morton, Mississippi; University of Tennessee College of Medicine, Memphis, Tennessee, 1893; aged 52; died, October 14, of cerebral hemorrhage.

THE NEED OF A PREVENTORIUM IN MISSISSIPPI.

With the broadening of our program of intensive case finding from the searching out and splendid care of persons suffering from tuberculosis in an active form to include methods of prevention, the need for an institution to provide treatment and care of children with early tuberculosis infection has become increasingly apparent. For the lack of a better name, this type of institution is called a Preventorium. It may be conducted as a Summer Open Air Camp or Health Camp, but it should by all means be conducted all the year. The results of treatment in such institutions are nothing less than astonishing.

Mississippi is pitifully in need of such facilities. A Preventorium of from forty to sixty beds would be a life saving station of untold value to the lives and happiness of our people. A Preventorium is not a hospital or sanatorium for the treatment of children suffering from tuberculosis in active form. The place for such children is in the children's unit in the Tuberculosis Sanatorium.

The Preventorium provides for children who are definitely malnourished and infected with tuberculosis, but as yet not suffering from active disease. Its work is preventive rather than curative. The Preventorium should for many good and sufficient reasons be a part of the Tuberculosis Sanatorium. It should be built on the grounds of the Sanatorium yet somewhat apart for it is not deemed best to have the kiddies closely associated with open cases of tuberculosis notwithstanding the fact that they would be much safer in many instances under such conditions than at home. The Preventorium should be a part of and under the management of the Sanatorium.

Paroxysmal Ventricular Tachycardia—There are clinical criteria that enable one to make a beside diagnosis of paroxysmal ventricular tachycardia. These are slight irregularities in the rapid heart rhythm which otherwise appears quite regular, a changing quality and intensity of the first heart sound as heard at the apex, and the failure to slow the heart by vagal stimulation. This condition previously has been considered unrecognizable except by the use of electrocardiograms. There are instances where the differentiation between this condition and paroxysmal auricular tachycardia is of great importance. — Levine, S. A.: Am. Heart J., 3:177, 1927.

The Bright Oration: Richard Bright.—The most —indeed to every man who has the right spirit, life would be unendurable did it not hold for him some engrossing task to accomplish which he is striving in the midst of the routine of existence, some problem he seeks to solve, some research he is endeavoring to carry out. With many a man life slips by, and, in the end, it may seem to have been a vain effort; but after all, 'twas that effort, that hope that held him up, that brought out the best that was in him.

Without this inquiring spirit no one can go far. Spurred by it the superior man may find the school of practice less alluring, perhaps, at the outset, than the chance to devote himself uninterruptedly to the study of some concrete scientific problem; but he will find it no less broadening and no less repaying in the end, and quite as full today, as it was in the day of Laennec and Bright, of opportunities for enduring contributions to science and to humanity.

This spirit Bright carried with him throughout his career. He could not have been called a brilliant man. He made at first no great impression on those about him. But brilliancy is often ephemeral; very often brilliancy spells instability. Bright showed a steadfastness of purpose and an equanimity that are rarer and more precious than mere brilliancy. He was a simple, straightforward, kindly man who met life with charity and tolerance and serenity; a conscientious, painstaking physician; a patient, modest, scrupulous, time-taking, thoughtful student. He became a learned and a wise man, and the fruits of his labors earned him a well-merited and an honorable immortality. —Thayer, W. S.: Guy's Hospital Reports, 77, 297, 1927.

BOOK REVIEWS

Modern Medicine: Ed. by Sir William Osler, Bart, M. D., F. R. S. 3rd ed., rev. by Thomas McCrae, M. D. Philadelphia, Lea & Febiger. 1927. 1011 pp.

A very excellent volume devoted to Diseases of the Respiratory System and Diseases of the Circulatory System.

The subject matter of this volume is very important and is presented in a full, concise and at the same time a readily understandable manner. Each contributor seems to have tried to present his subject in as practicable and as full a manner as possible. The chapters devoted to Disease of the Myocardium and to Endocarditis have presented these difficult subjects in a particularly clear manner.

In the section devoted to Diseases of the Respiratory System, it is interesting to note that more space has been devoted to the Physiology of the Respiratory System and that the chapter on Asthma is preceded by a discussion of the "Phenomena of Hypersensitiveness," both useful additions.

This volume not only makes interesting reading but should prove a useful addition to any library.

J. Holmes Smith, Jr., M. D.

Cultivating the Child's Appetite: Charles Anderson Aldrich, M. D. New York, The Macmillan Co. 1927. pp. 127.

A fascinating booklet of a hundred odd pages, written by an experienced man who does not hesitate to present his personal views on the matter. He makes a distinction between hunger and appetite, and on this distinction builds up quite a tenable theory which he proves by results in his practice. Forced feedings, calories, cajoling, etc., are given secondary or very remote places, while efforts to stimulate the hunger sensation and appeals to the mind to stimulate appetite, are given primary places in his scheme.

The book is rich in valuable hints. A complete exposition of the matter is tersely presented on pages 108 and 109. The book will be found very handy by the doctor and the parent.

Narcisse Thiberge, M .D.

Pioneer Medicine in Western Pennsylvania: By Theodore Diller, M. D. New York. Paul B. Hoeber, Inc. 1927. pp. 230.

Readers of Annals of Medical History are doubtlessly familiar with Dr. Diller's articles, which have been augmented and combined into an attractive volume. It fills another link in the incomplete knowledge of our own medical history, and as such should serve as a valuable source book to the cognoscenti who are interested in its details.

Naturally one would not expect great interest in this volume outside of its native surroundings. Moreover, it is composed largely of somewhat encyclopedic biographical details on little known figures. The chapters on "Three Parson Physicians," and "Early Medical Practice in Pittsburg,' are of some interest.

Such a study as this should serve as a stimulus to medical historians throughout the country to reveal the story of medicine in their own provinces, especially here in Louisiana, whose fascinating medical romance lies yet unwritten.

M. Mallowitz, M. D.

Anatomical, Phylogenetical and Clinical Studies on the Central System: By B. Brouwer. Baltimore, Williams & Wilkins Company. 1927. pp. 67.

The contents of this publication is the Herter Lecture made possible by Dr. and Mrs. Christian A. Herter of New York and given under the auspices of the Johns Hopkins University.

The subject treated opens up a new scientific field in the realm of neuropathology and neurophysiology inasmuch as the lecturer localizes certain tracts of the retina in the brain, likewise some illuminating data on the pathology of sensibility.

In the former he gives descriptive detail with photographs after Overbosch. In discussing the latter he explains the sympathic innervations in their entirety, giving photographs and diagrams of these. Especially does he elaborate on spinal cord tumors in the localization of which lipiodol is used.

In the third lecture of these series he lays stress on the pathological processes in the cortex with subsequent physical changes, laying emphasis in the explanation of extension of the cortical areas in mammals.

A descriptive analysis and interpretation of his findings in sclerosis-multiplex should be interesting and should be of some aid to the neurologist in his differential diagnosis by exclusion. He cites cases in detailing the result of his research. The lectures are written as only a medical literary genius of his type could write, for the name of Brouwer is synonymous with the intellectual advances in clinical neurology. The lectures should be used by

the ophthalmologist and physiologist as well as the neuropathologist and the neuropsychiatrist as collateral reading.

W. J. Otis, M. D.

Fistula of the Anus and Rectum: By Charles John Drueck, M. D., F. A. C. S. Philadelphia, F. A. Davis Co. 1927. pp. 318.

This monograph covers the subject of fistulae fully. Besides chapters on Etiology, Symptoms, Diagnosis, Prognosis, and Treatment, there are several chapters on special types of fistulae, and a noteworthy one on The Accidents and Complications of Fistula Operations. Preparation of the patient and postoperative care are covered in detail and their importance properly emphasized. It is clearly written and the illustrations are numerous and well selected.

Maurice Lescale, M. D.

The Principles of Sanitation: By C. H. Kirby. Philadelphia, F. A. Davis Co. 1927. pp. 354.

This is a neat treatise written by a well experienced sanitarian for men employed by the community to prevent or control disease. When the author first assumed his duties as sanitary director he realized that most men appointed for this political position were men who needed more knowledge on this important branch. To insure results from all his assistants and co-operation from the public in general it was imperative that his whole department understood not only *what* was to be done to prevent the spread of diseases in the community but *why* this and that step in sanitation should be carried out.

This volume represents the course of instruction given by him to his staff, as the author could not find any book on the subject that quite answered his purpose. It is very clearly executed and richly illustrated with selected plates. Three sections are devoted to communicable diseases—the descriptions are short, to the point and only sensible and well accepted steps recommended. The fourth section is devoted to food; the part on vitamines is very valuable. The only fault which the reviewer finds is that the chapter is too short. The last section on occupational diseases is quite up to date.

Men doing health work whether medical men or laymen employed to look after the welfare of a community will find that the time spent in a careful review of this modern well-edited book is well repaid.

Narcisse Thiberge, M. D.

The Care of the Patient: By Francis Weld Peabody, M. D. Cambridge, Harvard University Press. 1927. pp. 48.

Professor Peabody's thought provoking article, originally given as one of a series of talks to students of the Harvard Medical School, and later appearing in the J. A. M. A. (Vol. 88, pp. 877-82), is now available in a format worthy of its content.

At a time when our scientific thoroughness and therapeutic nihilism are apt often to lead us afield in treating the patient, it is well to bear in mind the last statement in the essay: "One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient."

The late lamented professor's thoughts will serve excellently in the physician's periodic brain and conscience dusting.

M. Mallowitz, M. D.

Treatment of Venereal Disease in General Practice: By E. T. Burke, D. S. Q., M. B., Ch. B. (Glas.). New York, Oxford University Press. 1927. pp. 162.

This book fills a long needed want. The reason for its publication can best be expressed in the author's own words: "While hundreds of pages are consecrated to diagnosis, treatment is summarily dismissed in a few paragraphs. The therapeutic directions are general and vague . . . one . . . can give clear, detailed and definite directions for treatment." The author, with these glaring ills always in mind, succeeds admirably in presenting a book which is at once concise and comprehensive. Throughout the book there flows a subdued though keen sense of humor and wit which proves most enjoyable entertainment at the same time a veritable mine of information and experience. In a review of this book one is tempted to forget the advice that "cautious they praise, who purpose not to sell." The chapters entitled Obita Dicta Syphilitica and Gonorrhoeocia are ingenious and witty aphorisms. The scheme of treatment mapped out for the different stages of syphilis and gonorrhea and its complications are clear cut, simple, and one is apt to remark, foolproof. There are no indefinite directions but sweeping and positive rules of procedure with sufficient latitude allowed for individual variations.

Several subjects are of such importance that they merit at least some slight mention. First he deals with the fact that there has been demonstrated a general law with regard to the members of the nitrogen family of the elements, as arsenic and bismuth. The statement is made that "they only exhibit their parasitical properties after they have been acted upon by the tissues," and he gives the supposed mode of action.

The various arsenical and bismuth preparations are analyzed and the untoward effects of each are discussed. In regard to mercury the author takes the stand that it is "as obsolete as is sarsaparilla," and asserts that he has discarded it. Only under two conditions should it be used: (1) Intolerance to arsenic and bismuth; (2) inaccessibility to these two drugs. The administration of glucose before administration of arsenic to decrease possibility of liver poisoning and jaundice merits consideration. Appendix VII, which deals with the subject "secondary organisms in gonorrhea," is a gem. The sideline, of the relationship between the laboratory and clinic, is worthy the attention of anyone regardless of his interest in the treatment of venereal disease. As this review has already grown too lengthy I will conclude with the good advice that you read it soon, especially those of us engaged in the general practice of medicine.

I. L. Robbins, M. D.

The Thomas Splint and Its Modification in the Treatment of Fractures: By Meurice Sinclair, C. M. G., M. B., Ch. B. (Edin.). With a foreword by Sir Robert Jones, K. B. E., C. B., F. R. C. S. London, Oxford University Press. 1927. pp. 168.

This books, a treatise on the splint which has revolutionized war surgery relative to fractures of the extremities is written by an officer of the British army. His experiences with treating the gun shot fractures in the late war has given him valuable information which literally is crowded into the brief 162 pages. There are over one hundred illustrations which makes descriptions interesting and simplified. Every physician doing any fracture or industrial surgery today should read this book and there is no doubt but that the Thomas Splint will come into universal usage.

H. Theodore Simon, M. D.

The Treatment of Acute Infectious Diseases: By Frank Sherman Meara, M. D., Ph. D. 2d ed. rev. New York, The Macmillan Company. 1921. pp. 806.

The text is one of the most complete of its sort on this subject. It apparently leaves little to be desired in an accurate, detailed outline and discussion of the actual practical management of acute infectious diseases. The common, as well as the rarer conditions, are included. Since such a large percentage of the general practice of medicine involves the careful handling of such cases, it is of considerable value. The author is to be congratulated upon the excellent literary style and the lucidity of his directions.

Each chapter is followed by a short summary of the salient points discussed at great length previously. Such an arrangement allows of ready reference when necessary. Because of its completeness and detail many of the measures and suggestions are too elaborate to be practical. The accepted use of scarlet fever antitoxin and the Dick Test since this revision would necessitate some correction of that chapter.

Willard R. Wirth, M. D.

Treatise on Orthopaedic Surgery: By Royal Whitman, M. D., M. R. C. S., F. A. C. S. 8th ed. rev. Philadelphia, Lea & Febiger. 1927. pp. 1061.

The text-book on Orthopaedic Surgery by Royal Whitman, of New York, has always been considered one of the most valuable of its kind published. The new edition contains much additional valuable data, both in the form of the text and in the new illustrations. The subjects are carefully analyzed from all standpoints, and only sound common sense advice given in regard to diagnosis and treatment.

The book is entirely too extensive to be reviewed in a few lines. It merits a careful analysis and painstaking study for one to obtain the real value of the book. It is a text which any general practitioner, general surgeon or bone and joint surgeon should have in his library for ready reference. It is more than a reference book, however, as it goes into great detail in describing the various conditions seen in diseases involving the spine and the extremities. The illustrations are unusually clear, and offer one a quick method of obtaining an insight into almost any subject in orthopaedic surgery.

John T. O'Ferrall, M. D.

Collected Papers of the Mayo Clinic and the Mayo Foundation: Ed. by Mrs. M. H. Mellish, H. Burton Logie M. D., and Charlotte E. Eigen Mann, B. A. Vol. 16. Philadelphia, W. B. Saunders. 1926. pp. 1078.

This volume as with previous volumes of Collected Papers, represents the progress of medical science during the year 1925, with particular reference to the work being accomplished by members of the Staff at the Mayo Clinic. There is no important major subject in medicine which has not been covered by one of the writers. The papers have been arranged in order to be of special benefit to the general surgeon and internist, though the fields of the various specialties have been well covered. To call attention to any particular paper or group of papers would only be expressive of an individual preference. The entire book is well worth reading and the writer most heartily recommends it to every physician. There is a total of 169 papers by 161 contributors.

Shirley C. Lyons, M. D.

Minor Surgery: By Arthur E. Hertzler, M. D., F. A. C. S., and Victor E. Chesky, A. B., M. D., F. A. C. S. St. Louis, C. V. Mosby Co. 1927. pp. 568.

This volume, covering the entire field of minor surgery, must of necessity be brief.

There are several points with which the reviewer is not in accord; the pathology of carbuncle is confused with that of furuncle; the time worn crucial incision is still adhered to; no mention is made of the antitetanic treatment of erysipelas; the use of carron oil in the treatment of burns is still advocated.

The statement that "the lower extremity is subject to a variety of sprains uncommon in the hip, less so in the knee and very common in the ankle and the smaller joints of the foot," is contrary to the reviewer's experience. A sprain fracture, however, is the more frequent type of injury.

The chapter on inflammatory infections of the upper extremity is adequate, concise and clear. The many illustrations are clear and convey the desired clinical characteristics.

Purposely no reference to pathology is included as the authors had in view "wholly a practical end." As this book deals primarily with the types of cases seen in an out-patient clinic, it is of value to the student as a text and to the interne and practitioner as a source of condensed clinical information.

PAUL G. LACROIX, M. D.

PUBLICATIONS RECEIVED.

Paul B. Hoeber, New York: "Tobacco and Physical Efficiency," by Pierre Schrumpf-Pierron, M. D.

Williams & Wilkins Company, Baltimore: "Fighters of Fate," by J. Arthur Myers, M. D.

C. V. Mosby Company, St. Louis: "Diseases of the Mouth," by Sterling V. Mead, D. D. S. "Nasal Neurology Headaches and Eye Disorders," by Greenfield Sluder, M. D., F. A. C. S. "The Normal Diet," by W. D. Sansum, M. S., M. D., F. A. C. P. "Diseases of the Skin," by Henry H. Hazen, A. M., M. D.

MacMillan Company, New York: "Nerve Tracts of the Brain and Cord," by William Keiller, F. R. C. S., Ed. "Clinical Laboratory Procedures," by George L. Rohdenburg, M. D.

J. B. Lippincott Company, Philadelphia and London: "Radium in Gynecology," by John G. Clark, M. D., and Charles C. Norris, M. D. "International Clinics," Vol. IV, thirty-seventh series, December, 1927.

Octave Doin, Paris: "Le Metabolisme Basal," by Claude Gautier and Rene Wolff.

REPRINTS.

"Tuberculosis of the Kidney in Pregnancy," by Winfield Scott Pugh, New York City. "Perineal Prostatectomy," by Winfield Scott Pugh, New York City.

Medical Education: One of the largest problems of medicine today is the distribution of physicians. It is well recognized that there is a decline in the number of physicians in the rural districts and in the smaller communities. A few individuals are of the opinion that the elevation of standards of medical education has been largely responsible for this condition, and suggest a lowering of our standards to secure a better distribution to these rural districts. There is no evidence available which would substantiate that opinion. Current methods of communication and transportation, the shift of the population from rural communities to cities and the rapid development of industry throughout the country have markedly influenced the entire life and character of the rural districts and have made their problem a major national question—of which health and medical service are but a part. To assume that the medical aspects of this enormous question can be answered by supplying these areas with physicians with a training below standard, is a far cry even if it could be done, which is quite unlikely. Modern transportation, the development of hospital and clinic facilities and active health and nursing work in rural communities have already demonstrated, in many sections of the country, that well-trained physicians and health workers will go to these districts fully prepared to meet their peculiar problems. It probably is true that in most sections of the country better medical services are now more accessible than they have been in the past. The present problem is largely to secure better organization of existing facilities and further extension of them, rather than to provide sub-standard physicians the individual. W. C. Rappleye, M. D., Bost. Med. & Surg. Jour., 1927, 197, 548.

Rudolph Matas

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RUDOLPH MATAS—HIS INFLUENCE ON THE MEDICAL PROFESSION OF NEW ORLEANS.*

A. E. FOSSIER, M. D.,

New Orleans.

Mr. Toastmaster, Dr. Matas, Fellow Members of the Orleans Parish Medical Society:

It was the eccentric Colten who said: "That speaking generally, no man appears great to his contemporaries." Unfortunately, he spoke truly. Only a few of the great men of medical history were loved, revered, honored and successful during their existence; the majority were saddened by bickerings, jealousies, scorn, poverty and even humiliation. A broken heart and posthumous fame, seem to be the reward of genius.

Few medical celebrities, Dr. Matas, have enjoyed the love, the respect, and the admiration you command of your confreres. Whilst your achievements are universally recognized, and your fame has spread to the foremost corners of the medical world, it is here, in your native state, where we know you best and love you most, that your genius is most appreciated.

From the very beginning of your medical career, your ability was recognized, and your glorious future was predicted by your associates. Their faith in your success was devotional, their enthusiasm unbounded, and their admiration and esteem for you, made them, in your hour of greatest need, when you were about to be the victim of an outrageous injustice, rally to your banner, and force the issue to a glorious victory. It is most befitting that on this occasion we voice our sincere appreciation and undying gratitude to the splendid body of true men, makers of medical history, stalwart leaders of their profession, who with unrelenting effort and unabating zeal, fought for "Matas and Matas only."

Their battle cry re-echoed throughout the city, and its whole population rose in indignant protest against the importation of outside talent to fill the chair of surgery made vacant by the premature demise of the distinguished Miles. The propaganda advanced that the best interest of the school and community could be served by expansion through the introduction of new ideals and the establishment of closer foreign relation, was reproved, and with prevailing justice, you, a native son, were made professor of surgery. I am sure this victory appears providential to every true son of Tulane.

History tells us that great epochs of medicine oft resulted from the genius of one man, that countries and even cities became the center of medical culture of the world because of the superior learning of a great teacher, and universities have been made famous by the renown of a distinguished professor.

For nearly one hundred years New Orleans has been most fortunate in having for its surgeons, men of international

*Delivered at the banquet tendered Dr. Rudolph Matas under the auspices of the Orleans Parish Medical Society, December 20, 1927.

reputation, most brilliant operators and original thinkers. In unbroken succession these physicians practiced their art and taught their science within the portals of that unique institution, the great Charity Hospital. The brightest stars of that galaxy of surgery were the distinguished Luzenberg, the rugged Warren Stone, the brilliant Smyth, the beloved Miles, all of whose resplendency is dimmed by the brilliancy of our scholarly Rudolph Matas.

It would be superfluous on this occasion to proclaim your achievements, to laud your learning, to compliment you on your culture, to refer to your writings, to extol your teachings and to enumerate the many great honors which have marked your distinction. Your success has always been to us a source of constant gratification, and your achievements are ever engraved in the memories of your grateful and admiring pupils and confreres. Every one of your glorious conquests have animated our hearts, and thrilled us with pride that will never be forgotten, and will ever remain our most pleasant and cherished recollection.

Our good friend Paul Gelpi, the genial toast master, has called upon me to speak on Dr. Matas—His Influence on the Medical Profession of New Orleans. This subject is unlimited in its scope, so much so, that many volumes may be written without in any way nearing its exhaustion. It has been said that a criterion of a scholar's ability is the number and value of the truths he has awakened. The greatest influence of Matasism on the medical profession of this city resulted from his teaching. A teacher may excel in transmitting knowledge, he may even be very learned, gifted with eloquence, but unless his personality can command the admiration and the respect of his students, and be able to inspire them with the love of the truth, and by his example spur their ambition and lead them along the difficult path to knowledge, he would have taught only cold facts and obtuse hypotheses without awakening the minds of his pupils. The highest function of the teacher consists not so much in imparting knowledge as in stimulating the pupils in its love and pursuit. This especially applies to the teacher of medicine, the practice of which, although based on scientific facts, is an art which can be best conveyed by the master of that art; not only must his knowledge be imbibed by his students, but his culture must be radiated; that culture, which, in the final analysis, is essential in developing that nobility of soul, that tenderness of heart, and that sympathetic understanding of the unfortunate, which is the distinction between a true physician and a crude though learned scientist.

New Orleans is fortunate in possessing a faculty of physicians, which, by culture, scientific attainments, learning, beneficence, personality and ethics, I will state with justified pride, makes it stand preeminently among the great medical centers. For this distinction we are indebted greatly to your 41 years of teaching. For nearly two generations your notable example instilled in the hearts of your numerous students many virtues, which virtues contributed so much to your phenomenal success. With your proverbial humility you attributed your high attainments to:—"First, a robust inheritance, for which you can never sufficiently thank your honored parents; second, tenacity of purpose, without obstinancy; third, a supreme and unalloyed love of your profession; fourth, an unlimited and unquenchable desire to be worthy of its mission." Although these sentiments were expressed by you only a short while ago, your beneficent influence on the local medical profession must to a very great extent be attributed to the instilling in our minds of that supreme and unalloyed love of your profession, with the desire to be worthy of its mission.

The maxims, Dr. Matas, propounded by you in that memorable presidential address, entitled: "The Missions and Ideals of the American College of Surgeons," bares to the world the heart of a just man

bursting with benignity, and proclaims you a philosopher whose precepts should be engraved in the soul of every true surgeon. With what logical distinctness have you spoken the following: "Now character is the will to put into action what the voice of conscience has aroused in him. Conscience without will to act upon its biddings, is powerless and might as well be dead. But the harmonious combination of the two makes the right-minded man. When a man has neither conscience nor character he cannot be a good man, and if he is not a good man he cannot be a good surgeon."

Dr. Matas, you have been prolific in your writings, and your versatility spells your genius. Your treatises, whether on medical history, addresses on occasions, or contributions to medical science, command universal attention. The purity of language, the profound knowledge of the subject discussed, your logical conclusions and the beauty of your philosophy, proclaim your scholarship.

You are the intellectual giant of medicine, not only of this city, but of the South, and in our estimation of this country.

Nearly everyone of our surgeons have been your apprentices, you have not only guided their scapel, but you have inspired them with your conservatism, with your love of humanity, and the virtues requisite not only for making of skilled technicians, but true physicians. Your genius has been the greatest contributing force which made your Alma Mater, and our Alma Mater, the Medical Department of Tulane University, one of the most famous institutions of learning in this country.

England has Moynihan; France, Doyen; Germany, Bier; Sweden its Gullstrand; Switzerland had Kocher; Italy, Pitti and Bastianelli; and here in America, Cleveland has its Crile; Baltimore its Young; Chicago had Murphy, New York had Carrel, and we in New Orleans have Matas.

RUDOLPH MATAS—HIS EARLY CAREER.*

CHARLES CHASSAIGNAC, M. D.,

NEW ORLEANS.

Mr. Toastmaster, Dr. Matas, Friends:

When asked to speak on this happy and momentous occasion, my first impulse was to decline for the very good reason that there were many men, more able and eloquent than I, who in addition have been in closer touch with our distinguished guest during many recent years; yet, becoming reminiscent, as is the recognized privilege granted to those of advancing years, I thought: why not? My association with our friend during the early part of his career and at perhaps the crucial period in his professional life enables me probably better than any other man living to bring to your attention some phases of that stage in his history. After all, I concluded, the greatest compliment I can pay him is to try, doing my best not to fall too short of the goal nor to bore you by the dullness of my discourse.

Matas—a great man—a big subject; let us hope it will not prove overwhelming to the speaker. You must forgive me if it often becomes necessary to use the first person, for it will not be done with a spark of vanity, but merely because of the modest part taken by myself and a few associates in some of the occurrences to be related. On the stage, whenever the spotlight is thrown on the star performer in order all the better to bring out the beauty and perfection of his art, it inevitably follows that some rays will draw out of the shadows to some extent any other person in sufficient proximity, no matter how relatively unimportant may be his part.

It is not my purpose to present a biography of our honored friend, first because that of recent years is too well-known to all of you and also because you need only

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refer to a long editorial in the December, 1924, number of the New Orleans Medical and Surgical Journal, published after the elevation of Dr. Matas to the presidency of the American College of Surgeons, in order to become further acquainted with the main facts. My aim will be but to review a few of the earlier events and lay more stress on some that may not have been given quite sufficient importance from my point of view.

Endowed with a robust physique, rugged health and a brilliant mind, the dominant note with Matas from the very beginning was work. He was a hard and earnest worker during his undergraduate student days. His labor first bore fruit when he earned an internship in the Charity Hospital in 1878, the year that appointments by competitive examination were initiated, the year also of our last local great epidemic of yellow fever which yielded an experience which was to prove very valuable to him within the next few years.

He was graduated in 1880 and was appointed on the medical visiting staff of the hospital. The next year it was your humble servant's turn to become an interne and he was assigned to Matas' service. This otherwise unimportant event, except to me, is mentioned merely in order to show the early connection between us and, especially, to allow me the opportunity of telling the reason for it. At that time the House Surgeon, who in those days was the executive officer of the hospital, was my beloved preceptor, Arthur W. de Roaldes. It was natural that he should desire to do the best he could for me, so he explained that he would put me under Matas because, while the latter was the youngest member of the visiting staff, de Roaldes considered him the most promising among them and the one likely to give me the most valuable training; unnecessary to add that de Roaldes was right in his prognosis and that I profited immensely from the teaching and example of my chief.

Always a voracious reader and at the same time gifted with a wonderful memory, Matas continued his hard work and forged ahead rapidly in professional attainments, growing experience and increasing reputation among his confreres and the public.

The next milestone in his career was reached when he was appointed demonstrator of anatomy in the medical department of Tulane University in 1886, a position which afforded him a fine preparation for the next step in his teaching capacity two years later.

In 1888 a coterie composed of a few of the most brilliant of the younger physicians of that day and of whom the only survivors are Matas himself and Henry Dickson Bruns, organized the New Orleans Polyclinic, the first post-graduate Medical School in the South, and Matas was chosen its first professor of operative and clinical surgery. These men were earnest and progressive, they had vision, their endeavor was crowned with success and the Polyclinic later became one of the leading post-graduate schools in this country. The year after their organization, I had the honor to be called to join their ranks and was enabled to become a close observer of the rapid strides of Matas as a surgeon and teacher. At that time, as ever after, his classes were largely attended and he was easily the most popular of the professors.

When, in 1894, through the death of A. B. Miles, the professorship in surgery of the Medical Department of Tulane University became vacant, the position attained by Matas in the medical world was such that he was considered the logical successor. Notwithstanding, the faculty, guided by a policy which we need not discuss here, decided to import a successor to Miles and actually elected one. The local profession resented the injustice so deeply that, led by de Roaldes, other friends, and the Polyclinic faculty, they voiced such a strong protest and organized such an effective campaign that the prospective appointee declined the appointment in deference to the justified

opinion of the profession of New Orleans. Following this the faculty yielded to the continued strong pressure of the medical and lay public and gave the chair of surgery to Matas. The fight had been won.

The appointment proved to be the best move the medical faculty of the University ever made. Matas quickly attained a foremost rank in the faculty, also continuing as professor in the Polyclinic for two years, when he was elected Emeritus Professor of Surgery in that school.

This was in 1896. For thirty years more he carried on in his professional duties, his immense practice, his talented writings, gaining progressively in distinction, reaping additional honors of which you already know or another will tell you. A paragraph from the already cited editorial in the local Medical Journal describes the actual status of Matas so aptly that I must quote it verbatim: "Dr. Matas is the greatest asset of the University and the city because upon him, as upon no other man living in our midst, the eyes of the world are focussed." Did I not say a moment ago that the Polyclinic men had vision? The very few still living who took part in the successful movement to obtain for Matas his best and his deserved opportunity may be permitted to feel particularly proud of his career and to be among the loudest to offer their congratulations and their expressions of admiration.

Work, I may be allowed to reiterate, has been the keynote of Matas' existence; good, hard, constant work. It is possibly the chief factor in his pre-eminent success. Besides its quality, which was ever of the highest, the volume of work he has accomplished is indeed marvelous. I remember well when, some twenty-five years ago in a conversation with the speaker, the lamented Senn, then on a visit here from Chicago, expressed serious concern for Matas on account of the tremendous amount of work he was doing without any respite, predicting that he would not last long if he did not moderate his pace and arrange to play more. Matas continued his labor in unchanged degree, Senn went to his reward long ago, but Matas is not only still with us, but we believe and trust will continue to be with us for another quarter of a century.

I can not close without venturing an opinion as to another important cause of the renown achieved by Matas. This, I think, is his well-balanced proficiency in the art as well as the science of medicine. The combination is a rare one. The true scientist is as seldom an artist as the practical artist is a scientist; the average fine mind does not seem capacious enough to harbor both qualifications. Matas possesses them in a happy degree, hence his universal appeal, that to the scientific element as well as to the more practical.

A third reason may be added. The combination of a facile pen with the already accentuated propensity for work enabled Matas to write well and often. There is no doubt that his numerous scientific and practical articles, giving publicity to his surgical knowledge and skill, contributed in no small measure to his fame.

Be that as it may, if it be asked who is the greatest physician of New Orleans, nay, the South, within the last half-century, the answer in loud and appreciative chorus can only be, "Matas."

As such, I salute you, Doctor, in the name of this representative assembly of your fellow-members, professional friends and warm admirers. In the words of our old genial friend Rip Van Winkle, and no one has ever improved on the phrase in terseness and feeling, "May you live long and prosper."

RUDOLPH MATAS—HIS PROFESSORIAL CAREER.*

C. C. BASS, M. D.,

NEW ORLEANS.

While the subject assigned to me, namely the professorial career of Dr. Matas, implies that my remarks will be limited to the period from his appointment as Professor of Surgery in 1894, to his retirement from that position with the close of the session of 1926-27, I shall take the liberty of going back a few years prior to the beginning of his professorship and recall some of the facts which, at that time, singled out this young genius above all others for a position of so great responsibility.

This community has been blessed with many great men in medicine. One of the greatest was Stanford E. Chaillé, whose influence and guidance for so many years contributed so largely to the progress of medical knowledge and to the promotion of the medical profession in this city and State and region. Even before young Matas was graduated in medicine, in 1880, from the University of Louisiana, now Tulane University of Louisiana, by special action of the Faculty before he was twenty years of age, Dr. Chaillé had recognized in him that indomitable passion for knowledge and superior ability to acquire it which guaranteed for him a successful career Dr. Matas was appointed clerk to the Yellow Fever Commission, appointed to investigate the yellow fever in Cuba in 1879, of which Dr. Chaillé was a member. This was the beginning of a friendship and comradeship and devotion that was ever intensified by time during the remainder of the long and successful career of that great philosopher and teacher, Dr. Chaillé.

Dr. Matas was appointed Demonstrator of Anatomy in 1886, and, to quote from that masterly address of Dr. E. D. Fenner on the occasion of the "welcome home" tribute paid to Dr. Matas by some of his friends upon his return after presiding over the American College of Surgeons, "in this arduous position his indefatigable industry, his prodigious memory, and his inspiring personal magnetism, soon marked him for advancement whenever the opportunity presented." That opportunity presented when the chair of surgery became vacant upon the death of Professor Albert B. Miles, in 1894. Professor Miles was held in such high esteem that many could hardly realize that there could be anyone in their midst who could fill the responsible position; but the general public, the local profession and the students whom Dr. Matas taught were so loud in his praise and so insistent in their demand for his appointment that the consideration of others was useless. It was on Friday, September 28, 1894, that the Faculty elected Dr. Matas for the position of Professor of Surgery pro tem, and later made it permanent on Wednesday, April 24, 1895, and thereby made perhaps the most momentous and far-reaching decision, in many regards, in the history of the institution. For as subsequent events have shown, this appointment provided the stimulus, the opportunity, and the field for the life work of one of the greatest teachers and surgeons the world has ever known, and whose personal friends, chiefly through their friendship, admiration and appreciation of him, have made large substantial contributions towards the facilities and support of the school.

Dr. Matas was an accomplished teacher and a surgeon of recognized ability before he was appointed Professor of Surgery, as witness the acclaim of him as a teacher by students whom he had taught as Demonstrator of Anatomy, and the praise of his confreres, a splendid example of which is the following quotation from an interview furnished to the Times-Democrat on September 9th, 1894, by Dr. Andrew W. Smyth, quoted by Dr. Fenner:

"He is beyond question the greatest surgeon New Orleans has ever possessed.

*Delivered at the banquet tendered Dr. Rudolph Matas under the auspices of the Orleans Parish Medical Society, December 20, 1927.

There is nothing that he teaches he does not exhaust. . . . I feel certain that the future will corroborate the opinion which I now express regarding Dr. Matas, and any honor bestowed upon him will be justified by history. . . . I am in earnest when I say that Matas is a greater surgeon than Stone, Miles, or Smyth have ever been, and he is profiting by experience; reading and writing all the time."

From the date of his appointment as Professor of Surgery in 1894, to the close of his active teaching career with the session of 1926-27, a total of 2,823 physicians were graduated from Tulane. If we add to this number 788 who graduated from 1886 to 1894, during the time Dr. Matas taught as Demonstrator of Anatomy, and 104 Junior students of the session of 1926-27, who also had instruction under him, we have a grand total of 3,714 students who have drunk at the fountain of knowledge at his feet and caught the inspiration of conscientious service, thoroughness and loftiness of purpose so characteristic of the man.

Professor Matas has the happy faculty of presenting whatever subject he presents, in a most interesting and instructive manner. Whether it be major vascular surgery and his endoaneurysmorrhaphy for which the world has acclaimed him, or some simple minor condition, bone felon, hemorrhoids, carbuncle, furuncle, or some rare condition requiring expert diagnosis, actinomycosis, madura foot, malignant pustule, he dealt with it in the same masterly manner. His students always felt that his every effort and purpose was to impart knowledge to them. All too often teachers unconsciously appear to wish to create the impression that they possess superior knowledge or ability in the particular subject that the student need not expect to attain. Not Professor Matas. He wanted the student to know and presumed that he could learn everything that he himself knew of the subject.

The popularity of Professor Matas was well shown by the large attendance he usually had at his clinics and demonstrations, of others besides the students who were expected to be present. Interns, house officers, visiting staff, and outsiders, were to be found often in considerable numbers eager to hear again and again the inspiring words and see the instructive demonstrations of the master. No professor in Tulane, in my knowledge, ever had so large attendance of others besides his students at their lectures or clinics as attended Professor Matas' dry clinics on Thursdays. On these, as well as on innumerable other occasions, he often displayed a versatility and a breadth of knowledge that was simply amazing. It has occurred so frequently on all occasions that nothing else is expected by those who have known him.

Professor Matas was a friend of the students and knew many of them personally. His sympathy with them was shown on many occasions. It was the most painful thing for him to report a failed grade for any of them. In the faculty meetings when the decision as to the disposition of a student who had made such low grades as to place him right on the borderline as to whether he was to be promoted or to be graduated or not, it was Professor Matas, perhaps more than anyone else, who pled his case and counseled leniency and charity. Many a student would appreciate him still more if they only knew of his kindness in the inner chambers of the Faculty in their behalf.

In the councils of the Faculty Professor Matas was always concerned in protecting and promoting the interests of the School. Any time that anything was proposed which might prove detrimental he at once challenged and opposed it. He was always an exponent of the opinion held by many others also that the closest co-operation between the School and the great Charity Hospital is essential for the welfare of both institutions. He never lost an opportunity

to promote the interests of the hospital which he always referred to as our great clinical laboratory.

His interest in, and appreciation of the value of the Library of the Medical School has never waned. Upon his return from his trip to Europe this year where the highest honors were conferred upon him on many occasions, almost the first thing he told me was of the valuable material he had been able to secure for the library and how he had been able to represent Tulane on important occasions.

An incident that occurred only a few days ago, will illustrate Professor Matas' reverence for and deference to the older members of the faculty. A document relating to certain funds was to be signed by both Dr. Matas and his lifelong friend and confrere, Dr. E. S. Lewis. There were two lines on the paper for the signature of each. It was passed to Dr. Matas first. He passed it to Dr. Lewis and asked that he sign it first. Dr. Lewis signed on the bottom line. I remarked that Dr. Lewis was determined to have the signature of Dr. Matas placed above his and that he would now have to sign it that way. Dr. Matas said "I will make my own decision as to that" and wrote his own name below that of Dr. Lewis, leaving the line above blank.

But I must stop. Time does not permit me to say all that I could say and I have not the power to say all that I feel and I know almost four thousand others, who have been his students, feel, of praise and gratitude. One of the satisfactions of having lived in this generation, and not in a future generation, so full of promise in medicine, in the light of scientific discoveries, or in a past generation under the charm of the emergence of the practice of medicine from the darkness of the shadow of superstition and ignorance, is the fact that we have lived with and under the inspiring influence and guidance of one of the greatest men in medicine of all times, Dr. Matas.

RESPONSE OF DR. MATAS.

Mr. Toastmaster, my Dear Colleagues, Fellow-Members of the Orleans Parish Medical Society, My Friends—All:

It is scarcely two week since my homecoming that Dr. Fossier speaking for himself and Dr. Paul Gelpi, told me, in an innocent way, to be sure and reserve this last Tuesday before Christmas for an informal "little dinner party with a few friends." I of course accepted. It is true that Dr. Lucian Landry had written me late in the Summer, that he had heard some rumors of a prospective dinner that was being planned for my return and added in his humorous way, "you might as well prepare to walk the plank." I was then so securely entrenched in the mountain fastnesses of the Pyrenees and the prospect of my early return so remote, that I did not heed and actually forgot the importance of his warning which has proved more prophetic than even he had imagined. So that when I accepted my friends Fossier's and Gelpi's invitation I little knew what was in store for me. I did suspect that the object of this "little private party" was to hear what account I could give of myself after the eight months that I had disappeared from our common habitat to wander far and wide in foreign lands across the seas—in a pilgrimage to Esculapian Shrines. But now that I have come to the tryst, what do I see but a formidable conspiracy actually organized by the Orleans Parish Medical Society—with its President as one of the chief ringleaders, to test not only my gastronomic capacity but to try my ability to stand on my feet in the face of a concentrated barrage of oratorical artillery with me as a target and the fire directed straight at my head and heart! And now that I have been emotionally shot to pieces, do you still expect the shattered fragments to speak?

But I hear myself talking and, as I feel my pulse, find that my heart is still beating and conclude, with the inexorable logic of the Cartesian syllogism which I learned in

my school days—"I think, therefore, I am;" *(Cogito, Ergo Sum)* and realize that I am indeed living and that I must hasten to put together the scattered fragments of my senses if I am to respond in some way to this extraordinary challenge to my vitality in spite of the overwhelming avalanche of praise in which I have been buried.

Yes, I am living and, besides, grateful—for the privilege of sitting here in a gathering of colleagues, comrades, and friends, old and young—so many of them my associates, assistants and former students—and even by my honored teacher [pointing to Dr. Ernest Lewis] who have joined in a conspiracy of friendship to greet and welcome my return to our dear New Orleans and to the interrupted activities of my professional life. In the presence of this unexpected, overwhelming and unsolicited manifestation of your regard and affection, I know scarcely in what vein to respond—whether to laugh or to cry. A little of both would perhaps best convey my feelings as an emotional expression of the effervescence of gratitude which lies deeper than either.

To one so embarrassed it would be the prudent counsel of wisdom to cover a Fabian retreat with that laconic phrase or words which, probably, since the dawn of human intelligence and the beginnings of speech, has been the message and the refuge of every grateful but perturbed mind under the stress of the circumstances in which I am placed—to repeat with unfeigned thankfuness and a fervor,—that comes deep from the heart: thanks, thanks, my dear friends, for all the kindness and the favor that you have bestowed upon me and for all the gracious compliments and sentiments of regard and praise that have been uttered here to night.

And yet, while I have been listening to your idealized portrayal of me, a small, still voice has been whispering within me that much as I am thrilled by your eulogy, I cannot leave you under the impression that I am so vain as to believe that I am the ideal man whom your speakers have so eloquently portrayed, for I am too conscious of my own shortcomings not to know how far I am from these fine ideals. I am only an ordinary mortal with no claims to superlative virtues; merely a fortunate man who was born with a robust constitution, inherited from healthy, honest and gentle parents, who taught me early to heed the Commandments and how to spell and remember the word *duty;* and how to find in that other word, *work;*—yes, hard, honest and persistent work,—the magic key that would open the gates that lock the richest and most enduring rewards of an industrious and honest life. It is upon this simple foundation that the superstructure of my professional career has been built and that I have been able to profit by the opportunities that have come to me through the good will of the generous people among whom I was born and have lived these sixty and seven years. It is due chiefly, if not wholly, to these inherited traits, for which I can claim no credit,—since I owe them to my progenitors,—also mere mortals,—that is due whatever success I may have attained and all the honors and distinctions that have been awarded to me in the course of my life. But this just acknowledgment to my ancestors makes me no less grateful to the good men and women of superior mould who recognizing early in my life the honesty of my purpose, taught me by their example, stimulated me with their encouragement, guided me with their counsel, and supported me with the warmth of their friendship. And if I have attained a fair degree of worldly prosperity and contentment with my lot, and have the honor to address you from the top of the high pedestal on which you have placed me, it is only due to these fortunate and kindly influences and not to any exceptional talents or superior virtues. You have looked upon my homely merits with more than kindly eyes and have regarded my faults and my failings with more than friendly forgetfulness. But again I say that while the full measure of your praise may well be questioned, the generosity of the regard and

friendship that prompted these compliments cannot be questioned and have roused in me the deepest and most grateful emotions.

If I may be permitted to interpret the motive which has prompted the Orleans Parish Medical Society to honor me with this gracious homage, I take it that it is the desire of the Society to recognize my long connection with its activities as one of its oldest members; my loyalty to the cause of medical organization and my unabated zeal in its support, in Parish, State and Nation; to my forty-three years of service as a teacher of Surgery in Tulane University where I have been privileged to claim as my students many and probably the large majority, of the members present; to my love and wholehearted devotion to my profession and to its cultural, social and ethical interests in their relation to the public welfare.

If such are my credentials to your favor, I feel safe in believing that they will not suffer by exaggeration, for no one who has known me throughout my long professional life can say they are not true.

* * *

It is now forty-seven years since I was first enrolled in the membership of the Orleans Parish Medical Society. In fact, I attended its first meetings as an undergraduate interne of the Charity Hospital, when I was a mere youth of eighteen years. I remember the first regular meeting held on May 6, 1878—a year that I can never forget as it was one of the most calamitous in the long history of the Yellow fever epidemics that have desolated not only New Orleans, but Louisiana, the neighboring seaboard states, and the whole lower Mississippi Valley. The pestilence came during the summer of that year and spread rapidly, leaving death, desolation and ruin everywhere along its path and never halted its march until the winter and the frosts paralyzed its movements; and not until over 6000 victims had paid the toll of death exacted by its fury. It was the ravages caused by this fearful epidemic that spurred the medical profession to organize into Parish and State Medical Societies, as the need of concerted action in studying the causes, the cure and prevention of this the greatest evil that had settled in our afflicted city and our southern country, had become too apparent and too urgent to allow of further delay. There were, no doubt, other reasons, but this was the most pressing.

From that tragic year of 1878 to the glorious victory of 1905, when sanitary science, guided by the light of scientific medicine, fought and won in the streets of New Orleans the most decisive battle that has been waged on the North American continent for the freedom of the people against the tyranny of disease,—the topic of Yellow fever never ceased to dominate our discussions and absorb the greater part of our energies in the desperate effort to control and suppress it. It is with legitimate pride that we now revert to the great role played by the members of the Orleans Parish Medical Society in that glorious campaign and the service rendered by its members as individual doctors—many of whom I am happy to see here present,—and as a corporate organization, will remain for all times one of the finest exhibitions of the devotion and consecration of the medical profession to the protection and welfare of the community and to their humanitarian ideals.

While the public at large has not yet fully realized the magnitude and the significance of that epochal campaign nor fully recognized its debt to medical science for the marvellous sanitary regeneration of our city, and for that matter of this whole country,—the medical profession of New Orleans and Louisiana have been rewarded in a large measure for their service by their participation in the general welfare, the greater happiness as well as the unparallelled prosperity that has followed the deliverance of this community and of the whole continent, from the thralldom of Yellow fever which, until twenty years ago,

throttled its vitals and crushed its spirits, its energies and its ambitions.

The prosperity of the Louisiana State Medical Society has been always linked with that of the Orleans Parish which created it, and of which it has remained the cornerstone, and both have travelled hand in hand with the growth and development of the city and of the commonwealth. For this reason both the Orleans Parish and the State Medical Societies led a languid and, at times, even a precarious existence, during the years that followed their organization, sharing in the general prostration and discouragement that our malodorous reputation for insalubrity and epidemic disease clung to us at home and abroad.

Not even the stimulus to medical organization and the importance and influence gained by the passage and the enactment of the Bill "To regulate the practice of medicine, and to create a Board of Medical Examiners," which became a law in 1895, during the period of my incumbency as President of the State Society,—served very materially to improve the numerical weakness of our Parish and State Societies. We all know that by the provisions of this law the State Society became an organic part or instrument of the administration of the State, in discriminating between the qualified and unqualified practitioners of medicine. I need not dwell upon the great importance of this event in the history of our Parish and State organizations and the undoubted influence it exercised in promoting this development and in strengthening the power of both societies. But even then, the continued commercial, industrial and general economic depression of Louisiana and of the South caused by the constant menace of Yellow fever, had an equally depressing effect upon the growth of our Parish and State Societies.

It was not until our deliverance from Yellow fever in 1905, as previously stated, that the Orleans Parish Medical Society and with it the State Society, entered into a new and flourishing life of strength, power and usefulness, such as neither had ever known before or at any period of its existence.

During the twenty-two years that have followed this great deliverance, our Society has steadily expanded its sphere of influence and service, and it has now reached a level of assured success and stability in its resources, that foreshadows still greater accomplishments in the development of its cultural, educational and medico-social missions.

Why not commemorate this event with a suitable memorial that shall remind future generations that the greater New Orleans of today, has been built on a solid sanitary foundation laid down by the hand of medical science?

New Orleans is not wanting in monuments to testify to the admiration and gratitude of the people to their heroes and benefactors,—a trait which is certainly characteristic of the warm-hearted people of our city. But where do we see recorded or inscribed in public places the names of the great discoverers, leaders and workers who in 1905 delivered the city from the most destructive and deadly of its foes? Nowhere is there a monument that commemorates this triumph of sanitary science or that holds to the public eye the names of the illustrious men who discovered and applied the principles that gave us the strategy and the tactics by which the city was purified from the scourge of yellow fever. It is not only New Orleans but the entire South that should give freely and generously to such a monument, but, it is New Orleans, as the most favored beneficiary, that should lead the way.

When we consider what the delivery of New Orleans from the thralldom of yellow fever has meant to this city, and to the whole South, is it not also proper that the school children should be taught in their text books the names of the great men who contributed to such a stupendous achievement? Should they not learn that

the peaceful and bloodless victories of Science that mark the triumph of man is the eternal conflict with his invisible but deadly foes,—the predatory parasites of the microscopic world,—are fraught with infinitely more significance to the welfare of the human race than all the bloody battles that bear testimony to man's inhumanity to man?

The children should know that the monster that medical science destroyed in 1905 was a millionfold more voracious than the fabled Minotaur, since he devoured in the course of a little over a century, within this Southland of ours alone, more than 150,000 victims and sickened over a half a million people unto death. He terrorized millions of others so that they fled from their homes and in this way, depopulated and impoverished, at the loss of incalculable millions in dollars, the beautiful and fertile lands of their fathers.

What better opportunities to inaugurate a movement directed to the commemoration of this epochal achievement than the semicentennial of the Orleans Parish Medical Society,—a society which was inspired and initiated in its career of service by its devotion to the public welfare at a time when the community was submerged in the gloom and despair of its funeral desolation? Why not celebrate the fruition of its labors after a half century of arduous travail by recalling that through the instrumentality of medical science, New Orleans,—our beloved New Orleans, was freed from the bondage of centuries and given the right to pursue her legitimate aspirations to that supremacy in her city's commercial and industrial life that the generous gifts of Nature have entitled her and that the wisdom and sagacity of her founders had forseen and planned for her.

In pleading for a memorial to commemorate one of the greatest achievements of the sanitary science of the twentieth century I am prompted by the desire that the discoveries and services of the medical profession should not only be duly recorded but what is more important and far reaching, that the lessons taught by the battle of 1905, should not be forgotten. The citizens of New Orleans have learned by dire experience that the old Roman maxim "Salus publica suprema lex" is founded upon the people's health, and that the "People's Health is the People's Wealth." And again, let the new and coming generations remember that were it not for the sanitary regeneration of our city that followed the experience of 1905, the greater New Orleans of the Present, would be no greater than the old New Orleans of the Past.

I fear that in laying stress upon the proposed memorial*—I have wandered far from my proposed functions of this occasion, but if I have trespassed upon your indulgence it is only because the recollections of the early struggles of this Society evoked by the joyful contrast of the present, have roused in me a sense of gratefulness for the Science, and for the men, of 1905, who have made the medical profession in New Orleans happy in the consciousness of service and of real achievement.

May I hope, in closing this long digression, that the suggestion offered may be deemed appropriate and worthy of your thought in planning for the celebration of the first semicentennial of the Orleans Parish Medical Society in 1928.

* * *

Thus far I have spoken of my connection with the history and activities of the Orleans Parish Medical Society, but I cannot leave you under the impression that I claim to be a factor or more than mere participant in its late and marvellous evolution. While I am an active member and have never failed to respond to the calls that have been made upon me by your secretary or your treasurer, I realize that in the last ten years my attendance at the regular

*For an elaboration of this suggestion see: "The Campaign against Yellow Fever and the Victory of Sanitary Science by Experimental Medicine, in New Orleans, in 1905" by Dr. Matas, in the Louisiana Historical Quarterly, July, 1925. —(Editor.)

meetings has lagged and that I do not figure on the floor or in the proceedings, as I did in earlier years when I was not so sorely pressed with the continually growing obligations of an exacting surgical practice and the time-consuming demands of other societies and institutions at home and abroad, to which I belong, and which unavoidably diverted and consumed my energies in many other channels, to the detriment of my attendance and actual participation in the drill-work of the Society. And please note that I am *not* pleading in extenuation any excuses on the ground of senescence or the infirmities of age, nor will I admit that my irregular attendance is significant in any way of an abatement of my interest in the scientific progress of the Society and my enjoyment of its steady upbuilding and magnificent success. While I am neither a shepherd or one of the sheep, as our genial Dr. Chaillé on compared the *leaders* and the *led* in medical societies, I would rather be classified as one of the watch dogs of the flock, and if you will continue to regard me in this capacity, you may trust to my watchfulness as long as I can bark.

* * *

And now, before I close, again allow me to take up a few moments for a word of explanation and apology.

In accepting the invitation to Dr. Fossier's and Gelpi's "little dinner party," two weeks ago, I had originally intended to return the compliment by taking the hosts and the guests through a personally conducted medical tour to England, Scotland, Holland, Belgium, France and Spain,—along the lines of travel that I had gone over in the course of my long vacation last Summer. This was not to be one of those stereotyped three weeks Cook's tours that everyone is taking nowadays, with scheduled hours and days and fixed itineraries. No, this trip was to be free from the vexatious annoyances of baggage, passorts, consular visas, railroad tickets, customs inspections, tips and even the economic restraint of a scant supply of travelers' checks. In fine, we were to take in the medical and other sights of London, Edinburgh, Amsterdam, Brussels, Paris, Barcelona and Madrid, with an ease and comfort that is unknown to the average traveler. Incidentally, and not the least of the attractions of this panoramic survey we were to enjoy the celebration of the great centennials which have made the year 1927 one of the most remarkable in the history of medicine, science and art. Indeed, 1927 has been a wonderful year in its extraordinary profusion of centennaries and multi-centennaries. Sir Isaac Newton, John Hunter, Lord Lister, Richard Bright, Pinel, Vellemin, Berthelot, William the Conqueror, Peter Paul Rubens, need only be mentioned among the great in the world of Science, Medicine, History and Art, to appreciate the added interest that the fame of these immortals have given to the splendor of these celebrations. Again in addition the fascination of these brilliant and colorful celebrations, we would have been entertained by participating in the meeting of the British Medical Association which was held in Edinburgh last July, with extraordinary enthusiasm evoked by the Lister Centennary,—and of the National and International Medical and Historical Congresses that took place in Holland, France and Spain, each of which furnished varied and rich material for huge tomes of transactions that will appear in 1928. It was my good fortune to have been received with unusual kindness everywhere and to have enjoyed the courtesy and hospitality of the distinguished officials in charge of these important and most instructive meetings who, apart from any personal considerations, accorded me all the privileges of delegate from Tulane University and of a representative of the American College of Surgeons.

I had hoped that my little company of friends would have enjoyed this retrospective tour somewhat like a moving picture travelogue while sitting comfortably, sipping the postprandial coffee and smoking good cigars.

But alas for my well intentioned plans for this evening's entertainment, they have all collapsed since the current of my thoughts has been short-circuited and lost in other channels. It is too late to-night to recharge my empty batteries after the jolt they have sustained on discovering that the big dynamos of the Orleans Parish Medical Society had been connected to my wires and turned in full force to intensify the spot light which has so dazzled my eyes that I can scarcely see.

* * *

And yet another fragment of my shattered thoughts rises to the surface to clamor for a last word of congratulation. No doubt many of you remember the wonderfull speech that Dr. Chaillé, our honored founder, delivered on March 13, 1911,—sixteen years ago, scarcely three months before his death,—his last message and a most precious legacy to our Society. In closing that memorable address, he congratulated the Society, then in its thirty-fourth year, grown, as he said, from a feeble childhood to the maturity of a lusty manhood. He congratulated you on the great progress you had made in strengthening your membership and influence by binding the most reputable members of our city's medical profession into a strong and thoroughly representative organization.†

He congratulated you on the staunch support given to our State and National Societies; on your valuable contributions to medical science, on your successful efforts for the enactment of some much needed laws; he congratulated you on your fine working and growing library and on other evidences of your prosperity and usefulness to the profession and to the public weal.

And now that sixteen years of steadily growing strength in numbers and in power have been added to the lusty manhood of 1911, how happy am I to renew in 1927, Dr. Chaillé's felicitations with doubled emphasis and with the assurance that they have never been more deserved by you.

Lastly and with him, let me repeat—since I can think of no better words to express my sentiments on this occasion;—

"Long may every one of you, my friends, live to serve this Society, still longer may it endure to serve the people, thereby ceaselessly augmenting that public esteem on which depends the influence, power and repute of our beloved profession."

†In 1911, when Dr. Chaillé delivered his address, the Society was constituted by 300 members out of the 446 named in the City Directory; now, (December, 1927) it has enrolled in its membership 500 reputable physicians out of the 732 licensed in the Parish of Orleans. (Editor.)

RUDOLPH MATAS—EXCERPTS FROM HIS RECENT PUBLICATIONS.

A Tribute to Dr. Ernest S. Lewis—While listening to Dr. Lewis' narrative, I have felt like a traveler who is hearing the well-told story of a long and adventurous journey which is halted and pointed by many thrills and episodes in which he has participated, and which have influenced and shaped much of his own course in the journey of life. This drift of thought is almost unavoidable in one who, like myself, has had the privilege of traveling over the same road, if not treading the same trail, blazed by Dr. Lewis and paved largely through his efforts, a little more than forty years ago. In this narrative of his life work and experience, our honored guest has drawn on a large canvas an admirable outline of the history and progress of medicine in New Orleans as it has evolved in the course of the sixty years that he has been one of its leading exponents. In fact, as we of the older set, who have tried to follow in his agile footsteps fully realize, he has outlined a history which, in so far as concerns his own special branches of surgical culture, is largely of his own making. Apart, therefore, from their personal and biographic interest these reminiscences are destined to remain as an asset of permanent value to the future historian of medicine in Louisiana

and of the South.—New Orleans Medical and Surgical Journal, 74:764-773, 1922.

On the Systemic or Cardiovascular Effects of Arteriovenous Fistulae—The author's interest in the systemic effects of arteriovenous fistulae is based upon a very considerable and gradually accumulating experience in arteriovenous aneurysms covering a period of thirty-two years of active surgical practice which — beginning in 1892 with a gunshot wound of the femoral vessels in Hunter's canal—has reached a total of 40 patients who have come under his personal observation up to the present time (December, 1923). He has seen more arteriovenous aneurysms casually or in consultation with other colleagues, but has kept no record of these for statistical purposes, though they contributed largely to his experience.

CLASSIFICATION AND SYNOPSIS OF GENERAL DATA.

These 40 personal observations are distributed anatomically as follows: 1 Upper brachial, 17 femora and iliofemoral, 2 popliteal, 1 peroneal, 6 subclavian, 3 jugulocarotid, 1 cervical occipital or vertebral, 9 intracranial, causing pulsating exophthalmos.....

We can readily understand that an ill-nourished myocardium will necessarily undergo pathological or degenerative changes that will ultimately lead to further dilatation, valvular incompetency and organic disease; but according to Lewis and Drury the dilatation of the heart and arteriovenous fistula is not a compensatory or adaptive phenomenon, not even a pressure distention, only, as we understand their meaning, a simple atonic yielding of the ventricular walls to a normally existing pressure; the heart instantly recovering from this atonic state and recovering all its tonicity the moment the arterial pressure is restored to normal by the closure of the fistula. This theory of coronary insufficiency does not seem compatible with a long preservation of the normal cardiac tone, as is shown in the many cases of years' standing that respond promptly to the Braham test. Coronary insufficiency always suggests atrophy, marasmus and degenerative changes of the muscular fibers.

On the other hand, the conception of coronary insufficiency as a cause of cardiac dilatation is admirably adapted to the acute cases that rapidly go on to cardiac insufficiency, right-sided ectasis and decompensation; but it will not fit the long-standing cases in which the myocardium seems to have preserved all its integrity and in which the chief defect in the circulation appears to lie only in the low diastolic pressure and in the retarded circulation of the capillary bed. It is to be regretted that these eminent investigators stopped short in their research at the stage of cardiac dilatation and did not go further into an explanation of its sequelae. Unsatisfying as the coronary insufficiency theory of cardiac dilatation is, when applied to the well-adjusted cases (not to say well-compensated cases, as compensation is a word that does not seem to fit in the new theory), it is, none the less, a most brilliant suggestion in accounting for the sudden or gradual transformation of these cases into a state of marked insufficiency and terminal decompensation. It is easy to conceive that when the flow through the coronary circle is diminished the tendency to thrombosis and other occlusive or constrictive changes should occur in these vessels, and that the heart muscle should, as a whole, be more liable to degeneration. —Transactions of the Southern Surgical Association, 36:623, 1923.

In Memory of Dr. Augustus McShane (1862-1923)—He was always ready to champion any cause or measure that he though was for the betterment and elevation of his profession, just as he was ready to condemn with equal vigor, any movements or influences that were calculated to injure it. His editorials advocating reform in nursing and in other ways at the Charity Hospital and his discussions on state medical licensing

boards and on other matters which engrossed the attention of the medical profession during his editorship, attes t to his courage and his fidelity of the highest professional ideals. While ever reasonable, modest and retiring he was always an idealist and an optimist. His mind was an open book. He was incapable of dissimulation. He always expressed his opinions with honesty and frankness and seemed to care little or nothing for the effect it might have on his purely personal interests. When he engaged in any new enterprise which he deemed worthy of his mettle, he gave it his whole heart and soul.—New Orleans Medical and Surgical Journal, 76:215-220, 1923.

Remarks on the So-Called Mediastinal Septum of the Dog, in Relation to the Pneumothorax Problem in Man—But to conclude from the mere fact that the septum is morphologically imperforate that the mediastinal septum in the canine species is anatomically and physiologically analogous to that of man, and that the data obtained from experimentation on the dog apply equally well to man, is quite a different proposition, and, I believe, is not sustained by the anatomic facts. As I now see the mediastinal septum of the dog, there is no need of appealing to any direct, visible communication between the pleurae. The mediastinal septum in this species is only a potential partition which can serve merely as a barrier between the pleural cavities when it is thickened or stiffened by inflammatory changes. In normal conditions, such as obtain in experimentation on laboratory dogs, it is as pliable and yielding as the thinnest gossamer or possibly the thinnest rubber used in the manufacture of toy balloons when fully stretched, only far more fragile.—Archives of Surgery, 8:336-344, 1924.

Introductory Address at Special Meeting in Honor of Sir Thomas Oliver—England, the most active and productive manufacturing nation, was primarily concerned in the alleviation of these growing evils and the need of protecting her industrial population was recognized not only in the interest of pure humanity, but as a matter of social, political and economic necessity. Laws directed to the hygienic and moral protection of the wage earners by inspection and supervision of the factories through justices of the peace and by the clergy were enacted as early as 1802. These were soon found inadequate and other laws of broader scope were added in the course of years. But it was not until 1891 that the supervision of sanitary control of the factories and trades was placed in the hands of the sanitary authorities and local medical officers of health. In 1897 the workmen's compensation act was passed by parliament which, as subsequently amended and expanded in 1906, marks one of the greatest epochs in the history of protective labor legislations. In the form of insurance against accident and occupational disease, and in other ways, it has been adopted in principle, at least, by most of the great nations of the world.—New Orleans Medical and Surgical Journal. 76:388-393, 1923.

Memoir of Dr. Edmond Souchon (1841-1924)—It is there that Dr. Souchon first met Dr. J. Marion Sims, then an obscure American physician who had had the temerity to cross the Atlantic to teach the great intellectuals and masters of surgery in Paris how to cure vesicovaginal fistula. Sims could not speak French, and would have been at a great disadvantage had it not been for Souchon's readiness to translate his remarks and interpret in the most lucid language every step of the first operation that he was allowed to perform in the presence of the large and most critical audience that had gathered in a Paris hospital to witness an audacious and unprecedented performance. The operation proved a perfect success and was followed by others even more brilliant and successful, which convinced the French faculty that Sims was no mere adventurer, but a gifted and inventive American surgeon. In all of these early operations Souchon always officiated as assistant and interpreter. Sims' success

in Paris was followed by what has been decribed as a triumphal march through the great medical centers of northern Europe and Great Britain, and as his fame rose so did his material prosperity increase in proportion. Sims, aware of his young friend's financial distress, advanced him the necessary funds to tide him over the most critical period of his student career in France. Thus an attachment and loyal friendship between the two men was established which continued pure and steadfast throughout their lives.—Transactions of the American Surgical Association. 43:967, 1925.

In Memoriam, Samuel M. D. Clark, M. D., 1875-1925—Dr. Clark's popularity as a man, with his students and in all social gatherings, in and out of the profession, is easily accounted for by his many lovable traits and genial characteristics. Physically endowed with a very attractive and approachable personality, he possessed an unusual inborn capacity for captivating friends and entwining himself in the affections, not only of his patients, of his students and of his associates, but of all the men and women with whom he came in contact. Of graceful manner and speech, he was delightful as a *raconteur* and always a charming companion on any occasion. Though playful and wonderfully adaptable to any environment into which he might be thrown, he was none the less very firm and determined in his opinions and convictions. Though seemingly docile, even shy and unobtrusive, he was thoroughly conscious of his rights, and whenever these were trespassed, or he suspected that they were trifled with, he was sure to assert himself in a way that left no room for cavil or doubt. He was every inch a man, strong in his likes and dislikes. While he had long schooled himself to control his emotions and reactions, he was quite frank and always dependable in whichever direction he was led by his convictions. It was the charm of his personality and the virile quality so dominant in his composition which contributed largely to his popularity and to the tenacity and loyalty in which he held his friendships.—Transactions of the Southern Surgical Association, 38:487-490, 1925.

Dr. Isadore Dyer, President, Southern Medical Association 1910-1911: *His Life and His Work*—Thus far, I have only referred to the relations and ties that bound our lamented friend to this Association and have said nothing of the man himself, of his personality, of the attributes of heart and mind that had given him pre-eminence in his national and international reputation as one of the leading American authorities in his chosen specialty, dermatology. I have said nothing of his philanthropy, humanity, and his untiring efforts to improve the cruel fate of that pathologic pariah and world outcast, the leper. From the moment he began his practice of dermatology in New Orleans, in 1893, the study of leprosy and its problems and the means of curing this dread disease became his special concern, which developed into a life-long passion. His intense study of the etiology, pathology and treatment of leprosy is continuously reflected in his numerous writings, in his original suggestions for its cure, and in his successful legislative efforts to insure the victims of the disease proper care and protection, and in every way alleviate their harsh and pitiful destiny.—Southern Medical Journal, 18:15-18, 1925.

In Memoriam—William Stewart Halsted—We should remember that many of the most difficult and dangerous operations made possible through the advances of contemporary surgery, are still only made safe by the exercise of the greatest caution coupled with most consummate skill.

Such undertakings consume time and, if speed is to be the criterion of brilliancy, the surgeon who performs these operations—no matter how successfully—can never be called "brilliant." And it is precisely this class of cases in which Professor Halsted was engaged!

According to my understanding, brilliancy in surgery lies more in the results of

the surgeon's intervention than in the immediate act. To my mind *he* is the most brilliant surgeon, who, in equality of circumstances, saves or prolongs the greatest number of lives and who restores his patients to health in the shortest number of days.

The brilliancy of the operator should not be appraised by the time he consumes in the performance of an operation, but by the effect that follows its achievement; not in the mere recovery of the patient from the immediate operative act, but in the way in which he recuperates; in the length of time required for his recovery; in the period demanded to restore him to usefulness, and, above all, in the permanency of the cure which it accomplishes.

It is in this manner that I would rate and compare the brilliancy of surgeons, and it is from this viewpoint that Halsted is considered one of the most brilliant and greatest surgeons of his time. It is the sort of brilliancy at which he aimed and with which he sought to imbue his pupils through his teachings and example. It is the sort of brilliancy for which every conscientious surgeon — who places his patient's welfare and the good repute of his profession above the vanity of his own flesh, should strive.—Bulletin of the Johns Hopkins Hospital. 36:2-27, 1925.

A Yellow Fever Retrospect and Prospect—It was not until the middle of the last century, long after Chervin had passed away and after the doctrine of spontaneous generation had been exploded by the conclusive and epochal experiments of Pasteur and of Tyndall, and that the fallacy of spontaneous generation in the biologic world, had been irrefutably demonstrated; and after the dependence of the phenomena of fermentation, putrefaction and infection upon the presence and activities of living ferments, microscopic and ultramicroscopic organisms, capable of reproduction and independent existence, had been proven, that the modern doctrine of a contagium vivum or the *germ* or microbic origin of yellow fever and similar epidemic infectious diseases came as the sun of a new day to illumine and dispel the darkness which had prevailed during the long night of the preceding centuries.—Louisiana Historical Quarterly. July, 1925: 454-473.

Inaugural Address with Remarks on Endoaneurysmorrhaphy—In the young, with aneurisms of direct traumatic origin, who are free from syphilis or other constitutional taint, and especially in dealing with arteriovenous aneurisms, I do not hesitate, in a general way, to attack the aneurism by a direct free incision into the sac, followed by the suture of all the communicating openings within the sac. But, even then, I never attempt such a procedure without the most thorough control of the main or injured artery, above and below the sac, by preliminary provisional hemostasis, with clamps, bands, or temporary elastic ligatures.

Finally, after security or safety, it is the simplicity of any procedure which must appeal to us in deciding our choice of methods. It is by reason of its simplicity in dealing with the accessible and controllable aneurisms, particularly those of the extremities, that I believe that I am serving the best interests of my patients by giving them the benefit of the operation which experience has taught me is the simplest, safest and surest—endoaneurismorrhaphy.—Surgery, Gynecology and Obstetrics. 41:701-705, 1925.

The Mission and Ideals of the American College of Surgeons—To this end, it is endeavoring to stimulate the cultivation of a *surgical conscience*. By this we mean not merely a consciousness of what is wrong with our technics, but with the morals that guide them. The surgical conscience is the fruit of knowledge, training and culture in the science and art of surgery, and, in the purely technical sense, can be developed and highly cultivated. But the moral conscience is that intangible something, "the

still, small voice" that rising from the depths of our innermost selves whispers its warnings when we are going wrong. It is the spirit of ancestral generations which, whether good or bad, is housed in us while in transit to our successors. Conscience is therefore an inheritance; and the seed of good or evil is implanted in us with our birth. Like other seeds, it will thrive when well cultivated, or it may atrophy or perish when planted in sterile soil. It is therefore influenced, for better or for worse, by the conditions and laws of its environment. The majority of those born of normal, healthy, honest and decent parents have the right seed sown in them when they are born. But conscience is erratic. Some people, it misses altogether. They are born without the spark that brings it into existence. In others it is so small and atrophied that it becomes, like the appendix, a useless and dangerous nuisance which might as well be cut out altogether. Conscience without will to act upon its biddings, is powerless and might as well be dead. But the harmonious combination of the two makes the right-minded man. When a man has neither conscience nor character he cannot be a good man, and if he is not a good man he cannot be a good surgeon.—Year Book of the American College of Surgeons, 1926: 71-78.

Politics and Hospitals in Their Relation to Hospital Standardization—The effect of this system of political patronage upon the efficiency of the hospital was clearly exposed, and the candidates responded with the usual promises and assurances of good will. This occurred a year ago, and thus far the status quo remains fortunately undisturbed, with only the added concession (?) made by the newly elected governor, that the members of the board that he should appoint would serve for overlapping terms. In this he simply ratified what the law prescribes, but a law that many of the past governors have never deemed it necessary to obey.....

Therefore, when we come to sift this matter to its final analysis, we reach the conclusion that the remedy for the evils described lies in the hands of the people who are most affected by them. It is the citizen, the voter, who must settle his grievances at the polls. If the community has arrived at that stage of enlightenment that it realizes that its most vital institutions are in danger and are dwarfed by degenerating influences which have sprung up in their midst, the spirit of the community must assert itself and, if they choose, the people can and will work out their own salvation. In all matters relating to the care of the sick, the injured, and otherwise physically disabled classes, the leadership in enlightening and directing public opinion is the prerogative of the medical profession. It is they who, living in the suffering community, are best acquainted with its bodily as well as its moral ills. And it is they who, through their local, State and district societies, should initiate the movements in their respective States which are to carry on the necessary reforms. *The taint of politics when it touches a hospital* permeates all of its departments; but, perhaps, in none more disastrously than in lowering the standard of surgery and the efficiency of its service.—Bulletin of the American College of Surgeons, 10:4-9, 1926.

Introduction of Sir William Arbuthnot Lane—How fortunate and fitting that this hour, which we have reverently consecrated to the memory of an illustrious founder, who gave luster and world renown to American surgery, should be graced by the presence and praise of one who shared with him, in an allied sphere, the glory of the pathfinder and the pioneer! It is a tribute of one master to another master. It is the voice that proclaims the solidarity of our guild; its unity of purpose; its aspirations and endeavors; its labors and its sacrifices; its rejoicings and its rewards in promoting the welfare of mankind.—Surgery, Gynecology and Obstetrics, 43:196-197, 1926.

Address at the Dedication of the John B. Murphy Memorial Building—Is it not fitting that here, on the shore of one of the great lakes, in a city which vibrates with the dynamic energy of its millions of people, in a city still so young that the enterprising spirit of the pioneers who founded it has not been crushed by centuries of antiquity—should hold a memorial institution such as this that is looking to the future for the crowning glory of its service? May there come from these sources an inspiration and stimulation to this Memorial and to the workers who give it life—who, as the years go by, will lead it into the highways of progress, to the ultimate attainment of its ideals in every field of surgical the welfare of mankind.—Surgery, Gynecology and Obstetrics, 43:196-197, 1926.

Surgery and the International Spirit—It is difficult, if not impossible, in speaking of professional harmony, fraternalism, and of international amity, to avoid the commonplaces or repetitions of sentiments that are now so worn with usage that they have become demoded through their very antiquity.

While freely confessing all this, I, none the less, venture upon another transgression by holding before you one of the oldest gems of antique thought which, in spite of the twenty-one centuries that it has been circulating around the world, retains all the resplendent humanistic significance that it possessed when it first emanated from the mind of a poet and philosopher (Terence) who, moved by the promptings of the international spirit, first gave it expression: "*Homo sum, nil humanum a me alienum puto*" (I am a man and nothing human can be foreign to me), which I would adapt to this occasion by saying: I am a surgeon and nothing human can be foreign to me.

To the younger men, here present, whose idealism is still aflame and has not yet begun to flicker in the gusts of Time, I commend this ancient legacy as a motto worthy of a profession dedicated to the service of humanity.—Surgery, Gynecology and Obstetrics. 44:424-432, 1927.

Address at the Farewell Dinner to Retiring Internes of the Touro Infirmary—In its essence, it is all reduced and compressed in one word—and that word is Character; and by character we mean the sum of all those traits which a man displays in his mental makeup that stand for the principles of right living. I again lay stress upon this word, because of its supreme significance at this period of your lives and at a time when you will be beset by innumerable temptations of the most alluring kind, that will be put in your path to clog your footsteps or lead you into thorny roads, which will tear your flesh, yet hold you in embrace, and from which you will find it difficult, if not impossible to extricate yourselves.

Remember that character is what a man is, not what reputation considers him. Character is one's intrinsic value, not his value in the market of public opinion. It is not learning; it is worth. . . . .

One thing is certain, and that is, no man can be in any professional, civic or ethical sense a good doctor unless he is also a good man. But, apart from all abstract questions of what constitutes individual Morality and without discussion of the fundamental qualities of respectability and decency, which presumably come with a healthy, clean inheritance to every individual, it is especially important that a student of medcine should be told, or at least warned, that if there ever was a necessity for holding and living up to a clean moral code, such an appeal could at no time be more opportune than it is at the present moment. Under the stress of contemporary social unrest and the tendency to the radicalism, skepticism and iconoclasm that everywhere prevail; with the social strata honeycombed with the all-pervading spirit of graft, and in the presence of an aggressive competition in an overcrowded profession, and, again, with the unavoidable infiltration of our ranks

with a large percentage of moral defectives, perverts and degenerates, fastened as parasites on our professional body and breeding the foul saphrophytes known as the quack, the shyster, the grafter, the fee splitter, and so many other disgusting varieties of the genus, flourishing in every rank of society—we have reason to seize the first opportunity and every opportunity to warn and prepare you for your unavoidable contact with these pestiferous evils.—New Orleans Medical and Surgical Journal, 78:684-690, 1926.

The Louisiana State Medical Society and Medical Progress—The first victory of sanitary science over yellow fever was won in Havana in 1901; the second and greatest in New Orleans, in 1905. In both countries the victory was won by declaring war on the mosquito. In the first battle field, Havana, a beautiful island, Cuba, "The pearl of the Antilles," was delivered from the bondage of centuries; in the second, New Orleans, the fate of a great metropolis was decided and with it, the future of the southern half of a contient was definitely assured. A little reflection will show that this is no exaggeration when we consider what the perpetual menace of the annual visitations of yellow fever meant in the past to the life of New Orleans; attaching to it a mal-odorous reputation of insalubrity; to the forbidding effect it had upon the growth of its population, upon its civic development and the dwarfing influence it had upon its commerce, as well as upon the progress and development of Louisiana, and, for that matter, upon the entire South. It restricted and actually forbade the most desirable and intelligent immigration. It kept Capital, Industry, Manufacture, Commerce and Finance at a distance; it put an embargo upon our maritime trade and expansion and reduced our river traffic to practical insignificance, beside diverting the great railroad trunk-lines into other tracks.—New Orleans Medical and Surgical Journal, 79:5-15, 1926.

A Tribute to the Memory of Stanford Emerson Chaillé, A. M., M. D. LL.D., 1830-1911—The oft quoted saying, "That no man is a hero to his valet" and that "familiarity breeds contempt," may be true of valets and of certain types of men. Indeed, few men, no matter how great and gifted they may be, can stand the test of prolonged intimacy without revealing in some way the frailities of the mind and of the flesh, when exposed to the nakedness of private life. Flaws of character and flaws of the flesh, which seem inherent in human composition, often dim the halo of glory that surrounds the otherwise great men and women in the eyes of their familiars. These thoughts are not applicable to Dr. Chaillé, who was never familiar in any vulgar sense and who was honored with the respect and affection of his humblest and most menial servants, as well as of his nearest and most intimate friends. In fact, many amusing stories could be told to illustrate the extraordinary hold of Dr. Chaillé, from his earliest childhood, upon the affections of his servants; whether white or black, they were all proud of the distinction of serving such a master. Personally, I can truthfully say, from all the opportunities for observation given by my long and close contact with Dr. Chaillé, during the period that we lived together under the same roof, in Havana, he never lost his prestige, and never, for an instant, did he cease to be a hero in my eyes.—New Orleans Medical and Surgical Journal, 79:811-815, 1927.

STATURE THROUGHOUT THE WORLD—North America is divided into five parts, Eskimo, Canada, United States, Mexico and Central America. There is a gradual increase in stature from the Eskimos through Canada to the United States, and a sudden decrease through Mexico to Central America. The summit of stature is reached among the Winnipeg Indians of Canada, 180.2 centimeters, and the Dakotas, 178.0 centimenters, and Apaches, 176.2 centimeters, in the United States. Low stature has its extreme among th San Blas Indians of South America. Starr gives the stature of 2,276 Mexican and Central American Indians as 157.5 centimeters.—Bennett, B.: Science, 66: 1, 1928.

RUDOLPH MATAS— HIS BIBLIOGRAPHY.

The following bibliography of Dr. Matas compiled by Jane Grey Rogers, illustrates better than words can express the large number of subjects dealt with, the thoroughness of follow-up once a subject interested and the life-long interest of the distinguished author in his greatest surgical triumph, endoaneurysmorrhaphy.

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New Orleans M. & S. J., 16:192-199.

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3. Note on a case of pathological gastroenterostomy found in the dissecting rooms of the Medical Dept. of Tulane University.

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1. Contusion of skull without appreciable fracture; symptoms pointing to pressure in excito-motor region of cortex. Trephining. Recovery.

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2. Section, specimen of carcinoma of the papilla of Vater.

3. Three enteroliths removed by enterotomy.

4. Malignant recurrent papilloma of the bladder, removed with entire bladder, leaving only the trigone with a short margin of mucosa around the internal meatus of the bladder.

5. Uterus removed by abdominal hysterectomy for multiple fibroids.

6. Gross and microscopic sections of a myxosarcoma of the thigh.

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2. Choledochus drainage.
3. Cholecystotomy.
4. Duodenal ulcers.
5. Gastro-duodenal ulcer.
6. Acute diffuse infectious periostitis, involving entire lower jaw.
7. Anterior mediastinotomy and multiple chondrocostomy.
8. Spontaneous thrombosis of cavernous sinus followed by marked improvement in an aggravated pulsating exophthalmos and cirsoid aneurism of 18 years standing. New Orleans M. & S. J., 61:739-742.

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3. Typical Jacksonian epilepsy caused by traumatic hemorrhagic cyst of right mid-central Rolandic area.

4. Acute hemorrhagic pancreatitis.

5. Carcinoma of pancreas, cholecystoduodenostomy.

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7. Partial gigantism of right foot and leg with megalodactylism.

8. Thrombotic occlusion of right common iliac vein at about the bifurcation of the inferior vena cava.

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Tribute to Prof. Stanford E. Chaillé. Address at Tulane alumni banquet Nov. 26, 1924. Times-Picayune, Dec. 7.

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Letter of thanks to the editors of the New Orleans Medical and Surgical Journal. New Orleans M. & S. J., 77:448.

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Primary sarcoma of the intestines. Discussion of Dr. Loria's paper. New Orleans M. & S. J., 78:206-208.

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Acceptance (John B. Murphy Memorial), Surg. Gynec. Obst., 43:251-255; Bull Am. Coll. Surg., 10:11-15.

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Resolutions in memory of Prof. Marcus Feingold, prepared and read by request of the Faculty, School of Medicine, Tulane University, at the executive meeting, Feb. 9, 1926. Am. J. Ophthal., 9:467.

Medical progress as influenced by opposition. Address at banquet of retiring interns. Touro Infirmary, June 29, 1926. Item-Tribune, June 30, 1926.

Abstract from the the acceptance of the President of the American College of Surgeons upon the occasion of the dedication of the Murphy Memorial—quoted from the Chicago Daily Tribune. New Orleans M. & S. J., 79:136.

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Introductory remarks at the dedication of the J. P. Murphy Memorial, Chicago, June 19, 1926. Bull. Amer. Coll. Surg., 10:1; Surg. Gyn. Oost., 43:242-247.

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Tribute to Dr. Bayard Holmes. Chicago M. Rec., 48:124.

Response at the public meeting held in honor of Dr. Matas, New Orleans, Nov. 11, 1926. Times-Picayune, New Orleans States and New Orleans Tribune, Nov. 12, 1926.

In memoriam, Samuel M. D. Clark, 1875-1925. Trans. South. Surg. Assn., 38:487-490.

Real things in medicine. Address at farewell dinner to retiring internes, Touro Infirmary, June 20, 1925. New Orleans M. & S. J., 78:884-890.

1927.

Treatment of uterine hemorrhage caused by fibroids and other causes. Discussion of paper by Dr. Burnham of Baltimore, meeting of Louisiana State M. Soc., Monroe, La., April 16, 1926. New Orleans M. & S. J., 79:482-483.

Surgery and international spirit. Surg. Gyn. Obst., 44:424-432.

Stanford Emerson Chaillé, 1830-1911. New Orleans M. & S. J., 79:811-815.

Hospital standardization movement. Bull. Am. Coll. Surg., 11:3-6.

The surgeon, his science and his art. Address at the presentation of the Henry Jacob Bigelow Medal of the Boston Surgical Society, Nov. 1, 1926. Bost. M. & S. J., 197:700-713; 778-782; 829-835.

Response at the banquet given under the auspices of the Orleans Parish Medical Society in honor of Dr. Matas on his return from Europe, Dec. 21, 1927. Times-Picayune, New Orleans States, Dec. 22, 1927.

The following addresses and lectures delivered by Dr. Matas have never appeared in print.

1908.

Address at commencement exercises College of Physicians and Surgeons, Chicago, Illinois, June, 1908.

1911.

Surgical treatment of amebic abscess of the liver. Contribution to a discussion on Amebiasis, American Society of Tropical Medicine, New Orleans, May, 1911.

Albert Mayer, M D. Memorial address, Touro Infirmary Chapel, June, 1911.

1913.

Remarks at the twenty-fifth anniversary of the New Orleans Polyclinic, April 7, 1913.

1914.

Annual oration. Stars and Bars Society, Tulane University, Thanksgiving Day, 1914.

1916.

Principles governing the surgical treatment of aneurisms (Mutter Lecture). College of Physicians and Surgeons, Philadelphia, 1916.

Aneurysms of the heart. Touro Clinical Society. January, 1916.

Treatment of infected wounds as influenced by present European war. Read before Association of R. R. Surgeons of Louisiana, April 27, 1916.

Gunshot wounds of the abdomen. Read before the Louisiana State Medical Society, April 28, 1916.

Some of the problems that interest the physician and the nurse. Address before National League of Nursing Education, May 2, 1916.

Remarks at Phi Chi smoker on the night of December 16, 1916.

1917.

On the primary excision and suture of war wounds. Read before the Touro Clinical Society, February, 1917.

What the medical profession can do for the country. Ivy Day Address Tulane Campus, June 2, 1917.

1918.

Appeal for more enrollment in the American Red Cross. Address before meeting of the Trained Nurses of New Orleans, July, 1918.

1919.

Message to Beta Iota Chapter (Tulane) of Nu Sigma Nu. May 10, 1919.

1920.

Treatment of empyema, based on the experience of the American Base Hospitals during the great epidemic of influenza and pneumonia. Discussion before Touro Clinical Society, March, 1920.

Lessons gathered from the experience of the World war in the surgery of the vascular system. Address before Association of Military Surgeons, by invitation at meeting in New Orleans, April 23, 1920.

Advantages and disadvantages of the various local anesthetics in nose and throat practice. Discussion by invitation before Section on Laryngology meeting of A. M. A., New Orleans, April 30, 1920.

1921.

On the systemic effects of arteriovenous aneurisms of the heart and circulation with introductory address on the life and character of John Thompson Hodgen. The first John Thompson Hodgen lecture. Delivered before the St. Louis Surgical Society, March 26, 1921.

Medical bibliography and books of reference of importance to medical students in library reading. Address by invitation before the Isadore Dyer Medical Forum, Tulane University, June, 1921.

Memorial address: A. B. Tipping.

1922.

Ivy Day address. Tulane Campus, June 8, 1922.

Memorial—presented to Mrs. A. B. Tipping.

Tribute from Louisiana to the Surgeons of France and to their heroism during the great war. Address at banquet Assn. franc. de chir., Paris. October. 1922.

Address to graduating class, Touro Infirmary Training School for Nurses. February 25, 1922.

Presentation and discussion of case of polypoid mucous adenoma of the stomach, blocking the pylorus and causing profuse hemorrhage Gastrectomy. Extirpation of the tumor after transfusion. Recovery. Touro Infirmary Clinical Society, March 8, 1922.

Case of congenital hernia of the cecum, complicated by the presence of a diverticulum of the right vesicula seminalis lying on the cord. Exhibit of patient cured of chronic intestinal fistula caused by catheter drainage for intestinal obstruction following appendicular abscess and peritonitis. Description of method of terminal (end-to-end) suture, with supplementary lateral anastomosis with Murphy button. Orleans Parish Medical Society, Clinical meeting, March 13, 1922.

Report of a case of septic endocarditis of pneumococcal origin with multiple visceral metastases and other infarcts associated with, or activated by, a cervical adenectomy for metastatic carcinoma of the breast. Touro Infirmary Clinical Society, April 20, 1922.

Report of total laryngectomy for carcinoma of the larynx, with presentation of the patient; illustrating the advantages of naso-pharyngeal intubation for systematic feeding in the post-operative period. Touro Infirmary Clinical Society, May 10, 1922.

Chronic relapsing tubercular ganglio-tenosynovitis of dorsal bursa of the wrist, treated successfully by incision of the sac, the evacuation of its contents (melon seed bodies) injection of iodin tincture, closure of sac without drainage, followed by an external application of radium. Violent reaction with intense local and constitutional disturbances, ending in complete cure. Touro Infirmary Clinical Society, June 14, 1922.

Report of a giant adenomatous (non-toxic) goitre. Presentation of the patient, aged 80 years, and the tumor. Commentaries on the value of the "Jutte" tube as a means of providing a flue or drain for the accumulated gases and fluids in the stomach. Touro Infirmary Clinical Society, June 14, 1922.

1923.

William Stewart Halsted: memorial address by invitation of President Goodnow and Dr. Finney, at Civil Engineering Bldg., Johns Hopkins University, December 15, 1923.

1924

Report of Sodoku or rat bite fever. Preliminary remarks on the nature of this infection and on the sanitary and economic aspects of the rat problem in New Orleans. Touro Clinical Society March 12, 1924.

Address at luncheon of "Owls' Club," Tulane student body. March 15, 1924.

Oath of Hippocrates in the light of history. Remarks on the purpose, function and value of medical student organizations, past and present. Talk to Beta Iota Chapter, Nu Sigma Nu. February 20, 1924.

Further observations on treatment of post-operative vomiting, distention and peritonitis. by continued drainage and lavage with duodenal tube. Read at meeting A. M. A. Surgical Section, June, 1924.

Congenital arteriovenous fistula. Discussion of Dr. W. F. Rienhoff's paper. Meeting of A. M. A., June, 1924.

Subclavian arteriovenous aneurism. Discussion of Dr. Reid's paper and personal experiences quoted at meeting of A. M. A., June, 1924.

Memorial in honor of W. S. Halsted. American Association for Thoracic Surgery, June 5, 1924.

Method of treating aneurisms by intrasaccular suture. Lantern lecture. Scientific Exhibit, Motion picture theatre, A. M. A., June 11, 1924.

Speech to students, Medical School, Tulane at opening of session, 1924-25, September, 1924.

Observations de trois cas d'anevrismes arteriels peripheriques de la main et du pied gueris par la suture intrasacculaire conservatrice (endoaneurismorrhapie reparatrice). Contribution to the Livre d'Or in honor of Professor Emile Forgue, Montpellier. November 6, 1924.

Address at the Cabildo at reception to the President, Council and Trustees of the South. Medical Association with presentation of bouquet to Miss Grace King, November, 1924.

Memorial on Professor Edmond Souchon on behalf of the Faculty of the School of Medicine.

1925.

Branham syndrome in arteriovenous aneurisms. An example of the inseparable relation of scientific medicine and modern surgery. Paper read at Scientific Sectional meeting, American College of Surgeons for Alabama, Mississippi, Georgia, Florida and Louisiana, at Mobile, Ala., February 13-14, 1925.

Introductory remarks at the lecture delivered by Dr. W. J. Mayo in the Miles Amphitheatre, Charity Hospital, New Orleans, April 7, 1925.

Nomination of Drs. Frederick W. Parham and Warren Stone Bickham for honorary LL.D. degree at meeting of the executive faculty with citations in support of these nominations, unanimously adopted by the Faculty, School of Medicine, May 12, 1925.

Citations read by request of the President of Tulane University on June 10, 1925, at th commncemnt. Honorary degree LL.D. conferred on Drs. Parham and Bickham.

Cardio-vascular effects of arterio-venous fistulae. Clinical lecture at Charity Hospital to the members of the Southern Interurban Clinical Club of Internists, 13th semiannual meeting June 7, 1925. Demonstration of two cases of aneurism.

Memorial on Dr. Edmond Souchon for the American Surgical Association.

Memorial on Dr. S. M. D. Clark on behalf of the Medical Faculty, Tulane University.

Opening address, Surgical Division, Touro Infirmary, on importance of Staff Conferences in Hospital Organization, June 10, 1925.

Address before Interurban Medical Club at Charity Hospital, New Orleans, November 7, 1925, on Cardiovascular effects of arteriovenous aneurism.

Memorial address on Dr. Arthur W. de Roaldes, at Metairie Cemetery, November 11, 1925, by invitation of the League of Peace and Freedom.

On the immediate and end results of the cure of arterial and arterio-venous aneurisms by the method of intrasaccular suture—endoaneurismorrhaphy. Lecture illustrated with numerous lantern slides delivered by invitation of the Cincinnati Academy of Medicine, March 2, 1925

1926.

Gunshot wounds of the abdomen. Report read at meeting of the surgical staff, Charity Hospital, New Orleans, February 17, 1926. R. Matas, committee chairman.

Lecture and moving picture to illustrate the operation of endoaneurismorrhaphy. Opera House, Monroe, La., April 16, 1926, Louisiana State Medical Society.

Ligation of the abdominal aorta illustrated by a moving film, showing the case of Corinne Duncan, operated on April 9, 1925, following a report of a ligation of abdominal aorta, by Dr. Barney Brooks, at Dallas, Texas, meeting of A. M. A. Surgical Section, April 21, 1916.

Speech of acceptance upon presentation of oil portrait by class of 1926. Ivy Day, June, 1926.

Opening address at Hospital Conference Clinical Congress, American College of Surgens, Montreal, October 25, 1926.

1927.

Speech upon the occasion of the C. E. Kells honor meeting. Hutchinson Memorial, January 19, 1927.

Address at inaugural meeting of the Chirurgical Society of Barcelona, with cinematographic clinic illustrating Dr. Matas' method of endoaneurismorrhaphy for the radical cure of aneurism (in Spanish).

Address at the banquet given in honor of Dr. Matas by the Chirurgical Society of Barcelona (in Catalan).

Lecture illustrated with moving pictures on the surgical cure of aneurisms at the School of Medicine of the University of Barcelona (in Spanish).

Lecture by invitation on the radical cure of aneurism illustrated by moving pictures in the assembly hall of the University of Madrid during the Spanish Congress of Medicine in October, 1927.

Introductory remarks at the opening session of the Congress of Medicine of Madrid as delegate from the Tulane University of Louisiana, and representative of the American College of Surgeons, October, 1927.

HOSPITAL AND LABORATORY.—But ignorance concerning disease is still appalling. One who has never stood by the bedside of a loved one dying of disease, conscious that his efforts are rendered useless solely through ignorance, which in the present state of the basic sciences might be removed, has never tasted the bitterness of grief. Preventable disease and misery are still with us. Present knowledge was not able to prevent in 1918 the spread of a disease which swept over the entire world and in the course of a few months was responsible for the deaths of over half a million people in this country or five times the number of our soldiers that lost their lives in the war. It is estimated that in India 6,000,000 people died during the visitation of this epidemic. Let us not only say, let there be no more war, but let us also say let there be no more epidemics. Cole, R.: Science, 66: 545, 1927.

THE MANAGEMENT OF PATIENTS WITH ANORECTAL FISTULA.*

WALTER E. SISTRUNK, M. D.,†

ROCHESTER, MINN.

Many patients with anorectal fistula are easily cured by simple surgical procedures, while others, usually those with multiple sinuses situated at points distant from the anus, are cured with difficulty. Operation in such cases is also often accompanied by injury to the anal sphincters and consequent loss of bowel control. I feel that it will be unnecessary to discuss the various operations which have been suggested or used for the cure of anorectal fistulas, and in this paper shall only describe a method of operating which has been the most satisfactory one in my own work.

Surgeons are prone to associate anorectal fistula with tuberculosis. Anorectal fistulas develop in many cases of advanced pulmonary tuberculosis; and, conversely, in many cases in which the patient's general condition is poor and there are multiple fistulous tracts around the anus, pulmonary tuberculosis and tuberculous fistulas are found. On the other hand, in only a small percentage of the cases of anorectal fistula in which the patient is in good physical condition can tuberculosis be proved.

Studies of the manner in which anorectal fistula develops tend to show that the primary infection usually begins in the crypts of Morgagni and that it spreads inward between or through the sphincter muscles to the skin (Fig. 1). Buie, of the Section on Proctology of the Mayo Clinic, believes that the swelling and edema which follow infection of a crypt, thus closing its opening, prevent pus, if it forms, from emptying into the rectum, and it then burrows through the tissues to the surface of the skin. W. J. Mayo first called my attention to the fact, previously recognized, that infection which occurs in the crypts lying

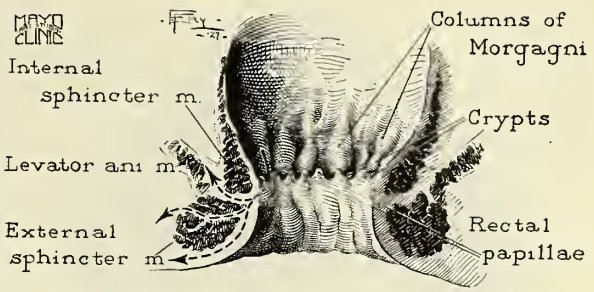

Fig. 1. Longitudinal section of the lower portion of the rectum and anus.

anterior or posterior to an imaginary line drawn, with the patient in the lithotomy position, transversely so as to bisect the anus into anterior and posterior halves usually produces different types of fistulas. Infection of an anterior crypt spreads directly outward and results in a sinus close to the anal margin which leads directly inward to the infected crypt. The strong fascia between the posterior border of the external sphincter and the coccyx prevents pus, following infection of a posterior crypt, from burrowing directly to the surface. As a result, it may burrow inward in any direction through the ischiorectal fat and form single or multiple tortuous sinuses, often as far as 10 or 15 cm. from the originally infected crypt. These tracts, however, almost invariably communicate with the originally infected crypt, usually situated near the middle of the posterior half of the anorectal margin (Figs. 2 and 3).

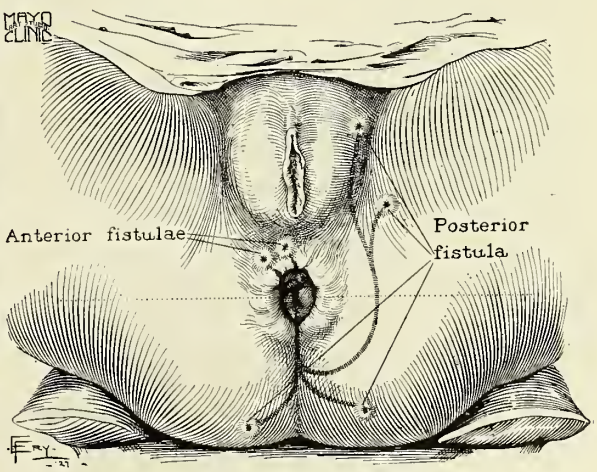

Fig. 2. Routes of anorectal fistulas originating anterior or posterior to the transverse (dotted) line.

*Read before the Mississippi State Medical Association, Jackson, Mississippi, May 12, 1927.

†From the Division of Surgery, Mayo Clinic.

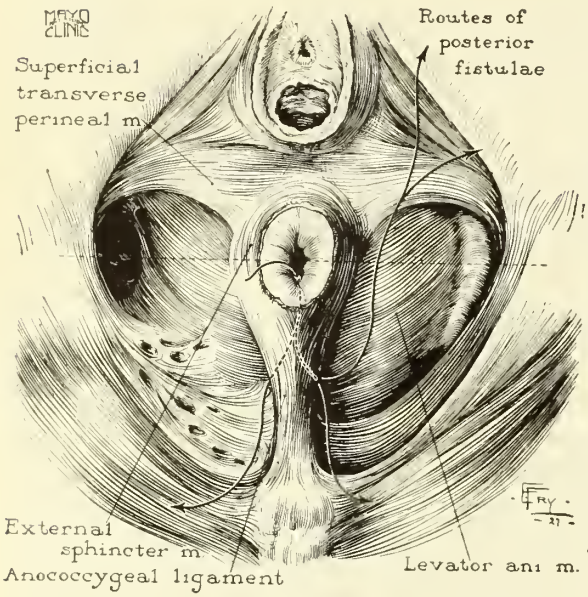

Fig. 3. Method of development of posterior types of anorectal fistulas.

Occasionally pus which forms following infection of a crypt, ruptures through the mucous membrane of the lower part of the rectum or through the originally infected crypt, thus producing an incomplete or blind fistula. Rarely a sinus tract will be found opening high in the ampulla of the rectum. Buie believes that such an opening may occasionally occur secondary to a deep-seated abscess which ruptures through the mucous membrane of the ampulla of the rectum, and that it is more likely to present as a result of a probe having been pushed through the mucous membrane of the ampulla in an effort to locate the internal opening of a fistulous tract. He also believes, and I agree with him, that the internal opening of practically all fistulas in which an artificial opening has not been accidently made with a probe lies in one of the crypts of Morgagni situated along the margin where the anal canal and ampulla join. The papilla near the lower margin of an infected crypt usually becomes inflamed, and when the anal canal is examined may serve as a guide in locating the site of the internal opening.

Abscess following infection of a crypt usually causes extreme pain until it ruptures. During this stage patients are best treated with hot applications to the anus and by hot sitz baths, and as soon as the infection becomes superficial or has persisted long enough to allow the patient to develop an immunity the abscess should be surgically drained. It is best not to perform an operation at this time with the idea of effecting a cure. After the inflammation in the tissues has subsided, should a fistula persist, a radical operation may be performed.

The sinus tracts which follow infection of an anterior crypt ordinarily are easily cured by the introduction of a probe through the tract into the rectum and dividing, with a scalpel, the tissues anterior to the probe. It is unnecessary in such cases to remove the scar tissue surrounding the fistulous tract. The granulation tissue should be carefully removed with a currette and small openings made through the scar tissue with a scalpel to aid in the formation of new granulation tissue. Of course, such an operation usually severs the external sphincter ani. If this sphincter has become fixed as a result of inflammatory changes, satisfactory control of bowel movements is usually obtained, but in cases in which the sphincter is not fixed, its severed ends may widely separate with resulting loss of bowel control. To obviate this serious complication I have for some years used a procedure which, so far as I know, has not been used before. In order to prevent separation of the severed ends of the external sphincter ani, I have sutured, with chromic catgut, each end of the cut sphincter to the

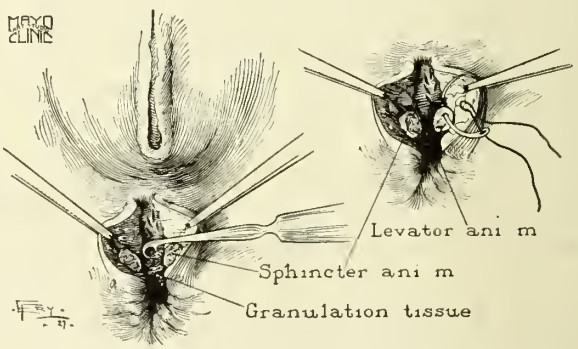

Fig. 4. Anterior type of fistula after being widely opened and curetted. Insert: suturing the ends of the external sphincter to the deep muscles.

internal sphincter or to the levator ani muscle in such a manner as to prevent their separation, but still leave the fistulous tract completely open. The entire tract is then packed with iodoform gauze which is held in position by one or two sutures passed through the skin and tied loosely so as to leave the skin margins widely separated (Fig. 4). The gauze pack is allowed to remain untouched for ten or twelve days. When it is removed, healthy granulation tissue will be found along the tract and the skin margins fixed so the wound will remain open and heal slowly without further packing with gauze.

As a rule a sinus tract connected with a posterior crypt is not so easily cured, and must be dealt with differently. A long tract with multiple openings is usually present and often better results are obtained by operating in stages. I have found it best to disregard temporarily the opening into the bowel and after first injecting the tracts under pressure with a weak solution of methylene blue to open widely and curet them, and then make small openings in the scar tissue with a scalpel (Fig. 5). The opened tracts are packed with iodoform gauze which is left untouched for ten or twelve days (Fig 6). When the gauze is allowed to remain for this length of time,

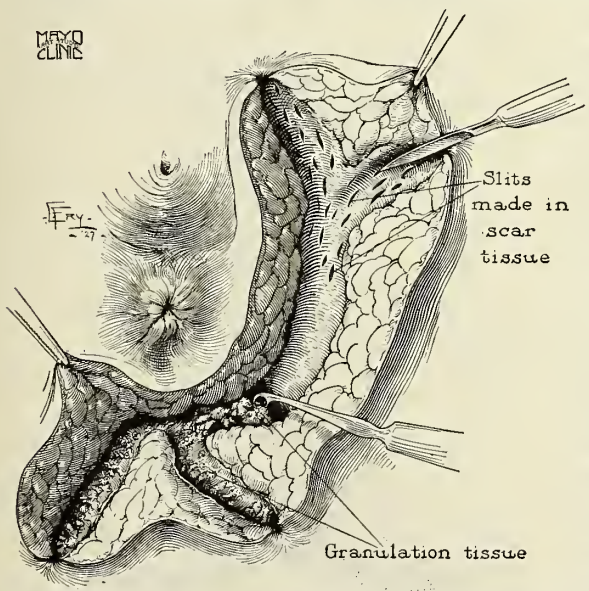

Fig. 5. Posterior type of fistula with multiple sinuses after being widely opened and curetted.

Fig. 6. The tracts shown in Figure 5 packed with gauze.

further packing of the wound to prevent closing too quickly is unnecessary.

When the tracts have healed, usually in from three to six months, a single sinus will usually be found, which connects with a crypt in the median line of the anorectal margin posteriorly (Fig. 7). This tract is injected with methylene blue and opened over a probe, as described in operating for fistula developing from an anterior crypt, and special care is taken to suture the cut ends of the external sphincter muscle to the internal sphincter or to the levator ani muscles (Fig. 8).

Satisfactory results also may be obtained in cases of fistula with an internal opening situated in the ampulla of the rectum some distance from the anal canal, by dividing all of the tissues anterior to the tract over a probe and carefully suturing the cut ends of the external sphincter to the deeper muscles. An incomplete or blind fistula should be treated by converting it first into a complete fistula by incising the skin and deeper tissues down to the indurated and infected area, which usually may be palpated, and then operating on the complete fistula thus formed.

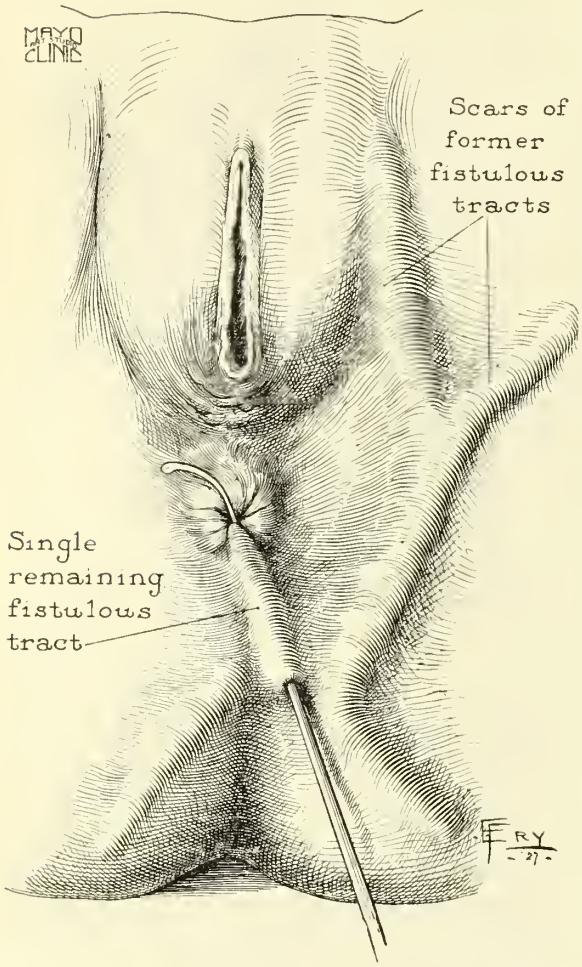

Fig. 7. Scars after healing of tracts shown in Figure 5 with single remaining unhealed sinus.

DISCUSSION.

Dr. J. W. Barksdale (Jackson): Dr. Sistrunk has presented to us a subject which we commonly see, and presented it in his usual lucid and very interesting way. Not only has he summarized and epitomized the present methods of treatment, which have relegated to the discard the many attempts to cure fistula ani in other ways than surgical, but he has shown us a method which I think will meet with the endorsement of men working in this field at the present time. He has advocated two—to me entirely new—things that seem to me to be the realization of rational treatment. The first is the fixation of the sphincteral ends and the second allowing the gauze to remain in for from ten to twelve days. I have been doing what most of you, I imagine, have been doing, leaving the gauze in for two or three days and then going in and removing it, disturbing the patient and doing no good. We are prone to think of anal fistula as a simple matter, but certainly when you have multiple fistulae, burrowing in different directions, you have a matter not of great seriousness as regards life, but of great technical difficulty.

I find myself in hearty accord with Dr. Sistrunk in that personally I have never done anything but curet these tracts out. This thing of dissecting out fistulous tracts and trying to get primary union, while it may be done and has been done, often is a serious matter, subjects the patient to a second operation, and I think has no advantage.

We are glad to have Dr. Sistrunk with us, and I am sure we have all enjoyed the paper very much.

Dr. Carroll W. Allen (New Orleans): This is indeed a very interesting and illuminating and practical discussion of a subject which I believe has been much neglected. I thoroughly indorse all that Dr. Sistrunk has said. There were some points that particularly impressed me and which Dr. Barksdale has mentioned. One is the mistake of cutting out the fibrous tracts. Those fibrous tracts, as the fistula has burrowed through the muscle, help to hold the muscles in place. If you

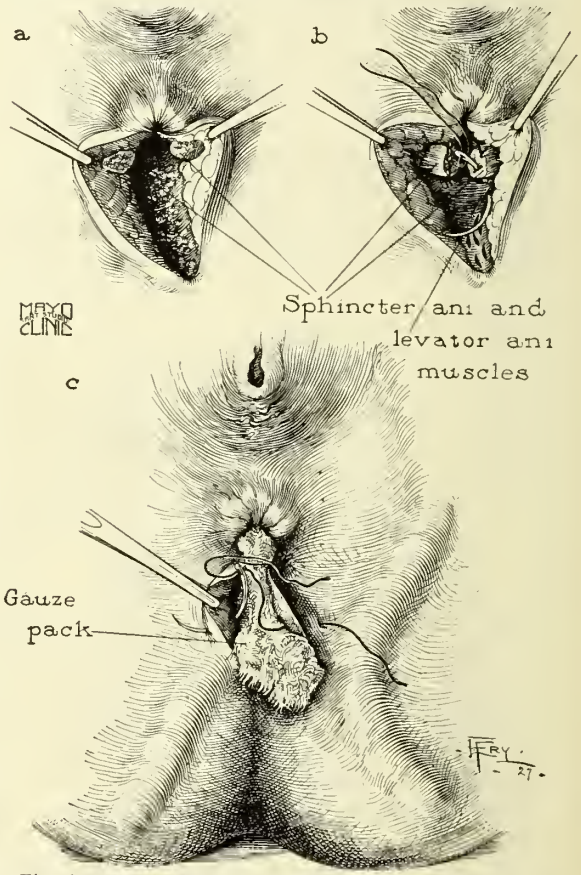

Fig. 8. Fistulous tract shown in Figure 7 after being opened and treated as anterior type of anorectal fistula.

dissect them out you permit the muscles to retract and offer much wider area for infection. To cut through the fibrous tissue is important. That was brought out by Sambon and is referred to in the old books as Sambon's black cut. That is important, as Dr. Sistrunk brought out.

I shall not dwell on the details of what Dr. Sistrunk has stated, in which I thoroughly agree; but I should like to call attention to two points which I have found very practical. I believe I can best illustrate on the blackboard. Here is the rectum and here the anal canal. The anal canal is always closed and the rectum always open. Now, in handling multiple fistulous tracts (which always, as Dr. Sistrunk states, occur behind here and often run up along the vulva and often, in the male, along the scrotom) they should be handled in stages. I find a very desirable thing following the first stage is to pass a probe through here, if this is where the fistulous tract goes through, because that tract is always open, and put in a ligature of stout linen or silk, tying it just tight enough so as not to constrict the tissues, and allow it to remain —tying with a knot, of course. You can twist it around so the knot is inside and you will have just a little strand of silk outside. That will develop the fistulous tract which will be the site of the secondary operation. Now, you have placed the secondary fistulous tract where you want it. The thing is that most men are fearful of making the incision the whole way through, but if you do you first get thorough dilatation, next get a cure, and suture following that. In these cases they have to get rid of the fistulous tract pretty thoroughly. We do not have to dissect out, a short curet will get rid of all tissue down to the fibrous coat. Put a catheter in to carry off the gas, and tie the bowels up for ten days. Put the patient on an appropriate diet, and there will be very little distress from the bowels not moving, as the doctor said. I have a little drain which is taken out in five or six days.

In case you do not wish to handle the case this way (and unless you have had experience I should not advise it), then handle these severe fistulous tracts by stages. Having outlined the fistula and reduced it to this condition by the primary operation, such as Dr. Sistrunk has called attention to, make an incision from the upper end of the fistulous tract right down to the external sphincter, leaving that area open (or if you wish you can put a suture in), then put a ligature around the external sphincter, tie it loosely, and pack this from above. Your fistulous tract will close down to this point, and as it closes it ties the tissues behind it, so that you have a competent internal sphincter. Later, when you have closed this tract, you can treat the internal fistula at an appropriate time. That I have found a satisfactory method to follow and have never had any loss of control.

I believe Dr. Sistrunk's method of suturing the external sphincter to the internal sphincter and levator ani muscle is a valuable idea, and I shall make use of it at the first opportunity.

Dr. Sistrunk (in closing): I merely wish to thank Dr. Barksdale and Dr. Allen for their discussion of the paper. I enjoyed very much the ideas which each of them brought out.

INJURIES OF THE ORBITAL PORTION OF THE OPTIC NERVE.*

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Direct and indirect injuries of the orbital portion of the optic nerve may be produced by

(A) Direct injuries:

I. Stab wound.

II. Intra-orbital foreign bodies, such as shot, particles of steel, iron, etc.

III. Operation for the removal of tumors of the nerve or orbit.

Or (B) Indirect injuries:

I. Fractures of the skull.

II. Fractures of the orbit.

III. Contusions of the globe.

IV. Dislocation of the globe.

In direct injuries the nerve itself is directly traumatized, resulting in complete or partial severance of the nerve stalk and subsequent atrophy.

Indirect injuries may cause atrophy of the nerve following a fracture with impingement of the nerve tissue by the fragments. Blows from a blunt instrument as seen in contusions of the globe cause a rapid and very high pressure intra-ocular and the lamina cribrosa being the weakest region of the globe the optic nerve is pushed

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into the sheath of the optic nerve which results in atrophy.

Dislocation of the globe from its orbital attachment may result in a complete or incomplete evulsion or separation of the nerve head from its relations with the globe. The optic nerve has no elastic tissue, but the optic sheath is very richly supplied with elastic tissue, it therefore oftentimes dilates and envelopes the optic nerve head giving a very characteristic fundus picture. The retinal arteries and veins may or may not be torn.

Atrophy of the optic nerve, resulting in total blindness, is almost always the end result and makes its appearance usually within two weeks after the injury.

As illustrative evidence of the various forms of these injuries to the optic nerve I wish to cite the following cases already reported in the literature, together with one unreported case of Dr. E. C. Ellett's and two unreported cases of my own.

(A) Direct Injuries.

I. Stab wound.

Case 1. Schliephake in 1888, collected twenty-two undoubted cases of severance of the optic nerve behind the entry of the central vessels. Later records of such cases were given by Vessely in 1889, Szili in 1893, and Seggel in 1892. The injury is caused by a sharp instrument such as a stick or an umbrella, and the external wound is usually at or near the inner canthus. A blow near the root of the nose is very likely to be converted into the orbit from this point, whereas one at the outer canthus is usually converted toward the temporal region. The signs are similar to those of injury in the optic foramen, and consecutive injury follows in the same manner. Other than direct injury to the eye, there is generally no change in the fundus in the early stages.

II. Intra-orbital foreign bodies, such as shot, particles of steel, iron, etc.

Case 2. Wurdemann's case. W. R., aged 40, Jan. 15, 1923. Two years ago had attempted suicide by a revolver held at the right temple. The ball passed across and through the right frontal sinus, coming out at the bridge of the nose. He then held the revolver to his left cheek, firing upwards. The ball passed through the left malar bone, glazing the upper frontal. The left eye is totally blind from traumatic cataract, total posterior synechia and atrophy of the globe. The right eye is normal to external appearance, the media are clear. There is perception of light only. Ophthalmoscopic examination shows the nerve entirely torn away from the globe by either direct injury from the ball or from the stretching of the nerve in its passage, or perhaps from a piece of bone being carried along. There is a deep pit in the region of the disc and in the depths, about 8 D- is seen a small pit in which loops of vessels appear. There is an extensive choroidal and retinal rupture, which has obliterated all except a few either new formed or remains of retinal vessels. The rupture has many prolongations, and there is extensive deposit of pigment at its edges and at the upper part of the fundus.

It is to be noted that this case has no opacity of the media; that it is quiet at two years after the injury and an apparently normal eyeball has been retained.

Case 3. Dr. E. C. Ellett's case. A white man, aged 31, was shot in the left eye and consulted Dr. Ellett, August 10, 1923, with the following history:

Two months ago he was shot in the left eye by a No. 5 shot. Since then he has had very poor vision in the left eye and at times it is painful.

Examination showed vision in the right eye 20/25, J I, vision in the left eye, fingers at 1 ft. Ophthalmoscopy of the left eye showed way up some areas of choroidal atrophy, the nerve was apparently normal. Roentgen-ray reported the shot deep in the orbit behind the eyeball.

Dr. Ellett made a diagonsis of foreign body (bird shot) of the left orbital portion of the optic nerve.

Case 4. A white man, aged 51, consulted Dr. E. C. Ellett, Sept. 1, 1924, with the following history:

On August 25, 1924, was shot in both eyes and face by a No. 6 shot followed by immediate total blindness.

Examination showed the right eye hemorrhagic, with chemosis of the bulba conjunctiva; the cornea and anterior chamber were normal; the tension was normal; on ophthalmoscopy the media was clear, the nerve distinctly fluffy and the temporal vein beaded. The other vessels were normal. Roentgen-ray showed no shot in the globe. One shot was shown in the region of posterior orbital portion of the optic nerve, and many in the face.

The prognosis given by Dr. Ellett was very bad.

The treatment consisted of atropin drops, aspirin and hot applications.

The diagnosis was: penetrating wound of the right orbital portion of the optic nerve by shot.

On Dec. 13, 1924, the patient consulted Dr. Ellett again. At this time he reported the right eye the same except for optic atrophy being present. Vision, total blindness.

I saw this patient in Dr. Ellett's office, Feb. 3, 1925. The patient stated that he had no discomfort except total blindness. In testing his vision I found both eyes blind.

The patient saw Dr. Ellett the last time on June 8, 1925, and he reported the case the same as above.

Case 5. Author's case. A white man, aged 43, Dec. 22, 1921, while hammering on an ax with a carpenter's hammer, was struck in the left eye by some foreign body. Severe pain occurred in the left eye, persisting only about five minutes. Three or four hours after the injury the patient noticed he had only light perception with the left eye. Examination showed O.D. vision 20/30, O.S. vision good light projection. O.D. tension normal, O.S. tension decreased. A slight conjunctival injection was present at the upper corneo-scleral junction. There was a small wound in the peripheral margin of the cornea at about 11 o'clock. The pupil was oval and dilated; the lens was cloudy; there was no fundus reflex. A small iridodialysis was seen immediately under the corneal wound. Roentgen-ray of the globe was taken and a foreign body was reported present in the vitreous.

Dec. 24 an attempted magnet extraction was done on the left eye by making an anterior-posterior scleral incision about 10 mm. back of the corneo-scleral junction. The large magnet was applied to scleral wound, but no foreign body was found. The small tip of the hand magnet was inserted deep into the vitreous. Again no foreign body was found. The wound was closed by conjunctival sutures.

A second roentgen-ray for localization of the foreign body was made and the following report was given by Dr. J. H. Herring, Memphis, Tenn.:

Foreign body measures 1½ m.m. by 1½ m.m.

Foreign body lies 33 mm. back of center of cornea.

Foreign body lies ½ m.m. horizontal plane of cornea.

Foreign body lies 6 mm. to nasal side of vertical plane of cornea.

This localization plotted on the chart showed a foreign body on the temporal side of the left optic nerve behind the globe.

The eye was treated with atropin and hot applications and remained a little red, soft and uncomfortable at times until February 3, 1922, when it became very painful. The vision was light perception. There was circum-corneal injection; the pupil was slightly dilated and fixed by complete seclusion and beginning iris bombe. The lower half of the lens was clear enough to show a large whitish vitreous exudate. With a plus 10 lens what appeared to be the detached retina could be seen.

February 8, 1922, enucleation of left globe was done under general anesthesia with implantation of a 20 mm. glass ball in Tenon's capsule. At the time of severing the optic nerve I resected a long piece of the optic nerve in an attempt to remove the foreign body. I found the foreign body (steel) exactly where the above localization indicated. The foreign body seemed to lie between the optic nerve sheath and optic nerve, on the temporal side of the nerve trunk.

March 9, 1922. O.D. vision 20/20. The patient was wearing a shell eye with comfort and with good cosmetic results.

Case 6. Dr. E. C. Ellett's case. A white man, aged 35, Jan. 24, 1924, was injured in the right eye by a bird shot perforating the globe at the corneo-scleral margin. The wound extended mostly into the cornea; the pupil was drawn out; the lens and vitreous were cloudy; there was no reflex.

Dr. W. R. Bethea, Memphis, Tenn., Roentgen-ray report, Jan. 25, 1924, as follows:

Size of foreign body, bird shot, which lies 2 mm. in the horizontal plane of cornea, 10½ mm. to the nasal side of vertical plane of the cornea, 32 mm. back of center of the cornea. Localization on the Sweet's chart shows the foreign body to be on the nasal side of left optic nerve.

The right eye was treated with atropin.

Jan. 26, O.D. pupil was undilated with atropin. No fundus reflex. No pain.

February 5, the right globe was enucleated with implantation of a 20 mm. glass ball in Tenon's capsule.

March 28, patient was wearing shell eye with unusually good cosmetic results.

The pathologic report is as follows:

Perforating wound of corneal limbus. Perforating wound, periphery of lens. Perforating wound of fundus. Foreign body apparently in optic nerve 3½ mm. behind optic disc.

The sections submitted show a traumatic reaction involving the optic disc, the contiguous choroid and retina, but do not show the actual perforation which probably was near or through the optic disc. There is a large hemorrhage from this region which has separated the retina. The optic disc shows a cavity 1½ mm. in diameter from which a foreign body has probably been removed. Around this cavity there is a chronic inflammatory reaction no doubt due to the foreign body. The choroid shows perivascular lymphocytic infiltration in the vicinity of the wound but elsewhere it is free from infiltration. The lens at the site of the perforation is infiltrated with endothelial phagocytes, but is free from pus cells.

Case 7. Clyde E. McDannald's case. Male, 29 years of age, seen in clinic at the New York Eye and Ear Infirmary, October 2nd, 1926.

Patient was in a restaurant 1½ years ago when it was held up by robbers. As he turned his head to see the cause of the disturbance a bullet struck him in the right temple and made its exit from the left temple. He was unconscious for twelve days. When he regained consciousness his vision was absent. External appearance of eyes normal. Ophthalmoscopy showed greyish area in region of both optic nerves. Many small retinal hemorrhages extending out from the region of the optic nerve.

Diagnosis: Double evulsion of the optic nerve.

Roentgen-ray of orbit showed no evidence of course of bullet.

III. Operation for the removal of tumors of the nerve.

Case 8. Dr. E. C. Ellett's case, Memphis, Tenn. History: L. H., a negro girl, aged 15 years, came to the clinic of the University of Tennessee in November, 1915, complaining that the right eye had protruded for five years and was blind. There was no history of trauma, and the date of the beginning of the protrusion of the eye, as well as of the beginning of the failure of vision, was not definitely ascertained.

Examination: The right eye was prominent and turned inward and upward. Motion was preserved except outward. The proptosis measured 25 mm. with the exophthalmometer, as compared to 15 mm. in the left eye. The pupil was dilated and fixed and the eye was blind, but the external appearances were normal in every way. There was no postneuritic atrophy of the optic nerve and some tortuosity of the veins; otherwise the eyeground was normal. It should be especially noted that there was no attenuation of the vessels. The left eye was normal in every respect. The child's general health was excellent. There was no history of tumors in the family, no abnormality of the nose or accessory sinuses, and no pulsation to be heard or felt. On palpation the finger passed easily into the orbit below and to the outer side of the ball, and a smooth, movable mass, about the size of the eyeball, could be felt.

Operation and Result: A diagnosis of tumor of the optic nerve was made, and operation under general anesthesia performed, November 17. A vertical incision was made through the conjunctiva near the limbus to the outer side of the cornea, and the external rectus muscle exposed and divided. By blunt dissection the tissues were pushed back from the tumor which was found to be an enlargement of the optic nerve, beginning about 10 mm. back of the globe. The nerve was divided in front of the tumor and the ball displaced upward and inward. All the tissue being separated from the tumor by blunt dissection, an attempt was made to encircle it with a snare, with the idea that it lessened in size as the optic canal was approached and the wire would glide backward to the farthest possible point. As this did not seem to be taking place, the snare was removed and the tumor cut off as far back as possible with curved scissors. It was certain from the inspection of the tumor, and will be equally apparent from the illustration, that not all the tumor was removed, but that there was a prolongation into the optic canal, if not into the cranial cavity. The finger introduced into the space left by the tumor did not feel any mass, and the apex of the orbit was in all respects exactly similar to what exists after an ordinary enucleation, this being verified by experienced observers among those present at the operation. The hemorrhage was slight and readily controlled by pressure. The cavity was wiped out with tincture of iodin, the cut ends of the external rectus muscle united, a few sutures put in the conjunctival incision and a pressure bandage applied. During the operation care was taken to avoid pressure on the eyeball.

The next day there was some discoloration and protrusion from bleeding into the tissues of the orbit, but the lids covered the ball and the cornea was clear. The protrusion subsided in a week, when motion was found to be limited. December 1, the exophthalmometer read 15 mm. in each eye. There was complete paralysis of the muscles supplied by the right third nerve, motion outward being preserved.

December 21, the paralysis was much better.

Jan. 16, 1916, motion and external appearance were normal.

The changes in the eyeground were very interesting. November 27, there was edema of the whole central region of the retina and a cherry red spot at the macula. The vessels were normal,

except that an artery above the macula showed a broken blood current. November 29, the edema was more marked, extending to the nasal side of the disc. Pressure on the eye did not cause pulsation of the vessel, but readily emptied them of blood.

Dec. 21, the edema was gone. In the macular region a few fine white dots and lines were seen. Near the disc, especially upward, was a deposit of black pigment dots on a pale yellowish background. The pigment was also being deposited on the disk, giving an appearance like ashes thickly sprinkled on snow.

Jan. 16, 1916, there was more pigment deposit, almost covering the disk. The vessels were slightly attenuated, especially the arteries.

The tumor was examined by Varhoeff and others and was finally diagnosed glioma.

(B) Indirect Injuries.

I. Fractures of the skull.

Case 9. Hathaway reported the case of a cyclist who collided with a tree and fractured the anterior fossa of his skull. When the patient became conscious, he complained that he could not see with his right eye. There was much conjunctival hemorrhage and swelling of the lid. The right pupil was semi-dilated and did not react to light or accommodation. There was absolutely no perception of light. The ophthalmoscopy showed nothing abnormal. On the seventh day, pallor on the temporal side of the disc began to appear and on the fourteenth day the whole disc was pale. On the twenty-eighth day, a note was made that the disc was quite white and it remained in this condition. There was permanent and absolute blindness in the affected eye.

II. Fractures of the orbit.

Case 10. Blake in 1918 reported a case of evulsion of the optic nerve in a man, aged 29, who was thrown from a wagon with the result that he fractured the superior maxillae and nasal bones and caused forcible extrusion of the eyeball. One week later, ophthalmoscopic examination revealed an excavation of the nerve head measuring 8D. In the course of a few weeks, the excavation was filled in with connective tissue.

III. Contusion of the globe.

Case 11. Crigler's case was a youth, aged 18, who was struck in the left eye and knocked unconscious while playing basket-ball. When he recovered consciousness, the eye was totally blind. There was slight laceration of the margin of the lower lid and ocular conjunctiva and considerable conjunctival edema. The pupil was dilated and did not react to light. At the end of a week, a round grayish white hole was visible at the site of the nerve head. There were hemorrhages extending from the lacerated ends of the empty retinal vessels out into the vitreous. Their shapes resembled the effect produced by a skyrocket at the moment of explosion. After a period of several months, the excavation was filled with connective tissue. The retina is now extremely atrophic.

IV. Dislocation of the globe.

Case 12. Author's case. H. B., negro, aged 28, fell on Dec. 7th, 1925, while attempting to catch a moving train and struck his left eye against some unknown object on the railroad track. First treatment was administered by the local surgeon, Dr. Herbert Barbee, who reported the case as left globe dislocated in front of the lids, with profuse bleeding. The globe was replaced into the orbit and a dressing applied.

Two hours later I was called to see the patient and found the left globe far forward with rupture of the external rectus from the orbital attachment. Marked bleeding was still existing, apparently from behind the globe. Pupil was slightly dilated and did not react to light. The tension felt soft to fingers. Vision was nil. Fundus findings were: media clear. Region of the optic nerve was pale and greyish. No vessels in the region of optic nerve could be seen. There were many retinal hemorrhages near the nerve. Blood filled veins and arteries of the retina could be made out in many places. A dressing and bandage were applied to the eye.

Six hours later consent was obtained for enucleation and the patient was placed under general anesthesia. After removing the blood clots from under the lacerated conjunctiva which extended practically around the globe near the cornea, the external and superior recti muscles were found to be ruptured from the orbital attachment, the internal rectus was very much stretched while the inferior rectus seemed to be uninjured. Both the superior and inferior oblique seemed to be very much stretched. By introducing the closed enucleation scissors and using same as a probe I found that the optic nerve sheaths had not been disturbed in their relations with the globe. I decided to make an attempt to save the globe because arterial and venous circulation was still present in the retina. Double chromic catgut was inserted into the orbital severed end of the superior and external recti muscles with a long curved needle; catgut sutures were inserted as far back as possible under Tenon's capsule to suture the ruptured orbital attachment of the superior and external recti muscles back near their original bony attachment in the apex of the orbit. The

sutures were carried through Tenon's capsule and conjunctiva within out and tied on the conjunctival side as far back in the cul-de-sac as possible. The large conjunctival wound was closed with silk sutures and dressing and pressure bandage was applied.

Seven days after the dressing was removed from the eye, fundus examination showed the mediae to be clear. The region of the optic nerve showed a white, well-like depression, the cupping measuring 14 diopters. No vessel could be seen in the region of the nerve head. Many large hemorrhages were scattered through the retina.

Two weeks after the above fundus findings, the mediae were clear. The region of the optic nerve was filled in with a greyish irregular exudate. Narrow pale areas were seen in the retina superior, nasal and inferior to the optic nerve region. There was a large retinal hemorrhage near the temporal border of the nerve with a medium sized retinal hemorrhage somewhat nasally and inferiorly. Many small retinal hemorrhages were scattered over practically every field of the retina. Ocular movements were good in all directions except for slight limitation mesially; O.S. was divergent strabismus 15 degrees. Otherwise the external appearance of injured eye was normal.

One year after the above injury the ocular movements were normal; divergence of fifteen degrees persisted. The pupil was dilated and fixed. Vision was nil. The fundus examination showed a dense greyish exudate covering the region of the optic nerve. This was seen best with a plus six diopter lens. The eye had been comfortable at all times.

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DISCUSSION.

Dr. B. S. Guyton (Oxford): I had Dr. Anthony's paper and read it before coming down here, and I made a few notes. I enjoyed his paper very much. He mentions a condition which is rather rare and gives us a number of case histories. It so happens that I saw one of those cases. The man was Sheriff of Marshall County. He was looking for some blind tigers, and walked up to a house and knocked on the door and was met by a man with a shot gun, who filled his face with bird shot. He went to see Dr. Ellett in Memphis who gave him a bad prognosis. He came back to Holly Springs and later came to see me; and he went back and forth to Memphis and down to see me two or three times. One eye had been perforated and it was blind from the number of shot that had gone into that globe. With the other eye that Dr. Anthony reports—there was practically nothing abnormal to be seen about the globe and yet he was totally blind. There was some swelling about the conjunctiva but the fundus looked almost perfectly normal. The bird shot must have gone into the optic nerve. The pictures showed the shot posterior to the globe.

Dr. Edward B. Heckell of Pittsburg last year reported ten cases in which the patients had had fractures of the orbit and he mentions the fact that in all these cases the pupils were clear, they re-acted to light and convergence but the consensual pupillary reflex of the good eye was negative. He emphasizes the point, that all of them showed optic atrophy very soon. Dr. Benedict of Mayo Clinic mentions the fact that you might get this monocular blindness from pressure, edema or hemorrhage. Dr. Anthony mentions one case of tumor of the optic nerve, that Dr. Ellett had resected the nerve for the tumor. Dr. Dandy of Baltimore two years ago reported a number of cases of ring tumor which was causing pressure on the optic nerve and caused monocular blindness. In speaking of fractures of the orbit and discussing these cases Dr. Heckell has reported, Dr. Gradle mentioned the fact that in nearly all of these cases you can distinguish between a fractured orbit with pressure of the optic nerve and that of edema and hemorrhage by the roentgen-ray pictures. He emphasizes the fact that you should take a stereoscopic view, if fracture is suspected, and states that you can get it so much better by getting the lateral view than by getting the antero-posterior.

Dr. Gradle says he has one case that had been shot for five years and the pictures show the line of fracture, but as a rule you can bring out pictures so much better within the first four or five weeks.

Dr. Anthony mentions a case of contusion of the eyeball causing very high pressure. Last week I was called to another town nearby to see a case in the hospital. He was almost unconscious—he had been struck in the eye, or right next to the eye, by a piece of timber at a sawmill. He had a fracture there around the orbit and several little pieces of bone had been lifted out. The man was suffering considerably. The tension was high in that eye. We thought we would try palliative measures for a day or two and if he did not get relief we would try paracentesis. He had no perception of light in that eye at the time. I have a patient who last week was screwing a vise down on a dynamite cap—a little boy about ten

years old—and it exploded of course, and filled his face full of pieces of dynamite cap. One piece struck him in the eye, went through the lower limbus and left a nice little opening through the iris. I wanted to determine whether this piece of cap was still in the globe, or posterior to it. I had an idea that probably the cap went on through the globe.

I sent him to Dr. Bethea in Memphis, and he gave us this chart showing the foreign body went entirely through the globe. At present you can look in his eye and see blood vessels coursing through the upper part of the retina and yet he barely has perception of light. It is a question whether that optic nerve is injured. Of course they can't localize these absolutely accurately, and I just wonder whether or not there is some induration or swelling about the optic nerve which is also decreasing its function, because the upper half of the retina seems good enough for him to have considerably more vision than he has at present. This picture shows the foreign body and in the discussions I should be glad if you will tell me what you think should be done with this eye. I am employing the watchful waiting policy. I have thoroughly enjoyed Dr. Anthony's paper, and am glad to have had him with us, and I hope he will come again.

Dr. W. A. Stevens (Gulfport): Several years ago I had several shot wounds of the eye, three or four cases in a short time, and roentgen-ray pictures were taken of most of them. There was no localization done but the pictures seemed to indicate that the shot were in the back of the orbit. Two of these were enucleated on account of uveal inflammation, and one of them slipped out of my control and I never know how it came out. I do not know whether these shot were in contact with, or injured the optic nerve or not, but my attention was entirely centered on the eyeball. The question I was mainly worried about was sympathetic inflammation. One case was shot by a B.B. gun and the shot was in the globe. I enucleated the eye at once.

I did have one case, however, that was undoubtedly an injury of the optic nerve. This boy had been shot from very close range with a B.B. gun, and I do not remember whether the shot passed through the upper or lower lid, but just near the margin of the orbit, and when I saw him there was very little inflammation to be seen—a little puffiness of the lid. The eyeball appeared perfectly normal, except that the pupil did not respond to light; he had absolutely no light perception. The fundus appeared absolutely normal. I think clearly that was an injury of the nerve looking very much like it had been cut in two at the back of the orbit. This boy was to come back, but he did not, and I never did get to follow him up or take any roentgen-ray pictures, but in that case there was instantaneous blindness and the eyeball was not touched, and had no inflammation. It was purely an injury to the optic nerve.

Dr. E. H. Jones (Vicksburg): I may mention as a matter of regret that I unfortunately had one of those cases that was supposed to be over a goose, but it was really over a still, I understand. This man was shot three times; the fellow was looking at him as he shot the first time, then he turned around a little and he got him the second time, and before he could turn all the way around, he got him the third time. We counted twenty-seven shot above the neck. One of them entered the anterior inferior border and, I presume, hit the optic nerve just anterior to the foramen. Vision of course was gone entirely.

Dr. George E. Adkins (Jackson): The value of stereoptican pictures is considerable. I have a stereoptican picture in my library in which you can count six shot from a single picture; you put it in the stereoscope and you can count nine. You can pick out your fractures, locate your foreign bodies, get your stereoptican picture and take it laterally; again you can take a single picture, put it up in your shed box and take a kodak photograph of it, make two prints from the photographs and put them in a little hand stereoscope and get your relation again.

The other feature I would like to call attention to is the real accident that occurs regardless of what kind of injury occurs to the optic nerve. I believe excepting a tumor of the optic nerve, that they can derive no benefit from any operative treatment or procedure.

Dr. D. H. Anthony (closing): I want to thank the members of this session for their liberal discussion of my paper. I will answer Dr. Guyton's question as to what I would do with the management of a case that he has shown here with the roentgen-ray pictures and the localization on the eye chart. From the localization it looks as if the foreign body is not in the optic nerve and I think the best thing to do with this patient is to let him alone. Even if the foreign body was in the optic nerve, you will still have to let him alone. Of course I do not believe that you can reach a foreign body without destroying the function of the optic nerve.

With my observation, and the outcome of my cases, and the ones that I have observed in literature, it seems that it takes only a small injury to cause complete loss of function of the optic nerve. Other nerves you can injure and they will return to their function, not totally normal but partially so. As you notice, all these cases that I reported here are blind. They have been kept under observation, some of them for several years.

CASE REPORTS AND CLINICAL SUGGESTIONS

A CASE OF TULAREMIA.*

B. GOLDSMITH, M. D.,
LAKE CHARLES, LA.

I am reporting a case of tularemia because of its rarity in Louisiana. I believe this is the first case reported in southwest Louisiana, even though we are in a belt infested with its hosts:

The history of the case is as follows:

Mr. G., a white male, aged 40 years, by occupation a woodsman, was first seen on Oct. 25, 1927.

Complaint: Severe headache, sore in groin, fever.

Present illness: This began Oct. 11, 1927, with a small pimple on right side just above hip gradually increasing in size. The day before onset patient recalled having been bitten by a tick but didn't know just where. The pimple broke down in a day or two leaving an ulcer about the size of a dime with the glands in the groin markedly swollen, painful and inflamed, being more marked during papular stage. With the appearance of pimple patient had slight headache, fever, and general malaise. Bones and muscles throughout body ached. He remained in bed a few days but headaches increased in severity. Patient came to Lake Charles where he consulted an eye, ear, nose and throat specialist, having been referred for a possible sinus or throat condition. This specialist declared that tonsils and sinuses were negative and referred him to me for further study. During past two weeks patient has lost fifteen pounds and is quite weak, appetite poor, bowels constipated, no nauseau or vomiting present. Urinary system is negative for any abnormal findings. Respiratory and circulatory systems are negative as well.

Past history: Typhoid 20 years ago; venereal history negative, and there was no history of severe accidents or operations.

Physical examination reveals a middle-age, white, male, well-developed but slightly undernourished and weak. The skin is warm with few hard papules seen on face and chest. These papules are evanescent, hard and shotty, about the size of a match head. An ulcer is present on abdomen. The mental condition is clear, no speech defects.

Reflexes: Pupils react normally to light and accommodation. Patellar reflexes are active and equal.

Lymph glands: The right inguinal glands, both deep and superficial are markedly enlarged, quite tender, with some redness, about the size of an egg, with no evidence of breaking down or suppuration.

The head and neck are negative, as are the lungs and heart.

The pulse is good, volume 84; no thickening, regular as to rate, rhythm and volume.

Abdomen: Negative, except for small punched out ulcer about the size of a dime found just two inches above the right anterior superior spine of ilium, with slight induration. The associated right inguinal glands enlarged as mentioned above.

Laboratory findings: Wassermann test negative; adeno-puncture sterile; scraping of sore, negative for B. Ducrey, Treponema pallida, or B. pestis. Urine negative. Blood picture, slight leukocytosis.

Progress notes: Patient continued complaining of headaches. Sore which was quite indolent has responded slightly. October 29, allowed to return home for further treatment.

Diagnosis of tularemia was made and a specimen of serum was sent to the Hygienic Laboratory, Washington D. C., for verification. Report received on November 5 confirmed diagnosis stating that serum agglutinated B. tularensi in all dilutions.

Further observation: Patient on returning home had a secondary rise in temperature to 104° which gradually returned to normal. Improving slowly, though very weak, this report having been received November 10. The further progress of patient is unknown.

The above case represents a typical ulceroglandular type of tularemia, which, as its name signifies, consists of an ulcer with its associated adenitis, which is the most common of the four types of tularemia.

*Presented at the Seventh District Medical Society meeting, Dec. 7, 1927.

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THE MATAS NUMBER OF THE JOURNAL.

The present number of the Journal is devoted very largely to the addresses and the response of Dr. Matas to these addresses, which were delivered at the banquet of the Orleans Parish Medical Society honoring New Orleans' most distinguished citizen and one of the outstanding figures of the South. In addition to these addresses the opportunity is taken of presenting to our readers the bibliography of all the material that Dr. Matas has published, of offering excerpts from his more recent talks and giving a list of the titles and honors that have been conferred upon this honored and loved man. It is hoped that the Matas Number of the Journal will preserve in a permanent form a record of the professional and medical career of Dr. Matas, as well as his relation to the medical profession, as seen by those who know him well and intimately. The bibliography exhibits, as can be done in no other way, the remarkable breadth of vision, catholicity of taste, and wide interest in many activities that this remarkably versatile man has shown. Likewise the abstracts from his recent addresses will give the reader even greater opportunity of appreciating the notable quality of mind of the author who has done so much by teaching and example for the young medical man as well as the old. It is indeed a pleasure and a delight to see the ideals expressed and actually put down in black and white and to become familiar with the high standards which have governed the life of a great man, a man whose high professional standards and unselfish generous personality truly express the word character.

RUDOLPH MATAS: HIS DISTINCTIONS AND HONORS.

M. D. (Tulane, 1880); Sc. D. (Pennsylvania, 1925); LL.D. (Washington, 1915); LL.D. (Alabama, 1926); F. A. C. S. (Pres. 1925-6); Hon. Fellow New York Academy of Medicine; Membre Correspondant Société Nationale de Chirurgie de Paris; Hon. Fellow Royal Academy of Medicine of Barcelona; Fellow Am. Surgical Association (Pres. 1910); Member Louisiana State Medical Society (Pres. 1895); Bigelow Medallist (Boston, 1926).

The following additions have been made in 1927:

In Europe: Hon. Fellow of the Royal College of Surgeons of England; Hon. Fellow of the Royal Academy of Rome, Italy; Hon. President and Fellow of the Surgical Society of Barcelona, Spain; Hon. Fellow of the Institute of Practical Medicine of Barcelona; Lecturer, by invitation, at the

School of Medicine of the University of Barcelona; Hon. Member and Lecturer, by invitation, at the Spanish National Congress of the Medical Sciences ("Jornadas Medicas") held in Madrid, Oct. 18-23, 1927; Corresponding member of the Royal Academy of Medicine of Madrid; Member Association Francaise de Chirurgie.

In America: Hon. Fellow Boston Surgical Society; Hon. Fellow Southern Surgical Association (Pres. 1912).

TYPHOID FEVER THOUGHOUT THE WORLD.

In a recent bulletin from the Health Section of the League of Nations' Secretariat, the epidemiology of typhoid fever is discussed and briefly commented upon. This report should be very interesting to epidemiologists throughout the United States as well as to the American physicians on the whole. Briefly the material may be summarized as follows:

In England and Wales the typhoid fever incidence is .9 for 100,000 population; in the Netherlands 1.8; in Switzerland 1.5; in Germany 1.8; in Spain 21.5. In 59 towns in the United States the rate is 2.8 as contrasted with a rate in 21 Japanese towns of 26.3; of 2 Egyptian towns 32.4; 4 Polish towns 15.4; 79 Ukrainian towns 15.3. In 107 English towns the point was 0.7; 47 German towns 1.3; 30 Swiss towns 1.1.

It may be seen from this brief extract from the report that the morbidity rate in the United States is higher than in many of the important European countries, and the incidence of typhoid fever in the United States cities is higher than the cities of these countries. On the other hand the United States rate is very materially lower than in the towns and countries which are known to be backward in their methods of hygiene. The typhoid rate is a graphic representation of the education of a community not only in public health measures but in all other respects. The United States should be among the leaders and not trailing the leaders. A morbidity rate such as that of Scotland and England should be the goal and ambition of the Public Health Services in the United States.

CLINICAL LABORATORY SERVICE.

The Council on Medical Education and Hospitals of the American Medical Association has sent out a bulletin on clinical laboratory service in the United States, which deserves to be published as a whole but space will not permit. In brief, this bulletin calls attention to the fact that a few years ago there was an increase in tendency of lay technicians, promoters and others to presume to dictate or to advise physicians regarding matters which belong to graduates of medical schools. This state of affair was highly distasteful not only to the clinical pathologists more intimately concerned, but also to the far-seeing medical men. The result was that in 1923 co-operation was secured with several laboratory and medical organizations interested especially in this matter. A committee was formed which undertook to make a study of all the clinical laboratories in the country. These studies culminated in a report in 1926 of those laboratories which filled the essentials of approved clinical laboratories, and has resulted in the last few years in many of the laboratories, insufficiently equipped and not under the direct control of a competent pathologist, going out of business. The report concludes with a statement as to the future outlook, which calls attention to the fact that in order to secure the most competent analysis for the benefit of their patients as well as best to preserve the interest of the medical profession physicians should refuse to have their work done in laboratories conducted under the direction of non-medical individuals.

HOSPITAL STAFF TRANSACTIONS

TRANSACTIONS OF SOUTHERN BAPTIST HOSPITAL.

At the monthly Staff Meeting of the Southern Baptist Hospital for October, 1927, papers were presented by Dr. Anderson, Dr. Lyons, Dr. Crawford and Dr. Sellers. A statistical report was given by Dr. Clements. The paper of Dr. Anderson's which is to be published in full sometime later in this Journal was discussed by Dr. Sellers and Dr. Potts. Dr. Lyons' paper was discussed by Dr Eustis. The paper of Dr. Crawford was discussed by Dr. Loeber and Dr. Smith.

PROFESSIONAL SECRECY AND PROFESSIONAL PRIVILEGE.—There are two well established principles in law regarding the examination of accused persons:—The first is that no legal authority, however high, can compel an accused person to say anything respecting his relation to the crime with which he is charged; and it is equally good law that there is no legal power which can compel any accused person to submit his or her body for examination the possible consequences of which might be the discovery of facts which would probably be used against him or her at the trial, except the consent of the accused is given after being informed that he or she is entitled to give or withhold consent. By keeping this latter fact in mind, medical practitioners may avoid, on the one hand, a criminal action for assault, and on the other hand, a civil action for damages.—Medical practitioners in this country (England) must reckon on their liability to be called upon to make disclosures of secrets of patients when called upon to do so in a court of Law. At the same time, a medical witness in this situation should always be reluctant even in a Court of Law to disclose such secrets, and he should ask for a ruling of the Court and receive it before he makes disclosure. Such action will, at least, convince the public that the medical profession jealously guards that which has been committed to the members of it as confidential, and that it is loth to make revelation unless compelled by law to do so. On such a ruling of a Court, the medical witness is freed from responsibility and is exonerated of blame in so doing. Glaister, John: Glasgow Medical Journal, 108: 336, 1927.

STREPTOCOCCI IN ABORTION.—Pleomorphic, anerobic, green-producing of faintly hemolytic streptococci from the tonsils and placenta of a woman who had had repeated spontaneous abortions produced abortion in four pregnant rabbits and hemorrhage in the uterus in 8 out of 10 nonpregnant rabbits after intravenous injection. In 13 rabbits given injections with a throat culture from the same woman 10 months after tonsillectomy, and with tonsil and prostate culture from her husband, no lesion in the uterus were seen. These results corroborate the theory that foci of infection may harbor streptococci which possess properties that may give rise to spontaneous abortion. Reith, A. F.: J. Infec. Dis. 41: 426, 1927.

ENFORCEMENT OF CAUSTIC POISON ACT BEGUN.—The branch stations of the Food, Drug and Insecticide Administration of the United States Department of Agriculture, which are located in sixteen of the leading trade centers of the United States, have been instructed to make a survey in their respective territories of the products subject to the Federal Caustic Poison Act and to initiate such action as may be necessary to see that all such products are labeled in accordance with its provisions, according to officials charged with the enforcement of the act.

The enforcement of the act was begun, say the officials, immediately upon the passage on December 22, 1927, of the deficiency bill which first provided funds for its enforcement. The purpose of the act is to safeguard the distribution and sale of certain dangerous caustic or corrosive acids, and alkalies in interstate and foreign commerce. It became a law on March 4, 1927, but no penalties were to be imposed until September 4, 1927, six months after its enactment. Manufacturers of the products subject to the act have now had over nine months in which to familiarize themselves with the requirements of the act and to label their preparations in accordance with its terms.—Bull. U. S. Dept. of Agriculture, December 28, 1927.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the past month the Board of Directors has held its regular meeting and the Society has held its Annual Installation Meeting and a regular Scientific Meeting.

The meeting of the Board of Directors was a joint meeting of the old and new Boards, and following the regular business a dinner was held at the Check, Checkers and Whist Club.

At the Installation Meeting the program was as follows:

Reading of Minutes, Fourth Quarter, 1927.

Report of out-going President, Dr. A. E. Fossier.

Report of Secretary, Dr. H. Theodore Simon.

Report of Treasurer, Dr. John A. Lanford.

Report of Librarian, Dr. Daniel N. Silverman.

Reports of Chairmen of Standing Committees.

Address of Incoming President, Dr. J. Birney Guthrie.

"Pasteur, the Benefactor of Humanity," by Mr. Andre Lafargue, Annual Orator.

Installation of the following officers:

President—Dr. J. Birney Guthrie.

First Vice-President—Dr. C. Grenes Cole.

Second Vice-President—Dr. Wm. D. Phillips.

Third Vice-President—Dr. Frederick L. Fenno.

Secretary—Dr. H. Theodore Simon.

Treasurer—Dr. John A. Lanford.

Librarian—Dr. Daniel N. Silverman.

ADDITIONAL MEMBERS, BOARD OF DIRECTORS.

Dr. Frank Chetta.

Dr. A. E. Fossier.

Dr. Adolph Jacobs.

At this meeting the following resolution of the Condolence Committee was adopted:

WHEREAS, by the Will of God, our Confrere, Dr. Charles A. Adolph was taken from us by Death.

THEREFORE BE IT RESOLVED, That this Society desires to express to the family of Dr. Charles A. Adolph its regrets and sincere sympathy in its bereavement.

BE IT FURTHER RESOLVED, That this resolution be adopted and that it be spread upon the minutes and that a copy thereof be sent to the family of the deceased.

At the Scientific Meeting held January 23rd, 1928 the following papers were read and discussed:

"Lymphosarcoma of the Lieum with Report of a Case"—By Dr. Martin O. Miller; Discussed by Dr. Alton Ochsner.

"The Velocity of the Pulse Wave in Arteriosclerosis and Hypertension," by Dr. Roy H. Turner; discussed by Dr. Geo. R. Herrmann.

"Treatment of Burns," by invitation, Dr. R. A. Cutting; discussed by Dr. Isidore Cohn.

Dr. Benjamin W. Ward was elected to active membership in this Society and Dr. Charles J. Miangolarra was elected to Interne Membership.

The Telephone Number of the Society has been changed to RAymond 6361.

REPORT OF TREASURER.

Actual Book Balance 11-30-27	$1,946.98
Receipts during December	$1,501.57
Receipts on Insurance	$1,047.32
	$4,495.87
Expenditures	$4,010.01
Actual Book Balance 12-28-27	$ 485.86

REPORT OF LIBRARIAN.

Ninety-nine books have been added to the Library during December. Of these 53 were received by binding, 21 by subscription, 6 by exchange, 1 by purchase, 2 by gift and 16 from the New Orleans Medical and Surgical Journal. A list of new titles is listed below:

NEW BOOKS.

Falta—Endocrine diseases. 1923.

Medical Interpreter—v. 9. 1927.

Richardson—Current Significance of the word alum. 1927.

U. S. Public Health Service—Annual Report. 1927.

Burke—Treatment of Venereal Diseases in General Practice. 1927.

Brouwer—Anatomical, phylogenetical and clinical studies on the central nervous system. 1927.

Woolf — Principles of Surgery for nurses. 1925.

Martel—Pseudo-appendicitis. 1925.

Gautier—Le metabolisme basal. 1928.

Newsome—Every Woman a Nurse. 1927.

Schrumpf-Pierron—Tobacco and Physical Efficiency. 1927.

Hirst—Parasitology of Plague. 1927.

Anderson—Cultivating the Child's Appetite. 1927.

Diller—Pioneer Medicine in Western Pennsylvania. 1927.

Crow—Ear, Nose and Throat in General Practice. 1927.

Peabody—Care of the Patient. 1927.

Wilson—Tonic Hardening of the Colon. 1927.

Kibbey—Principles of Sanitation. 1927.

Osler—Modern Medicine. v 5. 1927.

Sansum—Normal Diet. 1927.

H. THEORORE SIMON, M. D.,
Secretary.

MATAS BANQUET.

A banquet was given in honor of Dr. Rudolph Matas under auspices of the Orleans Parish Medical Society at the Chess, Checkers and Whist Club on Tuesday, December 20th. The toastmaster for this occasion was Dr. Paul J. Gelpi, and the speakers were as follows:

Dr. Matas—His Influence on the Medical Profession of New Orleans, Dr. A. E. Fossier, President, Orleans Parish Medical Society.

Dr. Matas—His Early Career, Dr. Chas. Chassaignac, Superintendent, Eye, Ear, Nose and Throat Hospital.

Dr. Matas—His Professorial Career, Dr. C. C. Bass, Dean, School of Medicine, Tulane University of Louisiana.

Response—Dr. Rudolph Matas.

COMMITTEE ON ARRANGEMENTS.

Dr. Frank J. Chalaron,

Dr. W. P. Gardiner,

Dr. Emmett L. Irwin,

Dr. T. A. Maxwell,

Dr. Paul J. Gelpi, Chairman.

The following members of the Orleans Parish Medical Society participated:

David Adiger, L. W. Alexander, Kotz Allen, Gilbert C. Anderson, E. F. Bacon, C. C. Bass, Elizabeth Bass, Henry Bayon, Geo. S. Bel, H. E. Bernadas, Robert Bernhard, Frank J. Beyt, S. M. Blackshear, Emile Bloch, Hy. N. Blum, E. R. Bowie, Muir Bradburn, W. P. Bradburn, C. L. Brown, F. Temple Brown, O. C. Cassegrain, L. L. Cazenavette, Frank J. Chalaron, Chas. Chassaignac, C. N. Chavigny, Hymen L. Cohen, Isidore Cohn, C. Grenes Cole, Maurice Couret, Jos. A. Danna, Roy E. de la Houssaye, Ph. C. DeVerges, John A. Devron, Homer Dupuy, Jules E. Dupuy, Allan Eustis, E. D. Fenner, Frederick L. Fenno, Lucien A Fortier, A. E. Fossier, Frank Gallo, T. T. Gately, Maurice J. Gelpi, Paul J. Gelpi, Hermann B. Gessner, W. A. Gillaspie, Frank R. Gomila, P. Graffagnino, Amedee Granger, George B. Grant, Julian Graubarth, J. Birney Guthrie, W. H. Harris, F. J. Hartley, M. David Haspel, Walter C. Hava, Walter F. Henderson, Arthur A. Herold, C. S. Holbrook, Earl A. Hogan, John J. Irwin, J. E. Isaacson, Adolph Jacobs, Chaille Jamison, Foster M. Johns, H. L. Kearney, F. J. Kinberger, E. L. King, T. F. Kirn, W. A. Knolle, W. H. Knolle, H. W. Kostmayer, P. G. Lacroix, C. J. Lanfried, Jerome E. Landry, Lucian H. Landry, John A. Lanford, Felix A. Larue, J. P. Leake, W. W. Leake, B. A. Ledbetter, I. I. Lemann, A. L. Levin, Joseph Levy, Louis Levy, Ernest S. Lewis, H. J. Lindner, D. A. Lines, Maud Loeber, W. A. Lurie, R. C. Lynch, Randolph Lyons, Urban Maes, M. J. Magruder, Roger J. Maihles, E. Denegre Martin, T. A. Maxwell, H. E. Menage, J. C. Menendez, Leon J. Menville, C. Jeff Miller, Leopold Mitchell, Daniel J. Murphy, J. H. Musser, Edward McCormac, P. A. McIlhenny, J. T. Nix, Alton Ochsner, J. P. O'Kelley, Walter J. Otis, G. Farrar Patton, C. V. Perrier, W. D. Phillips, J. E. Pollock, Nathan Polmer, L. L. Rabouin, W. A. Reed, W. H. Robin, Warren L. Rosen, Simon J. Rosenthal, W. C. Rucker, P. B. Salatich, E. C. Samuel, W. H. Seemann, Daniel N. Silverman, H. Theodore Simon, Sidney K. Simon, J. W. A. Smith, John Smyth, Edmond Souchon, Marion Souchon, Russell E. Stone, J. A. Storck, P. T. Talbot, Geo. J. Taquino, P. L. Thibaut, W. P. D. Tilly, W. G. Troescher, W. A. Wagner, E. H. Walet, D. L. Watson, J. O. Weilbaecher, H. L. Weinberger.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

ANNUAL MEETING, LOUISIANA STATE MEDICAL SOCIETY.

Dr. J. W. Lea's cordial invitation to attend the Louisiana State Medical Convention at Baton Rouge in April, as published in a recent New Orleans Medical and Surgical Journal necessitates more or less detailed reports from various other committees on the job.

As a member of Committee on Hotels and Reservations, I beg leave to call attention to the following:

Baton Rouge is rapidly getting set for this convention and hopes to demonstrate that with its present equipment it is one of Louisiana's most desirable convention centers.

One group of hotels on Lafayette and Third street recently completed, added to, or remodelled, have tentatively set aside two hundred and fifty rooms to take care of reservations and can add to these as occasion demands. Rates $1.50 and up.

Reservations are already being made and it is urged that this be not put off too long. We expect to take care of all comfortably whether reservations are made or not but are anxious that we get some idea ahead as to just what you want. Some may want quiet rooms to themselves for a period of relaxation, not many like this but maybe a few. Many will come in pairs or groups and prefer quarters together.

Others will follow Dr. Lea's suggestion and load the family into that new 60-mile Ford or '28 Cadillac and expect appropriate comforts on completing a wonderful drive through centers around which Louisiana's history has developed.

Speaking of cars, Mr. Day's downtown storage, with an acre or two of parking space and housing facilities for two hundred and fifty cars and some more, should be your first objective if you drive over. Mr. Day will take care of your car and direct you to Headquarters if you don't see it just across the street. Get registered, put on a badge, and get busy.

Should you prefer a few days detachment from a steering wheel, we have trains from everywhere all through the day. Most of them stop at the Union Station two blocks from official Headquarters. Get off the train with the crowd, climb the hill with them, pause under Baton Rouge's slogan, "Welcome to the Highlands." Turn north one block to headquarters and begin shaking hands. Of course, adequate taxi service is here for you.

In making reservations you might mention your car if you prefer to drive, not that it is necessary, but to give Mr. Day a line on what to prepare for.

We imagine many of you will drive over, and as an extra precaution against delaying matters, we wish to warn you not to linger along the way. Do not start any political prognoses at Alexandria, Donaldsonville or Opelousas. Speed up through the Teche and Atchafalaya country, Evangeline's oaks and the buried city of Melville will be there when you return. Bayou Manchac and old Galvez, center of Spanish culture in semi-prehistoric days and rich in tradition, will tempt you. Vicksburg, Natchez, and Port Hudson may protest against their neglect at the hands of latter day historians. The Natchez Trace, along which Jackson once marched the Kentucky and Tennessee squirrel hunters past the spot now forgotten where the Federal Government later built a ten thousand dollar monument to the memory of a general never known to history, may awaken emotions. The millions of dollars worth of strawberries in Livingston and Tangipahoa or the dogwood blossoms and yellow jasmin along the trout streams and waterfalls of the Felicianas will prove alluring. It will be spring time and as prosaic medicos we urge you to remember the serious object of our gathering. Meanwhile, co-operate with us by making known your wants along hotel line.

DR. W. H. PIPES,
Chairman, Hotel Committee, Baton Rouge.

At a recent meeting of the Shreveport Medical Society, the following officers were elected for 1928:

President, Dr. M. S. Picard; First Vice-President, Dr. O. C. Rigby; Second Vice-President, Dr. T. J. Fleming; Secretary, Dr. M. S. LeDoux; Treasurer, Dr. J. R. Stamper.

The Seventh District Medical Society held its winter meeting at Crowley, La., Dec. 7th, 1927, with a good attendance.

Drs. Henry, Fuselier and Cooper were elected to membership in this society.

The subject of chiropractics was brought up and called forth much discussion. The secretary being authorized to report several chiropractors who are practicing in the Seventh District.

The program was very interesting and enjoyed by all present. It was as follows:

1. "Urology in General Practice," by Dr. H. W. E. Walther, New Orleans, La.

2. "A Consideration of Certain Intestinal Parasites," by Dr. Dan N. Silverman, New Orleans, La.

3. "Leucorrhea," by Dr. E. M. Ellis, Crowley, La.

4. "Tularemia," with Case Report, by Dr. B. Goldsmith, Lake Charles, La.

Drs. H. W. E. Walther and D. N. Silverman of New Orleans, La., were unanimously elected honorary members of this society.

An unusually good dinner was served by the Catholic ladies during the progress of the meeting, the Creole gumbo, as only southwest Louisiana can make, called forth many exclamations of approval.

The next meeting of the Seventh District Medical Society will be held the first week of March in Lake Charles, La.

SIXTH DISTRICT MEDICAL SOCIETY NOTES.

Lucullus, that prince of gourmets and most gracious of Roman hosts, in all his pomp and glory, never set such a sumptuous feast nor gathered about him such a convivial and congenial group as assembled around the festive and flower-bedecked board and gastronomically enjoyed the banquet tendered by the staff of the New Fenwick Sanitarium at said institution in Covington, on Jan. 19th, complimentary to the St. Tammany Parish Medical Society on the occasion of its regular monthly meeting and installation of the 1928 officials.

The gustatorial exquisiteness of this feast will long live in the memory of the participants.

Masters Henry and Byron Gautreaux entertained with delightfully appropriate music during the repast.

The society met in formal session in the library of the New Fenwick Sanitarium with retiring President C. F. Farmer and retiring Secretary-Treasurer H. D. Bulloch at their respective posts. After the reading and adoption of the minutes, the officers elected were the following, viz: Dr. F. F. Young, President; Dr. W. E. Stevenson, Vice-President; Dr. Roland Young, Secretary-Treasurer; Dr. A. G. Maylie, delegate to the State Medical Society, and Dr. J. K. Griffith, alternate, were inducted into office, whereupon President Young delivered a most interesting address of appreciation, thanks, and appeal for concerted action and team work in behalf of organized medicine.

Judge Carter delivered a stirring address, using as a theme "The Allied Professions, Law and Medicine."

Others speaking were Drs. Dupuy, Weiss, Stephenson, Gouax, Williams, Hebert, Gelpi, Landry.

The President then announced the following committees:

Scientific Papers—Drs. Roland Young, W. E. Stevenson and J. F. Buquoi.

Publicity and Legislation—Drs. A. G. Maylie, J. K. Griffith and H. D. Bulloch.

Entertainment—Drs. H. E. Gautreaux, R. B. Paine and F. R. Singleton.

Finance—Drs. C. F. Farmer, G. McG. Stewart and J. F. Polk.

The next meeting will be held at Mandeville on February 10, 1928.

Adjournment and reassembling in the dining hall, then—

"The Muses and Oblivion."

The following attended the meeting and banquet:

Guests—Judge P. B. Carter, legal advisor to the Society, Doctors C. A. Weiss, 6th District Councillor, and Lester J. Williams of Baton Rouge; Doctors E. E. Lafferty and J. H. Slaughter, Jr., of Bogalusa; Dr. Frank Gouax, Councillor 3rd District, Lockport; Doctors Jules Dupuy, Homer Dupuy, Lucien LeDoux, A. E. Fossier, Jerome Landry, T. J. Dimitry, Paul Gelpi, of New Orleans; Doctor Laurie Young of Covington.

Members—Doctors F. F. Young, W. E. Stevenson, C. F. Farmer, Roland Young, H. D. Bulloch, F. R. Singleton, J. K. Griffith, J. F. Polk, R. B. Paine, H. E. Gautreaux, G. McG. Stewart, J. F. Buquoi, N. M. Hebert, F. F. Young, Jr., and A. G. Maylie.

IBERIA PARISH MEDICAL SOCIETY.

The annual meeting of the Iberia Parish Medical Society was held Thursday evening at 2:30 in the office of its Secretary-Treasurer, Dr. Carstens. The following officers for 1928 were elected: Dr. P. A. LeBourgeois, President; Dr. P. A. Boykin, Vice-President; Dr. W. F. Carstens, Secretary-Treasurer; Dr. Guy A. Shaw, delegate to State Medical Society; Dr. Jos. Raphial, alternate. The members of the society, in addition to above mentioned, are Dr. U. S. Perret, Patoutville; Dr. J. N. Pharr, Weeks Island; Drs. Geo. J. Sabatier, J. W. K. Shaw, H. A. King, E. N. Landry, H. J. Dauterive and J. W. Sanders.

Dr. W. W. Chipman of Montreal will be the guest of the New Orleans Gynecological and Obstetrical Society. The Orleans Parish Medical Society meets on the night of February 15th in joint session with the New Orleans Gynecological and Obstetrical Society, and Dr. Chipman will address the joint meeting at this time on "Acute Conditions in the Lower Abdomen of the Female."

Dr. John O. Polak, of Brooklyn, N. Y., will be present at this time also, and will speak on "The Toxemias of Pregnancy."

DIED: Richard Leander Seagle, Jesuit Bend, La., Med. Dept. of the Tulane University of La., N. O., 1906. Members of the Louisiana State Medical Society, aged 51; died Nov. 15 at New Orleans.

DR. FLOYD L. HODGE IS TAKEN BY DEATH.

(Times-Picayune, Dec. 22, 1927)

Dr. Floyd L. Hodge, 63 years old, veteran north Louisiana physician and well known throughout this portion of the state, died at his home at Calhoun early today after an illness of three months. The funeral services are to be held Thursday morning at the residence in Calhoun with burial at that place.

Dr. Hodge, a native of Union Parish, received his degree from a Louisiana medical school and after his graduation went to Calhoun, where he practiced medicine ever since. He was active in the affairs of Ouachita Parish and his passing is mourned widely.

His wife and seven children survive. The children are: Bryan, Irving, Mary, Sarah, June, Jerry and Floyd, Jr. A brother and sister also survive, Dr. Wesley Hodge, of Quanah, Texas, and Mrs. Virginia Hodge Ellis, of Calhoun. Dr. Hodge was an active member of the Calhoun Methodist Church and the pastor will conduct the funeral service Thursday.

DOCTORS PAY DR. CRUTSINGER FINE TRIBUTE.

At the meeting of the Webster Parish Medical Society, which was held at the Imperial Hotel on Tuesday at noon, resolutions of respect were voted by the society in memory of the late Dr. Paul Crutsinger, who was president of the society.

The committee appointed to draw up these resolutions was composed of Drs. Longino, Godfrey and Norman. They have drawn up and approved the following resolution:

"In the death of Dr. Paul Crutsinger, the medical profession lost a valuable member, the community a useful doctor, his family a devoted husband and loving father; the parish and state a distinguished citizen. Dr. Crutsinger's death strikes terror into our ranks when we think of a member so young and useful being taken from our midst so suddenly, but we recognize the hand of God and how his will is in all the affairs of life.

"Resolved: The Medical Society of Webster in regular meeting bemoans the untimely death of our late friend and President and shall truly miss his cheering words and wise councils. We take this opportunity to extend our deepest sympathy to the bereaved wife, lovely children and other relatives and friends in this great hour of loss and bereavement.

LUTHER LONGINO
B. A. NORMAN
E. B. GODFREY

Copies have been mailed to the family of Dr. Crutsinger and to the local press as well as being written into the records of the society.

The following letter needs no explanation:

January 15, 1928.

Mr. Marshall Ballard, Editor,
New Orleans Item,
New Orleans, La.

Dear Mr. Ballard:

I read with a great deal of interest your editorial on death rates in this morning's Item-Tribune:

In this connection, I have made inquiries regarding the death rates of large cities and only last week, when in Chicago, I asked Dr. Arnold H. Kegel, Commissioner of Health, if the death rates as published for 1927 included residents and non-residents and what was their population, white and colored. In reply, he stated "the death rates for 1927 includes both residents and non-residents—94.75 per cent white and 5.25 per cent colored. The death rates for each, for the year 1926, are: White, 10.85; colored, 22.83; or total 11.68. Then he further says, the white population is estimated: total, 3,102,200; colored, 163,000. Deaths by color and corresponding rates are not yet compiled, for 1927."

The World's Almanac shows on page 313, estimated population of cities for 1926-27: Chicago, 3,102,800 and New Orleans, 424,400. The Census report for 1920 shows Chicago to have: Whites, 2,589,169; colored, 112,536, while New Orleans is

shown 286,516 whites against 101,303 colored. According to estimated population, at present, New Orleans has: Whites, 314,130; colored, 110,-370. The Death Rates as published in the News Almanac shows, total for Chicago in 1925—11.5; New Orleans, 19.2.

I am especially interested in the closing paragraph of the editorial that the death rate can be reduced to the minimum only by reducing this too high death rate (of the colored) which of course affects the whites. I wonder if you will not agree with me that the white death rate, too, cannot be reduced.

I have great faith the time is not far distant when the death rate of New Orleans will be materially reduced and I do not know of anything at present that would contribute more substantially to bringing about the desired result than the improvement of our milk supply and modernization of our markets.

Yours very truly,

OSCAR DOWLING,
President.
Louisiana State Board of Health.

A NATION-WIDE CAMPAIGN FOR THE EARLY DIAGNOSIS OF TUBERCULOSIS.

To procrastinate with tuberculosis is to gamble with death. The hope ultimately of conquering this disease lies in our ability to take action promptly. This, in turn, depends upon efficiency in discovering all cases of tuberculosis before they have had opportunity to spread the infection.

These facts have been shouted from the housetops for the past twenty years. But doctors still report that most cases of tuberculosis which come to them for their first examination are found to be in an advanced stage of the disease. A recent census of patients in tuberculosis sanatoria in the United States shows that only 16 per cent are diagnosed as early cases on entrance.

During March, 1928, tuberculosis and health associations of the United States, led by the National Tuberculosis Association, will conduct an intensive publicity campaign to emphasize the importance of the early diagnosis of tuberculosis.

The aim of the campaign is twofold, first to focus the attention of the public at large upon the danger signs of early tuberculosis and to urge them to go to their doctor for examination; and second, to stimulate renewed interest on the part of the medical profession in the recognition of early signs of tuberculosis.

The American Public Health Association, at its annual meeting held in Cincinnati, October, 1927, endorsed by resolution the plan of the campaign and offered to lend assistance to the movement. The American Medical Association has agreed to stimulate the interest of the medical profession through its Journal and to interest the lay public by publishing articles and editorials on the subject in Hygeia.

State, parish and city tuberculosis and health associations will organize meetings where talks will be given, motion pictures shown and pamphlets distributed, all emphasizng the importance of early diagnosis. The National Tuberculosis Association is preparing several million pieces of printed matter for distribution through its affiliated associations. A motion picture for lay audiences to be called "Let Your Doctor Decide," and another for medical groups entitled "The Doctor Decides," will be used in the campaign.

It is expected that 10,000 billboards will carry the message of the campaign. The text of this poster will be the keynote of the entire campaign. The designer of the twenty-four sheet poster is F. G. Cooper, known the world over for his incomparable war posters. The designer of the smaller poster and posterette is Ernest Hamlin Baker, another artist of national prominence. The text of the standard circular and of all of the printed matter has been approved for accuracy of statement by a committee of the National Tuberculosis Association. The entire campaign will be financed out of the proceeds of the Christmas seal sale.

Besides posters, motion pictures and other methods of publicity, the press, ever alert to popular interest, may be counted on to publish interesting articles of information and news, telling about the progress of the campaign.

In short, every effort will be put forth to make the effectiveness and extent of this tuberculosis educational drive equal to that of the annual campaign for the sale of Christmas seals, which has been so uniformly successful. If the effort succeeds, similar concentrated educational campaigns will be planned or succeeding years.

All medical, health, social and civic organizations, both non-official and official, are urged to participate in this movement. A united, nation-wide campaign will help greatly to focus attention upon this question.

For further details concerning the campaign, address the Tuberculosis and Public Health Association of Louisiana, 535 St. Charles Street, New Orleans.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examination:

Junior Medical Officer (Interne)

Applications for junior medical officer (interne) will be rated as received by the Civil Service Commission at Washington, D. C., until June 30, 1928.

The examination is to fill vacancies in Veterans' Bureau Hospitals throughout the United States, and in positions requiring similar qualifications.

The salary ranges from $1,860 to $2,400 a year without allowances, or from $1,260 to $1,860 a year with quarters, subsistence, and laundry, the entrance salary within the range stated depending upon the qualifications of the appointee and the duty to which assigned.

The duties, under immediate supervision, are to admit patients, take histories, make physical and mental examinations and record findings; to make ward rounds of inspection, note charts, record observations; to prescribe for minor ailments or for acute or emergency cases and to dispense medicine in emergency; to perform minor surgical operations and to assist at major operations and in redressing; to administer anaesthetics; to make routine laboratory tests and analyses; to assist at out-patient clinics in dressing and in administering vaccines; to keep records, make up case histories; answer correspondence relating to patients, and compile statistics requiring medical training.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information may be obtained from the United States Civil Service Commission at Washington, D. C., or the secretary of the United State civil service board of examiners at the post office or customhouse in any city.

The United States Civil Service Commission announces the following open competitive examinations:

Assistant Medical Officer
Associate Medical Officer
Medical Officer
Senior Medical Officer

Applications for these positions will be rated as received by the Civil Service Commission at Washington, D. C., until June 29, 1928.

The examinations are to fill vacancies in various branches of the service throughout the United States.

There are vacancies in practically all branches of medicine and surgery, but there is especial need for medical officers qualified in tuberculosis or neuropsychiatry.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information may be obtained from the United States Civil Service Commission at Washington, D. C., or the secretary of the United States civil service board of examiners at the post office or customhouse in any city.

MEDICAL CORPS FIRST HIT.

Records Show It Suffered Initial Casualties of War.

Washington, Dec. 17.—(A. P.)—Lieut. Louis J. Genella, Medical Corps, was the first American Army battle casualty in France, a survey of the records has disclosed. He was wounded by a shell fragment July 14, 1917, while serving with British forces.

The first battle deaths were Lieut. William T. Fitzsimmons and Privates Oscar C. Tugo, Rudolph Rubino, Jr., and Leslie G. Woods, all of the Medical Corps. They were killed in the bombing of the base hospital at Dannes-Camiers, France, by enemy airplanes on Sept. 4, 1917.

The first combatant casualties were the deaths of Lance Corp. James B. Gresham and Privates Thomas F. Enright and Merle D. Hay, all of Company F, 16th Infantry, in a German raid on the American trenches at Bathelemont, Nov. 3, 1917. (New York World, Dec. 18, 1927.)

Dr. Genella is a member of the Orleans Parish Medical Society and the Louisiana State Medical Society.

A board of officers is convened to meet Feb. 6, 1928, for the purpose of examining candidates to determine their eligibility for commissions in the Regular Corps of the Service Jan. 10, 1928.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

AN APPRECIATION OF DR. RUDOLPH MATAS.

The State Medical Association is genuinely glad of the privilege and opportunity to testify to its regard for Dr. Rudolph Matas. Many of our members first knew him when they were his pupils. All of us who have come in contact with him revere and love and respect him as a man, as a teacher, and as a scientist. Contact with him always stimulates and he has ever proven a source of inspiration to us, not only by his brilliant contributions to medical science but by his many words of encouragement and by his unvarying courteous and patient personality.

It is accordingly with great pleasure that we acknowledge our obligations and give expression to the hope that we may continue this very pleasant association for many years to come.

The members of the State Association extend to Dr. F. J. Underwood sympathy in the loss of his mother who passed away at Clarksdale, Mississippi, January 10th, 1928.

The DeSoto County Medical Society met in regular session, January 2nd, 1928. In addition to other business the following officers were elected for the year:

President: Dr. W. S. Weissinger, Hernando.

Vice-President: Dr. A. L. Emerson, Hernando.

Secretary and Treasurer: Dr. L. L. Minor, Memphis, Tenn.

Delegate to State Ass'n: Dr. L. L. Minor, Memphis.

Alternate Delegate: Dr. A. V. Richmond, Lake Cormorant.

Censor: Dr. W. J. Gillespie, Cockrum.

The Tri-County Medical Society met in Brookhaven, December 13 for their annual banquet. Officers for the ensuing year were elected as follows:

President: Dr. E. B. French, McComb.

Vice-President: Lincoln — Dr. R. E. Higdon, Brookhaven.

Copiah—Dr. J. D. Dampeer, Crystal Springs.

Pike—Dr. M. D. Ratcliff, McComb.

Walthall—Dr. J. E. Brumfield, Tylertown.

Lawrence—Dr. B. S. Waller, Silver Creek.

Secretary-Treasurer: Dr. J. R. Markette, Brookhaven.

Censors: Dr. J. R. Markette, Brookhaven; Dr. J. W. Wilson, Monticello.

Delegate for Lawrence County: Dr. T. F. Conn, Monticello.

Medico-legal Defense: Dr. F. E. Collins, Brookhaven.

Members Legislative Committee:—

Copiah: Dr. J. D. Dampeer, Crystal Springs.

Lincoln: Dr. O. N. Arrington, Brookhaven.

Pike: Dr. W. S. Lampton, Magnolia.

Walthall: Dr. B. L. Crawford, Tylertown.

Lawrence: Dr. B. S. Waller, Silver Creek.

The next quarterly meeting will be held in McComb.

The Auxiliary to the Tri-County Medical Society elected officers as follows:

President: Mrs. O. N. Arrington, Brookhaven.

First Vice-President: Mrs. E. B. French, McComb.

Second Vice-President: Mrs. H. L. Bauer, McComb.

Treasurer: Mrs. F. E. Collins, Brookhaven.

Secretary: Mrs. J. R. Markette, Brookhaven.

Chairman Courtesy Committee: Mrs. W. H. Frizell, Brookhaven.

The Homochitto Valley Medical Society met January 12th at Natchez. The following were elected to membership: Dr. S. E. Fields, Centerville; Dr. T. R. Mellard, Centerville; Dr. S. L. Hutchinson, Natchez; Dr. J. G. Logan, Natchez.

The program consisted of:

"Subphrenic Abscess".....Dr. J. W. D. Dicks Natchez.

"Secondary Syphilis Co-extending with Tuberculous Adentitis"

Dr. J. S. Ullman, Natchez.

The next quarterly meeting of the Homochitto Valley Medical Society will be held at Natchez, April 12th.

Doctor, have you sent in your dues?

The Staff meeting of the Vicksburg Sanitarium was held January 10th, 1928, when the following program was presented:

"Analysis of Records and Work of the Various Departments of the Hospital."

"Carcinoma of the Cervix Uteri"..... .....Dr. G. M. Street

"Acute Appendicitis of Amoebic Origin"..... .....Dr. A. Street

"Chronic Obstructive Jaundice"..... .....Dr. J. A. K. Birchett, Jr.

"Lung Suppuration".....Dr. L. J. Clark

"Dental Cyst with Maxillary Sinusitis"..... .....Dr. E. H. Jones

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Members of the Central Medical Society met at Jackson, December 20th, 1927 and elected the following officers for the year, 1928:

President: Dr. J. P. Wall, Jackson.

Secretary: Dr. R. W. Hall, Jackson.

Vice-Presidents:

Hinds—Dr. W. L. Britt, Jackson.

Yazoo—Dr. O. H. Swayze, Yazoo City.

Madison—Dr. J. H. Howell, Canton.

Simpson—Dr. M. L. Flint, D'Lo.

Rankin—Dr. W. H. Davis, Pelahatchie.

Scott—Dr. W. A. Jones, Morton.

Medico-legal Defense Committee:

Hinds—Dr. J. P. Wall, Jackson.

Yazoo—Dr. Carl Day, Yazoo City.

Madison—Dr. L. C. Jones, Madison Station.

Simpson—Dr. Henry Boswell, Sanitorium.

Rankin—Dr. W. H. Watson, Brandon.

Scott—Dr. J. W. Townsend, Morton.

Board of Directors:

Dr. E. H. Galloway, Jackson.

Dr. R. W. Hall, Jackson.

Dr. H. R. Shands, Jackson.

Dr. D. W. Jones, Jackson.

Dr. J. W. Barksdale, Jackson.

Dr. J. P. Wall, Jackson.

Dr. G. S. Atkins.

As no program was announced, we are led to infer that the election was so hotly contested as to leave the members too exhausted to present any essays afterwards.

If you have not already paid your dues, send them in to your county secretary.

The Northeast Mississippi Thirteen Counties Medical Society met at Starkville, December 20th, 1927. The following program was delivered:

"Functional Hearing Test with Tuning Forks; Special Reference to Treatment of Acute Obstructive Conditions"..... .....Dr. Lon W. Dotson, West Point

"Rat Bite Fever".....Dr. C. B. McCowan, Nettleton

"Treatment of Ununited Fractures"..... .....Dr. W. W. McCrae, Corinth

"Thoracic Conditions in Children"..... .....Dr. W. L. Rucks, Memphis, Tenn.

"Preliminary and Post Operative Treatment" .....Dr. C. R. Berry, Tupelo

The election of officers followed.

President: Dr. Hunter L. Scales, Starkville.

Vice-Presidents:

Alcorn—Dr. W. A. Johns, Corinth.
Calhoun—Dr. E. B. Young, Vardaman.
Chickasaw—Dr. T. D. Houston, Woodland.
Clay—Dr. S. R. Deans, West Point.
Itawamba—Dr. S. L. Nabors, Nettleton.
Lee—Dr. R. C. Berry, Tupelo.
Lowndes—Dr. J. W. Lipscomb, Columbus.
Monroe—Dr. C. E. Boyd, Amory.
Noxubee—Dr.A. R. Sanders, Brooksville.
Okitebbehha—Dr. O. W. Roberts, Sturgis.
Pontotoc—Dr. R. P. Donaldson, Pontotoc.
Prentiss—Dr. L. L. McDougal, Booneville.
Tishimingo—Dr. N. C. Waldrep, Tishimingo.

Secretary: Dr. James M. Acker, Jr., Aberdeen.

Delegates to State Association:

Alcorn—Dr. M. W. Robertson, Rienzi.
Calhoun—Dr. W. J. Aycock, Derma.
Chickasaw—Dr. V. B. Philpot, Houston.
Clay—Dr. A. K. Naugle, West Point.
Itawamba—Dr. J. T. Senter, Fulton.
Lee—Dr. A. J. Stacey, Tupelo.
Lowndes—Dr. W. C. Brewer, Columbus.
Monroe—Dr. J. M. Acker, Aberdeen.
Noxubee—Dr. J. D. Green, Brooksville.
Okitibehha—Dr. F. B. Long, Starkville.
Pontotoc—Dr. R. P. Donaldson, Pontotoc.
Prentiss—Dr. W. H. Anderson, Booneville.
Tishimingo—Dr. N. C. Waldrep, Tishimingo.

Alternate Delegates:

Alcorn—Dr. J. R. Hill, Corinth.

Calhoun—Dr. J. B. Shaw, Slate Springs.

Chickasaw—Dr. W. C. Walker, Houlka.
Clay—Dr. J. E. Ellis, West Point.
Itawamba—Dr. N. W. Nanney, Fulton.
Lee—Dr. J. H. Green, Tupelo.
Lowndes—Dr. W. J. Weimers, Columbus.
Monroe—Dr. W. R. May, Amory.
Noxubee—Dr. A. R. Sanders, Brooksville.
Oktibehha—Dr. C. R. Dodd, Starkville.
Pontotoc—Dr. Z. A. Dorsey, Troy.
Prentiss—Dr. R. B. Cunningham, Booneville.
Tishimingo—Dr. K. E. McRae, Belmont.

RESOLUTION ADOPTED AT THE MEETING OF THE NORTHEAST MISSISSIPPI THIRTEEN COUNTIES MEDICAL SOCIETY, HELD AT A. & M. COLLEGE, MISSISSIPPI, DECEMBER 30, 1927.

We, the members of the Northeast Mississippi Thirteen Counties Medical Society, in session at A. & M. College, Mississippi, thoroughly approve the course of the State Board of Health and the Attorney General in prosecuting the negro quack, Redmon. We especially thank the Attorney General for his activity in this prosecution and pledge our aid in punishment of all practitioners of medicine without license and in suppression of all kinds of fraud that are a menace to the health of the public; we resolve that the practice of chiropractic is a menace to the health of the public and earnestly request the Legislature to enact laws governing the chiropractors, as requested by the State Board of Health.

It is further resolved that a copy of these resolutions be sent to each legislator and senator in these thirteen counties, to the Attorney General, and to each member of the State Board of Health.

RESOLUTION ON HOSPITALS.

BE IT RESOLVED by the Northeast Mississippi Thirteen Counties Medical Society, assembled at Starkville, Mississippi, on December 20th, 1927 that:

The application of modern scientific medicine in the rural districts and small towns is our greatest social and economical problem.

The rural and small town population has a shortage of best trained physicians and surgeons, there being about one practicing physician to five hundred population in the larger cities of our State, where there is only one to fifteen hundred to three thousand in the rural districts.

The small hospital dispersed throughout the State in every one, two or three counties, will encourage better trained physicians and surgeons to settle in the small town, and will enable them to practice cooperative medicine, and with the help of hospital facilities and the trained nurse, they will be able to serve efficiently many more people, not only save many lives that are now being lost, but will aid them in the practice of preventive medicine and surgery, or in other words, it will enable the medical profession to bring modern medicine to the people rather than carry them to the hospital.

The State by making appropriations to the small hospitals dispersed in the counties may save many patients who cannot and will not go one or two hundred miles to a large hospital.

The man in the rural district has been paying taxes for many years to the city hospital, without receiving any direct good from it, and it is just that provision now be made for him.

The State can save money on construction and up-keep by appropriating just enough funds to the community and private hospital to take care of the actual charity of the immediate vicinity.

An increase of appropriation to the large hospitals of the State, at the expense of the small ones, is poor preventive and curative medical economics.

The construction of any more large charity hospitals in the State will be expensive and will not be the best means of bringing modern medicine to the people.

THEREFORE, the Northeast Mississippi Medical Society, composed of thirteen counties and a membership of more than two hundred, would memorialize the incoming legislature through a personal representative, elected by the society, to consider the above observations and if in its judgment the above suggestions of bringing the means of practicing modern medicine, the hospital, to the people rather than carry the people to it, thereby serving the greatest number in the most efficient way and at the least cost, are approved, this society will pledge its active aid and assistance in accomplishing this great means of serving humanity.

Signed: T. B. Long, Starkville
C. R. Berry, Tupelo
J. R. Hill, Corinth
L. L. McDougal, Booneville
Price Ivy, West Point.

The Issaquena-Sharkey-Warren Counties Medical Society announces the following to present essays and to open discussions:

FEBRUARY
H. H. Austin
J. S. Austin
A. K. Barrier
J. A. K. Birchett, Jr.
H. H. Haralson.

MARCH.
T. V. Batchelor
M. H. Bell
J. B. Denton
L. J. Clark
S. W. Johnston
Preston Herring.

APRIL.
J. A. K. Birchett, Sr.
V. Bonelli
W. H. Cooper
E. H. Jones
I. C. Knox.

MAY.
R. P. Crump
H. C. Denson
C. J. Edwards
A. Street
S. Myers.

JUNE.
W. M. Eggleston
J. S. Ewing
M. J. Few
W. H. Parsons
G. P. Sanderson.

JULY.
H. S. Goodman
S. J. Harper
B. I. Hicks
W. H. Scudder
F. M. Smith.

AUGUST.
G. Y. Hicks
T. W. Huey
C. S. Hyland
L. S. Lippincott
E. F. Howard.

SEPTEMBER.
W. G. Kiger
B. B. Martin
L. E. Martin
C. J. Lewis
G. M. Street.

OCTOBER.
J. P. O'Leary
B. T. Orendorff
D. A. Pettit
E. B. Stribbling
A. J. Podesta
N. W. Weimar.

NOVEMBER.
W. C. Pool
W. C. Seale
D. S. Smith
V. O. Stewart
D. P. Street
H. B. Wilson

The January meeting of the Issaquena-Sharkey-Warren Counties Medical Society, according to previous announcement, was to have been devoted to a round-table discussion of the relationship of the Health Officer to the General Practitioner. The following questions were suggested for consideration:

How far should the County Health Officer go, legally or ethically, in administering serums and drugs to the general public?

To what class of individuals should he render this service—prince and pauper alike, to the public generally, to children only?

Should he give such service gratuitously?

Should a public health official ever give serums or drugs as a curative measure, or only as a prophylactic?

If drugs are given at all, under what circumstances?

May a public health official administer any curative measure without infringing on the rights of the general practitiioner?

Dr. W. H. Scudder, Mayersville; Dr. L. E. Martin, Vicksburg; and Dr. S. W. Johnston, Vicksburg; together with Dr. F. J. Underwood, Jackson, and the County Health Officers of the three counties were to discuss these problems. As we go to press, no announcement of the results have been received.

Dr. John A. Mead has moved from Logtown to Denco, Miss., where he has accepted a position with Tatum Lumber Company.

Died: George King Pratt, Pass Christian, Mississippi; Medical Department, University of Louisiana, New Orleans, 1874; aged 78; died November 29, 1927, of carcinoma of the stomach.

Died: Robert L. Turner, Meridian, Mississippi; Medical Department of Tulane University of Louisiana, New Orleans, 1891; physician in charge of a hospital bearing his name; age 62; died November 9, 1927.

Died: William Orville Harris, Rome, Mississippi; University of Louisville (Kentucky) School of Medicine, 1874; Confederate veteran; aged 82; died November 21, 1927, of chronic interstitial nephritis.

Died: Oliver A. Lomax, Waynesboro, Mississippi; University of Alabama School of Medicine, Tuscaloosa, 1898; member of the Mississippi State Medical Association; aged 59; died August 28, 1927 of heart disease.

Dr. David Edsall, Dean of Medicine and School of Public Health, Harvard University, and Dr. George H. Bigelow, State Health Officer of Massachusetts, spent three days as the guests of the Mississipppi State Board of Health during the month of December. On the evening of 7th they were the honor guests at a dinner party of twenty covers at the Edwards Hotel given by the executive officer of the State Board of Health, Dr. Felix J. Underwood.

Dr. H. A. Taylor, director of the Bureau of Child Hygiene, North Carolina State Board of Health, visited the Mississippi State Board of Health on December 5.

At the December meeting of the Washington county Board of Supervisors and the City Council of Greenville a $20,000 budget was arranged for a full-time health department, the State Board of Health, Rockefeller Foundation and U. S. Public Health Service co-operating with the county and city authorities.

BOOK REVIEWS

Modern Medicine: By Sir William Osler, Bart., M. D., F. R. S. 3d ed. rev. Vol. 5. Philadelphia, Lea & Febiger. 1927. pp. 948.

This new volume of McCrae's of Osler's Modern Medicine has been carefully revised and brought up to date. There are some 19 collaborators and the volume covers diseases of the blood, lymphatic system, ductless glands, urinary system, vasomotor and trophic disorder, and finally, diseases of the locomotor system. Of special interest are treatises on diseases of the spleen by E. B. Krumbaar, diseases of the lymphatic glands by A. S. Warthin and the ductless glands by Dock and Lisser. It also contains an excellent chapter on arthritis deformans by Thomas McCrae. Many other interesting articles will be found too numerous to mention in a brief review. To sum up, it may be said that this volume conforms to the high standard set by previous volumes.

RANDOLPH LYONS, M. D.

Should We Be Vaccinated? By Richard J. Stern. New York, Harper Brothers. 1927. pp. 146.

For the purpose of analyzing the pathological and sociological factors back of the ever-continued anti-vaccination movement organized and carried on throughout the more civilized countries the author has compiled a complete bibliography and historical summary on vaccination—reasons for and analysis of the antagonism against.

It is interesting to note that for 80 years before Jenner conducted his first historic experiment in vaccination in 1796 it was a common tradition in the dairy districts of England that cowpox would protect the individual against the very severe and mutilating disease of smallpox. Those who caught cowpox early were thus considered fortunate—but the fundamental reaction to Jenner's proposal forcibly and politically to inoculate the entire population with this animal disease evoked a storm of protest that has not died down yet. Indeed at first the fight against vaccination was led by the leaders in the medical profession.

The battle by Jenner, Pearson and Woodville and others to convince the medical profession of the possibilities of vaccination—the investigaton ordered by the British House of Lords—the early denunciation of the methods of vaccination and its fancied evils make very interesting reading. With the spread of the method of prophylaxis to the continent and America, it provoked a storm of protest as it went, but always to find new champions as in Dr. Coxe, who writing in Philadelphia in 1802 remarked: "How eccentric is the conduct of mankind! With testimony in favor of the vaccine ten thousand times stronger than would be required by the most prejudiced person to convict an individual in a court of justice, is it not surprising the slightest objection can be advanced against it?"

All this reminds me of a trip last summer, that when waiting for the fish to bite, in company with one of our prominent lawyers, he suddenly requested me to convince him of the necessity for compulsory vaccination of school children. I can assure you that had I but perused these pages beforehand, a half hour of floundering argument would have been saved in finally convincing the layman of a scientific fact that we as doctors take as a matter of course. Smallpox has gotten to be such a rare disease as a result of compulsory vaccination that we are going to be troubled more and more by individuals who are curious to know why the fight should continue, and I can heartily recommend a perusal of this small volume in anticipation of these queries.

F. M. JOHNS, M. D.

The Normal Diet: By W. D. Sansum, M. D., F. A. C. P. 2d ed. rev. St. Louis, C. V. Mosby Company. 1927. pp. 136.

The second edition in two years of a rather superficial and decidedly succinct book on the diet, which should interest the layman more than the physician.

J. H. MUSSER, M. D.

Tonic Hardening of Colon: By T. Stacey Wilson, M. D. and B. Sc. (Edin.), F. R. C. P. (Lond.). New York, Oxford University Press. 1927. pp. 210.

The elastic fixation of the muscular coat of the colon here taking place is compared by the author to a section of rubber hose where *considerable force* has to be exerted to overcome it constantly to prevent a return to its former contracted dimension. The author builds up quite an ingenious and tenable theory showing the tremendous drain on the system from *this effort.* The many and varied reflexes reverberating throughout the whole body are enumerated and explained and exemplified by clinical cases.

The whole book shows originality and is well presented. Some of the views are somewhat radical, as that giving second place to electrical currents a factor in heart contractions but on the whole the book is convincing and the reader will feel well repaid.

The part dealing with etiology and treatment leaves the investigator anxious for more. a few skyagraphs could be added as the book has no plates.

NARCISSE THIBERGE, M. D.

The Diseases of Infancy and Childhood: By L. Emmett Holt, M. D., and John Howland, M. D. New York and London, D. Appleton and Company. 1926. pp. 1018.

It is sad indeed to think of the recent death of the junior editor of this classic in medical literature. Dr. Howland at the height of his wonderful medical activity died at the early age of 53. Dr. Holt died two years before Dr. Howland but had lived to be 69 years of age. The preface of this new volume is written by Dr. E. A. Park who succeeded Dr. Howland as Professor of Pediatrics at the Johns Hopkins University. It is earnestly to be hoped that Dr. Park will continue the work begun by Dr. Howland of revising more or less periodically this medical classic, a book which has so well stood the test of time today; thirty years after the first edition it still stands unrivaled as a textbook of diseases of childhood.

J. H. Musser, M. D.

Feeding and the Nutritional Disorders in Infancy and Childhood: By Julius H. Hess, M. D. Philadelphia, F. A. Davis Co. 1927. Fifth revised and enlarged edition. pp. 556.

This excellent manual on infant feeding had its inception about ten years ago and has been one of the most popular pediatric books ever since.

It covers the entire subject of feeding both normal and abnormal cases together with a discussion of the various nutritional disorders of infants and children.

A very valuable chapter in the book is that on the diets of older children with graphic illustrations of each meal and the amounts to be served.

The author has replaced the Finklestein classification of nutritional disturbances with a new terminology derived chiefly from Marriott's teachings on athrepsia, anhydremia and anhydremic intoxication.

The chapters on Rickets, Spasmophilia and Celiac Disease have been brought completely up to date.

With the rapid strides in experimental work on the diseases of nutrition the pediatric world will always await with eagerness new editions of this book.

L. von Meysenbug, M. D.

The Tongue and Its Diseases: By Duncan C. L. Fitzwilliam, C. M. G., M. D., Ch. M., F. R. C. S., Edin. and Eng. London, Oxford University Press. 1927. pp. 505.

In this volume the author has recorded a large amount of material dealing with all the phases of the tongue and its diseases. He demonstrates his capability in presenting a complete yet concise subject without the usual annoyance of boresome statistics. He realizes very well that the tongue is relatively free from morbid processes. Nevertheless, this volume is justified in that it will serve as a convenient reference.

Much of the subject matter is devoted to case reports, a relatively small part to surgery, and a considerable space is utilized in the discussion of carcinoma, with especial emphasis on the early diagnosis.

The term, "Geographical Tongue," is reserved for the description of wandering rash. Other medical diseases are discussed briefly. Unfortunately, very little space is given to the description of the tongue in such conditions as pernicious anemia, sprue, and pellagra. Two chapters are devoted to the disturbances of the salivary glands and ranula. Of particular interest in this connection are reports of cases of subcutaneous emphysema of the face, neck and upper third of the chest as a result of inflation through the ducts of the salivary glands.

R. G. Pigford, M. D.

Hernia and Hernioplasty: By Ernest M. Cowell, D. S. O. New York, Paul B. Hoeber, Inc. 1927. pp. 128.

This is a good comprehensive small volume, giving a good classification of the subject, and a good description of the various operations. The writer lays stress on his method of flap operation; and he stresses the value of using a pedicled flap from the inner and outer portions of the oblique aponeurosis. However, in the light of our present knowledge on the subject it appears that a fairly simple operation is turned into a pretty complex one with no advantages nor any better results.

Frank L. Loria, M. D.

Everywoman a Nurse: By Edith Newsome. London, Oxford University Press. 1927. pp. 204.

A very excellent compend for the laity suggesting modes and methods of treating the sick.

J. H. Musser, M. D.

Modern Aspects of the Diagnosis, Classification and Treatment of Tuberculosis: By J. Arthur Myers. Baltimore, Williams & Wilkins Co. 1927. pp. 256.

Written with the belief that the co-operation of every practitioner of medicine is essential for the successful campaign against tuberculosis, this text should indeed fulfill in a large measure the desire of the author to further educate physicians

in the diagnosis and treatment of this disease. Without being unnecessarily voluminous it handles the subject rather completely. The essential useful information has been culled from many sources, and presented in manner that should allow of ready assimilation.

Under Part I, headed "General Considerations," are presented historical and bacteriological aspects of the disease. The discussion of the modes by which the organism gains entrance to the body is well done. Chapter V, "Tuberculosis at Various Ages of Life," is of especial clinical interest.

Part II, "Diagnosis and Classification," begins with a consideration of the use of tuberculin for the detection of tuberculous infection. The author advocates heartily the use of the epidermal or intradermal tuberculin test in every careful physical examination. The exact proper interpretation of such a test is of course essential. In this same chapter the importance of differentiating between infected and diseased cattle is stressed. Chapter VII presents a valuable presentation of the symptoms and modes of onset of tuberculosis. Each symptom is discussed separately, an explanation for the production of this symptom being given where possible. The chapter on physical examination offers little and is rather disappointing. The chapter on diagnostic points is helpful. Subcutaneously injected tuberculin is considered as a diagnostic measure only of last resort. A rational classification of the disease, according to stages, completes the first part.

Part III, headed "Healing Prognosis and Prevention," is worthy of much attention. The management of the patient is described in sufficient detail with separate chapters on rest, diet, medical and nursing supervision, air, exercise, heliotherapy and the various other methods which are of secondary consideration.

The surgical treatment is discussed sufficiently to give one enough information as to this valuable modern adjunct to medical care.

The presentation of tuberculosis concludes the text, presenting interesting statistics. Certainly the evidence is all towards the assumption that the disease is preventable, that much has already been done to prevent it, and that much work yet remains. And "nothing at present is more important than the diagnosis of the disease."

WILLARD R. WORTH, M. D.

American Medicine and the People's Health: By Harry H. Moore. New York-London, D. Appleton & Co. 1927. pp. XXII+647.

Harry H. Moore's most recent book on the evolution, development and organization of medicine, especially American medicine, is worthy of the author in every respect. Though one may not entirely share the opinions of the writer with regard to the main burden of the publication, viz: organized medicine, one must do him justice and admit that he has accumulated and classified a large volume of material to prove his case.

Without discussing the chapters in detail, in a few words, as we see it, the objective of the work is a plea for better co-operation, organization and service to the public. This can only, or rather can best, be attained by making medicine and medical activities part and parcel of state functions. Perhaps not altogether subsidiary to state jurisdiction but at least promoting such an understanding as will bring the profession into contact with the state, which is next door to state control.

One should bear in mind that while Moore is not a physician he is a man with keen insight and broad views. He is qualified to write on a complex subject which involves the welfare of over one hundred thousand (men and women) physicians. And as we said before, while we may not coincide with his opinions in all respects regardless of the evidence, he may discern the tiny cloud on the horizon more clearly than the rest of us.

OSCAR DOWLING, M. D.

Gonococcal Infection in the Male: By Abr. L. Wolbarst, M. D. St. Louis, C. V. Mosby Co. 1927. pp. 237.

Dr. Wolbarst has given the profession in a single volume a book on gonorrhea in the male that has long been needed. I know of no like book in print.

His statements are emphatic and very clearly written in the plainest English. This is a book that should be in the hands of every senior medical student or young graduate at the commencement of his practice. It answers the question "How will I treat an acute gonorrhea?" so often asked by the recent graduate.

It is true that this volume deals with Dr. Wolbarst's personal views almost entirely, some of which we have to differ with, individual personal experience giving the same results. He is a very strong advocate of the use of vaccines which in our hands have been of very limited value except in the very rarest of cases. Wolbarst stresses several points in the treatment of the chronic cases, the use of the urethroscope and vasotomy. The former should be more widely used, the latter though used more extensively elsewhere, has not come to its own in the south.

The chapter on prophylaxis gives information and instruction that should be given every young person and is material well worth radio broadcasting.

The last chapter, "Views on Gonorrhea," by McDonagh, deals with statements which are very pessimistic regarding the cure of gonorrhea. McDonagh puts his faith in the use of intramuscular injections of organic chemical compounds.

MONROE WOLF, M. D.

Le Metabolisme Basal: By Claude Gautier and Rene Wolff. Paris, Librairie Octave Doin. 1928. pp. 172.

A review of the knowledge of basal metabolism in the normal individual and pathologic states. Written in French, the book will not appeal to many medical men in this country as there are more complete monographs in English by DuBois, and by King.

J. H. Musser, M. D.

Elements of General Zoology: By William J. Dakin. New York and London, Oxford University Press. 1927. pp. XVI+496.

This book contains a large quantity of interesting material dealing with biological principles rather than animal groups and emphasizing the relation of structure to function. It is illustrated with numerous excellent diagrams. Like the writers of most of the so-called "principles" texts, the author undertakes the very difficult task of introducing the student to a biological principle by describing in one chapter half a dozen different mechanisms for performing the same function.

E. S. Hathaway, M. D.

Research on the Parasitology of Plague: By L. Fabian Hirst, M. D. London, Times of Ceylon Co. 1927. pp. 448.

This is a most thorough study of the method of transmission of plague. Though the numerous charts, tables, plates and maps refer to the Colombo situation the matter is not confined to India outbreaks but the book is a masterful survey of plague throughout the world. After a complete survey of flea distribution, the author shows that by studying this ectoparasite, outbreaks of plague and their severity can be predicted with almost mathematical accuracy. Many of the hitherto mysterious elements in plague transmission are explained in this book and the reader is well rewarded by its perusal. The report represents careful and patient study and has attached to it a most complete bibliography.

The relation of grain transportation and outbreaks of plague is clearly explained and pesterinizing methods indicated. "The whole history of plague," says the author, "is an example of the manner in which the commercial enterprise of man may sow the seeds of his own destruction." It is well shown from the numerous observations and experiments that the *cheopis* flea is the principal vector and transmitter of plague, that it will outbreed the *astia* in grain and will easily be carried by the house rat to the sewer rats during a rat exterminating campaign.

Another interesting item brought out is the role of the flea enemies and flea parasites explaining the greater virulence of an epidemic in quarters where the *cheopis* first establishes itself. Reference is made on page 406 of the report to a theory of immunity transmission of a rat to its offspring—a theory which may well cause the reader much speculation.

The reviewer urges even those not interested specially in municipal health measures to read this book. The style and method of presentation of the subject are most entertaining.

Narcisse F. Thiberge, M. D.

The Ear, Nose and Throat in General Practice: By D. A. Crow, M. B., Ch. B. (Edin.). London, Oxford University Press. 1927. pp. 150.

This little book is accurate in its descriptions of pathology and practical in its recommendations of treatment. Its condensed information should be useful to the general practitioner.

The chapters on foreign bodies of the air and food passages are particularly good.

H. Kearney, M. D.

International Clinics: Edited by Henry W. Cattell. Philadelphia and London, J. B. Lippincott Company. 1927. pp. 309.

A very excellent number of the International Clinics with the usual variations between the best and the worst contributions. Practically the entire number is devoted to a series of travel clinics which have been contributed by authors in Norway, Sweden, Germany, England, Scotland and Denmark.

J. H. Musser, M. D.

PUBLICATIONS RECEIVED.

Lea & Febiger, Philadelphia: "Practical Therapeutics," by Hobart Amory Hare, B. Sc., M. D., LL.D. "X-Ray and Radium in the Treatment of Diseases of the Skin," by George M. MacKee, M. D. "The Extra-Ocular Muscles," by Luther C. Peter, A. M., M. D., Sc.D.

Williams and Wilkins Company, Baltimore: "Annals of the Pickett-Thomson Research Laboratory," Volume III.

Paul B. Hoeber, Inc., New York: "Max Von Pettenkofer," by Edgar Erskine Hume, M. D.

Bruce Publishing Company, St. Paul and Minneapolis: "The Prevention of Preventable Orthopedic Defects, with special Reference to the Spine and the Feet," by S. C. Woldenberg, B. Sc., M. D., M. Sc.

U. S. Government Printing Office, Washington: Annual Report of the Surgeon General of the Public Health Service of the United States, 1927.

Rockefeller Foundation, New York: Methods and Problems of Medical Education.

REPRINTS.

"Pyelitis of Pregnancy, Its Treatment with the Indwelling Catheter," by Winfield Scott Pugh, New York.

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THE SURGEON AND HIS PATIENT*

ISIDORE COHN, M. D.

New Orleans.

Emerson has said, "Character is higher than intellect." That this is true no one will doubt. We might also claim that intellect without character prostitutes opportunity. A surgeon without character is not worthy of the name.

When the patient selects the surgeon, he does it in the pursuit of happiness; without health, there can be no real happiness. Disease distracts one's attention from those things which he could do to contribute his share to the welfare of the community. In this light our responsibility looms large.

No group should be more conscious of the eternal truths contained in the saying "Do justly, love mercy, and walk humbly." Is there a surgeon who does not realize his own limitations? If so, he is not humble. Is there a surgeon who does not appreciate that he is dealing with that which can not be re-created by the hand of man; that the all to a family is in his hands materially, that through neglect or ignorance, an irreparable damage may result. If there is one who does not feel that way, of course, he will not feel the need of doing justly. Fair play is due the patient. If he can not handle a situation, he should admit the need for help; in the end the consciousness of having done the right thing will bring its own reward.

To relieve suffering, or prevent it, is certainly the most merciful act given to man to do.

The appreciation of our moral responsibility is the first step in the line of duty to the prospective patient.

There are three questions which arise when one is consulted by a patient: what to do—when to do—how to do?

What to do—implies study, or familiarity with literature.

When to do—implies surgical judgment and

How to do—implies surgical technique.

WHAT TO DO?

Preparation for a surgical career may be compared to the saying of an ancient seer "Prepare for death, the day before you die." Who knows when that day will come. It is implied that preparation must constantly be made. Certainly, the surgeon who wants to be able to accept responsibilities, must constantly be preparing for new ones.

Study of current literature and study of the individual cases, are the chief methods of preparing ourselves for the prospective responsibilities.

No better example of the value of familiarity with literature can be given than what was said by the late Dr. S. M. D. Clark. He was associated in an important case with our beloved chief, Dr. Matas. Noting the resourcefulness of Dr. Matas, he said, "When most men have exhausted

*Presented (by invitation) at meeting of Talladega County Medical Society, October 4, 1927.

their methods of handling a complicated situation, Dr. Matas just seems to be getting into his stride." The world marvels at Dr. Matas; men pay tribute to him everywhere. His desire for information and his ability to retain such knowledge is marvelous. Such a man inspires one, yes, drives one to study, so that he too may be able to cope with problems as they arise.

Why is one surgeon better than another. The better surgeon refuses to be a mere technician, ordered to carry out a definite procedure by a colleague, preferring conscientiously to study his cases in the light of modern methods of investigations, after which, he applies his technical skill for the benefit of his patient, at a time when experience and judgment dictate. The difference in end results lies not altogether in the greater ability of one surgeon over another, but rather in the fact that one is willing to consider each case an individual problem and another assumes a great deal, or he makes the so-called snapshot diagnosis. This latter is certainly dangerous for the surgeon and the patient, and is certainly a dangerous example to set for the young associate, who overlooks the value of surgical experience of the older colleague, and assumes that he too can make a hasty diagnosis. The viciousness of such a procedure is too degrading not to be avoided.

Why is it that some surgeons see so many rare and interesting cases, while others content themselves with routine surgery of the appendix and other easily removal organs. One investigates his individual cases, he is unwilling to attribute all symptoms as evidence of disease of a few organs, which he can easily remove, while the unrelieved patient finally casts about for someone to make a diagnosis. Unlike the early American "Millions for defense, but not one cent for tribute," we find many paying heavily for operation, but little for diagnosis, until after the original error has been discovered.

This brings us to the consideration of the second important problem which presents itself to the surgeon,—When to do, or surgical judgment.

Judgment is the result of observation, but this must be done with an inquisitive eye, otherwise, time and opportunity are wasted.

Experience enables one to form judgment more readily than his less experienced colleague. But if that experience has not been coupled with a progressive appreciation of the ever increasing number of laboratory tests, judgment then will be fallacious in an ever increasing proportion, because of the fallaciousness and undependability of intuition.

The College of Surgeons has done a noble work, in an effort to improve surgical judgment by demanding records, without which, experience must be transmitted from memory, and you will all agree that memory is inaccurate. Would one be willing today to accept statements from large Clinics, based only on memory.

On the other hand, how many valuable contributions which have caused changes in procedure, can be attributed to careful study of end results. Who can estimate the value of the Mayo Clinic records? Can one measure the good accomplished by the poetic genius of the great American Surgeon whose dreams have been translated into life-saving stations for human driftwood. A driftwood which would continue to be lost, but for the startling, yes, marvelous effects from the use of anociassociation. Some may say that George Crile has dreamed, and that his theories are not permanent contributions. Can any one doubt that his contribution to the saving of countless lives, by advocating measures to bring the poor risk patient to such a condition that surgery will have less hazards,—can any one doubt that he has taught the value of gentleness? What has made possible his dreams, if it is not familiarity with surgical literature and accurate evaluation of his experience?

Let us ask ourselves the question, why is surgery? Its one excuse is that the patient has some condition which is potentially more dangerous than the method proposed for its relief. If this is true, and it must be, then a pioneer who blazes a trail to lower morbidity and mortality, has gained a niche among the immortals. The contributions of Crile must have been one of the inspirations of the great American Institution, the American College of Surgeons. The college has made possible a condition which permits the judgment of the individual to be questioned by his fellows at a Staff meeting. We all appreciate that one will exercise every bit of reason, when he knows that his action may be subjected to question by his fellows.

How many appendices have been removed for right sided pain, when later a renal calculus has been revealed. How often has a gastro-enterostomy been done, when later,—gastric crises of tabes have proven the error of a too swift current which has swept the unfortunate patient to the table. How many patients with cancer of the rectum have extensive operations done without knowledge of the futility of the procedure, because of the existence of a metastasis to the liver.

Head injuries which in the not distant past were submitted to surgery as soon as the diagnosis of fracture of the skull was made by roentgen-ray methods, are now carefully studied before surgery is invoked. Illustrations typifying hasty and unwarranted operations could be multiplied.

Hasty operation on a patient with a head injury results in high mortality; conservatism saves life. The change in attitude of the surgeon towards head injuries has been a result of several factors; first, high mortality which follows immediate intervention, and second, appreciation of the fact that head injuries should be considered more from the standpoint of brain laceration and an associated increased intra-cranial tension, rather than bone damage. This change can be attributed more to the great work of that pioneer in Neurosurgery, Dr. Harvey Cushing, than any other individual or group. It may be worth while at this stage to see just what this change has been. Formerly when the diagnosis of fracture of skull was made operative intervention was proceeded with. Today it is conceded that fractures of the skull should be operated only when there is evidence of depression, or if there is evidence of an extra-dural hemorrhage,—middle meningeal syndrome. The routine in most cases is to determine if there is an increased intra-cranial pressure. The spinal manometer readily provides this information. Repeated spinal tappings, and the use of magnesium sulphate, glucose, or hypertonic salt solution, effectively lower the intra-cranial tension.

Will you for a moment consider with me, —fractures of the skull, handled by different men. One puts on an ice bag, does a spinal pictures, gives magnesium sulphate, has the eye grounds examined, watches the pulse rate and blood pressure; one operates hastily without the above precautions. The patient of the one recovers, and the patient of the other dies.

We may take the patient with evidence of brain tumor; one surgeon carefully tries to reduce intra-cranial tension by giving hypertonic salt solution, preoperatively, and before opening the dura, the lateral ventricle is punctured. Another surgeon in handling the same patient, may neglect these additions to technique and judgment, and he is surprised when a brain laceration, and a fungus immediately develop. The field is bloody, and what should have remained healthy brain tissue is damaged. The handicapped patient is thus maimed by the lack of judgment on the part of the surgeon.

In a paper of this type, it woud not do to elaborate on this subject. I am anxious to make clear the importance to both surgeon and patient of the surgeon being posted on current progress, so that he may

change his methods with the increase in human knowledge.

"New times demand new measures and new men,
The world advances and in time outgrows,
The laws that in our Fathers' days were best,
And doubtless after us some purer scheme
Will be shaped out by wiser men than we,
Much wiser by the steady growth of truth."
—*Kingston.*

What has been said of head injuries, applies equally well to vertebral injuries.

Until Thompson and Coleman protested, many unwarranted laminectomies were being done. It has been shown, that unless there is a spinal block, a laminectomy is not indicated. More than that, if we have evidence of complete cord severance, operative intervention will be futile.

We may for an instant turn to cases of intestinal obstruction, or even in cases of post-operative vomiting, what a fund of information can be gained by properly interpreting blood chemistry. The debt we owe to Haden and Orr for the work which they have done can not be overestimated. How many lives have been sacrificed in the belief that the patient with persistent vomiting had an acidosis, when in reality blood chemistry would have shown a high carbondioxid and low chlorid, the picture which we have learned to associate with alkolosis. If one is ignorant of this recent work, he may continue to give carbonates and thereby increase the CO_2. On the other hand, being familiar with the recent developments, the free use of chlorids may re-establish the balance, and the patient go on to an uneventful recovery.

Thoracic surgery, one of the youngest of the special fields, offers great opportunity for the exercise of judgment. Patients with empyema were formerly operated at once by rib resection. The value of delay in some of these cases was shown by the experience in the various Camps during the influenza epidemic in 1918. You will all recall the high mortality in cases operated before definite adhesions were formed. Then came the change, repeated aspirations were advocated until frank pus was found, and then resection could be done because adhesion had formed.

Abscess of lung, has in recent years demanded a great deal of attention, because of its frequency following tonsillectomies, or other operations. Hasty operations of these cases has resulted in an extremely high mortality. Conservatism in the early stages followed later by operation, lowers the mortality and saves a fair proportion of these patients.

Gallbladder surgery has been improved in recent years by the work of Evarts Graham. We now have a means of visualizing the gallbladder and arriving at a conclusion whether it is functioning or not. There are other points of value which certainly should be observed in the preparation of gallbladder patients for operation; among these should be mentioned, coagulation and bleeding time, to know whether there are indications for calcium therapy, or not.

In the anemic, exhausted patient proper preparation for surgery includes transfusion and proper feeding. By so doing you will bring happiness to families where only crepe and sympathy would be in order.

No place in surgery requires the exercise of greater judgment than surgery of the extremities.

During the last twenty years enthusiasm for operative intervention in simple fractures has caused a great deal of trouble. Simple, accurate anatomic methods applied early will obviate much unnecessary operating and disability.

The committee for the study of sarcoma of bone has done great work by indicating methods most effective in the handling of these cases.

The advent of Insulin has brought the diabetic patient in the category of a fair-risk patient, provided the surgeon avails himself of the co-operation of a well trained internist.

Having considered the question of what to do and when to do, let us briefly consider the third, how to do, or the preparation for operation or surgical technique.

To many a recent graduate, surgical technique seems a simple thing, particularly if he has been trained by real masters.

He often approaches his responsibilities unaware of the pitfalls which are about him. He should approach his responsibility in the full realization of the fact that the patient entrusted to him is dependent on his judgment and technical skill for whatever material aid it is possible to render. In accepting such a responsibility, the Golden Rule should guide us to "ascend the hill with clean hand and pure heart."

As we gaze upon the panorama which makes up the present "Ritual of a Surgical Operation," (Moynihan) and look into the future "as far as human eye can see," is it not right that we should look back just a bit and give a thought to those giants who have blazed the trail in the dense forest of human ignorance, that we might see the light of surgical truths.

Where would the surgical conscience be, had Hippocrates not lived and propounded the great oath which all should observe.

Where would we be without the teachings of Guy de Chauliac?

"Let the surgeon be well educated, skillful, ready and courteous.

"Let him be bold in those things that are safe, fearful in those that are dangerous; avoiding all evil methods and practices.

"Let him be tender with the sick, honorable to men of his profession, wise in his predictions; chaste, sober, pitiful, merciful; not covetous or extortionate; but rather let him take his wages in moderation, according to his work, and the wealth of his patient, and the issues of the disease and his own worth."

Where would technique be had not Pare given us the ligature; Pasteur, a knowledge of bacteriology; and Lister, antisepsis; Crawford W. Long, anesthesia; McDowell, abdominal surgery; Matas, modern conception of vascular surgery, and the host of other great minds who have prepared the way for us.

The real trial for the surgeon begins in the operating room. The ritual of surgical operation must be carried out in detail, otherwise disaster may come to his patient.

From the preparation of the field of operation to the discharge of the patient each link in the chain requires the most scrupulous care and attention. Each act must be performed with a definite reason, rather than automatically because others do certain things. Briefly, let us consider the following stages: first, the anesthetic; second, the preparation of the field of operation; third, operation itself; and fourth, immediate after care, which includes complications.

The selection of the anesthetic should be most carefully made,—many complications may be avoided by having an expert anesthetist. Fortunately, with the advent of the expert in this field interest increased, and the many long days of nausea, urinary suppression, hepatic insufficiency, and pulmonary complications, which were common in the days of chloroform and ether anesthesia, have disappeared. Fortunately, the use of chloroform has disappeared from our operating rooms. Ether by the drop method, or vaporized, and gas (nitrous oxid, oxygen and ethylene) have replaced the older methods.

The selection of an anesthetic involves knowledge of the patient's physical equilibrium, his kidney function, blood chemistry and the status of his heart and lung.

It is necessary for us to be mindful of the fact that each anesthetic has its dangers, and must be given with great care. I believe, that ether in the hands of the ordinary anesthetist is to be preferred to gas. Under all conditions, the patient must be carefully watched during the anesthetic and following it, for no anesthetic is fool-proof.

Field of operation. Those who apply in a perfunctory manner iodin for skin preparation hardly realize the amount of ex-

perimental work which was done to prove the greater penetrability of certain antiseptics, when compared to others.

Operation itself. Nothing aids in operating, more than a knowledge of anatomy. Compare the directness and rapidity with which one surgeon approaches the site of disease, with the indecision, sponging and handling of tissues, and the time consumed by another trying to locate himself. The one approaches directly his objective,—the diseased organ, protects other viscera from exposure, handles all tissue gently and completes his operation in a short time.

At this point, I do not mean to imply that hasty operation is a good thing, but anatomic knowledge will avoid unnecessary delay. Anatomic knowledge enables one to investigate for evidence of secondary involvment, whether it be infection, or metastasis from malignant growths. Appreciation of the route of spread of an infection, has lead to changes in the attitude of surgeon towards certain conditions.

Careless handling of tissues is an insult which lowers resistance and invites infection.

When the patient leaves the operating table our responsibility must not be delegated to House Officers, who are inexperienced, recent graduates. The patient has come to us, and not the inexperienced, recent graduate.

The patient needs rest and fluids. Rest can be obtained by the administration of hypnotics. One will be surprised how little pain follows where tissues have been handled gently.

Morphin should not be given promiscuiously in the ordinary abdominal case, because of its inhibition of peristalsis. Fluids must be supplied by rectum, hypodermoclysis and, when nausea ceases, by mouth. Nothing adds to a patient's comfort more than relief from thirst. It is our duty to do everything which will add to the patient's comfort and bring him safely through to that goal which made him seek our advice,—a return to health. In that way, the surgeon will prove to be like a sunbeam in a dungeon, or a star of hope to a patient wrapped in the darkness of despair, thus gaining for himself that spark of eternity or immortality which the human mind is capable of—Gratitude.

RECENT ADVANCE IN OPHTHALMIC SURGERY.*

VICTOR C. SMITH, M. D.,

NEW ORLEANS, LA.

The progress of ophthalmic surgery has more than kept pace with the other branches of medicine. The trend of today is towards simplicity and practicability. We are learning to help the sick get well more painlessly and quickly, more completely and simply. We are beginning to understand how to avoid hairsplitting technicalities which have little or nothing to do with the patient's recovery. We are adapting our knowledge and skill more and more to the individual needs of each patient rather than adhering closely and rigidly to orthodox rules based upon the law of averages, and often upon the mistaken conceptions of the past. The slight differences of operative technique which we so frequently see usually only represent a surgeon's adaptation of certain basic principles concerning minor and usually important details. Methods which may be of value in foreign countries, however, are often not adapted to the needs of us more practical Americans. Distant pastures appear greenest and distant clinics are apt to infer a superiority which in reality does not exist.

OPERATIVE RISKS.

That rarest of jewels which we call surgical judgment really represents an intimate understanding of operative risks. The successful ophthalmic surgeon not only understands eye operations, eye and

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general diseases, but above all, human beings. He adapts his skill and knowledge to the individual needs of each patient.

Generally speaking, we all know that those who are healthy and happy get sick less often and that their chances of recovery are better. So in ophthalmic surgery the general well being of the patient often decides the success or failure of even the most skillfully performed eye operation. Active syphilis probably increases the risks of delayed healing sufficiently to justify preliminary treatment unless, of course, urgency is necessary. The same is true of severe infections involving the teeth, tonsils, sinuses, appendix, gall-bladder, etc. Less severe extra-ocular infections may or may not justify preliminary general treatment. The only safe guide is the Golden Rule. The cure must never be worse than the disease. In general sickness, like diabetes, it is often possible to reduce the constitutional factor to a minimum when the risks of ocular operation are not abnormally increased.

PREPARATION OF PATIENT.

Generally speaking, if eye surgery is to be successful, it must be painless, before, during and after operation. The accuracy and dexterity necessary to successful ophthalmic surgery is impossible in a pained patient. Fifteen grains of chloral and twenty grains of bromid about one hour before the operation relaxes the mind and minimizes that very uncomfortable and panicky feeling. Combined with perfected local anesthesia, there is no reason why practically any ophthalmic operation cannot be performed painlessly.

The conjunctiva nearly always contains an occasional staphylococcus, xerosis bacillus or diphtheroid. Unless the ocular tissues are especially sensitive to infection these do not contraindicate operation. Other organisms, however, such as the pneumococcus, streptococcus, influenza bacillus, etc., greatly increase the liability of infection because after intraocular operation they so often invade the internal eye. During epidemics of pink eye the risk of post-operative infection is greatly increased. Some surgeons can apparently determine the number and character of organisms by simple inspection of the conjunctiva; others insist upon a smear and culture. The important thing is not to operate if the risks are unjustified.

Where the conjunctival flora is practically normal, liability to post-operative infection is further reduced by copious irrigation with a sterile, non-irritating solution. No one formula apparently has any decided advantage. Care, thoroughness and cleanliness are what really count. In the European clinics forceful and copious irrigation with a 1-5000 oxycyanid of mercury solution is most frequently used. At Guists' clinic in Vienna, this is supplemented by gentle massage of the conjunctiva near the upper limbus with a cotton tampon dipped in the oxycyanid solution. The application of a 5 per cent iodin solution to the lashes and lids possibly further reduces the frequency of post-operative ocular infection.

Regional anesthesia in ophthalmic surgery marks a new era in making our surgery painless and safe. The eyeball receives its sensation principally through nerves from the conjunctiva, the extra-ocular muscles and those which enter at the posterior pole. The first is anesthetized by the installation of a few drops of 4 per cent cocain or 2 per cent butyn solution. The second requires anesthesia only in extra-ocular operation, such as enucleation, and the third is probably best anesthetized with 5 to 10 minims of a 2 per cent novocain solution injected near the upper temporal orbital apex. A 1½ inch 30 gauge needle is introduced in the skin or conjunctiva near the temporal orbital floor and directed gently upwards toward the upper temporal orbital apex as far as the needle will go. A ten minute delay is advisable. Satisfactory anesthesia is usually evidenced by a slight prompt pupillary dilatation. Combined with the drop and injec-

tion anesthesia, adrenalin not exceeding 5 minims is often of practical help.

OPERATIVE TECHNIQUE.

It is interesting to note how many slight differences have arisen in the ophthalmic operating room and how few important ones. In the European clinics immature senile cataract is much more frequently operated upon in order to reduce the unpleasant period of waiting for maturity. Although American ophthalmologists, as a class, feel that this waiting period is justified by quicker healing and better visual result, the use of suction, anterior chamber irrigation, and spoons for removing cortical debris apparently make their visual results and convalescent period about the same as ours. Akenisis or injection of the orbicularis muscle with anesthetic solution to prevent lid squeezing during intra-ocular operation is regarded as one of the greatest newer safeguards in ophthalmic surgery. A further improvement in the same direction is the routine use of canthotomy as practiced in Axenfelds' clinic, which has the advantages of enlarging the operative field markedly, and of preventing squeezing of the lids not only during operation but for the next several days as well. The injection for akenisis and canthotomy is the same and is accomplished by one cc. of 2 per cent novocain solution introduced slightly back of the temporal orbital wall and deeply injected into the tissues of the upper and lower temporal lids extending to the margins.

CATARACT EXTRACTION.

Of the many and varied methods of ocular fixation the use of a suture under the superior rectus tendon, as introduced by Elsching, promises to be more or less universally adopted.

The tendency of today is toward broad conjunctival flaps. Among the interesting adaptations is that of Von Blascovics, of Budapest, who undermines the entire upper ocular conjunctiva at the limbus and fixes it by two sutures to cover the whole upper cornea thus protecting the entire incision against infection, injury and iris prolapse.

Increased risk of vitreous loss has prevented the general adoption of intracapular extraction. The Barraquer suction and the Smith intracapular operations do not seem well adapted for American ophthalmologists and patients. The Torok-Knapp extraction with non-tooth, capsule forceps promises to be more widely used. Let us not forget that cataract extraction is a slight of hand trick as much as any seen on the vaudeville stage. Each surgeon must decide for himself how he can do the trick best and with the fewest failures. A technique that is brilliant and successful for one may be only a dismal failure for another. In most instances slight variation of technique make no appreciable difference in the visual result and that is what counts. Take for example the Hess operation in which a small peripheral iridectomy is made immediately after the lens is extracted in order to retain the round pupil. This operation is done very frequently in Europe and is relatively rare in America. In reality the visual result is practically the same as with our ordinary combined extraction.

AFTER TREATMENT.

The widely different methods used in the post-operative treatment of cataract and other intra-ocular operations with practically identical results show that the bandaging of both eyes and the keeping of patients in bed for a week and many other details that have been accepted as gospel, must not be taken too literally. The eye must be reasonably protected from handling, injury and infection, and there is no one single method of doing this which stands out in bold relief. We have learned that too much handling after operation frequently does harm. Irrigation can only introduce organisms from the lids, etc., which were not previously infective to the eye.

GLAUCOMA.

Practically all glaucoma operations are designed to reduce increased tension by:

(a) Increasing the filtration space at the angle of the anterior chamber as with anterior sclerotomy; (b) excising a piece of the iris root as with iridectomy; (c) replacing the aqueous with presumably more filtrable fluid as with parecentesis; (d) producing an easy outlet for the surplus intraocular fluid and a drainage bed for its distribution as in the operations of LeGrange and Elliott. Sclero-iridectomy is a combination of the first three principles and possibly the fourth, as is also the trephine operation. Generally speaking, the Elliott technique is best adapted to non-inflamed eyes because of its somewhat increased traumatism, while sclero-iridectomy is best adapted for inflamed eyes. The amount of increased drainage necessary and the traumatism that an eye can survive really must decide the type of operation and its success. Iris incarceration, as introduced in the operations of Borthen, Holth and others, although opposed to the teachings of the past, is apparently being more widely and successfully used. Cyclodialysis, as introduced by Elschnig, Gradle and others, is apparently effective in some hands and equally ineffective in others.

ENUCLEATION.

The world war, amongst other things, proved that the suturing of Tenon's capsule, conjunctiva, extra-ocular muscles, etc., are of little importance in the appearance of the subsequent artificial eye. It is traumatism of the orbital tissues that really matters because every cut means a scar, which, in turn, means a worse fitting artificial eye. Regional anesthesia has made this operation absolutely painless, simple, and rapid, in that two to four minutes is the average duration.

Any foreign substance introduced into Tenon's capsule will be extruded, absorbed, encapsulated or vascularized. The last is the ideal, which thus far has not been entirely attained. Implants of cartilage or tendo Achilles preserved in alcohol, or formalin, have been used during the past ten years with moderate success, as have cancellus bone and inorganic substances.

LACRIMAL SAC.

Excision of the lacrimal sac continues to hold its own, nothwithstanding the many newer operations, including those which attempt extensive drainage directly into the nose, as in the technique of West, Toti and others.

MUSCLE OPERATIONS.

Tenotomy is relatively simple but somewhat uncertain in that the effect ranges from 15 to 25 degrees, and always impairs ocular motility to some extent. Resection, advancement, and tucking, accomplishing practically the same result in a somewhat different manner, are more uniform in their effects, but are limited to about 10 degrees. Occasionally, a combined tenotomy and resection is of service. No operation, of course, really permits the patient to do without correcting lenses if the refractive defect justifies their use.

CONCLUSION.

In placing before you recent advance in the ophthalmic surgical world, including several observations made in the eye clinics of Europe in the last year, I have purposely avoided the spectacular novelties in our specialty which appear alluring but lack the fundamental merit that is necessary for permanent use. There is a legitimate place for experimental methods, which, however, must not be used as a smoke screen for impractical or otherwise fundamentally unsound surgical procedures which can only result in disaster for the patient. After all is said and done it is not the beautiful technique but the increased comfortable eyesight of a human being that decides the real value of any operation.

DISCUSSION.

Dr. E. L. Posey (Jackson, Miss.): This is a very interesting paper and one of great value. Dr. Smith has presented the subject in such a way that all present, whether ophthalmologist, surgeon or internist, can enjoy and appreciate what has been said.

When we view the field of eye surgery and the progress made during the past century we are gratified to know our specialty has kept pace with the other specialties. We are also pleased to know that America has produced some of the greatest eye men anywhere to be found.

I think there are several reasons why better ophthalmic surgery is being done now than in years gone by, but the main reason is better and closer study of cases or patients. Before any operation is done, except an emergency, a thorough physical examination is made, and if the patient's condition is such that he is not a good surgical risk he is placed in the hands of an internist who looks after this patient and corrects the ailment as nearly as possible so that he becomes a better surgical risk.

Improvement in operative technique has wonderfully helped ophthalmic surgery, and as the doctor stated the bacteriologist has helped us greatly. Before operating if secretions are at all suspicious or abundant, an examination of them should be made. This has done much to advance eye surgery and has enabled the eye man to look back over his work and see fewer infections and fewer eyes lost by infection.

Great strides have been made in anesthesia, as the doctor has said. I want to mention especially regional anesthesia and commend it to you gentlemen. In the absence of extreme trauma and infection any eye operation can be painlessly performed with this procedure. Injection of the orbicularis muscle before cataract operations will prevent squeezing, resulting in loss of vitreous and a possible loss of the eye in a large number of cases.

Dr. Smith spoke of the different operations done in various parts of the world for cataracts. I believe the American surgeons are the most conservative and in this country better results in the largest per cent of cases are being obtained by the combined extraction and the conjunctival suture.

He spoke of the after treatment of cataracts and other intra-ocular operations. No one rule can be applied to all cases, but I believe that better results can be obtained in such cases if both eyes are bandaged and patients are kept in bed for a few days. I think the fewer dressings done in these cases the better.

Speaking of glaucoma and the operations done for this most serious eye ailment, I, like the essayist, think the best results can be had by a broad basal iridectomy or the trephine as done by Elliott. Other operations are done but I believe these two offer most in the greatest number of cases.

I certainly believe with Dr. Smith in what he said in reference to the lacrimal sac. I believe the only successful way to treat a diseased tear sac is to excise it .

Muscle work is the most difficult of all eye operations. Here again, as Dr. Smith points out, the surgeon must decide what operation can accomplish most in each case. All cases of improper muscular balance should be refracted and correcting lenses prescribed.

I consider it a privilege to discuss this paper in my feeble way, and want to say in conclusion that I enjoy it, and to Dr. Smith we are glad to have him with us.

Dr. B. S. Guyton (Oxford, Miss.): I am sure we are all glad to have Dr. Smith with us today. As he told you, he does not go into the minor details of surgical technic but has given us some very practical ideas. He spoke of surgery and the infections—surgery in face of infections. I think nothing can illustrate this better than a case I had a few days ago. Last year a man came in to me totally blind in one eye, with apparently absolute glaucoma. He had very severe pain. I did an Elliott trephine operation for the relief of pain and had very good results. Perhaps I was somewhat careless about infections. Anyway, he came back a few days ago with beginning acute glaucoma in the other eye. I gave him a complete physical examination and found he had some badly abscessed teeth. He had them attended to and came back in a few days with the eye much improved. A peculiar thing is that the eye that had been blind for over a year is beginning to show some slight return of vision. It is certainly a good thing to go into infections carefully.

I see it advised by a clinic in New York to use argyrol for a few days before operation. I think, as a prominent eye man said, argyrol is a dangerous drug—dangerous in several ways. First, people will use it when atropin is needed or when some other drug is needed. Argyrol is not a cure-all drug, and I think we ought to condemn its general use, for many times it will be used when something more radical is needed. Argyria is also produced frequently.

As to the injection of the orbicularis, I have been using that for a year or so and find it a great help in keeping patients from squeezing the eye after operation.

Dr. Smith mentioned the conjunctival flap. That is becoming more popular in the last few years, particularly the conjunctival flap with suture. Dr. Berens, of New York, is using a conjunctival flap with continuous suture. I have been using it for several years. I turn the flap down first to the limbus and, instead of using a Graefe knife, use a keratome and then enlarge the incision by scissors. I do not know why I prefer

this exeept that a conjunctival flap can be protected better. I was glad to see in the New York Eye and Ear hospital a doctor who had been using this method for years.

Dr. Wiener of St. Louis, in what is called the Jackson birthday volume, which came out last year, describes in a good deal of detail an operation he is using for what he calls opaque cornea. He admits that he has more failures than he has good results but at the same time thinks the risk is justified, the patient having no sight at all. In this operation you skin the cornea down to the Descemet's membrane, taking off all the corneal substance down to Descement's membrane. This will in some cases give you some vision. While you get more failures than you do good results, yet it is worth offering to these cases that are hopelessly blind from opaque cornea.

As to glaucoma, I have used a number of operations. In one case I used the iridotasis operation, in which you pull the iris up into the limbus wound, and in the same case used the LaGrange on the other eye. The iridotasis did not prove successful; with the LaGrange operation it proved successful. You also hear some oculists claim that the LaGrange operation is so much more likely to have after infection. In one case I used the LaGrange operation in one eye and the Elliot trephine operation on the other eye. With these two both got along beautifully for about three months. In about three months I had an infection in the eye in which I had done the LaGrange operation but did not have infection in the eye in which I had done the trephine operation.

Dr. Smith spoke of suturing the extra-ocular muscles, Tenon's capsule, etc. In the only case I have ever participated in in which the muscles were sutured I was simply assisting another surgeon. The patient came to me later to have the artificial eye put in, and the socket was so contracted that it was impossible to put in anything except an infant eye. Since that time I have never sutured the extraocular muscles, and I think the practice should be discontinued.

I certainly appreciated the doctor's paper.

Dr. Smith (closing the discussion): It is my custom and the custom of most of us in America, after intra-ocular operations, to put the patient to bed and keep him in bed for a certain length of time, varying with each one of us. However, in a great many of the clinics of Europe the practice is exactly the opposite. They operate on a cataract, even operate on both eyes, and after the operation allow the patient to get up and walk around the room. Their results are practically the same as ours. I mention this to show the diversity in practice.

In my own experience canthotomy stands out as one of the greatest advances in ophthalmic surgery. I remember the time when I approached a cataract operation with dread, for I never knew when the patient was going to squeeze or lose control of himself and possibly cause the loss of the eye. But in canthotomy you have absolute control of the patient. It can be done very simply, does not need any suturing after operation, and I think is one of the greatest aids that has been brought forward in intra-ocular surgery.

Dr. Guyton mentioned the use of argyrol. I personally use argyrol sometimes but not a great deal. I saw one rather well known surgeon use it in an interesting way. He used it before the operation to clean the conjunctiva as many of us do. After the lens was extracted he lifted the cornea and put two drops of 20 per cent solution of argyrol in the anterior chamber and then bandaged the eye.

PRE-ECLAMPTIC TOXEMIA.*

H. VERNON SIMS, M. D.,

NEW ORLEANS.

Upon no problem in obstetrics has so much effort been expended as in attempts to determine the cause of toxemias of pregnancy. The extensive chemical research undertaken in recent years has failed to afford an acceptable explanation for the basic phenomena. They have reflected the results of derangements which occur in various organs, but no light has been thrown on the etiology. Our knowledge in this field is but little more than it was a quarter of a century ago. Little real progress as to the etiology can be made until it is possible, either to identify positively the causative toxic substances or to reproduce in experimental animals the characteristic clinical syndromes, as well as the microscopic and chemical features of the toxemias of pregnancy.

Pre-eclamptic toxemia is in all probability due to the formation of some toxic substance which leads to a profound disturbance of metabolism, accompanied by certain organic lesions; but what it is, or whether it originates primarily in the child, the placenta or the mother is not known.

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*Read before the Louisiana State Medical Society, New Orleans, April 27, 1927.

In the chemical study of the blood, the percentage of non-protein nitrogen and blood urea nitrogen remain unchanged. There is a marked increase in the uric acid content, and equally striking increase in the amount of sugar and lactic acid, and to a lesser extent in organic phosphorus, while at the same time, in extreme cases, the carbon dioxid combining power of the blood is reduced to such an extent as to offer a distinct menace to life from acidosis. These figures will again be referred to when the question of treatment is taken up. Stander has shown that all general anesthetics (chloroform, ether, nitrous oxid and ethylene) after as short a period as fifteen minutes produce changes in the blood suggestive of those noted in eclampsia; namely, a definite increase in uric acid, sugar, lactic acid and inorganic phosphorus, and a decrease in the carbon dioxid combining power of the blood.

SYMPTOMS.

Pre-eclamptic toxemia usually appears in the latter part of the second half of pregnancy. It should be suspected whenever the patient complains of headache, lassitude, or edema, and presents a high blood pressure, but particularly if the urine is diminished in amount and contains albumin. The symptoms may be slight or they may indicate a profound toxemia. There may be a tendency to nervous excitation or to sleep, occasionally slight mental unbalance, twitching in the muscles, cramps in the calves, nausea, vomiting, pain in the epigastrium, and disturbances of the special senses, spots before the eyes, bright lights, sometimes described as spangles, dimness of vision, even complete blindness, ringing in the ears, even deafness, and occasionally anomalies of taste and smell. Prodromata are present from a few hours to several weeks before the actual outbreak of eclampsia and should draw attention to the patient.

Any of the above symptoms should serve as a warning and a thorough examination of the patient made. This will usually show swelling of the feet, hands and eyelids, or more or less general edema, with pasty skin, a coated tongue, tenderness over the epigastrium (the site of the pain) and over the liver, high pulse tension, high (or rising) blood pressure, exaggerated reflexes, and diminished urine of a high specific gravity with albumin and casts. The patient may give a history of a recent rapid gain in weight which is due to the edema. These are the symptoms of pre-eclamptic toxemia and a patient presenting them may be said to be threatened with eclampsia.

TREATMENT.

Again we make the plea for close observation of all obstetrical cases from the very beginning. It is so important for the attending physician to know each case even in the early months so that he can understand any change in her condition. At times a patient who has an unusually trying time in the early months will feel better during the fourth, fifth, sixth, and seventh months, and then develop symptoms of pre-eclamptic toxemia in the eight month. Every case should have the blood pressure taken at least every other week (and the urine examined) until the beginning of the eighth month. After that the urine should be examined and the blood pressure taken at least every week. A blood pressure of from 130-140 may not be high for some patients but would be alarming for one whose systolic pressure had been closer to 100 during the preceding months. Again, all patients should be warned of the above symptoms of toxemia so that a report can be made to the attending physician at the earliest possible moment. Every pregnant woman should be considered a possible candidate for eclampsia.

When the first signs or symptoms of toxemia occur, treatment must be at once instituted. The patient should be put to bed and should depend solely upon milk for a while. Milk is not only an excellent food, but is an efficient diuretic as well. She should be given two or three quarts in the twenty-four hours, and should be

made to take large quantities of fluid in the shape of plain water or lithia water. If the condition improves, starches are added to the diet, then the protein vegetables, with the vegetable oils and butter. If the improvement is satisfactory, full vegetation diet with the fruits and one egg a day are allowed. Later a little fish, or chicken is added but never a full meat diet.

A brisk purge with magnesium sulphate is given at the start and the bowels are kept open by salines. If the symptoms of toxemia are urgent, hot wet packs are ordered twice daily. The skin should be kept free from chill by woolen undergarments, which should be worn even in summer. A valuable means for starting the skin and kidneys is the subcutaneous injection of normal salt solution or 5 per cent glucose solution, 1000 cc. being given under the breasts twice in twenty-four hours.

When the toxemia is severe, even though eclampsia does not develop, the child suffers, and numerous cases terminate in the spontaneous expulsion of a dead premature fetus. When treatment has been faithfully carried out and has failed to produce sufficient amelioration of symptoms, the pregnancy should be terminated. The symptoms which indicate the near approach of convulsions are: headache, seeing colored lights or spangles; twitching of the muscles, somnolence, insomnia or hallucinations, nausea and vomiting, pain in the epigastrium, general edema, high blood pressure and marked albuminuria. All of these symptoms are not always present and at times one or the other may stand out very prominently. When this picture is before us we must conclude that eclampsia is in the offing, and that it is wisest to terminate the pregnancy.

METHODS OF INDUCING PREMATURE LABOR.

The method of terminating the pregnancy should be selected which will empty the uterus quickest and with least danger to the patient. If the case has been carefully studied the symptoms should not be so threatening as to demand undue haste. Probably the main reason that induction of labor is less frequently resorted to by obstetricians, and scarcely thought of by general practitioners, is its formidableness when done with bags and bougies. I wish to call your attention to the value of castor oil, quinin and pituitary extract in the induction of labor. This was brought out by Watson and others and later modified by Mathieu. Intrauterine manipulation, early rupture of the membranes, dislodgement of the presenting vertex, prolapse of the cord, laceration of the cervix and jeopardizing of the patient in case cesarean section has to be resorted to, do not have to be worried about when the induction is made with castor oil, quinin and pituitary extract. Not only this, but there is not the added danger of increasing the patient's toxemia with the additional toxemia produced by any of the general anesthetics.

The method is as follows: The patient is given two ounces of castor oil and ten grains of quinin sulphate and exactly two hours afterward, a hot soapsuds enema is given and as the enema is about to be expelled, three minims of pituitary extract are given by hypodermic. This same dose of pituitary extract is repeated by hypodermic every thirty minutes until labor starts and no longer. From then on, the labor is conducted as though the onset has been normal. Failure is admitted and the procedure stopped if eight hours pass without labor being started, or if there is absolutely no sign of any effect toward the induction and the continual use of the hypodermic is too trying to the patient. In such cases, the procedure is stopped, the patient is given a hypnotic and after twenty-four or forty-eight hours the induction is again started. This method was successful in 96 per cent of Mathieu's cases (91).

Another method of inducing premature labor is to insert a bag into the uterus after the rupture of the membranes. Three minims of pituitary extract are given every hour until uterine contractions begin and it is not repeated unless the contractions cease. In primipara it may be necessary to

prepare the cervix by packing it and the lower uterine segment with gauze for from twelve to twenty-four hours. Pains are elicited, the tissues softened and the chances of injury to the cervix diminished. After the removal of the gauze the membranes are punctured, the amniotic fluid is drained off, and a bag is inserted. Then the three minims of pituitary extract are given every hour if necessary. The dilatation of the cervix may be hastened by attaching a weight to the bag. When the bag is expelled the child soon follows. Cesarean section is reserved for the case with contracted pelvis or central placenta previa.

When we think of the large number of prospective mothers who are not under the care of a physician we realize the danger they are in as pre-eclamptic toxemia occurs several times in every one hundred pregnancies.

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DISCUSSION.

Dr. Maurice Gelpi (New Orleans): I feel that a word should be said about Dr. Sims' excellent paper and that we should be grateful to him for bringing up this topic, if for no other reason than to remind us of the importance of pre-natal care and close observation of our obstetrical cases throughout pregnancy.

I feel about eclampsia pretty much as I do about carcinoma of the cervix, that is, that the method that gives the best results is to try and treat the precursors of the cancers, erosions and lacerations, before the cancer comes—in other words, the problem resolves itself into spotting the pre-eclampsia.

Eclampsia can be divided into two main groups: the advanced cases where you have ostensive eclampsia, less coma and convulsions; these are pregnancy cases and run about 5 per cent. The second group is the pre-eclamptic; these are the cases you want to watch. The mortality is much less—the majority of them clear up with rest in bed and a bland diet, and sometimes require rapid and complete evacuation of the uterus.

The lesson we have learned from Dr. Sims' paper is that it is necessary not only for us to look for albumin in our pregnancy cases, but see that we check up on their blood pressure, talk to them about their cases and in this way learn about the pre-eclamptic symptoms.

Dr. Arthur Caire, Jr. (New Orleans): I think there has been enough said about watching cases early or throughout the pre-natal stage, but there are a couple of points brought out by Dr. Sims' in his paper which I would like to emphasize, one of which is scanty urine. Most patients when they come to you complaining of pre-eclamptic toxic symptoms will never mention this fact unless you dig into their history and find out about it. The thing of most value in these patients is not to notice whether they are passing less urine or not, but to save all of the urine they pass from a certain time; measure it yourself—do not rely on them, they are not going to be accurate. The diminished amount of urine, to my mind, is one of the most important symptoms as to the severity of the condition that I can think of.

Blood chemistry has not helped me very much in the early stage to differentiate between those cases in which we should do something and do it right away, or those cases best treated by rest, quiet and other sedative measures. I have not been able to satisfy myself that blood chemistry has helped me. The only cases where we do see marked changes in blood chemistry is in cases we see with our own eyes and judge from the symptoms present the severity of the toxemia. I have not been able to find, in our work at Touro, that it has helped us very much, but it has been of help in determining the type of treatment we wish to use in these particular cases. All of our patients get cereals as well as milk; we put them on a milk and cereal diet. The reason is that a good many of these patients develop acidosis. If the CO_2 volume is depreciably low, we give them glucose, not subcutaneously, but intravenously. We find that we get better results in cases of marked acidosis if the glucose is given so that it gets in the system as rapidly as possible.

As far as the induction of labor is concerned, I have also tried the medical manual induction and found that it fails in all of these cases where the toxemic systems are marked. If you have a case where toxemia is not great, the medical induction will work quite well, but if pronounced enough to induce labor rapidly, I have found that the other method, principally the bag, of more value. The reason why perhaps I have not been able to get any results with the Medical induction is that the patient primarily has a uterine inertia due to toxemia and we must resort to more drastic measures. Catheters, etc., do not act as well as a bag. Of course, introducing the bag is exposing our patient to infection, but I do not think that is to be worried about if we are care-

ful of our asepsis and our patient is in a well regulated maternity hospital. We are not doing cesarian sections except in the type of cases mentioned by Dr. Sims.

The thing that has impressed me most with these pre-eclamptic states is the difficulty in differentiating between your true pre-eclamptic toxemia and your nephritic toxemia. We do know all cases of toxemia should have something done for them. One point I want to bring out is that the nephritic toxemia, true toxemia due to nephritis, an old kidney lesion, is not the type of case that can be dallied with at all. I mean we cannot even try ameliorative measures. In the pre-eclamptic type we can do that with safety, but my experience is that as soon as we make the diagnosis of nephritic toxemia, the sooner the uterus is emptied the better. We do not treat them all, we immediately induce labor. The pre-eclamptic can be benefitted and we usually treat them tentatively for several days by rest, purgation, etc., and after amelioration of their symptoms takes place we induce labor. In the nephritic we do not stop for that, but act promptly.

It has been my method in the last few months to employ theobromin in these cases where you have an almost complete shutting down of kidney function: it works very well. My first experience with this medication was a patient whose twenty-four hour urinary output was sixteen ounces. After putting her on theobromin, five grains every four hours for twenty-four hours, the second twenty-four hours her urine output had increased to ninety-six ounces. I had never heard of its being used in these cases before, but was advised by a medical confrere, with whom I had seen this patient, to employ it.

Dr. R. McG. Carruth (New Roads, La.): Dr. Sims said nothing about the theory of blood letting, or of the practice of hypodermoclysis with normal saline solution, and it is often that the doctor is called only after the eclamptic seizure has come on. Indeed, too often, it is only because of the seizure that he is called. Fifty years ago, when I was a student of medicine, these methods were advocated and I have gotten such good results from the treatment by using clysters and hypodermoclysis of saline, at the same time bleeding my patient under the influence of chloroform, that I am wondering if, in the adoption of newer methods the older, and at one time satisfactory method, had been dropped altogether?

Dr. H. Vernon Sims (closing): You will notice that in my paper I purposely avoided discussion of eclampsia, because at the present time there is so much controversy as to its proper treatment. My idea is, if you can, not to have eclampsia.

I believe that eclampsia can be prevented in the great percentage of cases, though I grant that we occasionally hear of a case of eclampsia where the patient had been watched and the attack comes like a bolt out of a clear sky. This would hardly occur if the patient had been questioned carefully, or if she had been warned of certain symptoms to report to the attending physician. I do not believe that it develops all of a sudden and I think we should direct all of our thoughts towards avoiding eclampsia. The attending physician must study each patient, you must know your obstetrical case clinically, when she feels well, looks well, or when she is presenting certain subjective or objective signs or symptoms which should serve as a warning.

In regard to the method of terminating pregnancy, if that becomes necessary, you may have to use a bag, but why not try this simple way of terminating pregnancy. You do not have the added danger of an anesthetic and no intrauterine manipulation is necessary. If you are not successful with the simple method then the bag may be used.

Venesection is still advocated by some in cases on the border line of eclampsia. Five per cent glucose solution given subcutaneously or intravenously is also a valuable therapeutic measure.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about Three Hundred Dollars, will be made on July 14, 1928, provided that an essay deemed by the Committee of Award to be worthy of the Prize shall have been offered.

Essays intended for competition may be upon any subject in Medicine, but cannot have been published. The essay should represent an addition to the knowledge and understanding of the subject based either upon original or literary research. They must be typewritten, and in English acceptable for publication without necessity for editing by the Committee. Any illustrations should be appropriate and correctly annotated with the text. Essays must be received by the Secretary of the College on or before May 1, 1928.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelop having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1927 has been awarded to Dr. Emil Bogen, Cincinnati, Ohio, for his Essay entitled: "Drunkenness."

JOHN H. GIRVIN, Secretary,
19 South 22d St., Philadelphia, Pa., U. S. A.

INTERPRETATION OF TOTAL WHITE AND DIFFERENTIAL BLOOD FINDINGS.*

C. E. HAMNER, M. D.,‡

SHREVEPORT, LA.

The proper interpretation of total white and differential blood findings may seem very elementary, but I find many physicians are not able to interpret the blood findings, especially when they do not agree with the clinical picture. For example, the interpretation is often confused in a case of appendicitis where the total white count is six to eight thousand with neutrophiles seventy-five or eighty per cent, or in a case of typhoid fever where the total white count is eleven or twelve thousand with a differential count of eighty-seven per cent neutrophiles for, as you know, we are taught that in appendicitis there is a leukocytosis, and in typhoid fever there is a leukopenia with an increase in the small lymphocytes in the differential count. The time alloted will not allow me to go into all the details of the value of the interpretation of the total white and differential count, but I shall endeavor to explain the interpretation in the type of every day cases which the hemocytologist has to consider. I beg leave to mention a few elementary facts and from these cite cases where the blood findings do not agree with the clinical case in question.

We know the normal total white count is from five thousand to ten thousand and that the average count is seven thousand five hundred. Any count above ten thousand may be considered leukocytosis, and a higher count a pathological leukocytosis; a count below five thousand is a leukopenia. We know that in the normal differential count of one hundred cells, neutrophiles are sixty to seventy per cent, large lymphocytes one to five per cent, small lymphocytes twenty to thirty per cent, eosinophiles one to three per cent and basophiles five-tenths per cent. Dr. Cummer is of the opinion that the normal differential count should be as follows: neutrophiles sixty to sixty-four per cent, large lymphocytes one to five per cent, small lymphocytes twenty to twenty-eight per cent, eosinophiles one to three per cent and basophiles five-tenths per cent. You will note that in my classifications I do not mention transitionals and unidentified cells. Dr. Cummer's statements are: "It is now felt that transitionals are mature forms of large mononuclears and should be grouped with the latter in the differential count. Their name is a misnomer, since at present they are not considered as transitional forms between large mononuclears and neutrophiles." Dr. McJuukin says that the difficulties underlying the identification of cells in the peripheral blood stream can not be emphasized too much. Much more difficulty has been encountered in identifying cells in the mononuclear group. That the majority of mononuclear cells are lymphocytes seems certain, owing to their morphologic and functional identity with the cells of lymphoid tissue and the presence of some of these cells in the large lymph vessels. "Transitional leukocyte" is a term commonly given to leukocytes that have a nucleus more or less horse-shoe or saddle-back in shape. The views of the origin and identification of this cell are almost as numerous as the publications themselves. Most of the recent workers agree that this cell has granules when treated with polychrome stain that can not be readily differentiated from neutrophilic granules; that it has neutrophilic granules with Ehrlich's triacid stain and that it gives the indophenol reaction.

Another common term in blood work is "large mononuclear leukocyte." As in the case of the transitional cell, this term, in regard to the use of which there is little uniformity, is not a histologic one and gives no indication of the origin of the cell. It differs from the transitional type especially in not having a horse-shoe

*Read at meeting of Louisiana State Medical Society, New Orleans, April 26, 1927.

‡From the Ellis & Butler Laboratories, Shreveport, La.

shaped nucleus. There is not proof at hand that most of the cells classified under these two terms (transitional and large mononuclear) arise from the endothelium of certain blood and lymph vessels. Quoting from Dr. Nageli: "There is no distinct boundary between large mononuclears and transitionals. The position of the large mononuclears in the classification of leukocytes is still very uncertain." Dr. Ehrlich's school regards them as quite immature elements of the bone marrow at an earlier stage of development than the myelocytes. Dr. Pappenheim thinks that they belong to the lymphocytes, while Nageli considers them especially differentiated matured elements of the myeloid group. They are frequently mistaken for large lymphocytes, but have more proptoplasm and a nucleus which stains rather faintly. Their differentiation is sometimes, however, very difficult. Potter states that transitional cells are very much like the large mononuclear leukocytes, except that the nucleus is quite irregular in shape and stains more deeply and the protoplasm exhibits a less distinct reticulum and contains a few fine neutrophilic granules. They are regarded as derivatives of the marrow and ancestors of the neutrophiles. They occupy a position between the exclusively pathologic myelocytes and the polynuclears, and are actually immature forms of the latter. In counting, they are usually included in one group with the related type of large mononuclears. So, from the diversified opinions, the above classification still holds good. Now the unidentified cells are not very often found and when found, must be classified according to some morphological characteristic. One will most often find that the unidentified cells is what might be termed an old neutrophile. The percentage of unidentified cells will be of no value in arriving at an interpretation of the blood findings.

We are taught that there is an increase in the neutrophiles in acute infectious diseases, cholera, small-pox, erysipelas, diphtheria, meningitis (including tubercular meningitis), scarlet fever, tuberculosis with marked sepsis, abscesses including empyema, the majority of purulent wound infection, eclampsia after hemorrhage, following the use of certain drugs (inhalations of chloroform or ether, and use of quinin, salicylates, phenacetin and morphin). There is an increase in the large lymphocytes in malarial cachexia and cachexia of carcinoma, Hodgkin's disease and lymphosarcoma. There is increase in the small lymphocytes in chronic infectious diseases; pernicious anemia; splenic anemia; diseases of the ductless glands; tuberculosis when uncomplicated; whooping cough; typhoid fever; influenza; rickets; measles; congenital syphilis and cirrhosis of the liver. There is an increase in the eosinophiles in certain intestinal parasites, especially hook worm; occasionally oxyuris, ascaris and the taenias; in trichinosis; in gonorrhea, particularly when there is involvement of the male posterior urethra, and the tubes in the female; certain skin diseases, notably, purigo, zoster, pemphigus, dermatitis herpetiformis; myelogenous leukemia; scarlet fever; brochial asthma; during convalescence from diseases accompanied by neutrophilic leukocytosis; in some cases of tuberculosis, and after injection of tuberculin.

I place a great deal of importance on finding eosinophiles following acute infectious diseases. One never finds the eosinophiles present in the differential count in an acute infectious disease where the total white count is fifteen thousand and above unless one of three conditions is present. First, an acute flare-up of an old chronic infection, as in appendicitis or gall-bladder infection; second, if the infection is being walled off or being handled, if you will, by the bacteriolysins or agglutinins, as in typhoid fever or body cell activity; and third, in acute gonorrhea, or an acute flare-up of an acute gonorrhea in male or female. I find the eosinophiles in acute gonorrhea are, as a rule, from one to three per cent in the differential count. In acute infectious diseases the eosinophiles must return

to the blood picture within twenty-four hours or the prognosis is not so favorable. Usually, when the eosinophiles return to the blood picture, there is a drop in the total white count of one to three thousand and you may have a corresponding drop in the percentage of neutrophiles. If the eosinophiles do not return to the blood picture within twenty-four to forty-eight hours and there is a drop in the total white count, the prognosis is grave. In typhoid fever, if the eosinophiles return to the blood picture after the beginning of the second or third week, the prognosis is good. If they do not return on the third, or beginning of the fourth week, look for the possibilities of complication.

We are taught that if there is a sudden drop in the total white count in pneumonia and an associated high differential count of the neutrophiles, an unfavorable prognosis should be given. In lobar pneumonia, however, where there is an involvement of another lobe, you will have a temporary drop in the total white count with, or without, a drop in the percentage of the neutrophiles. This condition could be considered as a negative phase and within two to four hours there should be a sudden rise in the total white count and the percentage of neutrophiles. If this rise does not occur within eight to twelve hours, the prognosis is unfavorable.

In cases where there has been a drain, if you will, on the neutrophiles, as in a severe septic condition, and nature is using its reserve supply of neutrophiles, you will note from one-tenth to one per cent of neutrophilic myelocytes. Do not at once arrive at the conclusion that you are dealing with a pathological leukocyte, for the fact is that nature is calling for more neutrophiles. In a septic condition, a falling total white count with a corresponding falling neutrophile percentage, with from one-tenth to two per cent eosinophiles, is indicative of the fact that there is a neutralization of the toxins or a walling off of the infection, and recovery should follow. But if there is a decided drop in the total white count and neutrophile percentage and no eosinophiles, one should be careful in making a favorable prognosis as there is a great possibility of a flare-up of the condition.

Sodern has drawn the following conclusions from the study of counts in pneumonia.

First: Slightly increased polynuclear percentage indicates slight toxic infection, regardless of the leukocyte count.

Second: Greatly increased polynuclear percentage indicates severe toxic infection, irrespective of leukocytic count.

Third: Slight leukocytosis with slight polynuclear increase indicates fair resistance and slight toxic infection.

Fourth: Pronounced leukocytosis with slight polynuclear increase indicates good resistance and slight toxic infection.

Fifth: Slight leukocytosis with pronounced polynuclear increase indicates poor resistance and severe toxic infection.

Sixth: Pronounced leukocytosis with pronounced polynuclear increase indicates a good resistance and a severe toxic infection.

Seventh: Absence of leukocytosis with pronounced polynuclear increase indicates no resistance and severe toxic infection and a falling leukocytosis with a rising polynuclear percentage indicates diminishing resistance and increasing toxic infection.

Eighth: A falling leukocytosis with a falling polynuclear percentage indicates diminishing toxic infection or recovery.

A continuance of a high total white count after a crisis, especially if associated with a high percentage of polynuclears, suggests some complication with pus formation.

Now we have the last of the white cells. The basophiles, you will note in the text books, are mentioned as being normally present in from two-tenths to five-tenths

per cent, but no mention is made of the significance of an increase in the percentage of basophiles. I find that when the basophiles along with the eosinophiles return to the blood picture after an infection the prognosis is more favorable. I have also noted an increase of the basophiles following hemorrhage, and their presence is to be considered favorable. A basophilic leukocytosis is also found in myelogenous leukemia and cholera.

BLOOD FINDINGS AND INTERPRETATIONS IN CASES WHERE THE BLOOD FINDINGS DID NOT AGREE WITH THE CLINICAL PICTURE

TYPHOID FEVER.

A young man, 27 years of age, returned from the oil field where there had been some typhoid fever cases, complaining of severe headache. Two days later he presented a decided clinical picture of typhoid fever. The total white count was 11,000, neutrophiles 84.1 per cent, large lymphocytes 2.1 per cent, small lymphocytes 13.8 per cent, no eosinophiles or basophiles. A twenty-four hour blood culture was positive for typhoid, and the clinical picture was pronounced. The total white count twenty-four hours later was 12,100, neutrophiles 87 per cent, large lymphocytes 0.4 per cent, small lymphocytes 12.6 per cent, no eosinophiles or basophiles. Widals in dilutions of 1-50 and 1-100 were negative. On the ninth day, the temperature staying near 100, the prognosis was grave. In the third week there was hemorrhage. The blood picture did not get anywhere characteristic of typhoid until the fifth week, and a positive widal in dilutions of 1-50 and 1-100 was atypical, with clumping but not complete loss of motility. The latter part of the sixth week there was a positive Widal of 1-50 and 1-100 dilutions and a corresponding return of the blood picture one would expect to find in typhoid. The infection lasted seven weeks and terminated by crisis. It was six months before the patient was able to return to work. There were three hemorrhages, one during the third week and two during the fifth week.

A CASE OF GONORRHEA, CLINICALLY APPENDICITIS.

A young lady, 18 years of age, went to her physician at 2:00 P. M. stating that she was suffering with menstrual cramps. He prescribed and at 4 P. M. he was called to come at once, as she was suffering the tortures of the damned. He found the young lady in bed with her right leg drawn up, and pain over McBurney's point and around the umbilicus. The temperature was 100 4-5°, pulse 132. There was nausea but no vomiting. I obtained blood for an examination and the physician gave morphin for pain. The blood findings were: total white count 14,985, neutrophiles 83.4 per cent, large lymphocytes 4.6 per cent small lymphocytes 9.7 per cent, and eosinophiles 2.3 per cent. Finding the presence of eosinophiles with the above blood picture, and taking into consideration the time the blood was secured after the onset of the clinical picture cited above, I was very suspicious of gonococcal infection. Urine was obtained by catheter and the examination showed a large amount of pus, the pus cells being loaded with gonococci. The patient was placed in the Sims position with an ice bag to her side, and three days later she was taking treatment at the office.

CASE OF ACUTE FLAREUP OF CHRONIC APPENDICITIS.

Blood was obtained four hours after the attack. The total white count was 8,250, neutrophiles 71.3 per cent, large lymphocytes 6.2 per cent, small lymphocytes 22.1 per cent, eosinophiles 0.4 per cent, no basophiles. Note the low total white and the presence of 0.4 per cent eosinophiles.

CASE OF ACUTE APPENDICITIS.

Blood was obtained twenty-six hours after the attack. The total white count 17,700, neutrophiles 79.8 per cent, large lymphocytes 5.6 per cent, small lymphocytes 14.6 per cent, no eosinophiles or basophiles. The prognosis was considered grave. We advised immediate operation and found a ruptured appendix, with no attempt of the omentum to wall the infection off.

CASE OF ACUTE APPENDICITIS IN BOY TWELVE YEARS OF AGE.

Blood was obtained six hours after the attack. The total white count was 12,250, neutrophiles 85.1 per cent, large lymphocytes 2.7 per cent, small lymphocytes 12.2 per cent, no eosinophiles or basophiles. Four hours later the total white count was 14,865, neutrophiles 87.2 per cent, large lymphocytes 1.6 per cent, small lymphocytes 11.2 per cent, no eosinophiles or basophiles. Twelve hours later, the total white count was 17,680, neutrophiles 98 per cent, large lymphocytes 0.6 per cent, small lymphocytes 1.4 per cent, no eosinophiles or basophiles. You will note that the total white count and neutrophiles are increasing in proportion. The prognosis was considered favorable but the patient wished to wait. The temperature was 102, pulse 140. Four hours later the total white count was 19,450, neutrophiles 79.8 per cent, large lymphocytes 3.1 per cent, small lymphocytes 17.1 per cent, no eosinophiles or basophiles. Result: a ruptured appendix, with no effort on part of omentum to wall off, the abdomen was drained and the patient was six weeks getting well.

CASE OF FOCAL INFECTION.

Patient, a male, 32 years of age. There was a history of fainting spells for the past three years, and at times unconciousness for thirty minutes after one of these fainting spells. He had been treated for autointoxication. The total white count was 3,250, neutrophiles 42.8 per cent, large lymphocytes 9.7 per cent, small lymphocytes 47 per cent, eosinophiles 0.3 per cent, and basophiles 0.2 per cent. The Wassermann was negative. Roentgenoram of the teeth showed five abscessed teeth. The tonsils were also infected. Three years after treating the infection the patient has not had any attacks as described above.

CASE FOR MALARIAL EXAMINATION

A male patient, 42 years of age, complained of just feeling bad. The total white count was 6,700, neutrophiles 52.7 per cent, large lymphocytes 4.8 per cent, small lymphocytes 35.2 per cent, eosinophiles 7.3 per cent. Prostatic examination was negative for Neisser infection. The stool was positive for hook worm ova.

CASE OF SELF-PRODUCED ABORTION (72 HOURS).

The total white count was 7,950, neutrophiles 88.9 per cent, large lymphocytes 3.4 per cent, small lymphocytes 7.7 per cent; no eosinophiles nor basophiles. The patient died three hours later.

CASE FOR LARORATORY HELP.

Female, 32 years of age. The appendix had been removed two years previously, and one year previously she had had the right tube and ovary removed. She was still suffering with headache, pain in the side referred to the gall-bladder, indigestion and general weakness. The total white count was 7,700, neutrophiles 48.6 per cent, large lymphocytes 10.7 per cent, small lymphocytes 40.3 per cent, and eosinophiles 0.3 per cent. From the above blood picture, there were four possibilities; focal infection, some endocrine condition, auto-intoxication or syphilis. The Wassermann was four plus positive. The patient was much improved after a few treatments. The case is still under observation.

CASE FOR LABORATORY HELP.

A baby boy 22 months old, had been sick for the past eight months. He had many ulcers in the buccal cavity, which looked like what are called "peptic ulcers." The baby was very restless at night, and in fact cried often during his sleep and would not eat unless forced. The lungs showed a evidence of a bronchitis. The baby had lived in the city all its life. The total white count was 26,250, neutrophiles 86.1 per cent, large lymphocytes 5.8 per cent, small lymphocytes 7.9 per cent; no eosinophiles, basophiles 0.2 per cent. The bronchial condition could have accounted for the percentage of neutrophiles; rechecking my differential count and counting 375 cells, neutrophiles were 82.9 per cent, large lymphocytes 4.7 per cent, small lymphocytes 12 per cent, eosinophiles 0.3 per cent, and basophiles 0.1 per cent. It was considered that the bronchial condition could have been causing the eosinophiles and basophiles; however, a stool examination was made and found to be loaded with hook worm ora. The patient made an uneventful recovery.

I believe that the reason why so many physicians claim that the blood examination is of no value is that they are always in such a hurry for their report that the laboratory has not time to make as satisfactory an examination as they would like to make and which would be of value in assisting in eliminating certain factors that should be considered. To make a satisfactory examination at least 100 neutrophiles must be counted, and with the large and small lymphocytes, eosinophiles and basophiles, you will have counted 160 to 180 cells; also the morphology of the red cells must be taken into consideration. So many physicians ask for "just" a total white count, and I have no hesitancy in stating that a total white count without the differential is of no value. To bring the above remarks more forcibly to your attention, I beg leave to state just one more case;

A baby girl, 7 years of age, was sent to the laboratory for "just" a total white count. I secured blood for a differential for my own satisfaction, as I did not know what to expect from the total white count. The total white count was 21,950, neutrophiles 80.4 per cent, large lymphocytes 4.5 per cent, small lymphocytes 14.2 per cent, eosinophiles 0.9 per cent, and no basophiles. I found the red blood cells loaded with tertian malaria. There had been some irregular chills. I asked the physician if I could secure a specimen of urine. The urine showed a large amount of pus and was loaded with bacteria. So the urine findings accounted for the high leukocytosis. The mother stated that she expected frequent urination during the fever, which was ranging from 102° to 105°. The malarial infction was masked by the urinary symptoms and would have been entirely overlooked if the differential count had not been made.

THREE INTERESTING CASES COMPLICATING SCARLET FEVER PROPHYLAXIS SERUM.*

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SHREVEPORT, LA.

I am writing this paper without any intention of condemning that which until now has proven satisfactory and experience shows to be useful; but presenting them to show that at times even our best methods can produce conditions that may be harmful. My experience with scarlet fever serum and prophylactic serum is based on the prophylaxis and treatment of scarlet fever in 1925-1926.

No one doubts the efficiency of the toxin antitoxin prophylaxis for diphtheria. The reduction of diphtheria cases in large immunized centers is sufficient to prove that we have a method equally as useful as vaccination for small pox. Scarlet fever immunization is in its infancy and experimental stage. Much work must be done in scarlet fever immunization before it can be generally used.

Two of my cases are children in rural districts immunized on account of scattered cases. The third case was a child immunized for distinct contacts. I believe in contacts, that is, in contacts in the same house we have a very satisfactory prophylaxis of short duration. Out of twelve children given scarlet fever serum as prophylaxis only one developed scarlet fever. However, scarlet fever does not possess as high a degree of susceptibility as many of the other contagious diseases. Two of the cases to be reported were nephritis and one case was encephalitis.

A search through the literature gives scant reference to the harmful effect of scarlet fever serum. My cases were so distinct and followed so shortly after the use of the serum that there is no doubt in my mind that the serum was the direct cause. Michetin of Moscow in the A. M. A. observed the following symptoms following the use of scarlet fever vaccines in strong reactions. The children became drowsy, at times delirious, temperature 101-103, the eruption appears in dots not only around the parts of the injection but over the whole body, especially the neck and shoulders, throat red and inflamed, papilla of tongue enlarged, albumen in the urine. In 26 cases disquamation of the skin took place, neck, groins and palms. Two cases of nephritis were seen.

Tooney and others made studies to ascertain the reaction in immune and sensitive patients to large skin test doses. Twelve nurses given, a 4 plus reaction, and six nurses with negative reactions received intramuscularly 750 skin test doses. The six nurses with negative skin reaction had no reaction. Nine of the four plus had a generalized reaction after the use of the serum.

Thirty hours after the injection one nurse had a scarlet fever rash, next day two had a rash, and the remaining six had scarlatina forms of eruptions. In five the reaction was severe enough to make them go to bed for three or four days. The temperature ran as high as 104 in two instances. In six cases the reaction was as severe as any scarlet fever.

In encephalitis no case has appeared in literature to the best of my knowledge following the use of scarlet fever prophylaxis serum, although a number of cases of encephalitis have been reported following vaccination for small pox.

Comby of Paris reported three cases of encephalitis following the use of small pox vaccination, the initial symptom appearing twelve days after the child was vaccinated.

Bastiance, Biji and Terbraugh reported thirty-five cases of post vaccinal encephalitis following the vaccinaton for small pox. Of these twenty-three were fatal. The symptoms appeared 10-13 days after vaccination They concluded that post vac-

*Read before Louisiana State Medical Society, April 26-28, 1927, New Orleans.

cinal encephalitis was probably caused by an ultra virus latent in the patient which was activated by the vaccination.

The following cases were observed by me:

M. J., aged 8, admitted North Louisiana Sanatarium, on account of temperature and cervical adenitis. Four weeks previous to admission on account of scarlet fever scare the child was given a dose of scarlet fever prophylaxis serum. Three days later the child developed sore throat with marked enlargement of the glands of the neck, no eruption was observed by the mother. Physical examination showed enlargement of glands of neck, throat negative, chest negative, hematuria with marked decrease in the amount of urine. Urine examination showed R. B. C., albumen, casts. First examinations 7 per cent albumen, successive urine examinations showed the same findings with a gradual decrease in blood cells, albumen and casts until discharged. At this time only a trace of albumen was found. For the first three days the total amount of urine secreted was six ounces, following this there was rapid average to normal. One month later the urine was negative.

P. P., aged 8, male, on account of house contacts with sister and another child was given scarlet fever prophylaxis serum. Three days after the last dose of serum was given, scarlet fever vaccines were given. Three days later the following symptoms were observed: eruption of moderate degree on chest and back, part macular, part papular, throat red. Temperature lasted five days. Three weeks later the child had three attacks of vomiting, three nights in succession. The following morning showed generalized edema. Patient had three convulsions. At that time the child had complained of being unable to see. Urine was loaded with albumen and casts. Four months later urinalysis was negative for albumen. No blood chemistry was done in either of these cases.

M. M., aged 8, male, admitted to Schumpert Sanitarium on account of loss of consciousness and stupor. Four weeks previous to admission the child ran obscure temperature of one week's duration, not sufficient to keep him from school. Eleven days before admission the child received a dose of scarlet fever serum resulting in marked urticaria. On the eleventh day following the injection child lapsed into unconsciousness. Physical examination: pupils react to light, deep reflexes are exaggerated, superficial reflexes are normal. Koenig and Brudzinsky present, rigidity of neck, child very sensitive to touch, tonsils enlarged, eye, ear and throat negative, chest and abdomen negative. A diagnosis of meningitis was made. Blood count: R. B. C. 3,800,000, white count 11,200, Poly 76, L. L. 6 per cent, S. L. 17, eosinophiles 1 per cent, typhoid, para-typhoid and malaria; urine negative. 10-18-26 spinal fluid 30, globulin 0, T. B. smear negative, Wassermann negative. 10-20-26 cell count 40, globulin 1 plus, sugar 90 mgns, T. B. smear negative, colloidal gold 3555, 400,000 total, proteins 6-1 mgms. Progress: Patient was admitted in father's arms, restless, unable to take food by mouth, nasal feeding. September 18, patient became worse during the latter part of the night. September 19th, patient was much worse, with restlessnes, very weak pulse, distended abdomen. September 20th, spinal puncture, patient was somewhat improved. September 21, patient improving, drank water by mouth, first evidence of conscious action. September 22, much improved, patient was able to take food by mouth. September 24, child was resting very well, temperature normal, gradual improvement took place. September 31, child discharged, much improved. Highest temperature 102. After a complete study of this case our final diagnosis was encephalitis following scarlet fever prophylaxis injection. Nine months later the child still has some remains of the old encephalitis condition.

RECURRENT DUODENAL OBSTRUCTION*

J. A. DANNA, M. D.,†

NEW ORLEANS.

I am going to review tonight five cases of duodenal obstruction which were given surgical treatment, and, if possible, arouse an interest in the subject and perhaps get some real discussion. I saw my first case in 1921, and have been on the lookout for similar conditions ever since. I am sorry to have to say that I have had difficulty in interesting the radiologists and that I had no assistance from them until very recently. Much has been written on the subject in the last few years and the condition has been called by various names: duodenal dilatation, duodenal ileus, duodenal obstruction. Owing to the tendency of the symptoms to recur, in a large majority of the cases, between periods of comparative well-being, I have called it recurrent duodenal obstruction.

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*Read before the Orleans Parish Medical Society, November 22, 1926.

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I was quite impressed while at the Mayo Clinic a few days ago by a paper read by Dr. Wilkie, Professor of Surgery of the University of Edinburgh, who had seen seventy-five cases. He saw his first case at autopsy in a patient dying of ruptured duodenal ulcer. I wondered at the time whether the ulcer was not the result of the dilatation and obstruction and whether gastro-enterostomy in such a case would not be sure to produce the clinical picture which has aptly been called vicious circle; or whether most of the cases of so-called vicious circle, occurring after gastro-enterostomy, are not due to obstruction in the distal duodenum. There will be a symposium on this subject at the meeting of the Radiological Society at Milwaukee next week. I hope that many of our radiologists will be able to attend. Suggestion has been made by Crile and his co-workers that migraine is produced by duodenal obstruction. Most of my cases had headaches. As to the pathology, I believe that there are various types of the condition, some being inflammatory; some due to congenital abnormalities, etc., but I am not going to discuss this phase of the subject. With the aid of some slides, I will endeavor to discuss my cases.

Case No. 1. G. S., aged 21, referred to me by Dr. Levin, who had been treating him for some time without relief. For five years, he had been having acute epigastric pains of severe character, lasting from a few minutes to several hours, coming on at irregular intervals (only while at work) and recently almost daily. He had served in the army overseas where he had a tonsillectomy done on him and had been treated as various kinds of a "neuro" and finally discharged. He had never been able to convince the army surgeons that there was anything really the matter with him. He was a nervous wreck; tall and thin in stature; had no vomiting nor headaches. He was operated April 1, 1921, with the idea of doing an appendectomy on him and making exploration. Examination revealed normal appendix, stomach and gall bladder. First portion of the duodenum was quite large and thick-walled. On raising the colon and omentum, the third portion of the duodenum could be seen presenting in the posterior abdominal wall in several large coils. This was freed and straightened out. Where the duodenum passed under the mesenteric vessels, it seemed to be constricted. Its surroundings were stretched at this point and the bowel itself freed so as to be able to pull it through into the general cavity. This straightened out the coiled portion of the duodenum and it was kept from returning to its original position by several sutures at the duodeno-jejunal junction to the surrounding peritoneal surfaces. The result was quite magical and for eight months he had no further pain. I lost track of him shortly before he began to have pain again and did not see him until a few days ago when I was able to locate him. Instead of a poorly dressed, unkempt, dejected individual, we saw a clean-cut, slicked well dressed young man of gentlemanly bearing who had gained considerably in weight, was married and had a very good job. He says that he has had pain off and on since but never found it necessary to seek medical aid and could not be persuaded to return for treatment.

Case No. 2. L. R., aged 18. Tall, thin; otherwise normal. Seven months before he had femoral hernia operation and appendectomy for a pain to the right of the umbilicus, aggravated by activity, coughing, etc., which prevented him from playing football and finally forced him to give up college. No vomiting; frequent headaches. Operated November 20, 1922. Having in mind the finding in Case No. 1, exploration revealed the same condition and a similar operation was done. Result—complete relief to date. He was seen today.

Case No. 3. Miss K. F., aged 23. Small, thin girl. Complaining for several years of upper right abdominal pain lasting from one hour to three days with headaches and coming on at irregular intervals. She was comparatively well between attacks except for a little soreness in the right side. Was afraid to eat for fear of bringing on an attack. Occasionally suffered with hemorrhoids and had an appendectomy one year before. March 10, 1926—Operation revealed a condition not quite so marked as in the two previous cases. Fearing the uncertainty of a relief of the obstruction by the technique previously followed, it was thought preferable to do an anastomosis between the presenting coil of the duodenum and that portion of the beginning of the jejunum, which could be easily brought across and in contact with it. A lateral anastomosis with the Murphy button was done. The button was not passed and although she ate everything without pain and had no attack similar to those she had been having before, she had a definite soreness over the site of operation. Four months later the abdomen was re-opened and the button pulled loose by digital manipulation. It was passed the following day. She still has complete relief of her spells; still has some soreness.

Case No. 4. S. M., aged 29, graduate nurse. Sick three years; no pain; always vomited supper; often vomiting dinner and rarely breakfast. Ambitious to work; much depressed. Recently ate breakfast only. Had frequent severe headaches. Previous operation none. March 17, 1926, operated. First portion of duodenum definitely enlarged; in fact, the duodenum beyond the pylorus seemed as large as the stomach above the pylorus. There seemed to be no constriction by the root of the superior mesentery artery. The duodenum presented posteriorly as one large loop. Murphy Button anastomosis. Complete relief to date.

Case No. 5. T. S., aged 24. Tall, thin, stooped. Quite depressed. Had been sick for three years, with severe attacks of epigastric and right upper abdominal pain, lasting one hour to three days, with severe headaches. Relieved by vomiting; well in intervals between attacks. Increasing frequency of spells to from two to three a week. Ate nothing during spells. Previous operations none. Operated October 22, 1926. Duodeno-jejunostomy; two rows of gastroenterostomy catgut being used. Relief so far. Operated October 22, 1927—just one month ago.

I believe in these cases that duodeno-jejunostomy should be done, as freeing the duodenum alone might or might not relieve the symptoms. I do not believe I will use the button again. I think the suture method is preferable.

In conclusion: I believe that there are many patients suffering with recurrent duodenal obstruction of a complete or incomplete nature, causing varying symptoms. As the number of our cases increases, I believe we will be able to classify them as two, three or four definite clinical pictures. These cases can be relieved by the proper operative procedure, preferably by duodeno-jejunostomy with the suture method. While doing an abdominal exploration, the operation is not complete until you raise the colon and look at the third portion of the duodenum and see if it does not need attention.

(Further details covering the surgical procedure in each of the above cases were here given by Dr. Danna, elucidating with illustrations of the duodenum and surrounding structures.) (Slides Nos. 6 and 7.)

DISCUSSION.

Dr. A. L. Levin (New Orleans): Dr. Danna deserves credit for bringing before us tonight this important subject of recurrent duodenal obstruction. I am very much interested in this subject. For the past several years I have made observations on cases with disturbances of the gastro-intestinal tract in which roentgen-ray demonstrates definite duodenal dilatation. I read a paper on this subject before the society in 1923, which was published in the New Orleans Medical and Surgical Journal. The first case which Dr. Danna reports has been under my observation for a number of years. No definite diagnosis was made. The reason for not arriving at a definite diagnosis was probably due to the fact that the radiologist then did not pay attention to duodenal dilatation as he does now since his attention has been called to its existence. In looking up the literature on the subject we find cases reported in 1920, 1921, 1922 and 1923. Dr. Danna diagnosed his case as duodenal obstruction. He must have had definite, good reasons, from his standpoint, to believe that there was an obstruction. My observations on numerous occasions, fluoroscopically and radiographically, lead me to believe that two duodenal conditions exist; one a duodenal obstruction and the other, which is more common, simply a duodenal dilatation, slight or marked. I recollect very well several cases who came to operation in which no duodenal obstruction was found, and in which preoperatively the roentgen-ray demonstrated a definite large duodenal dilatation with symptoms of obstruction such as duodenal regurgitation, pain, nausea, etc.

Some of you probably remember the case of colonic obstruction with fecaliths with a definite duodenal dilatation, reported by me several years ago, but no obstruction was found by the surgeon. Another case I remember which came under my observation in my clinic at Touro Infirmary was one in which the roentgen-ray demonstrated duodenal dilatation, still the surgeon could not find a duodenal obstruction. The causative factors of duodenal dilatation are numerous. I have enumerated them in my paper on that subject. I simply wish to mention tonight a point which might be of interest. From what I can gather in the literature on the subject, there are two types of duodenal dilatation: one a permanent, the other a transient. The transient may be caused by a loose right colon, to which the surgeon should pay particular attention, or a gastroptosis and splanchnoptosis. This abdominal condition unquestionably causes a drag and duodenal kink, which results in dilatation. In such cases, the surgeon on opening the abdomen should correct such an abnormality by fixation. Post operative vomiting, I believe, is more often due to a duodenal dilatation as a result of an obstruction by a kink than by gastric dilatation, as it is commonly diagnosed.

Duodenal ulcer, malignancy of the jejunum (several cases reported), malignancy of the head

of the pancreas are causes of duodenal dilatation. Duodenal dilatation, in my opinion, is more common than duodenal obstruction, and it results in toxemia. It is not often recognizable unless a careful roentgen-ray is made. It can be plainly seen fluoroscopically as well as radiographically. The symptomatology in these cases varies. Some present a typical picture of duodenal ulcer; others will present a group of symptoms pointing to biliary toxemia with headaches of a migrainous nature. The gastric analysis varies from a hyperchlorhydria to an achylia. The stomach itself is often found to be hypotonic or there is a marked gastric atony. To differentiate between a duodenal obstruction and a mere duodenal dilatation is not so easy unless carefully studied with the aid of the fluoroscope. It is often quite difficult to differentiate between a duodenal ulcer causing an obstruction and the duodenal diverticulum, but as a rule the duodenal ulcer is found on the lesser curvature whereas a diverticulum or pouch is more common on the greater curvature.

As far as the treatment of these cases is concerned, Kocher speaks very discouragingly. In cases of obstruction he cites four cases with poor results following operation. In cases of long standing they cannot stand much operative procedure because they are highly toxic. Duodenal dilatation can be handled medically sometimes by regulation of diet; smaller meals but more frequent; duodenal intubation and duodenal irrigations; regulation of bowel movement; in this way often satisfactory results can be obtained.

I wish to reiterate that this subject is of great importance. We should pay more attention to it, and I trust some day somebody will be good enough to write a text book on duodenal dilatation and obstruction.

Roentenograms, pre- and post-operative studies of Dr. Danna's cases, demonstrated by Dr. L. A. Fortier (New Orleans):

Case 1. This film was taken after operation. I did not see him previous to his operation—the roentgen-ray was done at some other place. It shows a definite dilatation of the second portion of the duodenum, which you might mistake for the pylorus, but it is not. Under the fluoroscope I saw this definitely separated from the stomach altogether, it being the second portion of the duodenum markedly dilated. This is the case Dr. Danna spoke of straightening the duodenum by pulling the loops thru. There is evidence of a recurrence of his trouble.

Cases 2 and 3. No pathology of the duodenum is revealed. In making the roentgen-ray examinations we searched carefully for this, but could find no evidence of pathology in the duodenum.

Case 4. Under the fluoroscope these are more pronounced than the films. You get a magnification, which makes the fluoroscopic examination more valuable than the film. Here you see a slight dilatation of the first portion of the duodenem, this being the second portion and here the pylorus. This patient had a typical history of migraine and pain in the midline of the abdomen.

Case 5. I think you can all see the dilatation of the second portion of the duodenum running into the third.

Now you see five cases here in which two showed absolutely a normal duodenum. It is not always easy for anyone doing roentgen-ray work to demonsfrate all duodenal pathology. If we see it, we state it, if we do not, we cannot say it is there.

It was with some trepidation that I saw Dr. Danna do this anastomosis. Some of these cases came back perfectly well. This patient came back several times to see whether the button had been moved from its point of insertion; she had been relieved of all her symptoms.

Case 1 is the most marked case of all. By the way, he said that he did not want to pay for the examination because Dr. Danna was experimenting on him.

Dr. Chaille Jamison (New Orleans): I thought I had seen only one of these cases. The first I did not recognize. The second case, however, has not been operated on. This patient came to me, a young lady (medical student) with a syndrome similar to the one described by Dr. Danna. The attacks of pain that she has, come on at very rare intervals—they do not come on now. She has been wearing a corset for several years. She has symptoms that might suggest duodenal ulcer. I did not pay much attention to the syndrome. I had Dr. Fortier roentgen-ray her. The picture shows a very striking condition; instead of the duodenum coming down in a crescent, it comes down in practically two loops, with very marked dilatation.

I am simply going to observe this patient, not going to advise operation at the present time and do not think she is going to consider operation.

One last point: do not let us forget that everything in the whole category of medicine has been blamed (either through ignorance or the specialist's limited vision) for migraine. The gynecologist is inclined to trace it to a gynecological condition, the ophthalmologist to the eye, the ear nose and throat men to the nose or throat, and if we read endocrinology at all, we have to believe it is due to some disturbance of the internal glandular secretions. Now we say it is from the

duodenum. Let us not blame the duodenum for the migraine—I protest over that.

Dr. Randolph Lyons (New Orleans): I am not a surgeon, but the subject is interesting and it seems to me that the medical man as well as the surgeon is seeing this particular condition. I have had the ill, or good fortune to see three cases in the last year and a half, but will not go into the pathology or etiology—some might be congenital, others are due to obstruction either from adhesions or pulling down on the duodenum and in some cases there is apparently no cause we can find for the condition, nor does the roentgen-ray always reveal the reason. It is, however, an entity and gives evidence of definite symptomatology.

Crile, as Dr. Levin has stated, has reported the frequency of migraine in this condition. The first case I saw was in a young married woman who has had a cholecystectomy, the duodenum was very large, patient in a very bad condition when operated upon and died shortly afterward.

The second case was a woman about fifty-five. Her father and mother both died of abdominal cancer; one brother, dead, also had had it. She began to develop stomach symptoms; regurgitation, emesis, and the physician who had been attending her thought he could palpate a mass. He probably did. Anyway, when he operated on her he asked me to be present at the operation. Exploration for malignancy was performed and a very thorough examination revealed no pathology whatsoever. Nothing was done except to close the operative wound. She felt well for several months, then developed symptoms of migraine and emesis, vomiting practically everything she ate. She came to me for examination and we made some roentgen-ray pictures and examined the gastric contents: contents showed hyperacidity, the roentgen-ray an interesting condition. Under the fluoroscope you could see the food go through the pylorus, fill up the duodenum and regurgitate. We put a Jutte tube through the pylorus into the duodenum and filled it up with barium—it would regurgitate back through the pylorus. I advised the doctor to do another operation; so he did. I have never seen such a mass of adhesions. Nothing was done except palpate very gently and feel the organs; the adhesions were so dense we could not do anything, merely make a gastro-enterostomy. She is considerably better, has gained weight and manages to get along.

The third case is now being observed. She complains of headaches, almost constant, worse in the afternoon, and has lost a little weight. She is thirty-five years old. Examination of gastric contents shows slight hyperchlorhydria. Radiological study reveals a dilated duodenum in the first and second portions and there seems to be regurgitation of the barium meal. I have not had her operated on, but want to watch her. We cannot find evidence of obstruction or adhesions, but eventually she may have to go through the hands of the surgeon.

Dr. J. A. Danna (closing): As to dilatation without obstruction, what would cause a dilatation in the intestinal tract anywhere except obstruction? We speak of migraine due to biliary toxemia—there is no more certain way of getting biliary toxemia than by obstructing the duodenum. In some of the cases the amount of the dilatation of the first portion of the duodenum is more evident than in others. In this boy (Case 5) as the structures lay exposed in the abdomen, his duodenum was larger than that portion of the stomach nearest to it—in other words, the part distal to the pylorus was larger than that proximal to it.

I am glad to see Dr. Lyons and Dr. Jamison awake to the duodenal dilatation or obstruction question and appreciate very much their remarks. Of course, visceroptosis, I am sure, was responsible for some of these symptoms. As I said, we will probably be able to classify them in three or four classes after further study.

Guard against one thing: Do not operate on every case in which the roentgen-ray shows a redundancy or dilatation of the duodenum when there are no symptoms. If you have a case that does give you symptoms and you find roentgen-ray verification, operate. If you get a case where you have symptoms and the roentgen-ray shows nothing—operate.

THE CELEBRATION OF AN OLD MEDICAL JOURNAL—On Saturday, February 18th, the Staff of the Boston Medical and Surgical Journal celebrated the one hundredth anniversary of the first issue of this well known journal. One hundred years of continuous publication makes the Boston Medical and Surgical Journal one of the oldest medical journals in the United States, and in fact in the world. It was only a few years ago that the London Lancet celebrated its centennial, and two years before them the American Journal of Medical Science, which is the oldest medical journal published in the English language, and probably the oldest in the world from the point of view of continuous publication.

THE SPANISH EDITION OF THE UNITED STATES PHARMACOPEIA — It may interest the physicians of Spanish descent and those speaking Spanish to know that the 10th edition of the United States Pharmacopeia has been published in Spanish. Translation has been made by a Committee from the University of Havana.

FACTORS OF SAFETY IN SURGERY OF THE BILIARY TRACT.*

WILLARD H. PARSONS, M. D.,

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There are certain general risks incident to all surgery. We may go further in the analysis and say that certain factors of risk cannot be eliminated, yet with proper care may be made less; certain risks may be eliminated in their entirety by proper care; and in a minority of cases, the tragedies of surgery, we are not able to foresee the risk nor able to influence its course once it develops. In addition to these broad dangers common to all surgery, there are certain other factors of risk dependent upon and peculiar to surgery of the different organs and fields.

In all surgery, the question of reducing hemorrhage, minimizing shock and preventing infection must be considered. In years gone by these factors accounted probably for the majority of the cases of mortality; today they account for a minority . I do not wish to discuss these three conditions in detail, except as they apply particularly to surgery of the biliary tract.

Hemorrhage, occurring in the course of most operations, unquestionably can be controlled provided the operator proceeds in the proper frame of mind; yet no matter what one's poise or surgical dexterity may be, in surgery of the biliary tract, under certain conditions, unless due regard be paid to definite features of the pre-operative preparation, there will come inevitably unnecessary mortality

Obstruction to the biliary flow results in back pressure with re-absorption of the bile into the circulation and obstructive jaundice, either clinical or latent. There follows prolonged coagulation and bleeding time with pronounced tendency to hemorrhage. It is of importance that one recognize the fact that clinical jaundice need not be present before the coagulation time is influenced, for a latent jaundice may easily exist without evidence of the condition from urinalysis or pigmentation of the skin, and yet surgery performed on a patient at that time is of necessity hazardous.

It is here that the van den Bergh reaction has its great field of usefulness. In recent years the liver has been subjected to an enormous amount of study, various tests have been developed and of these the van den Bergh appears possibly of most value. Van den Bergh found that pure bilirubin in a solution of 0.7 milligrams per liter gave a positive reaction, and that other substances such as biliverdin did not. In discussing this reaction it may be of some assistance briefly to run over the theory of bilirubin formation and excretion. There is in the body a constant destruction of red blood cells, bilirubin thereby being formed by the cells of the reticulo-endothelial system. The bilirubin thus formed presumably is present in combination in the blood stream. As the blood passes through the liver, the polygonal cells extract the bilirubin and excrete it into the bile canaliculi. If for any reason the bile flow is obstructed, this pigment passes again into the blood stream, thus presenting a case of obstructive jaundice. In this condition there will be present a positive direct van den Bergh test. In the hemolytic type of jaundice there will be present an indirect van den Bergh reaction. The latter type is determined by a different type of examination. It is of no interest to us to consider in detail the technical features of this examination; suffice it to say that by this method one may determine exactly qualitatively and quantitatively the serum bilirubin content of the blood. And further, that one may determine from examination of this sort whether a patient has an obstructive jaundice or a hemolytic jaundice; and further, whether it is or is not safe at this time to operate. It is easily possible and actually does occur, that not unusually patients have a so-called "latent jaundice" without clinical manifestation,

*Read before the Mississippi State Medical Association, Jackson, May 10-12, 1927.

and yet at this time surgery is hazardous, and often may be complicated by hemorrhage, unnecessary in the first place and not infrequently uncontrollable.

Further examination of the bilirubin will show the optimal time for surgical intervention. If the serum bilirubin is increasing, there will be imminent danger from surgery. If it is decreasing, it is wise to wait until it has reached its lowest level.

As a general principle, any individual on the "down grade" is better not subjected to surgery. Every intelligent effort should first be made to arrest the progress of the condition, converting the loss to gain prior to operating. The majority of patients going down hill will die if operated upon, the majority of those operated upon while improving will recover.

Walters advises preparing jaundiced patients for surgery by the injection of 5 cc. of 10 per cent solution of calcium chlorid intravenously once a day for three days. So much for guarding against hemorrhage, the result of jaundice.

In removing the gall bladder one should endeavor to have the cystic artery under perfect control. Should this vessel escape, blind clamping may easily result in damage of the duct, thus producing a condition enormously difficult to repair. Repair of strictures of the bile duct, etc., are probably technically as difficult and dangerous as any operation in surgery.

To sum up: no jaundiced patient should be operated upon until thorough investigation of the general condition, and particularly estimation of the serum bilirubin, has been done. Preparation for surgery of the biliary tract should consist usually of rest, forced fluids and free elimination, the administration of glucose, by the intravenous route as a rule, and calcium chlorid in the vein. The latter, of course, is not necessary unless the patient has a prolonged coagulation time.

As a general principle, cholecystectomy should not be done on a deeply jaundiced patient, but rather drainage of the bladder with subsequent removal if required. If it is removed at the first operation, prolonged drainage of the common duct is essential.

Shock is guarded against in surgery of the biliary tract in about the same manner as in surgery of other fields. Crile has shown the profound effect of lowering the hepatic temperature, and has suggested the use of diathermy both before, during and after operation. It is a well known biophysical law that a change of one degree, in temperature changes the chemical activity of either a physical or biological system 10 per cent. Therefore if the temperature of the liver is reduced one degree its chemical activity is reduced 10 per cent. If the liver already has been impaired as a result of disease, any further reduction of function is likely to be serious and may account for mortality.

Crile found that when the abdomen was opened, even if the liver was not directly exposed, its temperature fell from one and one-half to three degrees or more, and the impairment of the organism as a whole as a result of this lowered liver temperature was indicated by the fact that the temperature of the brain also fell from one to three degrees. He advocates therefore the application of heat to the liver as a means of conserving the function of that organ. He has found that diathermy may be used and that it is effective.

My personal experience with this procedure has been limited to a small number of quite desperate cases and I have felt confident that strikingly beneficial results were attained. I account Crile's suggestion in this instance a definite contribution to surgery.

It has been my practice in very poor risks to employ local anesthesia, feeling that this form of anesthesia carries definitely less risk than general. In the hands of the inexpert it is naturally more trouble

and requires possibly more time, yet neither of these factors can be used as an argument against the method, but rather as a criticism of the surgeon.

It is my feeling that after cholecystectomy it is safer to drain. I am cognizant of the fact that the modern tendency is not to drain, yet it is acknowledged by most surgeons who do not employ drainage that occasionally they have mortality as a direct result of this practice. I cannot see where a small drain properly placed could do very much harm. It may be that after removing a gall bladder, in which there is little infection, and at the termination of the operation a perfectly dry field, it is perfectly safe not to drain. However, the majority of my cases do not fulfill these requirements and I invariably drain.

An acutely inflamed gall bladder, I believe, is best not subjected to surgery, provided the response to treatment as outlined above in the preparation of biliary cases for surgery is satisfactory. In the event surgery becomes imperative, cholecystostomy is preferable to removal in a majority of cases. Future cholecystectomy likely will be necessary, but I believe that in a large series of cases, particularly in the hands of the average surgeon, more patients will live and fewer patients will remain alive to wish that they were dead.

The common and hepatic ducts should be invaded if definite indication exists for their invasion and not otherwise.

Enlargement of the common duct indicates obstruction and the obstruction should be removed if feasible. In other words if there exists evidence of ductal disease, the duct must be opened, explored and dealt with as indicated; otherwise the duct should be let alone. The forming of strictures may result from invasion of the duct and present the most difficult problem to deal with. I believe that any duct that has been opened should be drained.

The pulmonary complication most often causing death is pneumonia. This complication probably occurs more often in the obese type of patients. It should be guarded against in surgery of the biliary tract in a similar fashion to surgery of other fields. Possibly here too the use of diathermy might be indicated. Obese patients ought not to have weight rapidly reduced just prior to surgery.

Complications of the kidney may occur in any type of surgery. They are not particularly more prone to occur in surgery of this field than in surgery or other regions. They should be guarded against and, should they develop, be treated in similar fashion.

The occurrence of emboli represents one of the tragedies of surgery. I know of no way in which they can be foreseen, there is little that can be done should they develop and the fate here rests largely in the hands of the gods.

In closing one might ask: is the mortality usually had in surgery of this type sufficiently high to demand such extensive conservatism as I have recommended? I imagine that on many occasions individuals about to undergo surgery for relief of a diseased gall bladder or, what is more apt to be the case, a sick biliary apparatus, have been blandly informed by the surgeon that there was no particular risk or very slight risk.

Willis states that in the five year period, 1901 to 1905, the number of deaths per hundred thousand from gall stones was 2.2 per cent. The succeeding year, it rose steadily, until in 1922, the last year for which figures were available, it showed an increase of 77 per cent.

Bernheim calls attention to some interesting facts. He says the operative deaths in the goitre clinic of Crile of Cleveland are not more than 1 per cent. The deaths following operations upon the gall bladder and common duct at the Mayo Clinic in 1923 were 5.6 per cent. Judd, in reviewing the mortality following operations for cholecystitis performed at the Mayo Clinic

in 1924, reported as follows: Acute cholecystitis with or without stones 36, mortality 5.59 per cent. Chronic cholecystitis with or without stones 861 cases, mortality 1.6 per cent. There were four deaths from cholecystostomy there, deaths being due to the following conditions: (1) acute nephritis, (2) hemorrhage, (3) pneumonia, (4) fat necrosis. There were 12 deaths from cholecystectomy. The causes of death in these cases were as follows: (1) unknown, 1. (2) cardiac, 2. (3) peritonitis 2. (4) hemorrhage, 2. (5) pulmonary embolus, 2. (6) bronchial-pneumonia, 2. (7) uremia, 1.

Gelpi made a study of the gall bladder cases operated upon in all services at the Charity Hospital of New Orleans, from the years 1914 through 1925. He found that cholecystectomy was done 296 times with a mortality of 16.21 per cent. Cholecystostomy was done 180 times with practically the same mortality, 16.11 per cent. There were 76 cases classed as acute cholecystitis and of these 20 died, making a mortality rate of 25.51 per cent. There were 398 chronic cases of which 57 died, making mortality of 14.32 per cent. Of the total cases operated upon, 77 died; so that including all cases both of removal and drainage, etc., there was a mortality of 16.17 per cent. In what I take to have been his personal series, consisting of 73 consecutive cases, the mortality for cholecystectomy was 5.45 per cent, and for cholecystostomy 27 per cent. The cases classed as acute showed a mortality of 12.5 per cent. The gross mortality for all cases irrespective of the type of operation was 10.95 per cent. The chief causes of death noted in the causes of mortality were shock, post-operative hemorrhage, sepsis, myocarditis, diffuse peritonitis and acute nephritis. In one or two cases multiple operations have been done and the per centage of mortality in these cases was high.

The above statistics are based upon work done by men of considerable experience. It is hardly reasonable to presume that men of ordinary experience could attain mortality rates even as low as those that I have quoted.

In conclusion I wish to emphasize certain facts. It seems to have become the case that both physicians and members of the laity have crowned surgery with some laurels that it is not entitled to wear. Knowledge of diseases of the liver and its allied organs in the past year has increased enormously. The technic of operative work in this field has advanced in like fashion. Yet I do not believe that the mortality had in surgery of this region is sufficiently low ever to justify one minimizing its risk to a prospective case. When we reflect that some of the ablest surgeons that adorn not only this country but the entire world report mortality rates as high as they do report them, we must admit that the average mortality rate is very likely far higher. That, gentlemen, represents the excuse for this paper. I realize that nothing original has been presented, what I have had to say simply represents the thought of men of large experience, and of course represents those things that I have personally found of value. Our ultimate aim is always the preservation of life, after that the lowering of the period of morbidity, the establishment of greater comfort, etc., follows.

I do believe that surgery of the biliary tract should not be undertaken except with due regard to its dangers, its trials and tribulations, as well as its successes. And I feel confident that no man, no matter how competent an operator he may be, has the right to do work of this character until the prospective case has been thoroughly examined, use made of the modern laboratory aids and due thought given to the question of mortality, for after all is said and done what profiteth it a man to lose his gall bladder, though it may be the seat of disease, if the price he must pay is his life?

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DISCUSSION.

Dr. V. B. Philpot (Houston): I just want to emphasize one or two points that Dr. Parsons mentioned in the paper. The first is the administration of glucose in these cases. Remembering that one of the functions of the liver is glycogenic and that naturally the function of the liver is impaired from a diseased gall bladder or any diseased function about the liver, we can readily see that the administration of glucose will be in order. It has been shown at the Mayo Clinic, that dogs with the liver removed will live only a short while (I think only a few hours) unless glucose is administered, in which event they will live for from one to two or three days.

Another point is the prevention of shock. As Dr. Parsons stated, Dr. Crile uses diathermy. I have never used diathermy, because I think more of ethylene as a general anesthetic than I do of ether, and I believe it would be dangerous to use that around ethylene. I wrote Dr. Crile about this, and his physiotherapists stated they had not tried it in the presence of ethylene.

Dr. Whitman Rowland (Memphis, Tenn.): I have no intention of discussing this paper from the standpoint of the surgeon, but as an internist in a clinic where we see large numbers of gall-bladder cases it has fallen to my lot to see the cases pre-operatively and postoperatively; pre-operatively to prepare for operation and postoperatively to care for conditions which sometimes arise that are apparently not surgical. We have been studying clinically, over the past two years, the peculiar types of death that occur in gall-bladder disease, particularly following operation in these serious cases. I do not mean to say that we have a large number of deaths, but in indiscriminate cases sent for operation we of course have our share of bad risks.

Dr. Philpot mentioned hepatitis. We have been considering these cases pre- and postoperatively from the standpoint of liver function. There is a peculiar postoperative death in bad risk, long standing, gall-bladder disease that is hard to describe. We believe some of these deaths are due to alkalosis, and we think we have a biochemical basis to prove it. We have seen others die that died that type of death which simulates uremia closely, in which the patient has a peculiar type of mental orientation. If you ask him how he feels he is slow in his mental response. He looks as if renal insufficiency was the cause of the clinical picture. Yet the blood urea is not elevated, the creatinin is not elevated, the nonprotein nitrogen is not elevated, the total output of urine in twenty-four hours is satisfactory, and there is no apparent reason for his death. A very probable reason for such a death is hepatic insufficiency. Liver disease is a constant accompaniment of long standing gall-bladder disease. We know too little about liver function, but in the presence of liver disease we have a right to assume an impairment of liver function. This general decrease in liver function results in impairment of that important process of detoxication. Opening the abdomen with resultant cooling down of the liver, further impairs its function. Operative trauma and shock also play a role. Following operation the end products of metabolism, which ordinarily are detoxified, now sift through the liver with incomplete detoxication, resulting in a sort of continuous autogenous poisoning. It is possible this may be a cause of postoperative mortality in certain gall-bladder cases.

Dr. Parsons mentioned the various tests. There are two Van den Bergh reactions, the direct and indirect. The one qualitative and the other quantitative. We have found in some cases that the Van den Bergh test did not help us very much. We run the icterus index on many patients.

Dr. Parsons (closing): I have nothing in particular to add. Of course, I agree with Dr. Philpot as to the administration of glucose. It is very valuable as a postoperative measure, also. I have had no experience with ethylene and therefore can not add anything.

I do not believe the toxemia following operation on the biliary tract is alkalosis; I believe it is acidosis.

I appreciate the discussion very much.

PARANASAL SINUSITIS— ITS PREVENTION.*

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The prevention of paranasal sinusitis is the aim of modern sinuology. In order to accomplish this great service to mankind it will require a thorough understanding of the physiology of the sinuses and the cooperation of the general medical man. Simple suppurative sinusitis is the result of a failure on the part of the immunizing faculties of the body to overcome an infection of the upper respiratory tract. I will not consider in this paper catarrhal sinusities with or without polyps, traumatic sinusitis or that from extension of dental infections, nor sinusitis secondary to the granulomatous diseases or neoplasms.

The five most important factors in sinus disease are: (a) the virulence of the bacteria, (b) the immunity of the individual inoculated, (c) heredity, (d) diet and sunshine, (e) dental infection.

Bacterial virulence and selective action. This varies in each epidemic of upper respiratory infections. Likewise the tendency towards sinusitis varies in the different epidemics and at times the inflammation tends towards the formation of empyema.

Sinus disease became an entity after the first influenza epidemics of 1889 and 1892. The epidemic of 1918 was the starting of a majority of our cases. At one time it was thought that the influenza bacillus was the specific germ of sinus disease. This was due to the fact that it limits its activity to the epithelium and the underlying loose connective tissue of the upper and lower respiratory tracts, and was so commonly found in the sinus discharge of the cases studied during the nineties.

Immunity. Our immunity to upper respiratory infections is the result of a constant inoculation of the body by the bacteria of our environment. This is done by the lymphoid tissue of the nose and throat. If the infection is mild this lymphoid tissue can develop the immune bodies, but if it is virulent the neighboring glands are brought into play to protect the general system. The acute rhinitis of early Fall is often Nature's reaction to our first inoculation. When children are sent to school they acquire an introduction to a wider circle of bacteria and react by having an acute cold. The degree of the reaction is dependent on the child and we find that the more lymphoid tissue the child possesses, the greater will be the reaction. This reaction decreases as the child grows older because its lymphoid tissue is less responsive. In the infant we find that the greatest degree of reaction is in the adenoids and the glands of the pharyngeal wall (gland of Henle), while in the child the tonsils are the most active The sinuses serve, in a minor role, in this process of immunity, and if the tonsils and adenoids are removed they enter into a major role.

Heredity. A tendency towards sinus disease is often the fruit of the family tree. The frequency with which the children of parents suffering from sinus disease contract the disease early in life is a well known fact and irrespective of environment, diet or possible contagion, I believe that an inherited weakness towards the condition is a most important factor. This inheritance may be either direct or crossed, the latter being the more common. The sinuses of the child assume the same morphology as those of the parent or immediate antecedent whom it resembles in facial appearance, if the child and the parent have normally developed sinuses. This knowledge can be used to determine whether or not the child's sinuses are developing properly. We have rayed a number of parents with persistent infantile sinuses and have been unable to show that their offsprings have a prototype of these dwarfed sinuses and in our series we have had children with persistent infantile si-

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nuses resembling in facial appearance a parent with a mature set of sinuses.

Diet and Sunshine. Stucky has for years contended that the diet was one of the predisposing causes of sinus disease, and recently at the University of Iowa, Daniels and Dean have scientifically proven that diet is very important in the production of sinus disease. I have seen them raise white mice of the same litter, in the same cage and under the same conditions of exposure, but on different diets, and those on a poor vitamin diet would develop sinus disease. I was surprised to see the amount of purulent secretion within their sinuses when they were opened at autopsy. I have found that alcohol and sugar will upset the metabolism of a chronic sinus patient and precipitate an acute attack.

Sugar Tolerance. If a normal individual is given 100 grams of sugar his blood will show in half an hour its greatest concentration, which is as a rule 0.150 and by another hour will have reached the so called normal of 0.100; but if the same amount of glucose is given a sinus patient it will pass the concentration of 0.150, and will require more than an hour to return to its basic level. If a diabetic patient develops a suppurative sinusitis he will show a greater intolerance toward the glucose and in one of our diabetic patients with an acute frontal sinusitis his blood sugar rose to 0.700 on what we supposed was a low sugar diet. With this knowledge that sinus patients have a low sugar tolerance it is my practice to remove glucose from their diet and as they improve to allow of other "sweets" than sugar. Honey is the best tolerated of the "sweets."

The people who live out of the sunshine have more sinus infections than those more fortunate ones who store up in their bodies the activating rays of the sunshine. The nuns have the least resistance and the most chronic sinuses because of their lack of sunshine. The office and institutional worker, the nurse and teacher suffer from the same lack of sunshine.

Dental Infections. Infections suffered by the sinuses from extension are mostly from the teeth. This extension is usually from an active abscess on the root of a tooth which ruptures either spontaneously into the antrum or is spilled into the sinuses during the extraction of a tooth. We have had in our Clinic this year an unusually large number of dental cysts, and I have been impressed by the high percentage of these arising from the socket of a tooth long since removed. In turn chronic sinus disease will destroy teeth.

Prevention. The prevention of paranasal sinus disease requires that we carefully watch the children of sinus patients and at the earliest tendency towards the disease take active steps to protect them by a strict observance of all the rules. We cannot shield the child from all infections and have it carry on the game of life, but we can be on our guard, and when the child enters school watch it and sensibly handle its behavior. In like manner the diet of the child should be well balanced and high in vitamins and low in sugar. During the summer the individual, whether child or adult, should enjoy as much sunshine as possible as the rays are capable of being stored up in the body. Whenever the resistance becomes lowered during the winter months, the sunshine should be artificially supplied by substituting ultra violet radiation. The use of vaccines for colds will remove a heavy burden from the sinuses and distribute it throughout the body.

I purposely have refrained from mentioning surgery and in closing will say that only the surgery designed to improve the ventilation and drainage of the nose and its sinuses can be included under the head of prevention.

REVIEWS

SOME ASPECTS OF NEUROLOGICAL SURGERY*

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Neurologic surgery, like that of other branches, is old but ever new owing to progress and investigation. The Greeks and Egyptians practised craniotomy, and skulls on exhibit in Great Britain show evidence of craniotomy practiced hundreds of years before. These skulls have holes in them which experts consider to represent surgical results and they appear so to an inexpert eye. There is report of the savages in Africa practising craniotomy. However, neurologic surgery as we today consider it is practically an infant, albeit a lusty one. Harvey Cushing is at the present time very far removed from a doddering graybeard although he was the first in this country to limit his work to this field. He is the Dean of the neurologic surgeons of America and has contributed tremendous advances to diagnosis and technic. Long may he live!

Some may be inclined to ask "What has the neurologic surgeon to offer? How does he justify his existence?" While readily admitting comparisons are odious, one may still realize that they are very convenient for the purpose of comparing; and I take the privilege of comparing neurologic with general surgery. When neurologic surgery is mentioned, brain tumors are frequently first considered, and many associate neurologic surgery with brain tumors alone. Let us consider brain tumors in comparison with tumors of some other parts of the body as liver, lung, pancreas, stomach or rectum, not one of which is as delicate as the brain, or at least as highly specialized, yet the results of malignant growths in any of these situations are pretty much the same as those of malignancy of the brain. We might possibly except an early carcinoma of the stomach found in the course of an exploration and removed in its incipiency, but as a general rule when intraabdominal or intrathoracic malignancies are sufficiently advanced to give rise to symptoms they are influenced by surgery little, if any, more than are malignancies of the brain. In other words, palliative operations may be done which may relieve the patient of his most distressing symptoms and prolong life for varying periods of from a few months to a goodly number of years which is about what can be done with such conditions of the brain. "That" some one says "may be all very true but what about the mortality?" At the present time "there is the rub" for we are unable so readily to predicate the nature of an intracranial lesion as that of one in the chest or abdomen.

By roentgenologic and other laboratory methods of extreme refinement, by expert physical diagnosis through the application of auscultation, palpation and percussion much can be learned of the situation and nature of an intraabdominal or intrathoracic lesion and many such cases can be dismissed as inoperable. Until comparatively recent times the diagnostic methods applied to intracranial lesions were hardly sufficient to set aside the operable from the inoperable, but of late, as pointed out by Bailey, better surgical judgment leads to fewer operations for such lesions as those of the optic chiasm and the brain stem. There is also the most potent factor of increased intracranial pressure which might be safely stated to be one of the chief drawbacks to intracranial surgery, for unfortunately many of these cases have advanced to the phase of increased intracranial pressure before being sent to the surgeon. To await the presence of the classical triad of severe headaches, vomiting and choked discs is to await the onset of increased pressure and greatly to increase the risk and difficulty of the operation. One might risk

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saying that the results of surgery for brain tumors compare favorably with those for other such lesions which are as serious in nature and as completely disabling.

Percy Sargent[17] has recently reported the results of some four hundred cranial operations and found in cerebral gliomata about 25 per cent of the patients die shortly after operation, about 50 per cent within eight months and about 25 per cent make good recoveries, some living for years and earning their own livings.

Bailey and Cushing[5] and more recently Bailey[4] alone have contributed very valuable knowledge to the nature of cerebral neoplasms; through a long and painstaking study they have evolved a classification into which the vast majority of such growths will fall. They have divided these growths into fourteen classes and while there are, of course, borderline cases and some showing characteristics of more than one type, they can at least offer some suggestion as to the type of growth and therefore the prognosis. In a series of 407 cases they have found a survival period of some 12 months in the spongioblastoma multiforme and an increasing degree of longevity in the other types up to the astrocytoma in which the period is 76 plus months postoperative. They have found, furthermore, that growth in the spongioblastoma multiforme and the medulloblastoma can be definitely retarded by roentgen ray therapy which should be pushed to the limit in such cases. Also, in considering the question of operation in recurrences, certain benign types are apt to be associated with the filling of cysts, blockage of spinal circulation or other accessory factors. We call cerebral gliomata malignant because of their rapid growth and their tendency to infiltrate the neighboring tissue although they do not metastasise outside of the brain.

In the cerebellar gliomata Sargent[17] found 28 per cent alive and well at an average period of three years after operation and the average survival period of 72 per cent was 13 months. The benign tumors of the brain are unfortunately less common than the malignant; these tumors are benign from the histologic standpoint but certainly malignant enough from the standpoint of the patient as they will go on to a fatal termination if not interrupted. They are endotheliomata which do not actually invade the brain tissue but push it aside making hollows in which they rest. They are encapsulted and theoretically should be easily removed but this is far from being the case for, as Sargent[17] points out, the dura to which they are attached must be removed with them and this dura is nearly always close to one of the great venous sinuses. In Sargent's series the endotheliomata were to the gliomata as 2 is to 7. Of these, 75 per cent were completely removed and 50 per cent of the patients made good recoveries; 22 per cent with no neurologic defect whatever and 38 per cent with varying degrees of palsies or seizures.

The tumors arising in the cerebellopontine angle are largely neurofibromata, 90 per cent in Sargent's series. They are encapsulated and may be hard and firm, or soft from degeneration or even liquid in the center. The practice among many surgeons is to do an intracapsular enucleation by piecemeal rather than a removal of the tumor in its capsule, the latter being beset with difficulty in controlling hemorrhage and liable to interference with circulation of the medulla. In certain cases where there is a very large tumor in an elderly person or in one who is not a very good surgical risk one might insert radium needles directly into the tumor mass allowing them to remain for an appropriate time and later giving deep roentgen-ray therapy.

Operations on the pituitary body are usually undertaken to preserve vision and the location and extent of the tumor are factors determining the choice of approach. Cushing[6] has arrived at the remarkably low mortality of 4 per cent in these cases using either the trans-frontal or the trans-sphenoidal route. He considers it not im-

possible that the neurologic surgeon of the future will operate to arrest early acromegaly. The question arises as to how much of the pituitary body may be safely removed. The work of Smith[18] and Evans[10] of California is very interesting along this line. Among other things they found that the pituitary body may be removed from a rat after which growth and certain developmental factors are arrested. These functions can then be restored by a daily homoplastic implantation of fresh pituitary tissue, a procedure naturally not available for man. We do hope, however, that our diligent co-workers in the laboratory will some day give us an active, standardized preparation of the hormone or hormones of pituitary body.

For major neuralgia of the trifacial nerve the only sure and permanent cure is dividing the posterior root of the Gasserian ganglion which gives prompt and permanent relief from the pain. For the degree of suffering and disability involved there is probably no surgical procedure which shows a greater percentage of cure and a lower mortality. Prior to operation it is often advisable to inject the branches of the nerve with alcohol. In most cases relief will be obtained and this may last from a few weeks or months to several years; the average period of relief is about nine months. Injections can be repeated as indicated as long as they prove efficacious and in some cases may defer operation for years. This procedure accustoms the patient to the numbness of the face which must be accepted in lieu of the pain.

An analogous condition to tic douleroux is major neuralgia of the ninth nerve. The pain is much of the same nature in its intensity and other characteristics but occurs at the base of the tongue and along the lateral wall of the pharynx in the region of the tonsil often radiating to the ear on the same side. It has its "trigger zone" and may be brought on by talking, eating, drinking cold fluids etc. Painting the throat and base of the tongue with cocain will relieve the pain for a short time only. Here again permanent relief can be obtained only by dividing the ninth nerve, and in order that it may not regenerate it should be divided proximal to the ganglion which lies at or within the jugular foramen. Because of its anatomical relationships and situation the nerve does not lend itself to injection.

Tumors of the spinal cord and coverings present a more cheerful outlook, for whereas in the cranium the benign tumors are in the minority the situation is not such in the spine for here we encounter many nonmalignant growths producing their damage by mechanical pressure. According to Adson[3] about 65 per cent are situated extramedullary and are removable, being as a rule tumors of endothelial origin, while the intramedullary tumors are usually of glial origin. Woltman[22] reports about 60 per cent removable. About 66 per cent of the patients benefit from the operation. According to Church and Peterson[7] the extramedullary tumors are six times as common as the intramedullary, which would give the intramedullary an occurrence of less than 20 per cent. For these surgery can offer little more than a positive diagnosis and such benefit as may result from decompression which will probably be only palliative and temporary. Spinal tumors are more readily localized than those in the cranium and are more easily approached and removed with greater safety.

There are certain diagnostic points which suggest a differentiation between extra- and intramedullary tumors of the spinal cord, but to arrive at such a diagnosis with certainty and exactness is very difficult and one who regularly commits himself definitely may reasonably expect some surprises. Lipiodol is often of help in localizing spinal lesions, but in the majority of cases the level may be determined by physical examination. If it is desired to determine the lower level it may become necessary to use lipiodol or a spinal pneumogram.

The spinal puncture is of great value. Fluid drawn from a point below a subarachnoid block may be expected to be of a yellow color, from a pale lemon to a deep gold and will often coagulate after standing a few minutes. This phenomenon is known as Froin's loculation syndrome. Occasionally the fluid above the block may be yellow, perhaps from blood seeping through the block. Another test of supreme value in subarachnoid block is the Queckenstedt test or the response to jugular pressure. A needle in the subarachnoid space is connected with a manometer and the spinal fluid pressure ascertained, light pressure is then made over the jugular veins in the neck causing an increase in the intracranial pressure by interfering with the venous outflow. This increase in pressure is communicated to the spinal fluid which will rise in the manometer and promptly fall when the jugular pressure is removed. In complete block there will be no response and in partial block a slow response. The test is very reliable. A series of punctures above and below may localize the tumor both by the physical appearance of the fluid and the response to jugular pressure.

In the field of surgery on the sympathetic nervous system we face a host of problems and possibilities. The question of the influence of the sympathetic nervous system on the tonus of voluntary muscle has interested and baffled investigators since 1879 when Perroncito[15] first reported the finding of a system of nonmedullated accessory fibres and endplates in striated muscles. The question remained largely a laboratory problem until 1924 when the Australians Hunter[13] and Royle[16] thought they had succeeded in releasing spasticity in both the laboratory animal and the human subject by operation on the sympathetic system, their technic being a ramisection of the links between the sympathetic and the cerebrospinal systems. No one else has so far succeeded in reproducing their results either in the laboratory animal or the human subject and the results of such surgery have so far been rather disappointing. It may be however that the last word has not been spoken along this line as Kuntz and Kerper[14] of St. Louis report positive findings in their dogs. Adson[2] of Rochester, and Davis[3] and Kanavel of Chicago, have favorable results following abdominal sympathectomies for circulatory diseases of the extremities such as Buerger's, Reynaud's and erythromelalgia. In many cases freedom from pain in angina pectoris has followed operations on the cervical sympathetic with varying types of operative procedure. When we consider the tremendous number of conditions in the extremities which might be benefitted by a definite and permanent increase of blood supply to the part we begin to realize the possibilities of surgery on the sympathetic system.[1]

With nerve anastomoses we are all very familiar, and while it is true that the improvement following such operations is not always as much as could be desired, at the same time the number who do improve seem to justify the comparatively safe operative procedure wherever an indication seems to exist.

In fractures of the skull and other head injuries involving the brain the tendency seems to be more and more away from promiscuous operation. Dorman[9] and Weaver[19] have reported a very interesting study along this line from Atlanta and out of a series of 125 cases of all grades of injury they had a mortality of only 22 deaths. They divide their cases into eight classes according to the grade of injury and in class A put those cases with massive brain injury and exhaustion of medullary centers dying within a few hours of admission; of their 22 deaths 20 occurred in this class, although only three were operated upon. Of the 125 cases 37 received surgical treatment. The others were treated by the use of hypotonic salines as brought out by Weed and McKibben,[20] Foley and Putnam,[12] and Fay,[11] who showed the superiority of magnesium sulphate over sodium chlorid.

In spinal injuries the question of surgical interference sometimes presents a problem requiring the very nicest surgical judgment. The vertebrae may suffer a marked degree of displacement and produce a serious injury to the cord but show very little if any malalignment upon roentgenray examination owing to having sprung back into very good position due to the elasticity of the muscles and ligaments. If one is convinced that there has been a transverse shearing of the cord operation is not indicated; this may often be shown by the position of the vertebrae. On the other hand, if there is reason to believe that the cord is not severed but is compressed by either fragments of bone of hemorrhage, it should be decompressed. The presence or absence of a subarachnoid block as demonstrated by the Queckenstedt test is of great value in such cases.

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HOSPITAL AND LABORATORY—The investigation of all biological phenomena is attended with great difficulty. During the past century great progress has been made, yet it can not be held that the formulation of any laws or generalizations regarding biological phenomena has been comparable in significance with the discovery of the laws regarding gravitation, the conservation of matter or the laws of thermodynamics. The methods to be employed in the investigation of biological phenomena are in principle the same as those which have been so productive in investigation in other branches of science, the results of which have been to give man that marvelous control over the forces of nature, the blessings of which we enjoy but hardly appreciate. Man tried for a thousand years to learn about his environment solely by exercising his reasoning powers, and the result was the dark ages. But in the seventeenth century there was introduced into his armamentarium a new weapon, a new method, the method of experiment. Man began to observe, to think, to try. Before he had only thought. The past three hundred years may be set apart from all that preceded as the Age of Experiment. What is called the scientific method has almost banished darkness from the earth, has almost annihilated distance and has lengthened time.—Cole, R.: Science, 66:545, 1927.

CASE REPORTS AND CLINICAL SUGGESTIONS

BICHLORID OF MERCURY POISONING PER VAGINAM.*

LUCIEN A. LEDOUX, M. D.,

NEW ORLEANS.

The patient is a fairly well developed and nourished female, twenty-four years of age, who complains of pain and swelling of her "womb" following the introduction of a 7½ grain tablet of bichlorid of mercury, placed in the vagina for the purpose of counteracting a persistent leukorrhea.

Present illness: At about 11:30 a. m., September 15, the patient inserted a bichlorid of mercury tablet into her vagina. She states that the tablet immediately began to melt and soon disappeared. Shortly afterwards, approximately ten to fifteen minutes, she felt a very painful, burning sensation in the vagina and vulva, with swelling of these parts. Becoming alarmed she sought the services of a physician, who attempted unsuccessfully to inject egg albumen into the vagina. She was given a hypodermic presumably of morphin and returned to her home. Another physician was summoned, who attempted to give her a vaginal douche, but failed on account of the extreme pain that it caused. She was given another hypodermic of morphin and sent to the city.

When first seen at the hospital, the patient was obviously acutely ill, extremely nauseated, and vomiting small amounts of clear fluid at frequent intervals, and having diarrheal stools containing large numbers of blood clots.

She had been unable to void since 11:30 a. m. and when catheterized at 6:15 p. m. 500 c.c. of urine was withdrawn, the specimens being full of blood, blood clots and mucous membrane tissue.

Her past history is of no significance at this time, excepting possibly the fact that her leukorrhea dates from an operation performed in 1924.

Physical examination: Temperature 100, pulse 78, respiration 22. The patient has the appearance of being very acutely ill; the skin is pale, cold and dry. The head and neck are negative excepting for slight bleeding from the nose and gums and a grayish discoloration of the buccal mucous membrane. The heart is not enlarged, no murmurs, The lungs show normal respiratory sounds. The abdomen shows an old scar in the midline from a previous operation; there is tenderness over the left kidney posteriorly and some pain and tenderness over the lower abdomen. *Vaginal examination:* Reveals a rather marked inflammation and edema of the vulva, especially the right side. The urethral orifice is congested and edematous and the mucous membrane of the vagina is very pale and almost whitened in appearance, being extremely tender on palpation. Bimanual examination was not made owing to the extreme pain and fear of rupturing the vaginal wall. *Laboratory examination:* Oct. 9, Blood: erythrocytes 4,100,000; leukocytes 9,750,N64; Oct. 19, N. P. N. 40 mg. per 100 c.c., urea 20 mg. per 100 c.c., creatin 10 mg. per 100 c.c.; Nov. 22, N. P. N. 36 mg. per 100 c.c., creatin 18 mg. per 100 c.c.; Nov. 22, urea nitrogen 16 mg. per 100 c.c., N. P. nitrogen 32 mg. per 100 c.c., uric acid 3.2 mg. per 100 c.c., chlorids, quantity not sufficient, creatin, 10 mg. per 100 c.c., blood sugar 100 mg. per 100 c.c. *Urine:* (1) Oct. 15, Sp. Gr. 1010 negative clinically and microscopically; (2) Nov. 8, Sp. Gr. 1005 negative clinically and a few pus cells and red blood cells, renal function test (intramuscular) Oct. 17, 60 per cent, Oct. 22, 60 per cent, Nov. 7, 45 per cent, Nov. 10, 70 per cent.

Treatment: Treatment was begun immediately, sodium thiosulphate gr. xv was given intravenously and a solution of sodium bicarbonate as a douche, followed by a vaginal instillation of one ounce of sodium thiosulphate. The patient was placed on liquid diet, and sodium thiosulphate solution was applied to the vulva as a compress.

The following day, the patient was given 1000 c.c. of 10 per cent glucose solution with sodium thiosulphate gr. xv intravenously by drip. Liquid diet was continued and potassium permanganate solution 1-5000 was used as a douche. A mouth wash of sodium thiosulphate and water, equal parts, was employed to advantage, the treatment of the third day being a repetition of the day previous, another glucose infusion being given and an enema of sodium bicarbonate solution.

The remainder of the treatment was essentially the same. The sodium thiosulphate gr. xv was given intravenously three times a day, also in solution with equal parts of water as a mouth wash two or three times a day, in conjunction with a solution of magnesium sulphate as a compress to the vulva, more or less, continuously. Hydrogen peroxid was used occasionally as an enema, and a solution of potassium permangate 1-5000 as a daily douche.

Her diet for the first six days was liquid exclusively and that high in sugar content. Improvement in her local, mouth and general condition was followed by soft and full diet.

*Read before the Orleans Parish Medical Society, November 14, 1927.

But one hypodermic of morphin gr. 1/6 was given and that soon after her admission, and it was not necessary afterwards to resort to any analgesic.

Progress notes: Oct. 16 patient voided voluntarily, several times, passing as much as 400 c.c. at a time, with many blood clots and portions of mucous membrane tissue. Patient was given sodium bicarbonate enema and passed a large quantity of bloody mucus. Oct. 17 patient voided greenish colored urine in early morning, but this has since improved, the last two specimens being clear. The amount passed is satisfactory, approximately 1500 c.c. Oct. 18 she had slight chill at 12:10 noon, complaining of pains in joints when position is changed, urine still highly colored. Oct. 18 patient apparently menstruating, greenish brown material returned from douche and enema. Oct. 19 vulva swelling diminished, some nausea, urine stools still colored.

Oct. 20 patient improved, had a solid, green colored stool, vulva swelling greatly reduced. Oct. 21 passed normal colored stool, intake and output still satisfactory, 300 c.c. to 1900 c.c. Oct. 23 urine was still cloudy, improved greatly. Oct. 24 normal stool, douche returned clear; sloughing of parts of tissue surrounding salivary glands beneath the tongue with slight amount of bleeding. Oct. 26 soft liquid diet; mouth improved. Developed right bartholinitis, incised. Oct. 27 drain in Bartholin gland was removed. Oct. 28 condition good. Oct. 31 general condition good, soon ready for discharge. Nov. 11 discharged after a period of observation and local treatment. Her maximum temperature 100-2, pulse 102, respiration 24. Minimum temperature 97.3, pulse 66, respiration 18.

Examination prior to discharge: Fortunately the anticipated atresia of the vagina and vesico and recto-vaginal fistulae did not materialize. The edema of the vulva had entirely disappeared. There was still some slight swelling of the vaginal mucous membrane with several small granulating ulcers, chiefly in the vaginal vault and on the cervix.

Bladder and rectal function were normal and she was entirely free from pain.

DISCUSSION.

Dr. John F. Dicks (New Orleans): I would like to discuss this paper because in 1916 I had a case similar to that of Dr. LeDoux, the symptoms about the same, but perhaps not quite so severe. Mrs. J. W., a white female of thirty years, thinking she was pregnant because her menses did not appear after the usual interval had elapsed, put seven and a half grains of bichlorid of mercury into the vagina, followed by a douche of 500 c.c of water with a bulb syringe. In about half an hour after the injection she was seized with violent pains, cramp-like in character, and sent for me. The symptoms were vomiting, abdominal pain and rigidity. I administered one-fourth of a grain of morphin and irrigated the vagina. Her temperature was normal, pulse not over 100, but she appeared very sick. I began giving her egg albumin by mouth, and milk. In the first twenty-four hours there was complete retention of urine. Catheterization was employed. Nourishment was not retained and because of the persistent vomiting proctoclysis was instituted and a hypodermic given. On the second day 500 c.c. of a five per cent solution of glucose was given intravenously. Thirty ounces of urine were voided and the improvement was marked. She continued to progress and finally recovered.

That was in 1916. No blood chemistry was done in this case, but I would like to know what the findings would have been, for in Dr. LeDoux's case the thing which interests me most is the high retention of creatinin. In the literature we find cases on record with a very high urea nitrogen content; whether the bichlorid is taken by mouth or inserted into the vagina, it is practically the same. I am certain that a great many cases of this type of poisoning are handled by the profession of which they say nothing.

Dr. Lucien Landry has kindly given me permission to mention a case which he and Dr. Matas treated at Touro Infirmary some four or five years ago. One of the employees married and wishing to prevent conception placed two seven and a half grains of bichlorid of mercury tablets into the vagina. The symptoms were the same as in the case of Dr. LeDoux. Dr. Matas opened the gall-bladder and used the McArthur drip with the hope of promoting the more rapid absorption of fluid through the intestine, but in spite of all treatment she died.

Another case of bichlorid of mercury poisoning I noticed in the literature was reported by a Philadelphia physician, Dr. Outerbridge, who did a double decapsulation of the kidney. In these cases, no matter what the method employed, whether decapsulation of the kidney, infusion etc., the idea is to get the fluid to the patient.

Dr. LeDoux's paper is timely and clearly demonstrates that we should be careful in prescribing douches to our patients; tell them the indication for the douche and if a drug is recommended be sure to specify the amount to be used.

In looking over the literature I did not see a single case report where bichlorid of mercury poisoning had occurred under a doctor's directions; it was used either to prevent conception or produce an abortion. In no instance had the drug been recommended by a physician.

Dr. Adolph Jacobs: About three years ago, at Charity Hospital, I had a case of poisoning by

bichlorid of mercury. A woman of twenty-four years had introduced a tablet of bichlorid of mercury into the vagina to induce abortion. Shortly after inserting the tablet in the vagina she became acutely ill, her symptoms corresponding to those in the cases already cited, gastric disturbance and severe abdominal pain. When I examined her there was bleeding from the vagina, which was intensely inflamed. She complained of not voiding and on catheterization about a dram of bloody urine was obtained. The outcome in this instance was less fortunate—death on the ninth day.

I do not remember what the blood chemistry was in this case, but it strikes me that the creatinin, 18 mg. per 100 c.c., in Dr. LeDoux's case is extremely high. I cannot recall seeing, in any type of disease, such a high creatinin and the patient still living; the recovery is remarkable. My patient became greatly edematous, suffered with air hunger, but remained conscious to the end.

Dr. H. B. Alsobrook: I observed a case similar to the one reported. Last spring a woman took a vaginal douche in which she had put seven and a half grains of bichlorid of mercury. Four hours later she was admitted to the hospital. For the first four or five days she ran temperature 103° to 105°; and on the fourth day she aborted a three months fetus. The treatment was practically the same as that carried out by Dr. LeDoux, but she lost all of her hair, most of her teeth and last time I saw her she had partial atresia of the vagina.

Dr. J. Birney Guthrie: The thing that strikes one in this report is the comparatively slight evidence of retention manifested by the blood chemistry. We have a very remarkable report as to blood chemistry, with an enormous creatinin increase. I believe we would have seen a very different state of affairs had not Dr. LeDoux used sodium thiosulphate. We do not see the terrific involvements we should expect after such a dosage. We have almost a specific in sodium thiosulphate in mercurial poisoning.

Dr. LeDoux's case seems to have been perfectly managed. There is only one suggestion that I could make, and that is in regard to the question of hemorrhage. Hemorrhage occurring in these poisonings is an interesting phase. It indicates an involvement of the reticulo-endothelial system which we are just beginning to study, or rather have been studying for a quarter of a century, but only now a little twilight is dawning in regard to its proper function. So it would seem, if we had a case right now, that to study these hemorrhagic tendencies, study them from the standpoint of causation, would prove both interesting and instructive.

The discussion that has been brought out is exceedingly interesting and I regret that Dr. Dicks touched so very lightly on the subject of decapsulation of the kidney. I am old enough to remember when that operation was quite the fashion and as one of my neighbors here remarked, he "helped to save a life on more than one occasion by using that operation. It seems to be something of value come up out of the past, yet we ought to consider that there is a field for that particular thing in these kidney involvements, and maybe we can save a few cases thereby that would otherwise be lost.

Dr. A. F. Hebert: About eighteen months ago I was called to see a young lady who had introduced seven and a half grains of bichlorid of mercury into the vagina to prevent conception. I immediately took her to Touro and had the nurse give her a douche, and started giving sodium thiosulphate. Three hours later, to prevent anuria, she was given 300 c.c. of 30 per cent glucose solution intravenously. Improvement was steady and the sodium thiosulphate was continued.

The last time I examined her she had almost complete atresia of the vagina, sloughing had occurred while the patient was in the institution.

Dr. E. L. King: I remember seeing two cases in which, while I could not prove that they were really ill from bichlorid of mercury poisoning, all the evidence seemed to point that way. Both were cases of criminal abortion, both presented a picture of suppression of urine, both very high N. P. N. of the blood, and both women died with absolute suppression of urine. The only way I could account for these clinical pictures was that the midwives who were responsible for the abortions must have used some of this drug for sterilization of instruments and had not washed it off before using these instruments.

I think such cases should be reported as a protest against the sale of such terribly dangerous drugs.

From a therapeutic point of view, I feel that the chief virtue of a bichlorid of mercury douche is in the water used and the heat carried by that water. I believe that the medicated douche has little or no superiority over the plain hot water or saline douche. Consider the anatomy of the cervix or vagina. The vaginal mucosa consists of stratified epithelium without glands; the cervical mucosa has glands of the compound racemose type, opening into the endocervix; in other words, the orifices of the glands open in the cervical canal and do not open into the vagina except in a cervix with eversion. About all to expect from the douche is mechanical cleanliness by washing away the discharge and the benefit derived from the heat carried into the vagina by the hot water.

We teach our patients with pelvic inflammatory conditions to take the recumbent position—rest in bed. The rest in bed is responsible for 95 per cent of the improvement and the douches for the rest.

There seems to be no excuse for the use of any particular medicated douche except that by prescribling it you impress the patient with the importance of continuing the treatment, but as far as any real effect from the medication, this is not as a rule to be expected. Bichlorid of mercury, of all the commonly employed antiseptics, is particularly slow in its action. It requires about 24 hours of continuous contact for this drug to kill the usual micro-organisms. Therefore, it is of little or no value as a gynecological agent, and, as the paper shows, its use is by no means free from danger.

Dr. Lucien A. LeDoux (closing): I want to thank those who have discussed this case report.

I wish to call attention to two very interesting facts: one, the absence of any renal injury (the renal function test was uniformly high, and there was no albumin); the second, the clearing up of the case without pelvic sequalae.

I heartily endorse what Dr. Guthrie has said in regard to this case being a good demonstration of the extreme value of sodium thiosulphate in this type of poisoning.

ANNUAL GRADUATE FORTNIGHT OF THE NEW YORK ACADEMY OF MEDICINE—An unusual opportunity to study the degenerative diseases of old age will be given by The New York Academy of Medicine October 1 to 13 by means of a program of lectures, clinics and courses in hospitals and teaching institutions.

This is to be the first "Annual Graduate Fortnight" of the Academy, inaugurating a form of graduate medical education novel in this country. In October of each year a problem of medicine or surgery of outstanding importance and interest to practising phycicians will be selected. The topic for 1928 is described as "The Problem of Aging and Diseases of Old Age."

No fees are to be charged for the Fortnight. It is not expected that every physician will feel disposed to attend all of what will be a program of long duration each day. Special courses to be arranged in conjunction with the sessions by medical schools and teaching hospitals may, however, carry a nominal charge for those who attend them.

Sessions are scheduled for morning, afternoon, and evening, with suitable arrangements for physicians from out of the city to have supper served at the Academy between the afternoon and evening sessions.

LEPROSY COMPLICATED BY SYPHILIS AND HYPERNEPHROMATOSIS.*

Report of a Case.

OSWALD E. DENNEY, M. D.,
JERALD G. WOOLEY, M. D.

U. S. MARINE HOSPITAL NO. 66, (NATIONAL LEPROSARIUM),

Carville, La.

Justification for report of this single case, it is thought, lies not only in the unique pathologic complex, but in the patient's comparative freedom from clinical symptoms, one of the diseases having existed unsuspected for a considerable length of time.

Figure 1—Left kidney and adrenal.

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*Read before the Sixth District Medical Society, Carville, La., December 10, 1926.

**Approved for publication by the Surgeon General of the United States Public Health Service.

Figure 2—Right kidney and adrenal fused.

The patient, a white, male American, was admitted to the Hospital at the age of 53 with a bacterioscopically confirmed diagnosis of leprosy. Previous medical, family and epidemiological histories were not instructive. His leprosy was estimated to have existed for ten years.

Physical examination on admission revealed nothing atypical; he presented evidences of mixed leprosy, having macules on the face, chest and arms; thickened, pendulous ear lobes; analgesia and thermanesthesia along the courses of the ulnar and external popliteal nerves.

For twelve years of his stay in the hospital he presented no clinical symptoms of especial interest save that in the course of this time the symptoms of mixed leprosy gave way by resolution, leaving him almost purely anesthetic in type so that in 1921 he was reclassified as an anesthetic leper having extensive areas of anesthesia on legs, arms and trunk and a few smooth macules. The ear lobes no longer had the doughy consistency of leprous ears but were pliable and shrunken. Great difficulty was encountered in demonstrating *mycobacterium leprae.*

A large ulcer completely encircled the lower third of the left leg and a smaller one about 4 inches in diameter existed on the lower third of the right leg. These ulcers presented sharply defined margins and penetrated deeply into the subcutaneous tissues, with islands of rugged granulation throughout. They bore a clinical resemblance to both the ulcers of tertiary syphilis and the so-called trophic ulcers of leprosy.

A laboratory diagnosis of syphilis was made by Kolmer (1), the patient's serum being strongly positive with both the Kolmer and older routine Wassermann reactions; the patient presented presumptive clinical evidence only of syphilis, in the ulcers on his legs.

Previous to his last illness, the patient maintained the cheerful, uncomplaining temperament shown during his sojourn in the hospital. Ten days before his death, he complained of malaise and was admitted to the infirmary. Routine clinical and laboratory examinations failed to reveal anything of additional interest. At the end of three days, he became semi-comatose, with dysphagia and incontinence of urine and feces. By the end of the sixth day he was completely comatose and died on the tenth day after admission to the infirmary.

Abbreviated post-mortem findings are as follows:

Thorax: lungs, edematous; heart grossly normal, aside from a few calcareous deposits on the margin of the tricuspid valves; aorta, normal in size, with calcareous plaques, varying in size from 1 mm. to 1 cm. in diameter, in the intima throughout almost its entirety.

Abdominal cavity: The liver, on its superior surface, just above the costal margin, showed a firm, white, fairly well outlined mass, approximately 5 cm. in diameter, this mass was calcareous on its margins with a caseous center. The inferior surface of liver was firmly adherent to a large mass

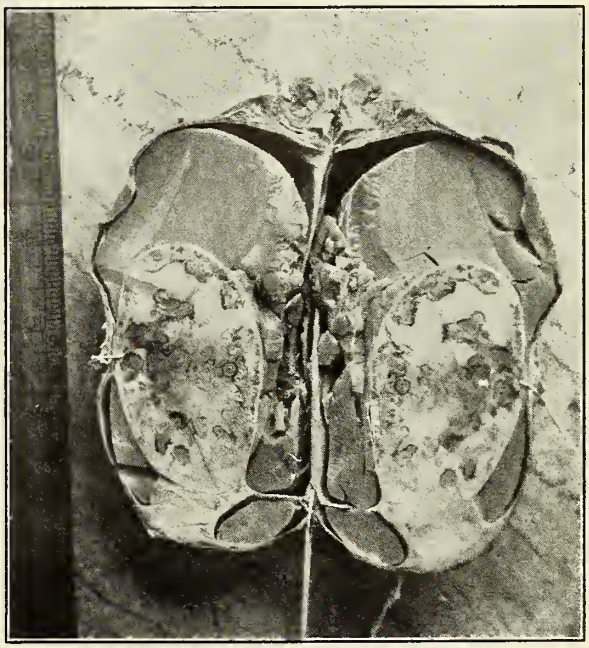

Figure 3—Right testis and tunicae

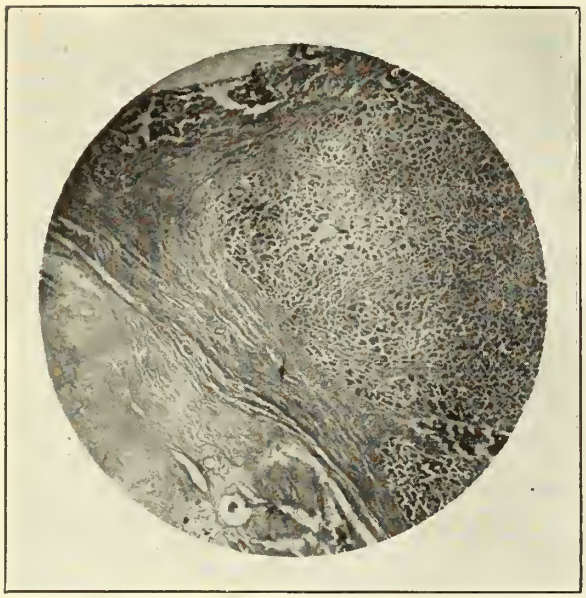

Figure 4—Liver: margin of gumma (left), capsule of Glisson (above) and compressed hepatic tissue (right) X40.

which, in turn, was attached to the upper pole of right kidney. The liver was about one and a half times its normal size, pale yellow in color; cut surface was pale yellow and greasy.

In the small intestine, about 60 cm. from the ileo-cecal valve was a firm encircling mass, 6x4x4 cm. in size, with a loop of gut attached on its lateral surface. The adhesions were comparatively fresh and easily broken; when stripped away, disclosed a perforation through the tumor, 0.5 cm. in diameter.

The left kidney was 11x5x4 cm. in size. On section the renal substance bulged slightly and the capsule stripped easily. Left adrenal, 8x4x4 cm., was adherent to tail of pancreas. (Plate I).

The right kidney, including a tumor mass, measured 15x8x6 cm. Lower portion was dark red, the upper, gray. Upon sectioning, the lower portion (9x8x6 cm.), was found to be kidney structure compressed at its upper pole by a grayish tumor mass (7x8x6 cm.), apparently the adrenal, penetrating the kidney and leaving an indistinct line of demarcation between the two structures. (Plate II).

The left testis was 7x5x5 cm. in size, firm in consistency, normal markings almost absent. On the right side of the scrotum was a sack 12.5x6.5x7 cm. containing with the testis, fluid under tension, the sack was placed in 10 per cent formalin for fixation. After fixation, the mass was sectioned, showing the testis 8.5x5x5 cm. surrounded, except at the lower pole, by a gray, hyalin substance. The testis was light gray with red areas. (Plate III).

Histologic findings:

Lung: Contains a large amount of fluid and red blood cells.

Aorta: Hypertrophy of fibrous connective tissue, endothelium in many areas absent.

Liver: Capsule thickened. Hepatic cells show vacuolation. Increased amount of connective tissue with round cell infiltration present. Dipping down from the capsule is a fibrous, encapsuled, caseous mass. (Plate IV).

Tumor in small intestine: Consists of hyperplastic adrenal cells, very small amount of glandular and muscular tissue present.

Kidney, Left: Cloudy swelling.

Adrenal, left: Composed almost entirely of hyperplastic adrenal cells.

Kidney, Adrenal and Right: Upper portion composed entirely of adrenal cells, normal cells compressed, normal relationship destroyed, hyperplasia of densely packed round cells averaging 7 u in diameter with very little interstitial tissue, lower portion consists of kidney structure. Line of demarcation between structures very poorly defined, kidney capsule being replaced by adrenal cells. The adrenal cells are pentrating the renal structures, replacing tubules and glomeruli, though the latter to a less degree. Tubules show cloudy swelling. (Plate 6.)

Fgiure 5—Adrenal; dense agglomerations of round sarcoma-like cells with small amount of interstitial reticulum X600.

Figure 6—Right kidney, cortex of upper pole. Replacement of tubules by adrenal cells. two glomerules apparently intact X144.

Testis, left: Composed almost entirely of adrenal cells with very small amount of nearly normal testicular structure.

Testis, right: Composed entirely of adrenal cells—no testicular structure found.

Spleen: Capsule thickened, increase of interstitial tissue; amyloid degeneration present in malphigian corpuscles.

Bacterioscopic examination of tissues stained by the Ziehl-Neelson method revealed rare acid-fast rods in the left kidney and in the liver.

Summary: A case of leprosy complicated with syphilis and hypernephromatosis is reported.

The clinical symptoms of leprosy subsided during approximately twenty-two years leaving almost no sequellae. Post-mortem examination revealed no pathognomonic signs of leprosy; a few acid-fast rods, probably "lepra bacilli" were found in the liver and left kidney.

The serologic diagnosis of syphilis was confirmed at autopsy by the presence of gumma and probable syphilitic cirrhosis of the liver, and aortitis.

Unsuspected double hypernephromatosis of adrenals and right kidney found at autopsy with metastatic growths in both testes and in the ileum with perforation and localized peritonitis.

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DIAGNOSTIC STANDARDS OF TUBERCULOSIS—In 1917 a Committee on Diagnostic Standards, organized by the National Tuberculosis Association, set to work to formulate as simply and accurately as possible standards and criteria for the diagnosis of tuberculosis. The seventh edition of Diagnostic Standards for Pulmonary and Glandular (Hilum) tuberculosis was published November, 1926, in booklet form by the Committee.

1. When constitutional symptoms and definite past history are absent or slight, there should be demanded definite signs in the lungs, including persistent rales usually in the upper half of the lung, or definite and characteristic parenchymal changes as shown by the roentgen-ray, or the finding of tubercle bacilli. (By "persistent" is meant that the rales must be present after cough at two or more examinations, the patient having been under observation at least one month.)

2. In the presence of constitutional symptoms, such as loss of weight and strength, etc., as defined above, there should be demanded some abnormality in the lungs on physical or roentgen-ray examination or both (but not necessarily rales).

3. Usually a process in the upper half of the chest should be considered tuberculous and a process in the lower half non-tuberculous, until the contrary is proved.

4. Hemoptysis or pleurisy with effusion is only presumptive evidence of the disease.

5. Pain in the chest and shoulders, night-sweats, digestive disorders, etc., require careful examination of the lungs for evidence of the disease. The presence of any extra-pulmonary tuberculous lesion necessitates careful examination of the lungs. This includes especially fistula in ano, adenitis, joint tuberculosis, etc.

6. In every doubtful case one should demand that the patient be kept under observation and a record kept of pulse, temperature, weight, etc., for at least one month, with repeated sputum examinations, before a definite diagnosis is made. The importance of careful and thorough observation for at least one month is to be emphasized.

7. Tuberculin tests and other special laboratory methods are of use only when in the hands of those specially trained and experienced in their interpretation.

The booklet also includes precise definitions of symptoms commonly encountered, classifications of diagnosis according to lesion and recommendations for the disposition of patients according to stage of disease.

"Diagnostic Standards" may be obtained free from the Tuberculosis & Public Health Association of Louisiana, Box 578, 535 St. Charles Street, New Orleans, La.

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AMERICAN COLLEGE OF PHYSICIANS

The Journal takes great pleasure in welcoming the Fellows of the American College of Physicians who are coming to New Orleans at the invitation of the Orleans Parish Medical Society and the Louisiana State Medical Society for their twelfth annual clinical session. It is earnestly to be hoped that many members of the College will take advantage of the opportunity of seeing the delightful old City of New Orleans, as well as the opportunity of hearing papers and addresses from some of the most distinguished clinicians and internists in the United States. The Journal wishes to call the attention of members of the profession of Louisiana and Mississippi to the fact that they are heartily welcomed as guests to be present at this meeting, and that membership in the College is not a requisite to the privilege of attending all the functions of the College. A small fee is charged for necessary expenses from the men who are not actually from New Orleans. To the New Orleans profession who have been so cordial and enthusiastic in their efforts to make this meeting a success, everything is offered as guests of the college. The character of the papers and symposia which are to be presented indicate that the meeting will be highly educational so that every medical man who attends will be instructed by hearing at first hand, men who have studied particular ways of treatment and diseases of special types.

The American College of Physicians is an altruistic organization. Its aims are to encourage medical education, research, clinical investigation and to foster measures for the prevention of disease and for improving public health. It was also formed for the purpose of organizing internal medical men so that they may see that only the highest standards are followed and practiced in their particular branch of medicine. The clinical session represents the educational feature of the organization, whereas the other purposes and functions of the College of Physicians are ever present and are being observed and followed throughout the year. It behooves thinking internists to take advantage of this opportunity to enlarge their range of vision and to increase their knowledge of disease by hearing the scientific papers and observing the clinics which will be held in New Orleans from the fifth to the ninth of March.

MODERN METHODS OF MEASUREMENTS.

The Britten Metric Bill is now up for action by the United States Congress. This bill requires that the metric system be adopted universally throughout the

country. The reasons that the bill should be adopted are numerous and many. Suffice it to say that the metric system has been adopted in every country in the world except the United States and Great Britain, and is the universal standard of measurement not only in civilized but in countries which we would naturally consider to be more or less in a state of semi-civilization. In its application of medicine, the metric system is without doubt the most satisfactory system that has ever been employed in this country. Incidentally it is the only system that has been legalized in this country, as in 1895 Congress passed a law making the use of the metric system compulsory in all medical branches of the United States Government. The United States Pharmacopeia employs the metric system first, and allows the old system as a secondary alternative.

The chief objection to the metric system by medical men is invalid to wit that prescriptions written in the metric system are changed back to the apothecary system by the druggists with consequent great liability to error. If they do change the metric system back to the old system it is because they have been corrupted by the physician who has employed this latter form in writing his prescriptions. The student of pharmacy is taught only the metric system. The advantage of a decimal system in medicine in making up solutions and in preparing formulas is so obvious that it is unnecessary to advance arguments as to why this system should be employed, a system which could be learned in fifteen minutes by any practitioner of medicine.

NEW OBSERVATIONS ON THERAPY.

Several unusual forms of therapy recently introduced in the treatment of disease have been extensively used in the immediate past and still are being widely used now in the present. These remedies include insulin in the treatment of diabetes, iodin in certain types of goiter, and liver, or liver extract, in pernicious anemia.

Insulin has stood successfully the test of a few years' time, although the question has never been answered "does insulin improve carbohydrate intolerance in diabetes?" Robinowitch[1] attempts to respond to this query. In doing so he points out first that the only true criterion on which to consider the information valid is from the study of the chronic diabetic and not the individual whose tolerance is lowered by infection, or the juvenile diabetic, or the acute diabetic who has for some reason or another a sudden dysfunction of the pancreas. In his clinic there have been over 1,200 diabetics. In controlling the three important variables: diet, exercise and acidosis, he found that it was possible to reduce the amount of insulin taken, but only if undernutrition was maintained, suggesting that the results were dependent upon proper dietary rather than improved carbohydrate tolerance.

The introduction of liver and liver extract, although suggested as a therapeutic measure a little less than two years ago, has resulted in very widespread employment of this food in the treatment of pernicious anemia. It naturally is to be expected that sooner or later other types of parenchymatous organs would be employed. Such has been the case. At the Rochester Clinic[2] two patients suffering from pernicious anemia were fed 250 grams of kidney daily, without other foods of value in blood regeneration. Response to kidney feeding in these cases was as spectacular as has been observed in the treatment of pernicious anemia with liver.

Iodin has been shown to be of definite value in exophthalmic goiter. But the physisian has been warned time and time again that it is absolutely contraindicated in cases of toxic adenoma. In fact so far has this iodinphobia been carried that it has been suggested that iodin should never be given

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(1) Rabinowitch, I. M.: Does Insulin Improve Carbohydrate Tolerance? Quart. J. M., 21:211-221, 1928.

(2) McCann, W. C.: Effect of Kidney in Blood Regeneration in Pernicious Anemia. Proc. Soc. Exper. Biol. and Med., 25:255-258, 1928.

to thyroid patients because of the danger of confusing a case of exophthalmic goiter and toxic adenoma. From the University of Michigan[3] appears a paper which shows that the patient with toxic adenoma, previously untreated with iodin, responds exactly as do unselected cases of exophthalmic goiter. Any differences that exist are not qualitative, but on the contrary are quantitative. This paper would seem to confirm the stand taken by many practitioners of medicine that iodin is of value in the treatment of all types of thyroid disturbance. As a side issue it would tend to show that hyperthyroidism or toxic adenoma and exophthalmic goiter are not two separate and distinct diseases, a belief very generally advanced by the endocrinologist and surgeon.

SIGNIFICANCE OF THE INSIGNIFICANT.

It has been frequently remarked that success in diagnosis in medicine depends not so much upon the appreciation of the big things, but the observation of smaller and apparently inconsequential features which escape the eye and the observation of the average man. In conformation of this oft-quoted statement, attention might be called to two recent papers, the one by Dr. George Blumer[1], who has recently brought out a large three volumed book, and the other by Dr. Paigniez[2] of Paris. Dr. Blumer notes that in certain patients who have metastatic carcinoma of the spinal column, a difficulty in turning over in bed is one of the outstanding features. This observation is particularly of value, obviously, in patients who have hidden and perhaps unsuspected cancer, more especially of the prostate. Even in those patients in whom carcinoma is appreciated and recognized, spinal metastasis is a frequent occurrence and may not be suspected until this observation of the difficulty of the patient in turning over in bed has been made.

The French authority[2] writes that a meal of protein or one which contains a considerable amount of protein has a distinct and depressing effect on the blood pressure. In normal individuals it will cause a fall in pressure of as much as 20 m.m. of mercury, wheras an ever greater fall will occur in patients suffering with hypertension. This observation pertinently points to the advisability of inquiring as to the time of the last meal and the character of that meal, before taking the blood pressure of individuals in whom it is desired to get a true and trustworthy manometric reading. These two observations are significant. They are points which have been overlooked in the past. They indicate certain apparently minute details which at times may be of great importance in arriving at a diagnosis. It may be truly said that the ability to observe and appreciate the little and apparently insignificant helps materially in the making of a successful diagnostitian.

THE LATEST ATTEMPT TO COMBAT TUBERCULOSIS

The Tuberculosis and Public Health Association of Louisiana, as one of the constituent organizations in the National Tuberculosis Association, is partaking in a nationwide campaign for the early diagnosis of tuberculosis, which is to be held during March of this year The organization calls attention to the fact that this campaign is conducted to reach both the laity and the medical profession. It points out that the failure to recognize the disease early accounts among many patients for the failure ultimately to conquer the disease in those individuals. This fault lies in large part with the patient, but the doctor is not entirely blameless. This campaign will attempt to teach both. In Louisiana small booklets will be sent to members of the

(3) Youmans, J. B. and Kampmeier, R. H.: Effect of Iodin in Toxic Adenoma, Arch. Int. Med., 41:66-74, 1928.

(1) Blumer, George: A Note on Difficulty in Turning Over in Bed. Boston M. & S. J., 197-1260, 1928.

(2) Pagniez, Ph. and Escalier, A.: Influence de l'ingestion d'albuminordes sur la pression arterielle. Presse mêd., Jan. 4, 1928:1.

medical profession illustrating the signs and symptoms of early tuberculosis. The laity will be instructed by special articles in the press, by movies and other means. The physician is asked to cooperate by the careful examination of patients who come to him as a result of this movement, and he is asked to study the booklet which contains many helpful hints in the diagnosis of this dread disease, the morbidity of which in the past few years seems to be on the increase, particularly among young women.

A CORRECTION.

The attention of our readers is directed to an unfortunate error which appeared in the Bibliography of Dr. Matas. In the list of his publications printed on page 512 of our February issue ("The Matas Number") a supplementary list is appended under the statement that "the following addresses and lectures delivered by Dr. Matas have *never* appeared in print." While this is true of a number of the contributions quoted, the majority of the papers reported as unpublished have been printed in full or in part, in the periodical press, in the Transactions of Societies, in separate pamphlets or in some other form of publication.

In explanation, we would state that during Dr. Matas' long absence in Europe last summer, the index cards which had been diligently and faithfully recorded by the Librarian of the Medical Faculty of Tulane, Miss J. G. Rogers, up to the time when she was compelled to give up work on account of illness, were filed in many instances, only as titles pending the printing of the articles, which was often delayed for months and longer. For this reason, the exact references to the time and place of publication did not appear on the cards that were copied by our clerks, who hastily concluded that they had never been published.

We greatly regret that in our desire to surprise Dr. Matas with a catalogue of his writings, the printer's proofs were not submitted to him for revision, as this error would have been avoided. Dr. Matas has since been given an opportunity to correct and amend his bibliography and the revised catalogue which is now in press, will be reprinted in pamphlet form for distribution to the libraries of the medical Faculty and of the Orleans Parish Medical Society, as well as other leading medical libraries of the country, where it will be available for reference.

CORRESPONDENCE.

February 10th, 1928.

To the "Journal Committee" of the Louisiana State Medical Society, Dr. Musser and Associate Editors of the New Orleans Medical and Surgical Journal:

My Dear Friends:

I have not yet recovered from the dazzling effects of the "Matas banquet" held on December 20, 1927, and the eulogies of my eloquent colleagues, Gelpi, Fossier, Chassaignac and Bass were still ringing in my ears when the "Matas number" of the Journal made its appearance on February 1st, in time to completely upset what was left of my emotional equilibrium when brought face to face with this added and crowning testimonial of your regard and friendship.

The "Matas number" has been lying on my desk for several days with no prospect that in my perturbed state of mind I could ever regain sufficient composure to do justice to my feelings and much less to the generous motives that prompted the trustees and editors of the *Journal* to devote so much of their thought, labor and space to an exhaustive review of my professional activities and in praise of my unpretentious worth.

As I hold the "Matas number" and see the printed image of myself, so conspicuous in the frontispiece, it seems to say in a puzzled and quizzical way, "Here I am; don't you see my dilemma and what are you going to do to help me out of it?" Indeed it is a dilemma in which I find myself confronted; on the one hand, with an incalculable debt of gratitude to acknowledge and, on the other, with no adequate means to pay it, even by borrowing copiously from the superlatives and adjectives of the lexicon. All that I can do is to declare myself verbally insolvent and put myself at the mercy of my creditors. Yes, my dear *Journal*, I confess myself utterly and hopelessly bankrupt in so far as I may draw on

my vocabulary to liquidate my debt for the over generous, nay prodigal, manifestations of your favor that now and so often in the past you have chosen to bestow upon me. Whatever wealth in words I may have once possessed to express my gratefulness has been exhausted by frequent repetition of the same and, I fear, futile efforts to express it. Whatever I could now say of the "Matas number" and of the emotions evoked by the columns of the *Journal* (on so many occasions the Editorial Staff in dedicating this number to me, would be a mere repetition and reiteration of what I have said or tried to say, verbally or in the columns of the *Journal* (on so many occasions in recent years), in thankful acknowledgement of the unfailing kindness and favor with which the *Journal* as the authorized organ of the Medical profession of Louisiana, has distinguished and honored me.

I have tried on this occasion to find some original or different way of giving utterance to my thankfulness in words that would not be worn threadbare by long usage, but in vain. No matter in which way I began, the attempt always ended in the same refrain, like that of the old familiar Creole love song: "Mo l'aimé, toi chère, mo l'aimé toi de tout mon coeur."

And now my dear Mr. Editor, I trust you will believe me when I say that though I have failed as a composer of a hymn in "laus magna gratitudinis," that might better fit your merits or my wishes—you will know by these lines that there are sentiments of affection and appreciation for the Journal and the splendid organizations that it represents—that remain too deeply anchored in the depths of the heart to find their way to the surface in the mere bubble of words.

Please allow me in closing, to avail myself of this opportunity and of your good will to acknowledge the many congratulary letters and messages that I have received since the publication of the "Matas number," from professional friends and others here and elsewhere throughout the country, whom I wish to thank but cannot reach individually at this moment, except through the wide circulation of the *Journal*.

Again, I beg to remain, as ever,

Yours faithfully and gratefully,

RUDOLPH MATAS.

THE PRACTICE OF MEDICINE IN THE COUNTRY—If the supply of country doctors is to be replenished, these doctors must come from among the young men and women of the country districts, as was the case in former times. The type of graduates now being produced by our medical schools will not settle and practice in the country districts. This is conclusiely proved by the experience of recent years.

The family doctor is rapidly becoming extinct. He is being supplemented by the specialist to a degree that is not warranted under practical conditions.

It is poor comfort to the expectant mother in the farm home to know that in the distant city there is an elaborately equipped maternity hospital, with specialists in obstetrics in attendance, when our system of medical education to an increasing extent compels her to rely upon a midwife or the friendly offices of a neighbor in facing her ordeal. It is not necessary to elaborate on this phase of the situation. Parallel illustrations will readily suggest themselves.

The need is for more general practitioners, whose outlay in time and money in securing their medical education will be such that their services will be within the reach of the rank and file of the people, who constitute the overwhelming majority of our population, whether urban or rural.

We are not advocating one class of doctors for the country and another for the town. The country doctor, who is compelled to rely largely upon his own resources, without many of the facilities afforded in city hospitals, and without the advice of specialists, should be the best product of our medical schools.

Neither are we advocating any lowering of medical standards. What is required is more practical instruction, which may be acquired in less time and with the expenditure of less money than under prevailing conditions. We find that it is the opinion of many physicians of the highest standing that present medical education is not giving the most resourceful practitioners for ordinary service; it is producing practitioners who are dependent upon hospitals and laboratories, while these facilities according to authoritative medical opinions are necessary in hardly more than 10 per cent of illnesses and accidents. It is in the care of this 90 cent of illnesses for which independent, resourceful physicians are necessary, that the rural communities are mostly in need. For the 10 per cent of emergencies requiring specialists and hospital service, rural people can, perhaps, in most cases by an effort utilize urban facilities. However, the cost of these distant facilities make them impracticable by rural people except in cases of emergency. Because of their cost they are not practical for 90 per cent of ordinary illnesses and accidents which, in the aggregate, produce the greatest sum of suffering, and whose early neglect leads to the serious emergencies. This 90 per cent of illnesses cannot be handled through distant doctors and urban hospitals. If the people are to have adequate medical service, they must have physicians in their own communities.

TRANSACTIONS OF THE SONIAT MERCY STAFF MEETING.

At the regular monthly staff meeting of the Mercy Hospital, the following officers were elected for the ensuing year: Dr. E. L. Leckert was unanimously re-elected chairman; Dr. E. A. Ficklen, vice-president; Dr. Maurice Campagna, secretary; Dr J. F. Dicks, treasurer.

Dr. Erasmus Fenner presented a paper on Hodgkins' disease, emphasizing the difficulties incurred in diagnosis due to lack of a typical clinical picture. The case was one which had been under observation since 1923, in which a primary diagnosis of tuberculous cervical adenitis and been made. At that time a pathological report was made of lymphosarcoma; radium therapy was instituted and the child sent home to be subsequently readmitted with various symptoms of distention, anemia and cachexia. The true diagnosis was not made until a few days prior to death, when an antimortem diagnosis of Hodgkins' disease was made and ultimately confirmed at the autopsy table.

Dr. Chalaron noted in the history that the child passed blood in the urine. He was interested in knowing the condition of the kidneys at autopsy; how to explain the hematuria in the absence of kidney pathology.

Dr. Hauser stated that the slide made in 1923, was again examined after death and it was found that the previous diagnosis of lymphosarcoma was erroneous. This was a true case of Hodgkins' disease and the typical Dorothy Reed cells were found present in the lymph nodes. The blood picture found in this particular instance was not characteristic of Hodgkins' disease, except for a persistent leukopenia. He also stated that there was no kidney pathology found at autopsy.

Dr. Campagna stated that two most frequent diseases confounded with Hodgkins' disease are tuberculous cervical adenitis and lymphosarcoma, and that the final diagnosis could only be made by the microscope. The earliest manifestations of Hodgkins' disease were a pruritis accompanied by itching and very often an associated diarrhea. The temperature is intermittent in character and the symptoms often disappear for a short time only to recur later with greater intensity. Therapeutically radium has been found of some benefit early in the disease. An eosinophilia with a leukopenia is found in about fifty per cent of cases.

Dr. Ficklen presented a case of septic infarct of the kidney following an appendectomy, in which there was marked hematuria. Cystoscopic examinations were unsatisfactory, due to the difficulty of introducing the catheter into the affected organ. Nephrectomy was performed, the patient making an uneventful recovery.

MAURICE CAMPAGNA, M. D.,
Secretary.

GONORRHEAL ARTHRITIS—Gonorrheal arthritis has been polyarticular in 58 per cent and monarticular in 42 per cent of cases. The involved joints in their order of frequency have been: knee, 58; ankle, 50; hip, 32; wrist, 21; shoulder, 19; phalangeal, 17; elbow, 13; metatarsophalangeal, 8; spine, 8; metacarpophalangeal, 7; sacro-iliac, 1; temporomaxillary, 1; sternoclavicular, 1. The symptomatology of gonorrheal arthritis in its acute and chronic forms differs in no material way from that of an arthritis due to other infections, it being borne in mind that the gonococcus may cause a suppurative inflammation; also that metastatic joint involvement may arise from mixed pyogenic postgonorrheal foci, lurking in the seminal vesicles or prostate gland. The diagnosis of the gonococcic origin of a synovitis or arthritis, occurring in the second or third week of an acute gonorrhea, does not offer any difficulties; the discovery of gonococci in the genito-urinary tract or its appendages is almost conclusive, and the demonstration of gonococci in the aspirated fluid of the suspected joint is pathognomonic. The tendency to rapid polyarticular involvement of the larger joints is most characteristic. Acute gonorrheal arthritis must be differentiated from acute rheumatic fever. The prognosis in gonorrheal arthritis should always be guarded. It is, however, directly dependent on the promptness of the most efficacious treatment, and is better in the acute than in the chronic form of the disease, before degenerative or proliferative anatomic tissue changes occur.

—Thomas, B. A.: J. A. M. A., Dec. 24, 1927. p.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the past month the Board of Directors has held its regular meeting, and the Society two Scientific meetings.

At the Board of Directors meeting the regular routine business was transacted and the following men were elected to Membership:

Active Membership—Dr. Ambrose H. Storck.

Interne Membership—Dr. Norman E. Applewhite.

The regular Scientific Meeting of February 13th was dispensed with. A joint meeting of the New Orleans Gynecological and Obstetrical Society and the Orleans Parish Medical Society was held on February 15th, at which time Dr. W. W. Chipman of Montreal and Dr. John O. Polak of Brooklyn, New York, were the guests of the evening.

The title of Dr. Chipman's paper was "Acute Conditions in the Lower Abdomen of the Female," and that of Dr. Polak's, "The Toxemias in Pregnancy." These papers were discussed by the members.

Both Dr. Chipman and Dr. Polak are of international reputation and experienced teachers.

At the meeting held February 27th the following program was presented:

"The Ptosis Support for the Thin Individual"
By.....Dr. A. K. Duncan
Discussion by Drs. A. E. Fossier, I. M. Gage
P. A. McIlhenny, and closed by Dr. Duncan

A Moving Picture, by Courtesy of Dr. Alton Ochsner.

"Infections of the Hand."

The second quarter premium on the group insurance is due March 5th, and the members are urged to pay this premium immediately.

DO NOT LET YOUR INSURANCE PREMIUMS LAPSE.

TREASURER'S REPORT.

Actual Book Balance, 12-31-27	$ 485.86
Receipts during January	3,651.05
	$4,136.91
Expenditures	$2,674.02
Actual Book Balance, 1-31-28	$1,462.89

REPORT OF LIBRARIAN.

Thirty-one books have been added to the Library during January. Of these 16 were received from the New Orleans Medical and Surgical Journal and 15 by gift. Gifts of journals have been received from Drs. Gladden, Talbot, Lanford, Bloch, Lurie and one book from E. L. King. A note of new accessions of recent date is appended.

The stairway between the two libraries is completed and will be of great benefit to the reference work of both libraries. The rooms for expansion furnished us have been constructed and the wall shelving is being built and stained at this time. As soon as this is finished we expect to make the necessary shifts.

NEW BOOKS—JANUARY, 1928.

Hess—Feeding and Nutritional Disorders of Infancy and Childhood. 1927.

Stern—Should We Be Vaccinated. 1927.

Fitzwilliams—Tongue and its diseases. 1927.

Wolbarst—Gonococcal Infection in the Male. 1927.

Moore—American Medicine and the People's Health. 1927.

Myers—Fighters of Fate. 1927.

Potts—Getting Well and Staying Well. 1927.

Coope — Diagnosis of Panceratic Disease. 1927.

Cowell—Hernia and Hernioplasty. 1927.

Fisher—Ophthalmoscopy, Retinoscopy and Refraction. 1927.

Cowan—Ophthalmic Optics. 1927.

Myers—Diagnosis, Classification and Treatment of Tuberculosis. 1927.

Coffey—Gastroenteroptosis. 1923.

MacKenna—Diseases of the Skin. 1927.

Morse — Emergencies in General Practice. 1927.

Clark—Radium in Gynecology. 1927.

American Neurological Association—Transaction. 1927.

Isthmian Canal Zone Medical Association—Proceedings. 1927.

Rockefeller Foundation — Methods and Problems of Medical Education. 1927. v. 8.

Darrah—Modern Baking Powder. 1927.

Orr—Treatment of Osteomyelitis. 1927.

Richardson—Current Significance of the Word Alum. 1927.

Ekehorn—Syphillis Fetuum. 1925.

MacAusland—Mobilization of Ankylosed Joints. 1923.

Campbell—Bats, Mosquitoes and Dollars. 1925.

Pusey — Importance of Being Historically Minded. 1927.

Hay—Graphic Methods in Heart Disease. 1921.

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

To the members of the Louisiana State Medical Society.

Greetings:

The annual session is close at hand. The House of Delegates meets at Baton Rouge on Monday, April 9th; the scientific session starts on Tuesday following. We sincerely hope that all that possibly can get off will leave and join the East Baton Rouge Parish doctors in making this year's meeting the greatest ever.

The American College of Physicians is meeting in New Orleans in March; an organization such as this coming to our state should foster interest in medical matters to such an extent as to help swell the attendance at Baton Rouge.

Our hosts at Baton Rouge got an early start with their preparations and have been steadily on the job; if those of us from the other parishes will show the proper appreciation of these efforts, the capital of our state can then boast of the best meeting in the history of our society. Remember that the legislature will meet in Baton Rouge a little later and it is imperative that we make a favorable and lasting impression there.

Anticipating hearty co-operation from our membership, I am

Yours to serve,

ARTHUR A. HEROLD,
President.

MEDICAL NEWS NOTES.

The Tri-State Medical Society of Louisiana-Arkansas-Texas held its annual meeting in Shreveport, January 18-19, under the presidency of Dr. S. A. Collom of Texarkana. The section chairmen were: Surgery, Dr. P. Hunt of Texarkana; Medicine, Dr. A. A. Herold of Shreveport; Gynecology, Dr. C. H. Mosely of Monroe; E., E., N. & T., Dr. G. W. Hartt of Marshall; Urology, Dr. I. B. Rougon of Shreveport; Pathology, Dr. N. Klein of Texarkana; Miscellaneous Topics, Dr. J. J. Terrill of Dallas. An excellent program was arranged, visitors including Drs. Hollender of Chicago, Campbell of Memphis, Henderson of Rochester, Moore of Houston, Sellers and Levin of New Orleans, Dowman of Atlanta and Caulk of St. Louis.

Texarkana was selected for the 1929 meeting place and the following officers elected: President, Dr. Guy A. Caldwell of Shreveport; Vice-Presidents, Drs. S. C. Barrow of Shreveport, M. L. Norwood of Locksburg, Ark., and W. G. Hartt of Marshall; Secretary-Treasurer, Dr. Frank H. Walke of Shreveport, re-elected.

The Shreveport Medical Society, after an absence of over two years, has decided to resume holding its regular meetings at the Charity Hospital. In 1926, meetings were held at the North Louisiana Sanitarium and from January, 1927 to date, they have been at the Highland Sanitarium.

Much interest throughout the state is being manifested in the coming session of the American College of Physicians in New Orleans, March 5-9, inclusive; a good attendance is anticipated from North Louisiana.

The Baton Rouge meeting of The Louisiana State Medical Society also promises to be well attended. The House of Delegates meets on Monday, April 9th and the scientific session begins the following day. Elaborate preparations are being made by the East Baton Rouge Parish doctors; Dr. Jabez N. Jackson, president of the A. M. A. has agreed to be present, participating in the scientific program and speaking at the public session.

St. Tammany Parish Medical Society held its regular monthly meeting on February 10, 1928, in the St. Tammany hotel at Mandeville with the following members present, Doctors F. F. Young, President; Roland Young, Secretary-Treasurer; W. L. Stevenson, J. K. Griffith, F. R. Singleton, J. F. Buquoi, J. K. Polk, R. B. Paine, H. D. Bullock and A. G. Maylie and E. E. Lafferty of Bogalusa.

Dr. E. E. Lafferty gave a discourse, illustrated with many roentgen-ray pictures on "Common Fractures of the Long Bones" which was as instructive as interesting, holding the attention of all the members, many of whom discussed the subject matter at the close of the discourse.

Several unusual clinical cases were reported and debated by the members, after which the Society adjourned to meet again March 9, 1928, at Covington.

The Bi-Parish Medical Society of East and West Feliciana Parishes met in the office of the President, Dr. E. M. Toler, Clinton, Louisiana.

An interesting and instructive paper was read by Dr. Wood of the East Louisiana State Hospital. His subject was "Cholecystography."

After the meeting dinner was served at the Rist Hotel. The next meeting will be with the East Louisiana State Hospital, the first Wednesday in April.

The Lafourche Valley Medical Society held its quarterly meeting at Napoleonville, La., on Wednesday, February 8. This being the occasion of the annual election of officers the following were elected to serve for 1928-1929.

President, Dr. Dawson T. Martin; Vice-President, Dr. Chas. J. Barker; Secretary-Treasurer, Dr. Chas. S. Roger. The meeting in every sense proved highly interesting to those in attendance, having had papers presented by fellow members which because of the medical and scientific interest conveyed, elicited quite a bit of discussion by the membership. The society was honored by having in attendance several distinguished members and guests of New Orleans in the person of the viz: Dr. M. O. Miller, Charity Hospital Surgeon; Dr. P. H. Jones, Charity Hospital physician; Dr. T. J. Dimitry, eye specialist; Dr. H. V. Unsworth, nervous and mental diseases; Dr. A. E. Fossier, ex-president of Orleans Parish Medical Society. After partaking and indulging in the banquet a happy climax to the evening's entertainment, the meeting adjourned to the second Wednesday in May.

The members of the Third District Medical Society and guests attended a meeting at the Elks Home in Lafayette, La., on Wednesday, February 8. The meeting was followed by a banquet at the Terrace Hotel. Dr. O. P. Daly of Lafayette was elected president for the new year; Dr. Dunshie of Rita, Vice-President; and Dr. P. H. Fleming, St. Martinville, Secretary-Treasurer. Dr. P. H. Fleming was chosen delegate to the State Medical Meeting, and Dr. M. E. Saucier of Lafayette, alternate. The retiring president, Dr. C. C. DeGravelles, Morgan City, presided at the business session with Dr. R. D. Voorhies, Lafayette, Secretary-Treasurer. Dr. Jules Dupuy and Dr. Carroll W. Allen of New Orleans spoke on medical themes. During the banquet at which Dr. Harold G. F. Edwards of Lafayette was toastmaster, toasts were given by Dr. Carroll W. Allen, Dr. Jules Dupuy and Dr. Lucien LeDoux of New Orleans, Dr. Daly of Lafayette and Dr. Ellis of Crowley for the physicians, Dr. J. R. Olivier of Lafayette, for the dental fraternity and M. A. Montgomery of Lafayette, for the pharmacists. The next meeting will be held at Lake Catahoula in St. Martin Parish during the month of June.

The Assumption Parish Medical Society has elected its 1928 officers as follows: President, Dr. T. B. Pugh, Napoleonville; vice-president, Dr. W. W. Pugh, Napoleonville; Secretary-Treasurer, Dr. Chas. S. Roger, Napoleonville; Delegate, Dr. W. E. Kittredge, Tallieu, P. O.; and Alternate, Dr. C. S. Roger, Napoleonville.

St. Martin Parish Medical Society has elected the following officers for 1928: President, Dr. J. S. Martin, St. Martinville; Vice-President, Dr. M. Boudreaux, Breaux Bridge; Secretary-Treasurer, Dr. P. H. Fleming, St. Martinville; Delegate, Dr. J. L. Beyt, St. Martinville; and Alternate, Dr. P. H. Fleming, St. Martinville.

Lafayette Parish Medical Society has elected the following officers for 1928: President, Dr. M. E. Saucier, Lafayette; Vice-President, Dr. M. R. Cushman, Lafayette; Secretary-Treasurer, Dr. Dr. H. G. F. Edwards, Lafayette; Delegate, Dr. H. G. F. Edwards, Lafayette; Alternate, Dr. O. P. Daly, Lafayette.

Vermillion Parish Medical Society has elected the following officers for 1928: President, Dr. W. A. Poche, Kaplan; Vice-President, Dr. A. A. Comeaux, Abbeville; Secretary-Treasurer, Dr. Thos. Latiolais, Kaplan; Delegate, Dr. Leo. Saporito, Kaplan; Alternate, Dr. A. A. Comeaux, Abbeville.

St. Mary Parish Medical Society has elected the following officers for 1928: President, Dr. C. C. DeGravelles, Morgan City; Secretary-Treasurer, Dr. A. C. Kappel, Franklin; Delegate, Dr. C. M. Horton, Franklin; Alternate, Dr. L. B. Crawford, Patterson.

DIED—Mary Dunan O'Rorke Mayer, in the 93rd year of her life, at Opelousas, Louisiana. Mrs. Mayer was the mother of three doctors well known in Louisiana, Dr. Fred J. Mayer, a former President of the Louisiana State Medical Society Dr. Chas. R. Mayer and Dr. R. A. Mayer.

NOTICE

At the request of Dr. C. A. Weiss, chairman of the arrangement committee of The Louisiana State Medical Society, you are urgently requested to make your hotel reservations early for the meeting of the Society in Baton Rouge, April 10 to 12, 1928, in order that the hotel committee may properly function.

SPECIAL ANNOUNCEMENT.

The 13th Annual Convention of the Catholic Hospital Association of the United States and Canada and the Second Annual Hospital Clinical Congress of North America will be held in the

Cincinnati Music Hall, Cincinnati, Ohio, June 18th to 22nd, inclusive, 1928. The Fourth Annual Convention of the International Guild of Nurses will be held at the same time, in the same building, at night meetings.

This Convention and Congress will be one of the largest and most important hospital meetings of the year, and will comprise general scientific meetings, special clinics or demonstrations of hospital departments, and three hundred special commercial and educational exhibits. Outstanding authorities in medicine, surgery, pathology, nursing, dietetics and hospital administration, architecture and engineering will lecture and demonstrate in specially planned clinics representing the various departments of the modern hospital. A professional program of the highest interest and value is now being formulated, and all persons interested in medical and hospital service are cordially invited to attend. Further information may be obtained from John R. Hughes, M. D., Dean of the College of Hospital Administration, Marquette University, Milwaukee, Wisconsin, who is General Chairman of the Convention and Congress.

THE BUDAPEST CONGRESS — The Fifth International Medical Congress for Industrial Accidents and Occupational Diseases is to be held in Budapest during September, 1928. The Executive Committee consists of the following: President, Dr. Tibor de Verebely, Professor at the University; Vice-president, Dr. William de Friedrich, Professor at the University; Secretary-General, Privatdozent Dr. George Gortvay, Section Chief.

The National Committee for the United States has been created and consists of the following: Dr. Volney S. Cheney, Chicago; Dr. R. W. Corwin, Pueblo; Dr. Eugene L. Fisk, New York; Dr. Otto P. Geier, Cincinnati; Dr. Leonard Greenburg, New Haven; Dr. George M. Kober, Washington, D. C.; Dr. W. J. McConnell, Philadelphia; Dr. Lloyd Noland, Birmingham; Dr. Francis D. Patterson, Philadelphia; Dr. George M. Price, New York; Dr. Frank L. Rector, Chicago; Dr. Wm. A. Sawyer, Rochester; Dr. Henry F. Smith, Philadelphia; Dr. C. E. A. Winslow, New Haven, and Dr. Emery R. Hayhurst, Columbus, Chairman.

Addresses and lectures are wanted from American physicians, dentists, and other specialists in the field. Such are requested to get in touch with the Chairman for the National Committee for the United States, Dr. Emery R. Hayhurst, Hamilton Hall, Ohio State University, Columbus, Ohio. General invitation is also extended to attend the Congress which will be arranged so as to co-ordinate with the Deutscher Naturforscher Tag" to be held in Hamburg, and the Orthopadenkongress to be held at Prague during the month of September, 1928.

CLINICAL ASPECTS OF JAUNDICE—Textbook classifications of jaundice, based on prolonged observation or on necropsy data, are frequently impracticable in clinical work, in which the essential need is to differentiate surgical and nonsurgical cases. The essentials to a working classification are: (1) the reaction of jaundiced serum to the van den Bergh reagent; (2) the height and behavior of the serum bilirubin curve as determined by the van den Bergh or icterus-index methods; (3) the quantity of bile reaching the intestine as determined by siphonage of the duodenal contents, and (4) the presence or absence of pain and its character when present. In differential diagnosis, the size and consistency of the liver, the palpability of the gallbladder, the presence of pruritus, the tint of the skin, the presence of diarrhea, and constipation and loss of weight are all of minor significance. Functional tests of the liver or pancreas have not yet attained diagnostic value in cases of jaundice. The tendency of jaundiced patients to bleed seems to be due in some cases to interference with normal clotting processes, and in other cases to the action of a toxin on capillary endothelium. In some cases in which a tendency to hemorrhage resists the administration of calcium or transfused blood, there may be spontaneous restoration of the factors which prevent hemorrhage. The prophylaxis of hemorrhage is thus summarized: 1. Routine administration of calcium chloride, 0.5 Gm. given preferably in 150 cc. of sodium chloride solution on three successive days. Dilution of the calcium solution and washing out the peripheral vein with sodium chloride solution following it will avoid thrombosis. 2. Transfusion, if prolonged coagulation time persists in spite of calcium administration, or if purpura is present. 3. Postponement of operation if these measures are not effective, and, if necessary, repetition of medical measures. 4. Frequent estimations of coagulation time by the Lee method, since this may reveal a tendency to spontaneous correction of delayed clotting.—McVicar, C. S. and Fitts, W. T.: J. A. M. A., 89:1927.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held in Vicksburg, February 14, 1928. The following program was presented:

"Syphilis"—Dr. A. K. Barrier.

"Observations on the Thymus"—Dr. J. A. K. Birchett, Jr.

"Diagnosis of Varicella"—Dr. H. H. Haralson.

The North Mississippi Six Counties Medical Society met in New Albany on January 27th. The program was as follows:

"Diseases of Lachrymal Gland and Duct"—Dr. J. B. Standford, Memphis.

"Pelvic Infections"—Dr. Wm. T. Black, Memphis.

"Asthma"—Dr. B. S. Guyton, Oxford.

"Roentgen Diagnosis of Gastric Cancer"—Dr. C. H. Peacock, Memphis.

"General Considerations in Obstetrics"—Dr. J. C. Ayres, Memphis.

The following officers were elected for the ensuing year:

President—Dr. B. S. Guyton, Oxford.

Vice-Presidents—

Benton—Dr. W. F. Coleman, Hickory Flat.
Marshall—Dr. D. R. Moore, Byhalia.
Panola—Dr. G. H. Wood, Batesville.
Lafayette—Dr. A. W. Pigot, Oxford.
Yalobusha—Dr. J. S. Donaldson, Oakland.
Union—Dr. G. F. Cullens, New Albany.
Tippah—Dr. Charles Murray, Ripley.

One of the members at this meeting presented the following letter:

"Doctor:

"My stomish and my Back hurt me and when it stard in my stomish it go to my Back and when it stard in my Back it come to my stomish and hard not will rise in my stomish at my nable and move to my side and my nable will grow in and out about all the time and I swel in the fork of my Brest."

(Anyone who can make a diagnosis of the above case or who cares to make any suggestions as to treatment is requested to communicate with Councillor J. S. Donaldson, Oakland, Miss.)

Dr. D. W. Whitaker of Coffeeville has moved to Shelby.

The opening of a sanatorium at Centerville by Drs. Fields and Fields was recently announced.

Dr. R. T. Smith of Natchez has recently returned from post-graduate work at the Cook County and Mercy Hospital in Chicago.

Dr. John Shea of Memphis was a recent visitor to Natchez, Mississippi.

The Staff of the Vicksburg Sanitarium and Crawford Street Hospital held its regular monthly meeting, February 10, 1928, on which occasion the following subjects were discussed:

"Diabetic Gangrene of Hand and Arm"—Dr. G. M. Street.

"Carcinoma of Bladder and Vaginal Wall Treated by Radium"—Dr. A. Street.

"Gallop Rhythm"—Dr. L. J. Clark.

"Pansinusitis"—Dr. C. J. Edwards.

"Dental Cyst with Chronic Maxillary Sinusitis"—Dr. Edley H. Jones.

"Septicema"—Dr. W. H. Parsons.

Pathologic Specimens—

Carcinoma of cecum
Extensive Scirrhous Carcinoma of Breast
Large Lipoma of Perineum
Fibroid Uterus with Macerated Fetus
Toxic Adenoma of Thyroid

Radiographic Studies—

Gall Bladder (Graham method) in Pancreatic Disease
Cholelithiasis (two cases)
Fracture of scapula
Fracture of tibia
Osteomyelitis of tibia
Gunshot wound of leg
Myositis ossificans
Subdeltoid bursitis

The South Mississippi Medical Society announces that its next meeting will be held in

Laurel, March 8th, with the following men definitely on the program: Drs. U. Maes, New Orleans; W. W. Crawford, Hattiesburg; H. J. Mixson, Laurel. Drs. Joseph Hume and Henry Daspit have also been invited but at the time we go to press no definite word has been obtained. The meeting will be held at the South Mississippi Charity Hospital.

As we go to press, we are pleased to inform the friends of Dr. C. E. Catchings of Woodville, Mississippi, that he is rapidly recovering from an operation performed in Natchez on February 6th because of ruptured appendix.

Dr. Randolph Tucker Shields, Dean of the School of Medicine of the Shantung Christian University, Tsinan, Shantung, China, recently paid a short visit to Natchez where he lived and practiced before going to China. Dr. Shields will spend the better part of the year visiting medical centers in this country and possibly in England before returning to his work abroad.

EXPERT TESTIMONY

There has been recently introduced into the Mississippi Legislature a bill tending to regulate the use of the insanity plea as a defense for crime. Another bill providing for the sterilization of the insane has also been introduced. Such legislative measures are undoubtedly the result of a natural reaction to pleas made by Hickman, Remus, Leopold and Loeb.

The present system wherein alienists are employed independently by the prosecution and the defense has made him the butt for the jokes of the humorist and yet there is no more reason why the alienist should not attempt to make himself as worthy of his hire as does the attorney for the defense or for the prosecution. This, however, is not conducive to swiftness or to surety as far as justice is concerned. Another point that should be considered is the fact that in such cases evidence of a highly technical nature is placed before a jury whose members have never made a study of any phase of insanity; but those who study these conditions—lawyers and physicians—are not eligible to serve upon a jury. Therefore, we are confronted with the absurb condition of presenting a highly technical question, about which experts have been employed to disagree, to a body of men who admittedly know nothing of the condition. How are they to know which group of experts is rendering the more dependable opinion?

It would seem, therefore, far better that there be established commissions composed of three or more alienists whose duty it would be to pass upon the sanity of the accused. Fortunately, in spite of the fact that we have more crime in this country than any other, we still do not have such frequent need of such a commission as to require one for each state. It seems that the presidents of such organizations as the American Psychopathological Association, the American Psychiatric Association and the American Medical Association should be quite competent to appoint commissions of outstanding psychiatrists for different sections of the country. Legislative enactments to recognize and legalize the findings of such a commission could be procured. Such enactments should be based upon the idea that the findings of the commission are to be accepted by the jury as a fact.

This would in no wise interfere with the right of the accused to be tried by a jury, but it would do away with one cause of delay that is bringing such disrepute to American criminal proceedure today. To go a step further, it would be well for our Legislators to consider some fair and equitable plan whereby those who had been adjudged criminally insane could not be pardoned by the usual procedure. It is possible that our commission of alienists might be employed to study the condition of the inmates of these institutions for the criminally insane, but the case of Harry K. Thaw is evidence of the trouble, danger and inconvenience to which the public is submitted quite often when the ordinary pardoning committee boards are allowed to pass on the mental condition of such unfortunates.

COUNCIL PASSED.—The notable success of many pharmaceutical products which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in "New and Nonofficial Remedies" recommends not only the plan itself, but the wisdom of the medical profession in selecting these reliable "Council Passed" remedies for daily use.

Among the medicinal chemicals now being widely used are such "Council Passed" products as ephedrine hydrochloride, neocinchophen, butyn, metaphen, butesin picrate, anesthesin, chlorazene, amidopyrine, procaine and neutral acriflavine, all of which are described in the recent edition of "New and Nonofficial Remedies."

These remedies are the result of research and clinical study. They have been announced in our pages and are worthy of further investigation on the part of our readers.

BOOK REVIEWS

Tobacco and Physical Efficiency: By Pierre Schrumpf-Pierron, M. D. New York, Paul B. Hoeber. 1927. pp. 134.

A digest of clinical facts published under the auspices of the Committee to Study the Tobacco Problem. A very broad and complete summary of the physiological and pharmacological actions of tobacco together with an annotated bibliography of an equal number of pages which contains reference to practically everything that is written about tobacco from the medical viewpoint in the last hundred years.

J. H. Musser, M. D.

Emergencies of a General Practice: By Nathan Clark Morse, A. B., M. D., F. A. C. S., Amos Watson Colcord, M. D. St. Louis, C. V. Mosby Co. 1927. pp. 541.

This is a very good book to have on hand for quick, reliable and up-to-date reference. From its pages the old type of the beloved family doctor speaks. He gives information on medical, surgical and obstetrical emergencies — information which doctors, nurses and even laymen will find invaluable.

In this age where everything is specialized a book of this character brings home the fact that many general practitioners are working for the specialists instead of with them. Even the specialist himself would be benefitted by the perusal of this book—"for a specialist in the strict sense of the term should first be a *good allround doctor* and then a little more."

In some chapters details could be left out, such as Cesarean sections and amputations, but the chapter on fractures and dislocations is worth the price of the book. In the opinion of the reviewer the most useful section of the book is that dealing with the various poisons—the one on alcohol is particularly good. Over 300 cuts add to the value of the book.

Narcisse F. Thiberge, M. D.

An Illustrated Guide to the Slit-Lamps: By T. Harrison Butler, M. A., D. M. (Oxon.), M. R., C. S. (Eng.), L. R. C. P. (Lond.). London, Oxford University Press. 1927. pp. 144.

A splendid work of 137 pages on microscopic study of the living eye, including a great magnification of the conjunctiva and its blood supply, the layers of the cornea, its nerve and blood vessels, the aqueous currents, the iris, presenting especially in the latter the destructive changes following glaucoma, iritis, etc.

Beautifully confirming the contention of the eye pathologist that without the microscope it is impossible to appreciate the study of ophthalmology. Changes in the lens, anterior and posterior capsule and vitreous are shown and described in a very simple and attractive manner.

This book impresses one with the importance of the Gullstrand Slit-lamp as a part of the equipment especialy necessary in every clinic and office of the oculist. In chapter 14 the value of the slit-lamp in medico-legal cases is herewith quoted.

"All cases referred for report after accidents with reference to compensation should be examined with th slit-lamp. If in a court case the expert witness on one side has made such an examination and medical evidence for the other side has omitted to use the slit-lamp, an immediate opening is given to an up-to-date counsel to discredit the value of evidence gained from what he could point out was an incomplete investigation.

We have seen how the slit-lamp can at once decide the question as to whether a fragment has actually perforated the cornea or not, and that in some cases an approximate date for the perforation can be fixed. In the lens certain time limitations can be defined; for example, a lesion deep in the lens covered by clear lens cannot be of recent date.

The exact nature of inflammatory deposits and of iris synechiae can be discovered and it may be possible to show that such could not have been the result of a comparatively recent accident. The presence of striae in the vitreous points to a wound of the sclera. In a large number of conditions the slit-lamp gives accurate knowledge which cannot be gained without it, and the value of accuracy in medico-legal questions cannot be overrated. The production of definite measurements obtained with the micrometer eyepiece may prove to be the deciding factor in a doubtful case."

Conclusive proof of the fact that diseases such as glaucoma and sympathetic ophthalmitis can be detected in advance of the ordinary clinical symptoms.

Arthur L. Whitmire, M. D.

Diseases of the Mouth: By Sterling V. Mead, D.D.S. St. Louis, C. V. Mosby Co. 1927. pp. 578.

This comprehensive work is full of valuable information for doctors of medicine as well as for doctors of dental surgery. A feature of interest is the outline of a thorough systematic examina-

tion of the mouth, so useful because of the important local evidences of systemic disease, and because of the statistical frequency of oral cancer. The colored illustrations of pathological conditions about the mouth are excellent in technique and practically helpful. While giving this instructive addition to medical literature its full allottment of praise, one might wish only a less wide scope, omitting some laboratory technique usually left to the expert. All things considered it is a very good book.

HERMANN B. GESSNER, M. D.

Radium in Gynecology: By John G. Clark, M. D., and Charles C. Norris, M. D. Philadelphia and London, J. B. Lippincott Company. 1927. pp. 315.

The very sad death of the senior author of this book before its publication has removed from the ranks of American gynecologists a man who was vitally interested from the start in the use of radium in gynecologic practice. It was he who has done more and who did more probably than any man in this country to place radium in gynecology on a scientific and practical basis, and who early appreciated that radium could replace operation in many types of gynecologic cases. The book will serve as a splendid memorial to the memory of a great and distinguished man.

The history of the use of radium is detailed in the first chapter. The second chapter, by Failla, nearly a hundred pages, is devoted to an exposition of the physics of radium. Following these preliminary chapters comes a chapter on pathology and action of radium and then a series of chapters on radium in malignant diseases of the female generative organs. The last two chapters deal with cervicitis, with sterility and dysmenorrhea.

This monograph of Clark and Norris is a splendid example of an extremely carefully prepared piece of work written from first hand knowledge. The book is splendidly printed, admirably illustrated, with a complete list of references, at the end of each chapter, of the important papers which have appeared dealing with the material in that chapter.

J. H. MUSSER, M. D.

Diseases of the Skin: By Robert W. Mackenna, M. A., M. D., B. Ch. (Edin.). 2d ed., rev. and enl. Baltimore, Williams & Wilkins Co. 1927. pp. 452.

This is one of the best books on dermatology I have seen in a long time. I enjoyed it so much I read it twice. The diseases are arranged for causes: according to, bacilli, vegetable fungi, parasites, etc. The author also shows how after making a tentative diagnosis one skin disease can be eliminated from others by comparison. The weak point in this book as in all others on the market on skin conditions is this: Title page announces "A Manual for Students and Practitioners." Yet, when discussing such lesions as acne, epetheliomas, etc., which require roentgen-ray or radium treatments, they all overlook the fact that they are addressing doctors and embryo dermatologists and not experts or specialists. They all forget to mention the best doses they have used, the frequency of application, and the technique used by them with such success in their own practices.

JOHN A. DEVRON, M. D.

The Diagnosis of Pancreatic Disease: By Robert Coope, M. D., B. Sc., M. R. C. P. London, Oxford University Press. 1927. pp. 112.

A concise, accurate and complete statement of the present day knowledge in this field. The brief summary of the development of that knowledge is stimulating not only to the student of medical history but also to the research worker and bedside observer seeking to extend its limits. Certainly we have come a great way since Sir Thomas Watson wrote in the middle of the last century: "It may seem a slight to the pancreas to pass it over without noticing the diseases to which it is subject. But really these diseases appear but few; and they do not signify their existence by any plain or intelligible signs."

The author's outline of the histology, anatomical relations and physiology and pathology of the gland provide the proper background for the diagnosis of pancreatic lesions which "would be easier if only the doctor remembered that his patient had a pancreas." The various methods used to arrive at a diagnosis are briefed under the following heads:

1. Clinical observations, including roentgen-ray findings.
2. Attempts to detect failure of the discharge of pancreatic juice into the duodenum.
3. Attempts to detect failure of insulin production.
4. The findings and opinion of a surgeon during an abdominal operation.
5. The "therapeutic test."
6. "Esoteric" tests with dubious foundations.

Of the "esoteric" tests with dubious foundations (*e. g.*, those of the Mayo-Robson and Cammidge), the author has no great opinion.

The book is clearly conceived and as clearly written; hence, it is easy reading. It is commended as a dependable guide.

I. I. LEMANN, M. D.

An Introductory Course in Ophthalmic Optics: By Alfred Cowan, M. D. Philadelphia, F. A. Davis Company. 1927. pp. 262.

The keynote of this book is found in the introduction. The purpose in preparation is to convey a working knowledge of ophthalmic optics for students and practitioners. He has succeeded in constructing such a system from immense material obtained from the writings of Helmholtz, Donders, Landolt, Tscherning, Duane, and many others, utilizing 121 illustrations to convey his difficult subject. He has not neglected to use an understandable English with a simplified mathematics. Many will find this book stimulates deeper investigation in optics.

T. J. Dimitry, M. D.

Ophthalmoscopy, Retinoscopy and Refraction: By W. A. Fisher, M. D., F. A. C. S. 2d ed. rev. and enl. Philadelphia, F. A. Davis Company. 1927. pp. 291.

This book has entered upon its second edition revised and enlarged. Many half-tones with colored illustrations and 48 plates have been added. A chapter on the value of the slit-lamp in ophthalmology has added to the attractiveness of the volume. Many subjects treated of are presented in a simple style of expression and with its many pictures and illustrations we need but glance to grasp the entire contents of the book with little effort on your part. This simplicity of presentation may be considered objectionable and nothing is left to solve. The author wished to accomplish an understandable, working knowledge of the ophthalmoscope and retinoscope, and in this he has been successful.

T. J. Dimitry, M. D.

Getting Well and Staying Well: By John Potts, M. D. St. Louis, C. V. Mosby Company. 1927. pp. 223.

Although a large library of excellent books concerning tuberculosis already exists, this will be found to be a worthy addition. The author has apparently had a large experience in all phases of the disease as soon becomes evident when reading the book. It is a rather thorough exposition of the subject, couched in a very entertaining and simple language. But it is strictly scientific and medically sound. The book is said to be for patients, public health nurses and physicians. Whether this mode of writing for both laymen and doctor with the several adverse criticisms of the latter is the correct thing is a matter of personal opinion. I am inclined to believe that this is not the best form to employ. All in all, however, the fact is that the book may certainly be read with enjoyment and the assurance of time well spent.

I. L. Robbins, M. D.

PUBLICATIONS RECEIVED

W. B. Saunders Company, Philadelphia and London: "Bedside Diagnosis," edited by George Blumer, M. D., 3 volumes with General Index. "Neoplastic Diseases," by James Ewing, A. M., M. D., Sc. D.

J. B. Lippincott Company, Philadelphia and London: "Physical Diagnosis," by Charles Phillips Emerson, A. B., M. D. "Troubles We Don't Talk About," by J. F. Montague, M. D., F. A. C. S.

P. Blakiston's Son & Company, Philadelphia: "Recent Advances in Tropical Medicine," by Sir Leonard Rogers.

Oxford University Press, New York and London: "Bacteriology and Surgery of Chronic Arthritis and Rheumatism," by H. Warren Crowe. "Clinical Researches in Acute Abdominal Disease," by Zachary Cope, B. A., M. D., M. S. "Diagnosis and Treatment in Diseases of the Lung," by Frank E. Tylecote, M. D., D. P. H., and George Fletcher, M. A., M. D. "The Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis," by Clive Riviere, M. D., F. R. C. P.

Paul B. Hoeber, Inc., New York: "Crawford W. Long and the Discovery of Ether Anesthesia," by Frances Long Taylor. "The Peaks of Medical History," by Charles L. Dana, A. M., M. D., LL. D.

The MacMillan Company, New York: "The Young Man and Medicine," by Lewellys F. Barker, M. D., LL. D.

Professional Press, Inc., Chicago: "Baby's Health Day by Day."

D. Appleton and Company, New York and London: "Gynecology," by Howard A. Kelly, A. B., M. D., LL. D. "Pathological Physiology of Internal Diseases," by Albion Walter Hewlett, M. D., B. S.

Williams & Wilkins Company, Baltimore: "The Harvey Lectures, 1926-1927." "Percival's Medical Ethics," edited by Chauncey D. Leake. "Food Infections and Food Intoxications," by Samuel Reed Damon, A. M., Ph. D. "DeLamar Lectures, 1926-1927."

William Wood & Company, New York: "Mosquito Surveys," by Malcolm E. MacGregor.

Harvard University Press, Cambridge: "Mental Health of the Child," by Douglas Armour Thom, M. D.

Libreria Sintes, Barcelona: "Tratado de Patologia y Clinica Circulatoria," by Dr. Duran Arrom.

Commonwealth Press, Inc., Chicago: "Modern Baking Powder," compiled by Juanita E. Darrah.

REPRINTS

"Acute Infection of the Renal Cortex, Its Conservative Treatment," by Winfield Scott Pugh, M. D., Manhattan.

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and
Surgical Journal

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THE RISE OF MEDICINE.*

By

M. G. SEELIG, M. D.†

St. Louis, Mo.,

I have been asked to discuss medicine from an historical aspect. Only the liveliest appreciation of the honor conferred has made it possible for me to overcome the crippling thought that not I, but some truly worthy disciple of medical history should be delivering the Chaillé oration tonight. Then, too, there has been ever present in my mind an inhibiting fear lest it be not possible in one brief lecture to trace for you the rise of medicine from dark and dank oblivion into the high light of modern times. The task of making what the incomparable Osler called "an aeroplane flight through the centuries, touching only the high peaks," can be accomplished best by painting a picture for you in broad splashes of color that will necessarily blur individual effort and make all but invisible the numerous single threads that have been woven so hopefully, so toilsomely into the web of medicine through all the ages. And yet, from all that I can gather, Stanford E. Chaillé would have wished to be glorified in no finer fashion than by having his life's work emphasized as only one of the strands in such a garment. None knew better than he the truth of Shelley's verse:

"The fountains mingle with the river
And the river with the ocean."

We of the world outside know Stanford E. Chaillé as an enthusiastic medical student, editor, educator, organizer, sanitarian, medical academician and scientist; you, his neighbors, friends, colleagues and pupils in New Orleans, know him as a courageous independent spirit, as an honest, simple, lovable and loyal man. Maybe the immanence of his generous spirit here tonight, in his beloved New Orleans, will lend inarticulate approval to the somewhat fatuous attempt to unroll the vast tapestry of medicine within the space of the small part of an evening.

It has been said that the development of medicine rests primarily on man's sympathy for man. There seems, however, to be warrant for assuming that the desire to be relieved of pain and disability represents a reaction based on the powerful instinct of self-preservation in contrast with the desire to relieve pain and disabilty in others representing a reaction based on love. May it not be, then, that self-preservation and love, two of the oldest instincts of man are the primal springs of action that ushered medicine from out of the nowhere into the now?

It would be difficult to deny that early man did at least as much for himself as animals do for themselves. Heated animals know the value of cool water, they cleanse wounds by licking them, dogs know the value of grass as an emetic and of

*The Stanford E. Chaillé Oration, delivered under the auspices of the Orleans Parish Medical Society, December 6, 1927.

†From the Department of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo.

sunlight as a restorer of stiffened limbs, monkeys check hemorrahge by application of the paw and are skilled in the extraction of foreign bodies, the ibis administers enemata to itself. Animals moreover extend help to helpless brothers, particularly to the young.

There are no written records to prove that primitive man learned in a purely empiric way to observe, experiment and deduce, but there are scattered about the world today peoples as primitive as untamed nature herself, and they furnish clearly the proof that primitive man does learn the relation of cause to effect as applied to disease. These primitive peoples do all that the animals do and much more: baths, primitive splints, circumcision, incision of wounds, urethrotomy, cystotomy, trusses, trephining, scarification, venesection and some form of actual cauterization are common knowledge to many aboriginal tribes.

All this is interesting, but for us this evening, the importance of primitive medicine lies rather in the determination of the reactions of aboriginal people to the idea of disease; and this is important because within us all, even down to this moment, there courses a strain of the primitive:

"I am a part of the seas and the stars
And the winds of the south and the north.
Of the mountain and moon and Mars
And the ages that sent me forth."

Even today we believe that toads cause warts, that horse chestnuts cure rheumatism, that prayer will cast out the demon of cancer and that stump water eradicates freckles. Such pseudodoxies are only a bit less common today than they were in the time of Sir Thomas Brown and those he described were of a lineage that traces back to Neolithic times. The importance to us of primitive man lies in the fact that he construed the natural as the supernatural —rain, lightning, volcanic eruptions, quakes and tidal waves were to his mind indubitable evidences of offended Gods or malevolent spirits, and disease was one of the omens of displeasure of these offended forces. Early man also capitalized the idea of sorcery and naturally concluded that the sufferer from disease was possessed by supernatural powers. As a result of his general confusion of thought, disease was regarded as an entity separate from the human body, to be treated by prayers, offerings, charms, amulets, incantations, all manner of dances, songs and noises, charmed numbers, colors and meaningless, gibberish words. In many, indeed in most instances, the proper use of these various charms and incantations was an esoteric art, to be learned and practiced only by a chosen and select few, the so-called medicine men, the forerunners of the priest physicians who played such an important role in the historic development of medicine.

Such then was our heritage from our primitive ancestors—a confusional misinterpretation of the fundamental causal relationships of disease, leading to bizarre and futile practices that nevertheless went hand in hand with a highly rational tendency to observe, deduce and experiment. It is not possible to say when primitive medicine gave way to those more rationalistic doctrines and dogmas which constitute the nucleus of modern theory and practice; for in this as in practically all other historic developments, transitions are so slow as to be almost unmarked. The gradient of cultural progress is usually so gentle and gradual as to defy detection. Allbutt emphasizes this thought when he suggests that the advance of standards may be due to a sort of psychical cross fertilization which sows in us the rudiments of a new epoch. At all events the truth holds that we cannot point to any particular period as marking the end of primitive and the beginning of modern medicine.

We do know that early Greek medicine is worthy of being characterized as the mother of modern medical thought. And we follow only the perfectly human inclination to bridge a gap when we seek for evidence of a transitional development

leading out of the dim days of the unwritten past into the clearer light of succeeding ages. This transitional period, covering at least six thousand years, was a time when recorded thought struggled onward and upward in various lands. The significant fact is that as contrasted with primitive times, thought is now recorded by graving it on stone, by impressing it on clay tablets, or inscribing it on papyri; such records come to us from the Chinese and Japanese, from the Egyptians, Assyrians, Babylonians and Jews.

With Chinese medicine we shall not tarry, for it is not a fruitful field for our purposes. Magic played a large part in Chinese medical theory and practice, the pulse was studied in confusing detail, acupuncture was a common procedure and organotherapy was extensively practiced. On the whole, the point of absorbing interest in relation to Chinese medicine is its barrenness and, even more interesting than this, the fact that it remained barren for thousands of years with an inflexibility that suggested to the mind of the historian Baas, the idea that Chinese resistance to progress preserves them from the diseases of development and from ultimate destruction.

Alfred Russel Wallace was so impressed by his study of early Egyptian people that he expressed the hope that man might once again attain the same high level of civilization that characterized the times of the Pharaohs. Osler pictures this same people as emerging "out of the ocean of oblivion" in a highly civilized state, sixty centuries ago. That Egypt led the way out of the quagmire in which primeval man floundered for so long is manifest in the comparatively high state of development of medicine among these early Egyptians. Egyptian medicine was practiced largely under the egis of the Gods; Isis and Osiris were the chief deities and the God Imhotep presided over medicine, much after the fashion of Aesculapius in later Greek mythology. The Gods functioned through two orders of priests, a lower order who were obliged to master anatomy, pharmacology, pathology, gynecology, surgery and ophthalmology, and a higher order who devoted themselves to conjury, prayers, revelations and charms.

Frazer says that "the movement of the higher thought, so far as we can trace it, has on the whole been from magic through religion to science." We begin to grasp the significance of this truth when we learn how large a part the priesthood and magic played in Egyptian medicine and that despite this fact, the Egyptian grasp of the fundamentals of medicine was both broad and rational to a marked degree. They recognized specialties in a fashion that furnishes an amusing commentary on the modern idea that present-day medicine is overridden by specialists. Herodotus tells us that the Egyptians employed a special physician for every part of the body. They were thoroughly conversant with baths, massage, inunctions, and food values; they recognized the indications for cathartics and emetics, the role played by vermin as disease carriers and the value of fumigation in epidemics. Egyptian surgeons bandaged skilfully, practiced cupping and venesection, circumcision and castration. Among them were clever lithotomists, men who performed amputations and particularly skilfull ophthalmologists and dentists. As pharmaceutists they are particularly noted. In popular use were opium, squill, hemlock, castor oil and various inhalations, suppositories, poultices, plasters and enemata. The very name of chemistry is derived from Khami, an old title for Egypt. Yet these old Egyptians, while they were developing a rationalistic though somewhat complex system of therapy, were at the very same time preaching the doctrine of the evil spirit as the cause of disease and were concocting most nauseous mixtures of human excrement as remedies. How queer, through all the pages of medical history, is the march, hand in hand, of basic truth and bizarre practice! Man has been and will eternally be incanting the poet Crabbe's verse:

"And now the torch of truth is found,
It only shows us where we strayed."

The early Assyrians and Babylonians appropriated most of the rational medical ideas from the Egyptians. Science reached a higher stage in Mesopotamia than it did in Egypt and yet medicine was largely subjugated to religion and to magic. Astronomy was born and architecture reached a high stage of development under Babylonian, Assyrian and Persian influence, but what was rational in their medical doctrines and beliefs was largely Egyptian in origin. Even the remarkable code of the Babylonian king, Hammurabi, is noteworthy rather as a mirror of the medical times and customs than as the promulgation of medical doctrines or theories that challenge attention. Likewise the ancient Jews were not pathfinders. As promulgators of social hygiene they stand out preeminently, but just as their history is made up of two eras, so their medical philosophy has two phases. The Jews passed through an older or biblical period and a later or talmudic era. The older period was one of close contest with the Egyptians; early Jewish medicine, therefore, reflects the acceptance of Egyptian doctrines in both principle and practice. The Talmud, a compilation of the decrees and traditions of the old rabbis, was not completed until the second or third century after Christ; and during this period the Jews borrowed from Greek medicine. Thus by paths too concealed to follow in a logical step by step process, we find ourselves removed from primitive man by thousands of years. We gain an inkling of the state of medical knowledge in that cradle of civilization, the Mediterranean basin, and we are prepared to witness for the first time the flowering of science in Greece.

The development of medicine in Greece illustrates in perfect fashion the influence of environment on national thought. The Greeks, inhabiting a peninsula and its fringe of islands, must necessarily have become a maritime people. As a sea-faring nation, Greece established with her neighbors contacts that fostered the development and spread of ideas. Here was a land of natural peace; neither wild beast nor jungles, torrential rivers nor tidal waves, earthquakes nor volcanic eruptions intimidated the spirit of this people. So situated that "an eternal summer gilds them yet", the Greeks learned instinctively not to fear nature but rather to love and study her; therefore, the natural sciences, among them medicine, were cultivated intensively and studiously. From the earliest times up to 500 years before Christ, Greece gradually consolidated her place in history and stabilized herself on a basis of constitutional government. During the earlier or Homeric period, she furnished what has proved to be an endless flow of beauty and stimulation for the thinking world. Later the semi-mythological lawgiver, Lycurgus, and the more human Solon, furnished a practical background for substantial national growth, and then Greece was in her flower.

One-half a century before Christ, when Pericles was establishing statesmanship and politics as realities, when Herodotus and Thucydides were writing history, when Aeschylus and Sophocles were constructing deathless dramas, when Phidias was planning masterpieces of architecture and chiselling glorious statues, and when Socrates and Plato were placing philosophy on a foundation that has stood for nearly three thousand years, Hippocrates, as a contemporary, was for the first time in history rationalizing medicine and converting it from an esoteric art practiced by priests, allied with Grecian Gods and goddesses, into a discipline resting solely on the firm basis of painstaking observation re-enforced by most carefully guarded deductions. A more subtly critical mind than his has never graced the art of clinical medicine and the principles of clinical analysis which he laid down constitute the foundation of what we today call bedside method. He wrote a large number of aphorisms, short, terse comments on disease that read like the dictated bedside notes of a keen, present-day clini-

cian bent on establishing a true relationship between particulars and generals, accidentals and essentials. He wrote also an admirable treatise on fractures and dislocations, on wounds of the head, on prognosis, on ulcers, on epidemic diseases, on climate and on epilepsy. He is supposedly the author of the Hippocratic oath, the earliest and most impressive document in medical ethics. Pity it is that time does not permit either to read to you some of the crystallized clinical wisdom of Hippocrates, or to expound to you his fanciful doctrine of the humors. It is difficult, however, to refrain from reminding you that every time you "God bless" a friend who sneezes, you are revivifying Hippocrates, who taught that mucus, one of the four humors that regulated body function, was manufactured by the brain and circulated throughout the body. If the body functioned well, some of this mucus flowed downward through the cribriform plate of the ethnoid. A sneeze favored this flow; hence the "God bless you." No more need be said to impress you with the fact that even Hippocrates faltered and groped on his way. Enough has already been said to demonstrate that as founder of Greek medical thought he stemmed the tide of superstition and loose reasoning and set medicine full face along the line of advance. How fascinating the thought that this line of advance has trailed directly from Hippocrates down to the announcement of yesterday's latest discovery in medicine. Not a trail as the crow flies, but one of infinite turns and twists, now forward, now back, now into the dark thickets, but eventually always into the clearing, with the aid of those torch bearers of medicine who are her heroes.

After Hippocrates came the rise of the Macedonian power, under Alexander the Great. Alexander was the pupil of Aristotle, the deductive philosopher who succeeded in imbuing him with a love of science. He established the city of Alexandria in Egypt, where later a great museum and library was established and where the finest traditions of Greek medicine thrived for several centuries. Two men stand out as pre-eminent during this Alexandrian period of medicine, Erisistratus and Herophilus, both clinicians of the Hippocratic stamp, inspired by the spirit of truth seekers. They taught that the brain was the center of the nervous system, that there was a difference between veins and arteries, that the intestine was made up of segments, that there was a system of chyle vessels and many other fundamental facts.

The destruction of Corinth, 146 B. C., marks the downfall of Greece and the beginning of her complete subjugation to Rome. As medical historians it is vital for us to recognize that Roman dominancy was complete only in the realm of world politics; in the realm of ideas the spirit of Greece lived on. About 125 years before Christ, Asklepiades, a physician from Asia Minor, had settled in Rome, transplanting there in an unfruitful bed of mystic, theurgic and primitive Roman medical practice, the nucleus of flourishing Greek medical thought. Asklepiades was followed by several so-called schools of medicine known variously as encyclopaedists, electics, methodists and pneumatists, important chiefly as illustrating an inveterate tendency toward cultism in medicine. For a time it seemed that the outstanding Roman scientist, Celsus, during the early part of the first century after Christ, would straighten out the now tangled skein of transplanted Greek medicine, but he failed to establish his supremacy. An authoritarian was sadly needed and curiously enough, as has been the case so often in world history, he was at hand in the person of Claudius Galen.

Claudius Galen appeared on the scene and re-established the principle of Greek medicine on the firmest of Hippocratic foundation. Anatomist, physiologist, clinician, Galen covered every field of medicine, including even the economic aspect. His sympathy seems very definitely not to have been with Roman practitioners, whom he said differed from bandits only in that the

physicians practiced in Rome and the bandits in the forests. He furnished admirable descriptions of the skeletal and muscular systems, dissected and described the brain, performed clever experiments on the central nervous system and made careful studies of the gastro-intestinal tract. However, the most noteworthy attribute of Galen was the assurance of the man, an assurance by means of which he established his authority for a period covering the Middle Ages lasting nearly fifteen hundred years.

We are now approaching the engulfing period known as the Dark or Middle Ages, an era that lasted from the fall of the western empire at the end of the fifth, until the Renaissance at the end of the fifteenth century. As students of medical history, it is important for us to bear in mind two facts: Fact number one is that it is as impossible to keep the world dark as it is to keep it dry. The thousand so-called dark years witnessed the political fall of Rome and Constantinople, the rise and spread of Christianity, the invasions of the Goths and Huns under Alaric and Attila from the North, the attack of the fanatic Turks from the South, the crippling of trade and science, religion and culture, the rise of Charles Martel and Charlemagne as saviors of Europe, the rebirth of church power under the stimulus of the crusades; and finally through the added stimulus of the establishment of universities, the discovery of America and the invention of printing and gunpowder, the world again found her place in the sun. How certain it is that a world going through a thousand years of such travail cannot be characterized as a world of darkness! The shadows slanted threateningly but the times were not totally dark; the mind of man did not revert to the state of primitive simpleness; rather was it lying fallow, fertilizing for years to come.

And fact number two is that medicine entered the so-called Dark Ages with an equipment of which she might fairly be proud. The medical profession knew about the commoner diseases of the respiratory tract and differentiated pneumonia from pleurisy, recognized tuberculosis in its various forms, and considered it to be an infectious disease, amenable to dietetic and climatologic treatment; understood the signs and symptoms of inflammation and placed wound treatment on a rational basis; prescribed opium, hyoscyamus, helebore, alcohol, turpentine and many other drugs with rare discrimination; used sutures and ligatures, was familiar with some fundamental facts of anatomy, recognized that the arteries carried blood and that the heart pumped it. In other words, by the end of the fifth century, the medical profession, on the whole, showed a grasp of disease nothing short of remarkable, if we bear in mind that the only bedside or clinical aids available for the practitioner were his five senses. Much of this fund of knowledge was lost sight of and, for the time being, was forgotten during the Middle Ages, and there was substituted for the rationalism of Hippocrates and Galen the unqualified authority of the Bible and Aristotle, neither of which were adapted to serve as sound underprops for medical growth.

The preservation of medical learning during the Middle Ages was due to two important facts. In western Europe, the monks patiently transcribed and stored valuable Greek treatises, made the teaching of medicine a formal discipline, and established the principle that the care of the sick was a task of Christian love and mercy. In Eastern Europe a group of scholars at Byzantium, who had been trained at Alexandria, and who were therefore familiar with and sensitized to the best in Greek philosophy and science, did the same thing. We must bear clearly in mind that the era of western monk medicine was not an inspiring one, indeed that it was rather a period of shakling in so far as the mind of man was concerned. Likewise the group of Eastern or Byzantine scholars was not productive in the sense of blazing new trails; they were merely copyists and ency-

clopedists on an even larger scale than were the monks. Oribasius in the fourth century compiled in seventy-two volumes, an encyclopedia of anatomy, physiology, surgery and phamacology. During the sixth and seventh centuries, three other Byzantine scholars, Aetius, Alexander of Tralles and Paul of Aegina made extensive compilations and began to show some signs of the old Greek initiative. Further, the Nestorians, after they were driven out of Europe in the sixth century, settled in Mesopotamia and Persia, carrying with them and preserving the best of Greek learning and traditions.

At the time that Byzantine literary effort was at its height, Persia was conquered by the Arabs, who thus became fertilized by Greek culture. What they did not absorb from the Nestorians they got through their contacts with the other Byzantine scholars, thus establishing one of the most interesting movements in all history. These Arabs, among whom were such famous physicians as Avicenna, Averroes, Avenzoar and Rhazes, were a nomadic people who roamed back and forth along the north coast of Africa, a people who loved learning and who treasured the legacies from Greece As they coursed the lines of trade along the Southern Mediterranean shore, they reached Italy and Spain over the convenient stepping stones of Sicily and Gibraltar, thus retransplanting into Europe the seed of Greek learning which had originally sprouted there.

One of the most important results of these migrations was the establishment of a medical school at Salerno in Italy in the year 800 and following this within a few centuries, the establishment of the great Universities in Spain, France, Italy, England and Germany. Of course, even the founding of universities does not signify that the minds of men had attained the prescience and depth characteristic of old Greece. The important thing for us is that learning did not die out during the Dark Ages, and that even if medicine of this period was steeped in theurgy and snarled in scholastic philosophy, the flag still waved over the ramparts through the dark night.

An awakening, however, was clearly evident in the work of four Englishmen who lived in the thirteenth and fourteenth centuries, Bernard de Gordon, Gilbert Anglicus, John of Gaddesden and Roger Bacon, who set about rationalizing medicine, putting the house in order for the coming of the famous Frenchman, Guy de Chauliac, who by the middle of the fourteenth century had re-established the fundamental surgical principles of Hippocrates, and who wrote a surgical text book that was almost biblical in its authority for two hundred years, until the actual rebirth of science occurred.

This rebirth is usually dated as beginning with the sixteenth century, a century of struggle and conflict, an almost constant battle between the vested doctrines of the past and the aspiring truths of the present. Galen and the Arabians, Aristotle and the Bible were displaced from their seats of medical authority and once again, for the first time in nineteen hundred years, medical men began to preach the doctrine: "Observe and deduce. Accept nothing on faith. Follow nature like a child."

We shall carry this sixteenth century better in mind if we call it the century of reformation and note the interesting fact that as far as medicine was concerned, the reform was limited to anatomy, internal medicine and surgery. The old Greeks, as we have already pointed out, were fairly skilled anatomists; but it was not always human anatomy they studied. They largely confined their dissections to animals. The Alexandrian school created the science of human anatomy, but Galen used chiefly swine as the animal most nearly resembling man, and he boldly applied to human anatomy the discoveries he made in animal dissection. As a result, we marvel both at the fullness of the anatomical knowledge of the Greeks and also at the large number of their facts that were not true.

In a word, human anatomy, as a thoroughly rationalized science did not exist until it was established by Andreas Vesalius about the middle of the sixteenth century. As a boy Vesalius had a passion for dissecting mice, rats, cats and dogs; as a youth he was stimulated by the spirit of independent investigation which characterized a group of early sixteenth century botanists, as well as by his teacher Sylvius, who did much to establish the necessity for human dissections. Sylvius and Vidius in France, and their forerunner Berengarius in Italy, dissected many human bodies and established many new facts in human anatomy, but these men were too thoroughly imbued with the authority of Galen to be able to see the things written plainly by Nature before their very eyes. Vesalius was no respecter of authority. His reverence for Galen was emphatic but he felt and said that anatomy based on animal dissections could only be a phantom. From the time he began studying medicine in Paris in 1533, through the period of his professorship of anatomy at the University of Padua, he zealously dissected, until he had disclosed more than two hundred errors in the so-called authoritative teachings of Galen. When he was twenty-nine years old, he collected the results of his studies in his book, De Humani Corporis Fabrica, Libri Septem, a volume characterized by Osler as "one of the great books of the world."

In 1546, Vesalius became the body physician of Charles the Fifth, serving him at court and particularly in his campaigns. Later he became an active practitioner recognized for his skill in surgery but no longer engaged in the active pursuit of anatomy. In the fiftieth year of his age he died under circumstances that have never been perfectly authenticated or understood.

Before his thirtieth year Vesalius had revolutionized anatomy; but in the doing it he brought upon his head a storm of criticism and revolt as difficult to understand as it was appalling in acerbity. What tragedy there lies in this perverse and oblique bitterness that shrinks the souls of men! Jupiter, jealous of the power of Aesculapius, used a thunderbolt with which to slay him. Man with more refined torture, crushes the very soul of his fellowman preaching new truths.

In a much less dramatic and thorough going manner, Paracelsus did for internal medicine what Vesalius did for anatomy, and he did it in a fashion strkingly identical with the Vesalian method, namely, the demolition of established authority and the substitution for it of independent observation and deduction. A Swiss by birth, he died at the age of forty-eight, in 1541, after having traveled all over Europe, occupying the chairs of medicine at Freiburg, Strassburg and Basel, holding none of them for any length of time on account of a rebelliousness of spirit that made life for him one uninterrupted Donnybrook Fair. Intemperate, coarse, egocentric and bold he was motivated by a spirit of revolt that colored his whole life. He publicly burned the works of Galen and the Arabians, declaring that there was more wisdom in the hairs of his beard than in all the books of the ancients, and that all reading was only a footstool to practice and a mere feather duster.

Let no one however think of Paracelsus only as a bold mouthing mountebank or tavern brawler. He was the first to deal a telling blow to alchemy and to place therapy on a basis of real chemistry; he introduced laudanum, mercury, lead, iron, arsenic and copper; he popularized tinctures and extracts; he recommended mercury for syphilis, preached surgical cleanliness, recognized the relationship between endemic goitre and cretinism and popularized hydrotherapy. He found the practice of internal medicine a nondescript mixture of quackery, cultism, herb doctoring, superstition and alchemy; he shivered the very timbers of its weak and tottering structure and initiated a reformation no less important for medicine than was the contem-

poraneous Lutheran reformation for religion.

And finally surgery was reborn during this sixteenth century of ferment. When 1500 dawned, surgery as a science was on a somewhat higher plane than was internal medicine for the reason that Guy de Chauliac and his immediate forerunners had left their impress upon it; but one can hardly grow enthusiastic over surgery as it was practiced in the early Renaissance period. Surgeons were for the most part cuppers, leechers, barbers, bath attendants, peripatetic herniotomists and cutters for stone in the bladder, who also gave enemas, extracted teeth, sharpened knives and prepared salves and plasters. A few surgeons, an almost inappreciable few, were men of academic attainments and broad vision, but even these few were only artificers carrying out the commands of internists who directed how, when and where to operate.

Ambrose Paré changed all this. Born in one of the French provinces where he worked as a barber's apprentice, he came to Paris during his twentieth year, in 1529, and served as a dresser in the Hotel Dieu. Eight years later he was campaigning, as army surgeon, with the troops of Francis the First of France. In common with the other two reformers, Vesalius and Paracelsus, he was a bold, courageous, resourceful man who was not moved by the shibboleth of authority, prefering to allow his infinite common sense full play and to follow natural law rather than ancient doctrine. He reintroduced the ligature for checking hemorrhage, thus banishing the barbarous actual cautery and boiling oil. He simplified wound dressing, invented an ingenious armamentarium of useful surgical instruments, discarded the common practice of castration in the operation for hernia, popularized the use of the truss, introduced the operation for cleft palate, excised loose cartilage of the knee joint and taught the obstetric operation of podalic version.

Besides the epochal reforms instituted by Vesalius, Paracelsus and Paré, there were many other medical events and men that lent color and enduring interest to the sixteenth century, but the laws of proportion prohibit more than the mere mention of one or two of them in such an address of this sort. A full discussion could be devoted to Michael Servetus, the discoverer of the pulmonary circulation and the victim of Calvin's bigotry, or to Fracastorius who coined the name syphilis, to Eustachius Fallopius, Columbus and Fabricius, all of whom did admirable work in anatomy under the stimulus of Vesalius' example, or to such a topic as the fierce battle of the venesectionists that was waged during the early sixteenth century, or to the story of the first cesarian operation performed on a living woman by the swine gelder Jacob Nufer; but one hour is too small a space in which to attempt to pack such infinite riches. We must content ourselves with the general idea that the sixteenth century was the era during which the wheels of medical progress set in motion with a modern swing, rolling on into ages of greater accomplishment.

The seventeenth century, although characterized by a steady advance of medicine and by epochal medical discoveries, nevertheless demands a special non-medical consideration. We find ourselves, for example, confronted with the vital relationship between medicine and philosophy, because during this particular period the four great philosophers, Francis Bacon, Baruch Spinoza, René Descartes and Gottfried Leibnitz lived and thought. These men stimulated profoundly every field of human endeavor. Outstanding as were these philosophers, however, they did not establish over medicine a dominancy comparable with that of Aristotle. Medicine, having assuredly outgrown her swaddling clothes, appropriated such parts of philosophy as served her and rejected such parts as led into morasses of metaphysical argumentation, so that from now on she stands on her own feet. If a Bacon develop the marvelous instrument of inductive philosophy, or if a Descartes consecrate doubt as a factor of

incalculable value to science, medicine appropriates the new doctrines with avidity; but she will have nothing to do with complex philosophical theorizing as to the validity of abstract knowledge. Paracelsus fortified the Hippocratic dogma in teaching that medicine's job is to observe facts and to reason from them.

From another non-medical angle is this seventeenth century interesting to us. As we shall soon learn, Italy and the Netherlands furnished only a few pathfinders, and France and Germany were unproductive during this hundred years. The main stimulus for the advance of medicine was furnished by England. France and Germany were busy with devastating wars, whereas England, by no means pacific in spirit, was nevertheless stimulated first by the events leading to the rebellion and the protectorate under Cromwell, and then by the glorious outburst that attended the Restoration under Charles the Second.

The sudden change from the transcendental and conservative attitude of mind of the Puritan to the stark realism of the era of the Restoration reflected itself in science by a shift from a tendency to generalize to a zeal for the details of investigation. We mention the stimulating influence of the Protectorate and the Restoration on English medicine and the inhibition incidental to the sterility of war-ridden Germany and France in order to emphasize the basic fact that from an historical point of view medicine in not an entity and has no separate existence. The course of her development is dependent upon general conditions, so-called general culture, war, peace, prosperity, famine, plague, invention and discovery. And if there be needed a bit of corroborative evidence for this thought, we may say that in the fabric of American medicine the first fibres of warp and woof were laid down during this seventeenth century, through the efforts of those English physicians who accompanied the early colonizing expeditions to New England and Virginia.

If now we pick up the thread of our story and confine ourselves to the details of progress, we shall note that between 1600 and 1700, the circulation of the blood was discovered, histology was established, chemistry was elaborated and set on the firm basis of a science, the compound microscope was perfected and introduced into medicine as an instrument of precision, anatomy was elaborated by the addition of significant facts and internal medicine was developed by further insistence on the essential importance of noting and accounting for the demonstrable symptoms of disease.

William Harvey was the outstanding medical man of the seventeenth century. His discovery of the circulation of the blood was so fundamental that only with difficulty can one conceive the existence of medicine without this basic fact on which to rest. Vesalius came right up to the threshhold of the discovery of the circulation in his studies of the structure and course of the veins and arteries. Fabricius, the pupil of Vesalius and the teacher of Harvey, came a bit closer when he discovered the valves of the veins. Servetus opened up a limitless view when he taught that there was a lesser circulation through the lungs, a concept that was later reaffirmed by Realdus Columbus. Caesalpinus taught that the large vessels of the heart served partly as channels of supply and partly as channels of delivery, the orifices being guarded by little membranes to provide that the orifices leading blood into the heart do not let it out and vice versa. But Harvey, stimulated by the teaching of his preceptor, Fabricius, and familiar with the entire literature of the subject, after years of experimentation on animals, published in 1628 his thesis that the heart is a force pump and that the veins and arteries are the channels through which it circulates the blood. If Francis Bacon's new inductive philosophy required demonstrable vindication, it was furnished by the incomparable Harveian methods, which left unexplained only the capillary link, demonstrated thirty-three years later by Malpighi.

Marcello Malpighi, Professor of Medicine at Bologna and later at Pisa and Messina and Physician to Pope Innoocent XII, was a zealous microscopist, who in addition to discovering the capillaries, demonstrated the microscopic structure of so many of the organs of the body that he is credited with being the founder of histology. So zealously did he investigate the minute anatomy of the chick embryo that he is also regarded as the founder of descriptive embryology. Malpighi had an enthusiastic coworker in the old Dutch microscopist, Antony van Leeuwenhoek, who assisted materially in making the microscope a recognized part of an adequate medical armamentatium.

The collosal stimulus to the minds of contemporary students of medicine furnished by Harvey, Malpighi and van Leeuwenhoek may be imagined. Steno, Vieussens, Lower, Aselli, Pecquet, Wirsung, Glisson, Bartholin, Highmore, deGraf, Peyer and not a few other workers added valuable anatomic discoveries to Vesalian anatomy and began to point the way toward the development of physiology after the Harveian method. Another group of seventeenth century medical men lent color to these times by a zealous attempt to develop an all-embracing theory to fit the various phenomena of health and disease. One set of these theorizers placed their chief reliance on physics and another on chemistry and they have therefore always been known as the iatrophysical and iatro-chemical schools. Some of their mechanistic theories were pretty fine spun, but on the other hand some of the theorists were able to separate theory from practice; for example, the iatrochemist Sylvius, who was an eminently successful practitioner and one of the first to introduce the idea of bedside instuction into medicine.

There was still another group of seventeenth century medical men who planted their standard with Hippocrates, enthroning observation and making diagnosis, prognosis and treatment the outstanding accomplishments of the practicing physician. Unquestionably the greatest among this group of practical men was Thomas Sydenham, the London practitioner who has been called the English Hippocrates and the prince of physicians. The Royal College of Physicians placed on his grave a tablet characterizing him as "a physician famous for all time." His insistence that disease was a natural process best mastered by the study of phenomena at the bedside, and his disregard for the authority of books remind us of Paracelsus. When asked what were the best books for medical reading he replied, in less vituperative and more polished phrase than Paracelsus, "Read Don Quixote; it's a very good book; I read it myself still."

It would be fine to be able to furnish a pen picture of Archibald Pitcairn, Sydenham's Scotch rival, or of dear old Sir Thomas Browne, or to tell the story of the introduction of intravenous medication by the famous architect of St. Paul's Cathedral, Sir Christopher Wren, or to recount the story of Richard Lower, the first transfusionist in history; all of these men and measures are of the seventeenth century and temptation to give them place is great, but insistently the eighteenth century crowds her way into the foreground.

This eighteenth century furnishes an interesting interlude between the hundred years that preceded and the hundred that followed. The seventeenth century began an era of notable medical advance along several lines. The nineteenth century repeated the process in brilliant, meteoric fashion. The eighteenth century interlude was a period rather of critique, general enlightenment and clarification. The historian Garrison characterizes it as a time of dullness and sobriety "square toed, silver buckled and periwigged." However, what was accomplished was done in a spirit of stabilization, as if the eighteenth century were seeing to it that hard-earned assets should be firmly and securely knitted into the business of medicine so that nothing of value should be lost. With this assurance the way was opened for an occasional bril-

liant gleam such as the genius of a Jenner or a John Hunter.

Generalizing a little less broadly, we may say that the eighteenth century demonstrated the fullness of gross anatomy, adding only moderately to this now well-rounded science. Physiology, histology and embryology were definitely broadening fields. Likewise, pathology began to develop and was solidly cemented into the structure of medicine. Speculative philosophy menacingly raised her head again, threatening sober science in spite of such eighteenth century philosophers as Kant, Voltaire, Rousseau, Berkley and Locke. But as an offset to this by-play was the fact that clinical medicine began during this era to take on a significance that has steadily increased up to the present time.

A somewhat more detailed examination of these general propositions discloses that although such men as Valsalva in Italy, Winsow and Camper of Denmark and Holland, Albinus of Germany, Douglas, John Hunter and contemporary workers in England, were tilling the field of anatomy enthusiastically, their additions to this branch of knowledge were comparatively insignificant.

More must be said for the workers in the fields of physiology, histology and embryology. Albrech von Haler, a versatile Swiss who as a young man held the chair of medicine at the University of Goettingen, was an inspired investigator and an indefatigable worker who established the fact that irritability is a fundamental and inherent characteristic of living tissue. On this and the correlative fact, also established by him, that sensibility is solely the property of nervous tissue, he built physiology to the proportion of a science. Likewise Francois Bichat, a Frenchman, starting with the idea of his countryman, Malpighi, that organs possess an histological architecture, proved that the body was made up of separate and distinct tissues. He called his new science general anatomy, but we know it today as histology. At the early age of thirty-two, Bichat died of tuberculosis. Like so many of the famous consumptives of history, he was a man of intense feverish activity combined with poetic vison. No less a character could have dreamed the truth that "every tissue has everywhere a similar disposition, and its diseases must be everywhere the same." While Haller was working in Germany and Bichat in France, Morgagni was painstakingly plodding along at Padua, performing autopsies, abstracting medical literature and corresponding with scholars all over the world, with unparalleled zeal, to establish the single fact that disease caused characteristic gross anatomical changes. Morgagni found pathology an unsatisfactory collection of inadequate descriptions of visceral stones, hydatid moles, and similar bizarre observations; he left it an established branch of medical science. He worked on in spite of age, feebleness and blindness until his eightieth year when his famous book "Concerning the Sites and Causes of Disease Discovered Through Anatomy," was published.

Haller did not discover physiology, neither did Bichat nor Morgagni discover histology, and pathology, but they all elaborated these various disciplines to a point where they functioned as indispensable parts of general medicine. Caspar Fredrich Wolff occupies a similar position in relation to embryology. Harvey and Malpighi, as we have seen, showed the way during the seventeenth century, but Caspar Wolff in his work "The Theory of Generation," characterized as the greatest masterpiece of scientific observation we possess, put embryology on an unshakable basis. Such then was the complexion of this century from the standpoint of the basic, or what we now call the fundamental sciences.

Veering now to practical medicine during the eighteenth century, we note the interesting fact that in almost every land there is manifest a stir and strive and strain, a spirit of Hippocrates and Paracelsus and Sydenham redivivus, a note of clinical assurance resting not solely on the genius of great intuitive clinicians, but for the first

time, on the combination of intuition with the fundamental knowledge furnished by the great scientists and students of medicine. In Holland, in Germany, in France, in Austria, in England and even in young America, clinical workers are steering medicine and surgery for the apogee of bedside excellence.

The initial stimulus for this eighteenth century blossoming of internal medicine was furnished by three men who have been called systematizers: Friedrich Hoffman and George Stahl, both holding chairs at the University of Halle, and Herman Boerhaave, who made Leyden a Mecca toward which the medical students of the world turned their steps, who established his own fame so securely that it is said a letter addressed from anywhere "To the greatest physician in Europe" would have been delivered to his door, and who by his influence stimulated the group of enthusiastic clinicians in Vienna known as the Old Vienna School. One of the men of this Old Vienna School was Leopold Auenbrugger, who made the epochal discovery of percussion in physical diagnosis.

In France during the eighteenth century we encounter such men as Pinel, the emancipator of the insane, Anel and Brasdor, keen students of surgery, aneurysms in particular, Desault, Chopart, Petit and Littré, all of them first rate surgeons who dignified this branch of medicine to a point where it could now proudly lock arms with internal medicine. In Italy likewise, surgery found a champion in Antonio Scarpa who was also an enthusiastic anatomist. His interests were largely orthopedic and he is credited with having started this branch of surgery as a specialty. Germany was in the eighteenth century procession with Wrisberg, Zinn, Meckel, Heister, Lieberkuehn and Richter, all of them names that have become eponymic in surgical literature.

Even young America felt the wave of enthusiasm. Zabadiel Boylston, of Boston, in 1721, inoculated his son with human small pox virus, bringing down upon his head the wrath of the community; a young publisher, one Benjamin Franklin, editorialized bitterly against the procedure. John Morgan, William Shippen and Benjamin Rush established medicine on a firm footing in Pennsylvania, through their writings, their interest in the colonial army and their successful establishment of the Medical Department of the University of Pennsylvania. Before the end of the eighteenth century, America possessed five worthy medical schools.

It was in England, however, that medicine, during the eighteenth century, was in fullest bloom. The two Hunters, William and John, Percival Pott, the five custodians of the Gold Headed Cane, Radcliffe, Mead, Askew, Pitcairn and Baillie, Parry, who first described exophthalmic goitre, Heberden, Cullen, the three Munros and Abernathy, all of these are eighteenth century names. With most of them every intelligent young graduate in medicine is familiar even though he may not have studied medical history. Finally there is the great Englishmen, Edward Jenner, who was inspired to solve the problem of immunity of dairy maids to small pox and who finally worked out the method of vaccination on a scientific basis so firm that, for nearly a century and a half, it has withstood a veritable torrent of abuse and opposition.

By all these great accomplishments of great men, we are prepared to enter the nineteenth century; more than enter, we cannot; indeed we shall merely pull aside the curtain and peep in. During this hundred years, Sir Humphrey Davy, Alexander Humboldt, John Dalton, Charles Darwin and Georges Cuvier lived and worked. Faraday disclosed fundamental principles of electricity; Morse invented the telegraph and Stevenson the locomotive; Schleiden and Schwann announced the cellular theory of human and plant organization and Mayer and Helmholtz the principle of the conservation of energy; Helmholtz discovered the ophthalmoscope and Garcia the laryngyscope; Laennec discovered and dis-

closed the possibilities of mediate auscultation; morphin, choral, chloroform, quinine and strychnin were isolated; Fehling devised the quantitative determination of sugar; Virchow established the doctrine of cellular pathology; Semmelweis solved the problem of childbed fever; Pasteur made his unforgettable discoveries, leading to the establishment of bacteriology as a science and stimulating Lister to his epochal work on wound treatment; Koch discovered the bacillus of tuberculosis: anesthesia was introduced into surgery by Long and fixed there by Morton; Roentgen discovered the X-Rays and the Curies, radium; Florence Nightingale made nursing an art; Behring and Roux discovered diphtheria anti-toxin; Reed and his co-workers did away with the menace of yellow fever; Eberth discovered the cause of typhoid fever; Laveran and Ross the plasmodium of malaria and Schaudinn the organism of syphilis; local anesthesia was introduced by Karl Koller; war surgery was developed into a science by Larrey: McDowell performed the first ovariotomy.

Thus we might tabulate for an insufferable length of time, pyramiding fact on fact, but amenity with an extended index finger of caution calls a halt, warning against braggadocio and reminding that

> Most can raise the flowers now
> For all have got the seed.

It is our century, almost the very present one in which we live. The nineteenth century is too close to warrant pride and not quite far enough removed to permit reverence. Rather with humility should we contemplate this most wonderful of centuries, never letting out of mind that all that has been done in our own times and the immediate years preceding them was builded on stones set in place for us by our forebears and that:

"We breathe cheaply in the common air, thoughts that once great hearts broke for." And if this does not hold our modern ego in check, let us remember, as we take proud unction to our souls for our modern flair and brilliance, that our very own nineteenth century saw the rise of homeopathy, mesmerism, phrenology and other cults as mystic and theurgic as any that ever before fought for a strangle hold on rational medicine; let us with becoming modesty credit the victories of scientific medicine not solely to men of science but also, in part to the fact that

> "... through the ages one increasing purpose runs,
> And the thoughts of men are widened with the process of the suns"

OBSERVATIONS ON THE SURGICAL CORRECTION OF SQUINT*

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NEW ORLEANS.

Strabismus, or squint, is the deviation of one of the eyes from its proper direction so that the visual axes cannot both be directed simultaneously at the same objective point.

To correct this defect intelligently, I would recommend the plan originated by Dr. Edgar J. George, in which provision is made for the careful study and operation of squint cases. He says:

"This method, because of efficiency, safety, and results, has many points to commend it. Very briefly the treatment consists, first, of careful refraction; second, the study of muscular balance of the eye; third, the mapping out of operating procedure; fourth, a modified tucking and recession operation, in which a predetermined procedure is followed"—

I agree with Dr. George in the above except in the tucking which he performs, producing an added deformity to an already existing one, in lieu of using a plain hard knot of braided silk following a complete resection. In the event the deviation is benefited, refraction and correction of

*Read before the Louisiana State Medical Society, New Orleans, April 26-28, 1927.

Fig. 1. Two months' interval between views 1 and 2 of this case following resection of externus and recession of internus.

the error is done on patients as early as two years of age. On the far-sighted cases, practically no reduction is made in the lens, usually resulting in the patient being comforted or relieved of the symptoms of eye strain, and enabling him to see objects more distinctly. These little ones will not permit glasses to be removed on retiring, and call for them before getting up in the morning. The object of employing the glasses is to assist the deviating eye in maintaining the normal position in order that the visual power does not become undeveloped, and at the age of seven, should the squint remain, some suitable operation should be performed.

The tenotomy, universally condemned, has done much to discourage the operator, patients, and public.

Tucking or resection, alone, without recession of the antagonist, is, according to my observation, a mistake, in that if enough correction is made to enable the eye to assume the normal position unaided by the constant use of glasses, the attachment of both lateral muscles should be altered more or less. Since you cannot hope for any material improvement in the vision of the squinting eye following operation, the cosmetic aspect becomes secondary in importance to the arrest of the deteriorating vision.

According to Ralph I. Lloyd on visual field studies:

"Normal fields and blind spots are usually assumed to exist in amblyopia from non-use, and central scotomas are not thought of because poor vision is attributed to non-use of the maculae in the early stages of life. The usual theory of strabismus centres about the muscles. Difficult vision is supposed to throw an additional burden upon accommodation, which, linked as it is with the adductor control, increases the adductor stimulus, if the patient is hyperopic;

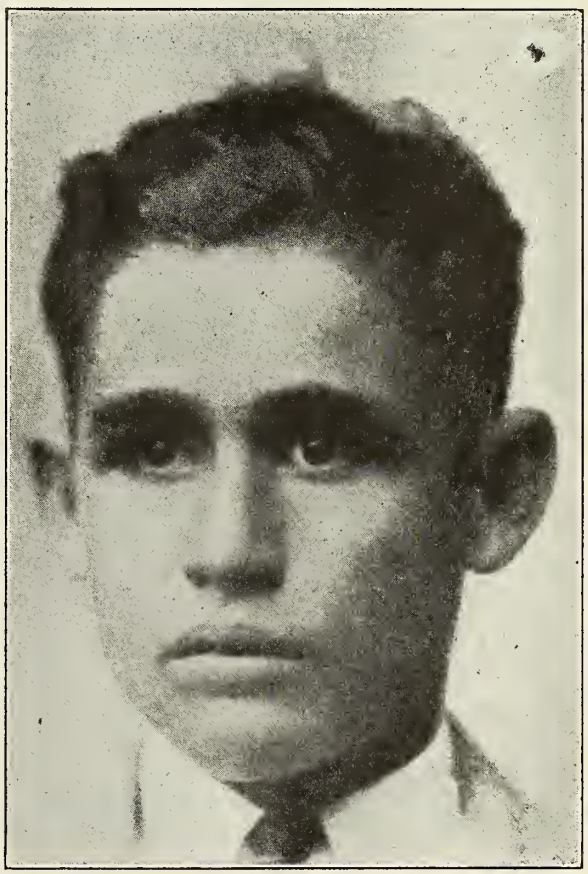

Fig. 2. Case as shown in Fiy. 1, 8 years later. No glasses since operation. Patient calls at office occasionally No complaint of discomfort.

and increases the adductor stimulus, if the patient is myopic. The hyperope then should, if the error runs high, tend toward convergent strabismus and the myope should have a divergent eye."

When the squint develops, one maculae is turned away from the object gazed at and this image must be suppressed to avoid the annoyance of double vision. Habitual suppression leads to loss of the function of the maculae if, as is the rule, the chain of events related operated during the first two or three years of life. Pathology would be absent in genuine squint if this theory is true and our methods are perfect.

Fig. 3. About two months intervenes between views 1 and 2, following resection of externus and recession of internus.

Fig. 4. Case as shown in Fig. 3, 8 years later. No glasses worn since operation.

It is our opinion, then, that strabismus is associated with pathology, and is not a non-use complex. For this reson, cursory examinations of squint cases are out of place. More accurate measurements of deviations are in order and can be done without consuming the time usually thought necessary to accomplish this. More fields of these cases need studying and neurological assistance is frequently of great value to clear up the case. Our estimates of the amount of deviation which an operation will correct are in need of revision.

Scleral suturing has been exployed by Curdy with pleasing results. Jamison reviews his former work of recession Y. B. v. 19 page 72 and elaborates upon the technique of operation. He claims that the object of the operation is not to weaken the muscle, but to protect convergence after the extended retroplantation is performed by leaving the muscles strong and unimpaired. Jamison's paper is based upon a study of fifty-six operations of recession without advancement, in which deep scleral suturing, short of perforation, was practiced. The operation described freely exposes the muscle and, after detaching it, separates it from the globe, also its capsu-

lar continuity above and below, leaving, however, its sheath intact. The muscle is transplanted at once further back, and the operator accurately grades the procedure and fixes the location or reattachment. A conjunctival incision is made about 7 mm. long following the curve of the semilunar fold, the center corresponding to the caruncle. The ends of this incision are prolonged toward the cornea and in the direction of the fornices above and below. The flap is undetermined to its base and turned over toward the cornea. The semilunar conjunctiva is also undermined in the direction of the caruncle, with care not to disturb the fascia or areolar tissue on the surface of the muscle. The muscle is now undermined completely, and separated from the globe, and its capsular continuity severed above and below by incisions carried back beyond the equator. A tenotomy hook is inserted to facilitate clean dissection, and Reese's forceps, placed behind it, to grasp the muscle. The hook is then withdrawn and the muscle severed from its insertion in the usual way. The distance from the muscle insertion back to where the operator desires to recede the muscle end is now measured in millimeters and the point noted on the sclera.

Fig. 5. Operated 1922, as shown in view 1. Resection of internal rectus and recession of external rectus. Following antrum disease on left side, patient apparently developed cellulitis, 12 years previous to 1922. History of opening having been made over attachment of internal rectus to let out pus. Absolute blindness followed infection, resulting in an optic atrophy. When examined in 1922, optic disc was snow white. Could not distinguish between light and darkness. Pupil reacted perfectly. Following operation, patient gained 25 pounds, but wore glasses for close work on account of slight astigmatism. Employed for several years in Newcomb College office. Monocular blindness offers no obstacle to good cosmetic results.

The scleral suture, in my humble opinion, will greatly aid you in obtaining good results. Its exployment forever removes the possibility of making a bad guess as to what would become of the tenotomized muscle end.

Fig. 6. Patient 35 years old. Became happily married 3 months after operation

With the exception of eyes that possess central scotoma, lateral deviation in even totally blind eyes can be corrected, which means equally as much to the patient as though the eye possessed vision, in that a squint results in a more or less depressing effect upon the patient, well known to all oculists. This corrected, converts the unfortunate into a

changed individual. My observation of this work has not been made without disappointment. Feeling the necessity to exercise the greatest care, I have under corrected several cases, even when, with the use of glasses, more or less deviation persisted. These cases I have operated the second time, simply doing a small amount of nicking of both sides of the short muscle in order to lengthen it, but in so doing I have had proven to my satisfaction that in all cases observed, the attachment produced by suturing the muscle to the sclera was a splendid duplicate of the original attachment.

Fig. 7. One year intervenes between views before and after operation

SUMMARY:

Tucking without recession, followed by slipping of sutures and the production of deformities so objectionable to patients, is fundamentally wrong in that to tighten one lateral without loosening the opposite muscle gives rise to restricted motion or retraction of the globe. The short muscle is also at fault and must undergo recession if you wish to produce a necessaray balance. Resection with recession, suturing the latter to the sclera with 20 day 00 Chronic cat gut, is to me a great improvement over other methods.

PREVENTION OF BLINDNESS — There are still nineteen states and two territories of the United States which have inadequate or no legislation or regulations for the use of a prophylactic in the eyes of the new born. Sixteen states have as yet made no provision for the distribution of a prophylactic to those who officiate at the birth of a child.—Carris, L. H., Annual Report of the National Committee for Prevention of Blindness.

THE TREATMENT OF SPASTIC PARALYSIS WITH SPECIAL REFERENCE TO THE STOFFEL OPERATION.*

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NEW ORLEANS.

It is the erroneous tendency on the part of both general surgeon and clinician to consider treatment of spastic paralysis hopeless, together with its more common occurrence than is ordinarily supposed, which has prompted the selection of this subject. Sharp and MacClaine, in Surgery, Gynecology and Obstetrics, February, 1924, state that in 13 per cent of 100 consecutive deliveries, cerebral hemorrhage with some spastic symptoms was present.

While it is the object of this paper to consider orthopedic treatment, it is certainly not amiss to review briefly the pathology, etiology, symptomatology and diagnosis.

As is well known, this affection is not strictly a paralysis but rather a muscle hypertonicity, which varies from slight muscular irritability to a condition of rigid spasticity. There may be some loss of muscle power, but it is the excess of mus-

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cular contraction which renders the limb useless. This excess contraction is the result of the impediment with cerebral control; and with the removal of cerebral inhibition muscle tonus is greatly exaggerated. All muscles of a limb will show hypertonicity, but it is the stronger groups of muscles which will contract and this contraction will eventually cause deformity. These deformities are well formulated. As the flexor muscle groups are constantly stronger, we find in the lower extremity the hip to be flexed, internally rotated, and adducted, the knee flexed, the foot plantar flexed and inverted. With both lower limbs involved there is the scissors gait or crossed-legged progression from the adductor spasm. In the upper extremity the shoulder is adducted and internally rotated, the elbow flexed, the fore-arm pronated, the wrist and digits flexed.

The pathology is that of cerebral hemorrhage with formation of clot and destruction of cerebral structures—a final degeneration of the pyramidal tracts and lateral columns of the cord taking place.

Etiologically the standard classifications are those:

1. Of intra-uterine origin; under which are:
   a. Congenital defects of cerebral cortex or pyramidal tracts.
   b. Intra-uterine injury
   c. Syphilis.
2. Traumatisms during labor:
   a. Forceps (usually high forceps.)
   b. Protracted difficult labor.
   c. Wrapping of cord around child's neck causing congestion and subsequent hemorrhage.
   d. Hemorrhagic diseases of the newly born.
3. Those acquired after birth:
   a. Hydrocephalus.
   b. Meningitis
   c. Meningeal hemorrhages, embolus, thrombosis due to syphilis, vascular lesions, sclerosis, etc.

From a clinical standpoint four types are recognized:

1. Spastic monoplegia, where there is the involvement of a single upper or lower extremity.

2. Spastic paraplegia, when both lower extremities are involved.

3. Spastic hemiplegia, where half the body is afflicted.

4. Spastic diplegia, with an involvement of both upper and both lower extremities.

Symptomatically there is muscle spasm and rigidity, loss of muscle control, incoordination of muscle movement, increased reflexes, contractions with facial deformities, and lastly a possible retardation of mental development up to a point of idiocy in some instances. There is no doubt of the diagnosis in well established cases; in the milder forms increased reflexes are very significant.

The treatment must of necessity depend on the stage in which the case is seen.

I. If immediately at birth, it is found that repeated spinal punctures with drainages will relieve the intra-cranial pressure.

II. During the first few years of child life muscle re-education is found to be quite helpful. This re-education should be:

1. Development of the weaker muscles, this being done by gently aiding the patient voluntarily to use the weaker muscle groups to their fullest and then passively gently extending them beyond this point, then passively putting the limb in flexion and repeating.

2. Directing the eratic motor impulses into legitimate channels—by this is meant that the patient is taught to use each muscle group independently and thereby eliminating the setting into action of the entire upper limb when, say, flexion of the elbow only is desired.

3. Cultivating rhythm in the affected limb by either marching to music, perform-

ing movements to the heat of a metronome, or performing them synchronously with movements of the unaffected side.

4. Improving balance or equilibrium in affection of the lower extremities by such exercises as dancing.

5. Continuous stretching of the strong muscle groups by the use of casts, braces and splints. Massage and intermittent stretching is contraindicated because if we reason that massage and motion strengthen muscles, it is easy to see that this form of attempted re-education will improve the stronger as well as the weaker muscles.

From the above one is impressed with the need of a physiotherapist thoroughly trained in such work.

I. Besides muscle re-education Holt advises the use of pituitary gland extract in large doses (15 gr. daily), and in some instances thyroid extract added in small dosage. Especially does he think this beneficial in the types associated with lessened mental activity. It is obvious also that the syphilitic type be treated rigorously with the known methods.

III. The chronic type which has not responded to the above or which is too severe to attempt such palliative measures must be assisted by operative procedures. Among the operations employed are:

1. Tenotomies.
2. Tendon transplantations.
3. Alcohol injection of the nerves.
4. Decompressions of the brain.
5. Resection of the posterior roots of the spinal cord.
6. Sympathetic ramisection.
7. Partial resection of the motor nerves as advised by Adolph Stoffel.

Tenotomies in mild contractions are found beneficial, but in the severe cases the shortenings will in time recur.

Tendon transplantations have helped only in severe knee flexion where the hamstrings are transplanted into the patella.

Alcohol injections into the nerves produce a transient paralysis of the stronger group during which time the weaker muscle groups may be strengthened by the physiotherapy methods suggested above.

Decompression of the brain is useful at the onset and was found beneficial in late cases by William Sharpe.

Resection of the posterior roots of the spinal cord as advocated by Foerster requires a laminectomy, the mortality is high (7 to 15 per cent) and the operation difficult.

Sympathetic ramisection suggested by Hunter and Royle of Australia has been successful only in their hands,—here by a retroperitoneal dissection the lumbar sympathetic ganglia on the bodies of the vertebrae were exposed and the gray and white rami divided. This operation has been universally discarded in this country.

Lastly we come to the partial resection of the motor nerves which will be referred to as the Stoffel operation.

Adolph Stoffel, in 1910, demonstrated that the main peripheral nerves have a cable-like structure and that the nerve bundles making up the main nerve always bear the same relation to one another. He also showed that each muscle is made of several parts and that each part was supplied by a bundle of nerve-fibres. The muscle force is therefore made of an aggregate of the various muscle parts. With a knowledge of the topography of a main nerve trunk it can be exposed at any point of its course, the bundles isolated and tested with an electric current and a portion resected. The parts of the muscle supplied by the excised bundle become paralytic, the remaining muscle being spastic as before. There results a weakened muscle and if the correct nerve supply is removed, equilibrium will be established. In 1921, A. Bruce Gill, of Philadelphia, reported 32 cases of spastic paralysis so treated, with marked improvement, and since then this operation has come into universal usage

with such gratifying results, that even the most severe types of spastic paraplegia which are bed-ridden have been helped to walk. The only contra-indication for this operation is a lowered mentality which will prevent muscle usage even after equilibrium has been established.

To those interested in the operative technique we would advise the article of Gill, which appeared in the February, 1921, issue of the American Journal of Orthopedic Surgery. Here it suffices to say that for adductor thigh spasm the obturator nerve is exposed by an incision down the inner side of the thigh beginning at the symphysis and finding the nerve as it lies between the adductor muscles; in moderate spasm only the anterior branch is excised; in severe spasm the posterior branch is also included; in the latter case with no longer any obturator innervation it is found that the adductor magnus has a secondary nerve supply from the sciatic, the pectineus and hamstrings aiding this muchly weakened adductor in moving the thigh inward.

To relieve hamstring spasticity the sciatic nerve is exposed in the posterior upper mid-thigh, the nerve bundles supplying these muscles dissected, tested by the electric current and a sufficient number resected to relieve the over balance, thereby allowing the quadriceps extensor to function.

To overcome foot flexion the internal popliteal nerve is exposed in the center of the popliteal space; the nerve bundles to the gastrocnemius and soleus dissected and sufficiently resected.

For pronation of forearm and flexion of the wrist and fingers the median nerve is exposed on the anterior elbow, dissected into its component muscle bundles, tested and sufficient supply of the pronator radiiteres, flexor carpi radialis, palmaris longus, flexor sublimis digitorum and flexor longus pollicis resected—the amount depending on the severity of spasticity and contraction as in the other instances.

With the division of these nerves an immediate relaxation takes place. If contractions are present and can not be overcome while the patient is under complete anesthesia, tenotomies or tendon lengthenings should also be done.

These are two forms of after treatment, the one of putting the limb in plaster casts is one correction for several weeks, or the allowing motion as soon as practical. Where deformities are severe or where tenotomies are done the casts are imperative.. After several weeks physio-therapy as before suggested is instituted and attempts at walking tried, if in the lower extremity, usually without the aid of braces.

Improvement is most marked, a scissors attitude which before resisted even the strongest attempts at reduction is transformed into voluntary thigh separation with ease, and so down the line of the other contractions

In the past four years we have operated according to the Stoffel technique on 12 cases, doing a total of 43 operations, 3 being on the median nerve, 12 on the obturators, 14 on the sciatics, and 14 on the internal popliteals. With the exception of the 3 median nerve operations improvement was most marked, the cases walking with a bad gait were improved immeasurably, and the 3 cases which were practically bed-ridden were gotten to walk with a considerable degree of satisfaction. Of the median nerve operations one improved markedly and when seen 6 months afterwards had excellent usage of his hand, the other two median cases while no longer showing the marked wrist, finger contraction had not established useful finger motion. The median resection is the least helpful because of the many intrinsic movements of the fingers and thumb. Some of these cases have been shown from time to time before the clinical meetings of this body and likely some of you recall them.

In conclusion I wish to reiterate that spastic paralysis is not a hopeless condi-

tion; that even in the most severe types where the mentality is near normal, adductor thigh and flexor knee and foot contractions can absolutely be relieved by the use of the Stoffel operation.

DISCUSSION

Dr. P. A. McIlhenny: I am very glad of this opportunity to compliment Dr. Simon on his interesting paper and especially on the results of some of the cases which I have had the privilege of seeing.

The primary point in the treatment of Little's Disease, or spastic paraplegia, or paralysis, I consider, is the mental condition of the patient. If the mental condition is below the possibility of re-education, or enlisting the help of the patient in developing muscles already weakened by stretching through the opposition in the other muscles, it is absolutely fruitless to attempt any procedure, whether tenotomy or nerve section. We must therefore be careful in determining that the patient is able to take advantage of the muscle education. The second point is to determine the actual shortening in the strengthened or hyperstrengthened group; the actual structural change in the opposition group. The only way to determine this is to examine the child while it is in profound sleep, or under gas-oxygen anesthesia. If we find that there are no real contractures or no structural changes have taken place, we may then safely take the position that the contractions are absolutely due to spasticity and that nerve section will give us a very good result. If, on the other hand, structural changes have taken place, we must do a tenotomy to relieve this actual shortening. After overcoming the deformity by attacking the shortened muscles, we then resort to the nerve section. I have used the method advocated by Lovett of Boston and Jones of Liverpool in the slight cases, of not doing a nerve section, but rather doing a nerve crushing by forceps, which are allowed to remain on a particular nerve for a time, and then remove them, thus paralysis is secured, but this is only a transient paralysis, and during the interval the opposition group which we weaken cannot overpower the atrophied group. I do not believe that this method should be used except in the mild type; Stoffel's operation is the one to be used in the exaggerated type. I also believe that post-operative treatment by fixing in a plaster cast, or bracing, is necessary to obtain a satisfactory result, unless you can supervise the patient at least twice a week. After tenotomy, after nerve section, then comes the real proposition—re-education—and it is not easily attempted, or easily carried out unless one has an experienced assistant. These children are, in the majority of cases, greatly spoiled and do not give any great help in carrying out these exercises unless we are able to devise games for them. Finally, get them up on their feet playing games, dancing and other exercises, and gradually bring them back to a position where they can use the re-educated muscles. That is the secret of post-operative treatment.

Dr. Edward S. Hatch: I want to compliment Dr. Simon on his paper. I think all of us have found that Stoffel's work is probably the best technique of all in these cases of spastic paralysis. Many years ago, as a matter of fact ten to fifteen years ago, Sharp and Farrell did cranial decompression for spastic parlysis in a large number of cases. They gave me a demonstration of their work, and many of their cases were in some instances remarkable; but we were not able to duplicate their work here. However, in a few of our cases the children were quite markedly improved. Forrester's operation and the operation of sympathectomy are very formidable work. Even in the hands of the most brilliant operators I have not seen better results produced than by the comparatively simple Stoffel's operation. As Dr. Simon says, "the Stoffel performs marvels."

My views coincide with those of Dr. McIlhenny, who touched on the fact that only those who are mentally able to help themselves should be operated on; that it is unfair to operate on an imbecile child, for no matter how beautiful your work, how technical and satisfactory, you do not get results with those incapable of taking care of their muscle action afterwards. Therefore, if you would obtain the best results, be careful in selecting your cases.

The nerves which I have operated on are the sciatic, the obturator, the popliteal and the median. The results are sometimes marvelous where the post-operative treatment can be carried out with a child who has sufficient mentality to follow instructions. But more impressive than correction of deformity or any physical improvement that takes place is the child's mental reaction, the whole mental outlook changes. The physical defect remedied, he can participate in the pleasures of his little friends, and seeing him a year or two later you will be amazed at the marked mental progress which is dependent on his ability to handle himself more like a normal child.

Dr. H. Theodore Simon (closing). I am glad Dr. Hatch spoke of the improvement, mentally, in these cases. Some men using this particular type of operation have advised operating on those with a lowered mentality, claiming that following operation the mentality improves to such an extent that useful individuals can be made out of the hopelessly mentally deficient.

The operation is simple, it is one in which we can control the stimulation removed and the results obtained are highly satisfactory. The tendency today is not to take enough stimulation. In the beginning, when we started this operation, our very conservatism took a small portion away, we did not get as good results. The simplicity of the operation is certainly appealing, the nerve bundles which go to the muscles are located in certain places and if the articles of Gill are followed, you can take up a hook and definitely pick up these nerve bundles. We use galvanic current to test and definitely verify the nerve bundle before we cut it away.

I have not tried crushing the nerve in these cases, but the results should be the same as injecting alcohol, a transient removal of stimulation.

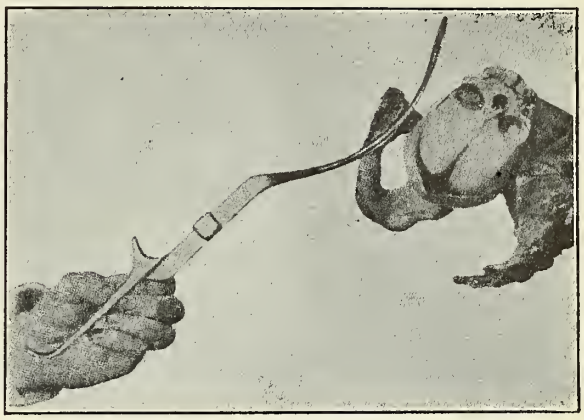

Fig. 1. Introduction of the anterior blade, the concavity of the cephalic curve being turned away from the head.

THE KIELLAND FORCEPS.*

E. L. KING, M. D.,†

NEW ORLEANS.

This instrument was devised by Kielland, of Norway, who worked on it for several years before he perfected a forceps that he deemed satisfactory. It has been used extensively in various parts of Europe, especially in Germany and Austria, and the obstetricians of these countries have written voluminously regarding their experiences with this appliance. The literature was well summarized by Greenhill in 1924[1]. While I am not attempting to review the subject, I might also call attention to the recent articles by Jarcho[2], in this country, and by Brindeau and Lantuéjoul[3], of France. It would appear, from the recent American literature, that this forceps has come into vogue in this country in the past few years, and is being employed in selected cases in many clinics.

Some of the comments are very enthusiastic, some are distinctly unfavorable, while many are favorable but conservative. Thus, Hoffman (quoted by Greenhill) recommends that its use be taught to every medical student, while Brindeau and Lantuéjoul[3] feel that by its use we can accomplish nothing that cannot be done just as well (or better) by the employment of the Dmelin No. 8 or the Tarnier forceps. The majority of the writers, however, take a middle ground, assigning to the instrument a limited field of usefulness, with its employment restricted to specialists in obstetrics. It is claimed by Kielland[4] and others that it is particularly adapted for the high application. The chief indication for its use, however, is the persistent occipito-posterior position, or, as some prefer to term it, the obstinate occipito-posteror position. We can all agree that at times this latter designation is particularly appropriate.

There appear to be three chief advantages claimed for this instrument in comparison with others, which points of superiority are due to its peculiar construction. The first is that the traction is made in the axis of the birth canal, as is done with axis-traction forceps. The second is that, when anterior rotation occurs in dealing with a head in the occipito-posterior positon, it is not necessary to remove the forceps and reapply it, as is done in the Scanzoni maneuver. The third is that, on account of the sliding lock, the blades may be applied to the sides of the head at dif-

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†From the Department of Obstetrics, Tulane University, School of Medicine. The author wishes to express his acknowledgment for the illustrations, which are taken from the following article, Kielland: The Application of the Kielland Forceps. Monatschr. f. Geb. u. Gynak., 43:48, 1916.

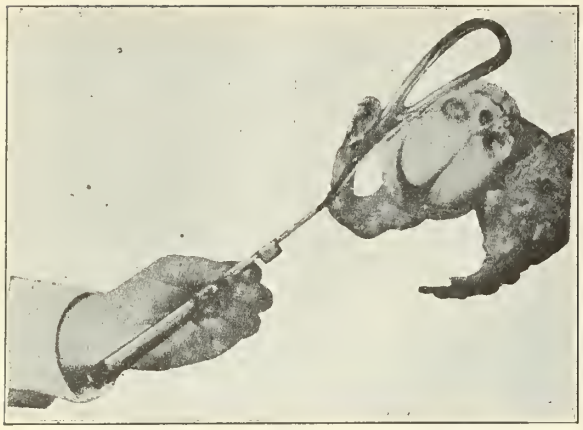

Fig. 2. Rotation of the anterior blade so as to bring its cephalic curve in contact with the side of the fetal head.

ferent levels; at the first traction they adjust themselves. The method of application, according to Kielland's technique, is peculiar in that the anterior blade is introduced upside down, between the cervix and the side of the head, and is then rotated into position, through an angle of 180 degrees. It would seem that this maneuver might entail damage to the lower uterine segment, especially if it is unduly thinned out, as is possible in an occipito-posterior position complicated, as it so frequently is, by a long, dry labor. Greenhill prefers to apply this blade in the usual manner, permitting it to "wander into place," and in my limited experience I have been inclined to favor this method of application.

Without attempting to discuss the various methods of dealing with a case of persistent occipito-posterior position, I may say that my personal preference is to permit the patient, under careful supervision, with obstetrical anesthesia, to bring the head as far down as she possibly can, and then to terminate the labor with forceps. I have used the Scanzoni method many times with great satisfaction, and have employed the Kielland forceps only occasionally, mainly in an attempt to evaluate this instrument. I have found it of value in several instances, and have been gratified to note that in some cases delivery has been accomplished easily after the attempted Scanzoni maneuver with the Simpson forceps had proved unsuccessful. A brief discussion of some of my cases may be of interest.

In one instance, the patient being a primipara with a roomy pelvis, the occiput rotated into the hollow of the sacrum, but the head was still rather high. The Simpson forceps was applied, but the traction served merely to bring the head against the symphysis, and no progress was made. The Kielland instrument was applied, the blades being introduced as in the usual forceps delivery, a deep medio-lateral episiotomy was performed, and the head was easily brought down and was delivered in the occipito-sacral position. In this instance, the fact that the traction could be applied in the axis of the birth canal was the factor of importance. In another case, that of a persistent R. O. P. position in a multipara, a very competent physician had failed to deliver the patient at home with forceps. She was sent to a hospital, and I attempted the Scanzoni maneuver without success. The Kielland forceps was applied, rotation was easily performed, and a living ten and one-half-pound baby was delivered. In another instance, that of a persistent L. O. P., failure with the Simpson forceps was followed by success with the Kielland instrument. On another occasion, I used this instrument to advantage in handling an L. O. A. position, with the head in the midplane. Delivery was indicated by the condition of the baby.

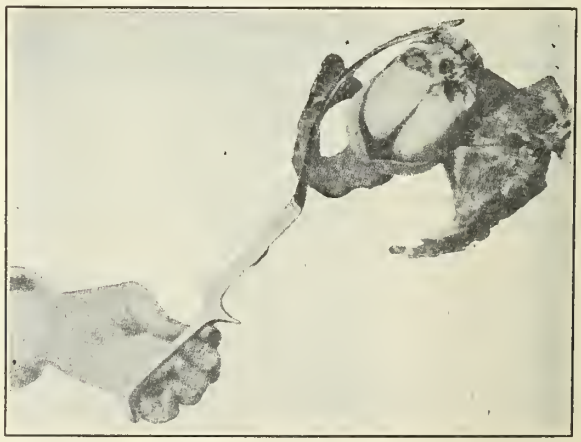

Fig. 3. Rotation of the anterior blade completed.

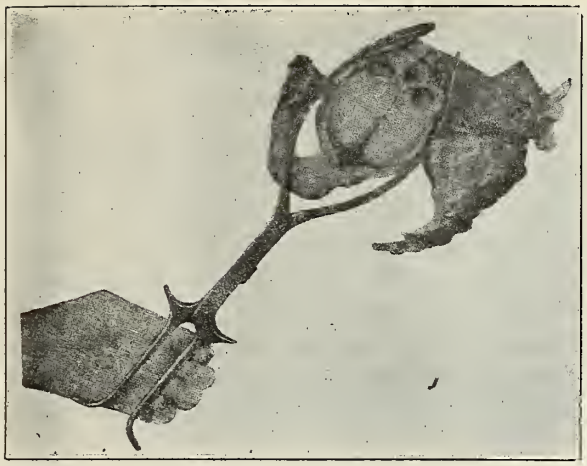

Fig. 4. Sagittal section through the pelvis, showing the position of the blades after the introduction and adjustment of the forceps.

Here again the chief advantage lay in the fact that the traction was easily applied in the axis of the birth canal.

It is only fair to record a failure recently experienced in the employment of the Kielland forceps. I had performed a classical Cesarean section on this patient two years before in her first pregnancy at term for placenta praevia. The convalescence had been complicated by a slight febrile reaction, but she was at no time particularly ill. Her second labor was characterized by an early rupture of the membranes; the child was in the R. O. P. position. I believe that anterior rotation and spontaneous delivery would have occurred ultimately. However, I was not willing to wait for this, feeling some uneasiness about the uterine scar, especially in view of the fact that, as far as her vagina was concerned, the patient was a primipara. Hence, when the head was fairly well down, with the occiput still posterior, I attempted delivery with the Kielland forceps, but did not succeed. Perhaps the application was faulty. The Simpson instrument was then applied, and an easy Scanzoni rotation was performed.

From my experience with these patients, and in some other instances not detailed here, I feel that I am on safe ground in concluding that the Kielland forceps is useful in certain cases of persistent occipito-posterior position, as well as in the occasional case of anterior position with the head in the midplane, in which delivery is indicated in the interests of the baby. However, we can not always be certain which instrument will serve us the better, until a trial is made. I have had no experience with the Kielland forceps in the high application. I believe that its use, at least for the present, should be restricted to those making a special study of obstetrics; if it is found to have a definite field of usefulness, the indications for and technique of its application may then be taught to our students.

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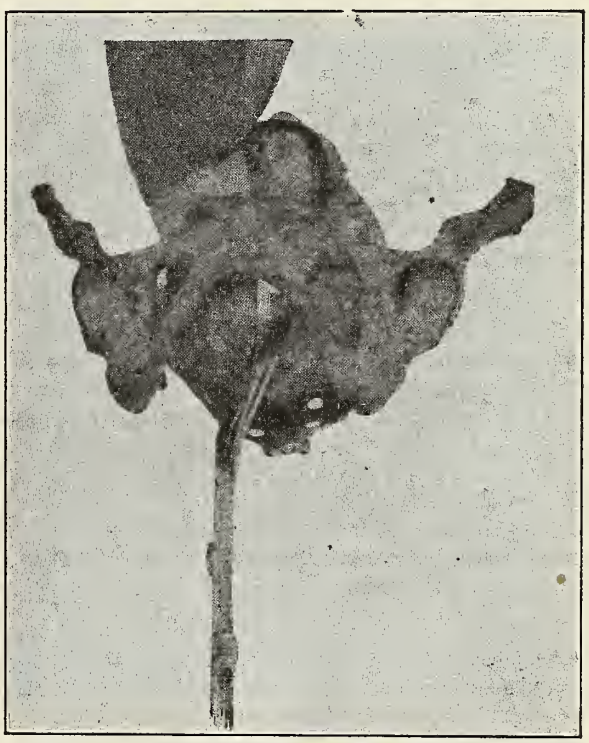

Fig. 5. Anterior-posterior view of Fig. 4.

DISCUSSION

Dr. L. A. LeDoux: Dr. King has ably described the Kielland forceps and its application, but there are one or two interesting points that I want to re-affirm. First, that it is a forceps that cannot be used in the home, but has to be used in a hospital under proper conditions, with a general anesthetic. Second, that it is very much more difficult to apply than either the Elliott or Simpson forceps. A third disadvantage, reported by men who have worked with it consistently and over a period of time, is that there is a high percent of injuries to the cervix and bladder. Numerous cases have been reported of rupture of the uterus, and frequently of the bladder, following the application of these forceps. The possible explanation may lie in the fact that they lack the proper curvature and, while much used as traction forceps, they lack the traction pull. In Europe, this particular forceps has had its vogue and been in and out of favor. Hausch has done as much work as anyone else with it and his results are interesting. Incidentally, Kielland mentions that Brindeau claims some fatalities due to the use of his forceps and Hausch has come to the same conclusion after getting a maternal mortality of 14 per cent and a fetal mortality of over 23 per cent, the maternal deaths due to rupture of the bladder and uterus; the fetal deaths to fracture of the skull. At present it is being used spasmodically, but I do not believe its use is being taught any more in Sweden or Denmark.

In my opinion, while I have not had very much experience with the forceps, I do not think it can accomplish anything more than the forceps we have been using. Simpson's and Elliott's forceps will effectively deliver any forceps case, and if they do not, it is not a forceps case.

Dr. E. L. King (closing): I think Dr. LeDoux has brought out the point that the Kielland forceps has passed through the experimental stage. In Kielland's home, in Norway, the forceps has not received any great favor, in fact, the greatest approbation has come from Germany and Austria; the French are not very much in favor of it. In this country it has been tried out in some clinics and I think in most instances the observers' experiences have been somewhat similar to mine.

I disagree with Dr. LeDoux in saying that if Simpson's or Elliott's forceps do not deliver the case it is not a forceps case; I have found, as noted in the paper, that occasionally the Kielland forceps has helped where other types of forceps have failed.

CONSERVATIVE GYNECOLOGY.*

WM. D. PHILLIPS, M. D.,†

NEW ORLEANS, LA.

In selecting the title of "Conservative Gynecology" for my contribution to this section, I have done so with the idea of reviewing, in a general way, the various conditions that one meets in gynecological work and attempting to emphasize the importance of keeping constantly before us the responsibility of our specialty.

The word "conservative" which, as explained to us, means "having the tendency of power to preserve" should be the watchword of any conscientious surgeon, but to those of us doing gynecological work, it should mean even more. We may amputate an arm or even a leg and the patient may, though incapacitated, continue to live a pleasant and happy existence. But, on the other hand, a removal of the ovaries, uterus, or both, in a young woman may mean a miserable existence for the rest of her life. Even though we are aware of this fact, we see instances every day of the careful surgeon who will ponder and deliberate for some time before removing a finger, arm or leg, but without hesitation will rush in and completely remove part or all of the sex organs of a helpless woman.

I, of course, realize that there are times when this is necessary, but I do believe a little more serious thought as to the absolute indications for hysterectomy, oöphorectomy and other gynecological operations will probably result in many days of happiness for our female patients.

I also believe that it is our duty to study our cases carefully, with the point in view of eliminating any type of operation, if possible. But, if an operation is necessary, care should be taken to select a type of operation which will eliminate future op-

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erations as nearly as possible. Briefly, then, our aim as gynecologists should be to relieve suffering by every known means before resorting to surgery, and, when surgery is attempted, we should endeavor to maintain the main functions of women, namely, ovulation, menstruation and propagation, and, in this manner, maintain the nervous stability of our patients.

To do this it is necessary that we preserve the ovaries, tubes and uterus and do everything possible to see that the functions of these organs are not interfered with. In order to attempt to convey my impressions, I will discuss this subject under the following heads. These subjects will usually, in the average case, be the cause for consultation:

(1) Pain in abdomen.

(2) Uterine hemorrhage.

(3) Backache.

(4) Leukorrhea.

(5) Sterility.

(6) Laceration of perineum.

PAIN IN ABDOMEN.

It would require too long a discussion and necessitate considerable digression from my subject for me to attempt to enumerate the causes of pain in the entire abdomen, so I shall eliminate the upper abdominal conditions and consider only lower abdominal pain. Tubal and ovarian diseases are most often the cause of such pain. Pain in the right iliac fossa, independent of the menstrual periods, usually points to appendix disease which, if definitely recognized, should be treated in line with our conservatism, and independent of other dangers we should realize the possibility of tubal involvement secondary to the appendix infection. Sharp, severe pain in the right or left lumbar region, extending down to the region of the bladder, may point to renal calculus.

Pain in the left side of the abdomen, independent of menstrual periods, frequently points to constipation, which I have found is a more or less constant complaint with a large number of gynecological cases presenting themselves for treatment. In my own experience, treatment of this condition has completely relieved a fair percentage of patients who were apparently ignorant of the real cause of their suffering and, in their own minds, were fully reconciled to the necessity of an abdominal operation.

If, on vaginal examination, we find masses in one or both sides, with the uterus adherent and with or without tenderness on both sides, we are reasonably sure that we are dealing with tubo-ovarian disease and even though no masses are felt, an adherent uterus always suggests existing or pre-existing inflammation. After eliminating all of the other more common causes of abdominal pain and finding evidence of pathology in the pelvis, we are then interested in the treatment of the local condition.

A carefully taken history of the previous health and habits of the patient will assist materially in the treatment and prognosis. A patient who gives a history of a miscarriage or a full term delivery, associated with temperature, frequently points to a puerperal infection whereas, on the other hand, a negative pregnancy history with a history of profuse leukorrhea and bladder symptoms, frequently points to a Neisserian infection. Smears should be taken in all cases, and just a word about the method of taking these. The average laboratory man will tell you that not only are you wasting his time, but yours as well, when you take the pus from your gloved finger and smear it on a slide; it is only in the very acute cases that you will obtain the gonococcus by this method, and in that type of case the clinical evidence is so strong that the microscope is hardly necessary to make a diagnosis. It is in the obscure cases that we must be careful to obtain (1) any pus, if present, from the floor of the urethra and (2) from the cervix, after carefully sponging the cervix with a piece of gauze. In some cases of

long standing infection, silver nitrate application to the cervix will cause the organism to appear. Several negative smears should be made at different times before a negative diagnosis is warranted.

In almost every type of salpingitis case, while in the acute stage, rest is the essential form of treatment. In some instances douches are used; applications of either heat or cold to the abdomen may also be of service.

Just how far we should carry our conservative treatment will depend entirely upon the type of infection and the symptoms presented. A very large percentage of cases resulting from puerperal infection will recover entirely if given plenty of time and continued rest treatment. If the gonococcus is responsible for the infection, the prognosis is not so good. However, in quite a fair percentage of these cases the patient will apparently recover and, with the exception of an adherent uterus and very often sterility from occlusion of the Fallopian tubes, will appear to be completely well.

I think we all agree that no cases of salpingitis should be operated on in the acute stage, except when it is necessary to drain a pelvic abscess or a broad ligament or tubal abscess and I am frank to say that it is my practice to defer abdominal operation in salpingitis cases until all other measures have failed, and only then after two or more repeated attacks of trouble. It is in the preoperative state of this type of case that I attempt to practice conservatism, realizing that no matter how good your intentions are, it is hard to be conservative when working in a pelvis in which tubes, ovaries and uterus are firmly bound down with adhesions.

There is very little to be said as to the type of operation in tubal conditions. I advocate conservatism by attempting to prevent infection extending to the Fallopian tubes and also by prolonged rest treatment, before resorting to operation. If operation is advised and found necessary, I do not advocate partial tube resection, except in extreme cases as, in my experience, it has resulted in future suffering and further operative work for the patient. My dictum is that if a Fallopian tube is diseased sufficiently to require partal resection, it is diseased enough to require complete resection.

Regarding ovarian conditions, the type of the disease and age of the patient will be the deciding factors as to treatment instituted. As a large number of the acute inflammatory and cystic types are associated with the inflammation of the Fallopian tubes, we would naturally institute the same plan of rest treatment. In chronic oöphoritis, on examination, the ovary is found to be hardly larger than a hen's egg; it is sensitive and other inflammatory evidences are present. These cases frequently present symptoms of ovarian dymenorrhea or intramenstrual ovarian pain, which may be referred to the hips, thighs, back or under the ribs. Palliative treatment for relief of the symptoms are usually advised, surgery being resorted to only in extreme cases or when all other conditions have been eliminated. In small cystic tumors of the ovary, unless symptoms are very marked, no treatment is instituted. In some cases, partial resection or careful enucleation of the cyst has been advised. In large cysts, removal by operation is indicated. Because of the fear of malignancy, all solid tumors of the ovaries should be regarded cautiously and removal is most often indicated.

In extreme cases of diseased ovaries in young women, without evidence of malignancy, where it is necessary to remove all of both ovaries, the function of menstruation may be preserved by means of ovarian transplantation, providing the uterus is left intact. I am sure we all agree that this procedure is practical, and I do use it in suitable cases very often.

UTERINE HEMORRHAGE.

In this group we will find a fairly large percentage of our gynecological cases. The bleeding may vary from a slight

intermenstrual bleeding to a more or less continuous hemorrhage, and I think it is here that good, sound judgment as to the treatment is so necessary. It has been my experience that tumors of the uterus have accounted for the largest number of cases suffering from intermenstrual bleeding in both young and old women. A careful study as to the type and size of tumor should be made. If we are dealing with a cervical or uterine polypus, the removal of the polypus followed by a thorough curettage or, if necessary, a hysterotomy is indicated. If it is possible to do so, I prefer to remove a cervical polypus with an electric cautery, especially in elderly patients, because of the fear of malignancy. I recall a recent case of this type in a woman aged 50; on microscopical examination, carcinoma was found at the base of the polypus. I was of the opinion that the heat had destroyed most of the remaining diseased tissue, but for fear of extension a hysterectomy was done, and I feel reasonably sure that the patient will have no return of the condition.

In the intramural or interstitial type of fibroid tumor of the uterus, and even in the subserous or subperitoneal types of tumor, the plan of treatment to be instituted will depend entirely on the size of the tumor and the age of the patient.

Myomectomy should always be the choice of operation in a young woman whenever possible, for in this manner the function of all of the organs is not interfered with. In a woman past the child-bearing period, the size of the tumor should be the deciding factor. In a small tumor, no larger than a three or four months pregnant uterus, not pedunculated, radium may be used, and in the larger tumor I feel that we are still doing conservative gynecology when we resort to hysterectomy, incomplete hysterectomy being done in cases in which the cervix is not diseased and the complete hysterectomy being done in cases associated with badly diseased cervices.

Another rather common cause of uterine hemorrhage is chronic metritis which may or may not be associated with a hyperplasia of the endometrium. This is the type of case which has been referred to by the laity as "the bleeding of the menopause" because of the fact that they usually occur at that time of life. In former years, a hysterectomy was frequently done for these cases, but, with the advent of radium, the treatment was very much simplified, and I do not know of any one type of gynecological case that responds so well to radium treatment as do these cases. For fear of malignancy, a diagnostic curettage should always be done and the radium then applied in the uterine cavity.

Extra-uterine or ectopic pregnancy, and both tubal and ovarian disease, are sometime responsible for excessive uterine menstrual or intermenstrual bleeding, and should always be eliminated before advising treatment.

Malignant growths of the uterus may also be mentioned as a possible cause of uterine hemorrhage, and my suggestion towards conservation here would be to make it routine to have all uterine scrapings examined microscopically and in suspicious cases sections should be taken from the cervix for examination. As a result, an occasional early malignancy may be found which would otherwise be overlooked.

BACKACHE.

Pain in the back is rather a constant symptom of gynecological cases and, as we are all well aware, it is caused by various conditions, such as sacro-iliac separation or sprain, arthritis, focal infections, infections of the posterior parametrial tissues, an extension from the infected cervix, constipation and retro-displacements of the uterus. A careful check-up on the patient's general condition, posture, etc., should be made, including, if necessary, roentgen-ray examinations.

Concerning uterine displacements, I feel much can be said regarding conservatism. There is probably no single gynecological operation which has been more abused than

uterine suspension. Fifty or more different types of uterine suspensions have been described and, in former years, we were led to believe that any patients who presented themselves for treatment suffering with pain in the back, and who at the same time happened to have a uterine displacement should, by all means, be operated on. More recently we have learned that only a small percentage of patients having uterine displacements really suffered discomfort from that condition. I do not deny that we do occasionally see cases of uterine displacement presenting symptoms, and in thoses cases operation should be advised, but only after eliminating all other possible causes, and after relieving the symptoms by correcting the displacement and maintaining the uterus in position by means of a properly fitting pessary.

Realizing that uterine displacements may sometime cause various discomforts, I wish to call attention to a fact which we all seem to be aware of, but for some reason or another, do not seem to practice, and that is that much can be done toward preventing uterine displacements if we would give more careful attention to the post-delivery treatment of our obstetrical cases, the more general use of the knee chest position and the use of properly fitting pessaries in cases of uterine displacements after delivery.

LEUKORRHEA.

This is one of the most annoying and trying conditions with which we have to deal in gynecological work, and a symptom of a disease that I feel in past years has been treated more empirically than any other. It is certainly not practicing conservative gynecology when we rush in and do a curettage for the relief of leukorrhea, as we all know now that there are very few real indications for this rapidly growing obsolete operation. In a large percentage of cases, the white discharge, or so-called leukorrhea, is caused by a disease or traumatized cervix, which may best be relieved in the average case by the use of the cautery. In some instances, it may be necessary to do a repair of a lacerated cervix, or even in extreme cases an amputation, but cauterization should always be the choice procedure if there are no contra-indications to same. But before resorting to any form of treatment, a careful check-up as to the cause of the leukorrhea should be made, remembering that in many instances a cervical gonorrhea may remain as such unless disturbed and spread by means of cervical treatment.

In extreme unilateral or multiple laceration of the cervix, trachelorrhaphy may be indicated, and only in rare cases have I found amputation of the cervix necessary. Even though trachelorrhaphy or amputation is contemplated, a preliminary cauterization to destroy infection will aid as to the final results. In my own work I am sure that the use of the cautery has removed the indications for operation in a large number of cases; but in all cases of cervical cauterization or operation I wish to lay emphasis upon the importance of a careful post-operative examination of the cervix, as the occurrence of partial stenosis of the cervix is not an infrequent sequela and should be observed early and treated.

STERILITY.

In this type of case we are usually first approached by the husband who will, with an assurance which is more or less characteristic of our sex, state that he wishes his wife to be examined in order that we may find out what is wrong with her that she does not have children. In very few instances does he seem to realize that the fault may be 100 per cent due to his abnormal condition, and it is here again that we practice conservative gynecology when we resort to a very careful examination of the male before subjecting the female to numerous operative procedures. We should remember that 25 to 30 per cent of males are permanently or transiently impotent. Of course, the causes of sterility are numerous, but I do think we should always determine the absence or presence of active spermatozoa in the male, and patulous

Fallopian tubes in the female, before subjecting the woman to various operations. When that is done our percentage of cures in cases of sterility will be much greater.

While searching for a cause of sterility, we should keep in mind that, aside from endocrine dysfunctions, there is probably no one condition which so frequently prevents conception as endocervicitis or infection of the cervical glands. Gonococcic invasion of the racemose glands within the cervix is the most common cause of this condition.

DYSMENORRHEA.

Painful menstruation is another very common cause for complaint in our gynecological cases and may vary from slight pains at menstrual times, to almost total incapacity at that time. Probably the most pathetic cases we see are in the young working girls, who are very much disturbed because of the fact of being kept away from work for a day or days each month because of severe pain at this time. A very careful analysis of these cases should be made. If they suffer from constipation, this condition should be treated. Careful attention should be paid their hygienic surroundings and the usual outdoor exercises advised. As our knowledge of the endocrines is still very much limited, I am unable as yet to state just exactly why we do see results in some cases of dysmenorrhea following the administration of glandular extracts. But I am frank to say that I have seen some remarkable results following the administration of thyroid and ovarian extracts and I always, in cases showing no marked abnormal conditions on examination, carry out a more or less routine treatment, as mentioned above, before resorting to any form of operative treatment and even then, the only form of operative treatment that I have found of service is a thorough dilatation of the cervix under an anesthetic.

Recent investigations in some of the large Eastern Universities regarding the frequency of dysmenorrhea shows a marked decrease of this condition, which can only be explained by a more general interest in athletics and exercise, and is a strong argument for plenty of outdoor exercise.

LACERATION OF PERINEUM.

Aside from the usual symptoms of pain in the lower part of the back and a dragging down sensation in the lower part of the pelvis, these cases, in the more simple types of laceration or relaxation, do not present any very marked symptoms. It is only during our routine examination that we find the injuries to the muscles forming the female perineum, and I believe we are practicing conservative gynecology by advising early repair of these structures, as by so doing the more serious type of bladder and uterine displacements may be prevented.

And finally, in conclusion, I again urge a more careful study of our gynecological cases before advising operation, and the more general use of medical gynecology, realizing that although its application is limited, in some instances remarkable results may be obtained. It is my firm belief that as our knowledge of that vast subject, endocrinology, becomes more extensive, our percentage of gynecological operations will be further diminished.

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DISCUSSION

Dr. E. L. King (New Orleans): I have very little to say concerning those points touched upon by Dr. Phillips; he has covered the ground assigned to himself very well.

From an obstetrical viewpoint, there are one or two ideas I would like to add to those already

brought out. One is the advisability of minimizing as much as possible operation during the child-bearing period. If you must operate, do as little as possible. I remember obstetrical cases I have handled after gynecological operations and thought it might be well to mention here some of the difficulties encountered.

Case 1. A multipara had had some extensive repairs done including uterine suspension (the type of suspension I do not remember). After she had been in labor several hours there was no progress, the cervix was pulled high up, and we finally had to resort to Cesarian section.

Case 2. In this instance an amputation of the cervix had been performed. On vaginal examination nothing could be felt except a little dimple. After several hours of labor she had accomplished nothing, that little dimple remained a dimple and we had to do a Cesarian section.

Case 3. The patient had undergone a high type of forceps delivery several years before and in her case there was apparently little or no cervix left; she presented a condition somewhat similar to the above mentioned amputation of the cervix. Cesarian section was performed.

Innumerable are the instances that could be cited of cesarian section following different types of gynecological operations. There are many effective methods of treating cervical infections and lacerations, and amputation of the cervix should be limited to those cases in which other methods have been employed and have proved futile.

Some very interesting work done at Hopkins several years ago was reported by Leonard in "Surgery, Gynecology and Obstetrics"; a comprehensive study of women who had had trachelorrhaphies done and those who had been subjected to amputation of the cervix . He found:

First: That hemorrhage was more frequent as a post-operative complication following amputation of the cervix.

Second: That sterility was more common after amputation.

Third: That when the cervix had been amputated the pregnant woman aborted more frequently than when a trachelorrhaphy had been performed.

Fourth: That there was more dystocia and that he had much difficulty in dilating these cicatrized cervices at the time of labor.

So, if these patients with lacerations come to us, we should take care of that damage by the use of the cautery. In cervices which have been lacerated, or cervices associated with considerable leukorrhea, the cautery will do wonders; in some cases, not in all, but if we do use the cautery to better conditions and then fail and feel that a cervix has to be operated on, the next best thing is trachelorrhaphy and, if possible, by all means avoid amputation in women during the child-bearing period.

Another thing to avoid is uterine suspension. Some of these women who have had the uterus suspended get along comfortably, a good many go through perfectly normally—some not quite normally—but there is always the threat of trouble.

A word regarding dysmenorrhea. This is a condition that can very often be corrected without surgical intervention. School teachers, stenographers and women who lead sedentary lives usually suffer with constipation. We dilate, curette, etc., and they do not get well; if they get well they frequently cure themselves. I had a patient upon whom I performed curettage and the insertion of a stem pessary without a bit of relief, and she finally cured herself by taking up athletics.

Another point in the borderline between gynecology and obstetrics, i. e., abortion. I do not believe in cleaning out an incomplete abortion with a curette. A great many cases can be cleaned out with the finger or, where the cervix is not sufficently dilated, the retained secundines can be cleaned out with sponge forceps. Never use a sharp curette, particularly when the patient has high temperature. If there is free hemorrhage, and you have to clean them out, excessive gentleness is the rule, in order to avoid a flare-up and consequent general infection.

Dr. John Dicks (New Orleans). Dr. Phillips has certainly covered the field of conservative gynecology thoroughly and brought out the conservative plan of treatment. Under one of his headings he mentions sterility. In this connection I certainly agree with the essayist that when these unfortunate women come to us sterile, if we simply accept them as sterile and do a curettage, we are doing them an injustice. What he said is timely; we should go further in the study of these cases. Rubin's test for sterility has not proved satisfactory in my hands and I have discarded it, using instead the lipiodol injections with fluoroscope. This method is a big help to us in diagnosing these cases and determining what treatment to adopt.

There is another point I would stress. No paper on gynecology is complete until we go further into the rest plan of treatment for pelvic infections. These cases ought to be more thoroughly studied from the standpoint of diagnosis. I do not think that every case recorded as pelvic infection should be classified as such and the nature of the pathology should be determined before we

give treatment. Suppose a woman comes in with an acute attack of gonorrhea. We know that before we operate her temperature should be normal, there should be no rise in temperature after examination and her blood chemistry should be normal. There is no danger in resting these cases. There is another type of infection we ought to study, the post-partal and post-abortal and learn to differentiate between it and Neisserian infection. The pathology of infections following abortion is entirely different from the Neisserian; they are the infections that spread in the layers of the broad ligaments through the lymphatics, and this type should be watched, for there is danger of abscess formation and rupture of the broad ligament. In gonorrheal infections we do not fear a ruptured tube and can rest these cases without danger. Study and know your different types of pelvic infections before putting them on a rest plan of treatment. If the infection is the post-partal or post-abortal type make frequent vaginal examination to determine the presence of abscess formation. If an abscess forms do a vaginal drainage before rupture takes place.

What Dr. Phillips said about myomectomy and every other point is well taken. I enjoyed his paper very much.

Dr. W. D. Phillips (closing): I have nothing further to say except thank Drs. King and Dicks for their discussions. I had a general subject and a limited time to present it, therefore could only run through and touch upon it in a general way.

NEUROLOGY AND THE TEACHING OF MEDICINE—Problems in the natural history of disease are now more engrossing than the disease itself—we are more concerned for instance with the pathways of infection of the central nervous system than we are in neat descriptions of hopelessly paralyzed muscles resulting therefrom. This digging after roots deep in the ground is thought unproductive looking work — we have almost lost interest in the flowers and shrubs on the surface—and, for a while, less spectacular results may be available for show. This search for prime causes has also changed or rather better adjusted our value as a single specialty—added knowledge has revealed our unity with general medicine—we are discontented with labeling a disease "subacute combined sclerosis of the spinal cord"—we must find out its affiliations with pernicious anemia and with antecedent gall-bladder disorder. Epilepsy has ceased to be a diagnosis and has become a damning verdict—we must try to find the toxic factors which give rise to epileptic phenomena, which is now looked on as but congeries of symptoms produced by other agents. —Foster Kennedy, Science, 67:178, 1928.

HEMORRHAGIC COMPLICATIONS OF THE LATER MONTHS OF PREGNANCY.*

C. JEFF MILLER, M. D.

NEW ORLEANS.

Placenta previa and premature separation of the placenta furnish a painfully large proportion of our obstetric tragedies. Indeed, they rank immediately after puerperal infection and eclampsia as factors in the maternal death rate, and they stand almost at the head of the list as factors in the fetal death rate. Prophylaxis, no matter how painstaking, apparently cannot avert them. The causes of placenta previa are beyond human control, and even if premature separation of the placenta be due, as the modern belief is, to some toxemia, it is one as yet unidentified, so that efforts at prevention, beyond routine prenatal care, are little more than strokes in the dark. On the other hand, in both conditions the mortality is entirely in proportion to the promptness of diagnosis and treatment, so that of no other complications of pregnancy may it be more truly said that the death rate, at least on the maternal side, is so largely in our own hands.

The real danger of placenta previa, or implantation of the placenta within the zone of uterine dilatation, lies in its insidious onset. The initial bleeding is rarely severe, and may be little more than a spotting or a slight discharge. The patient, for this reason, is inclined to minimize it, and too often the physician follows her lead. Such a sense of security is utterly false. The condition is as potentially tragic as premature separation of the placenta, even though it lacks its dramatic onset. The initial spotting may be followed by a hemorrhage so severe that the patient may die before it can be checked, or it may continue as a slight discharge over days or even weeks, with a total blood loss so high that the additional normal blood loss of par-

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turition, added to the degree of anemia already present, may bring about a fatal termination.

It is not too much to say that any painless, causeless bleeding after the sixth month of pregnancy demands a presumptive diagnosis of placenta previa, and that the exact diagnosis should be established at any cost. As a rule, confirmation is not difficult. Vaginal examination reveals a cervix edematous and boggy, with telltale blood clots extruding from it, and usually patulous enough to permit the examining fingers to palpate the characteristic, cushiony mass of the abnormally implanted placenta. If, however, this is not possible, then examination under anesthesia is warranted, even at the risk of exciting premature labor.

The only place for a patient in whom placenta previa is diagnosed or suspected is the hospital, and for my own part, I prefer to postpone even an examination, if that is possible, until after admission. For one thing, the gentlest vaginal manipulations, or rectal examination, for that matter, may excite an acute hemorrhage, so in any case examination should never be begun until all preparations have been made to insert a vaginal pack. In addition, these patients are peculiarly prone to sepsis, because of their impoverished blood supply and because of the close proximity of the gaping placental sinuses to the vaginal tract, so that the aseptic safeguards of hospital practice are essential. The patient should be prepared for examination as carefully as if she were an actual parturient, and the obstetrician, on his part, should observe the full ritual of the delivery room.

The first consideration in the management of placenta previa is to stop the hemorrhage, and the only sure way to stop it is to terminate the pregnancy. There is no place for expectant treatment in a condition as treacherous as this. How best to effect delivery, however, is a question which can be most wisely decided by taking into consideration the period of pregnancy, the degree of cervical dilatation, the type of previa, and the condition of mother and child.

Before the period of viability the problem is fairly simple, for the child may be entirely disregarded. Intrauterine manipulations, other than a preliminary puncture of the membranes, are rarely indicated. A firm vaginal pack is then inserted, consisting preferably of cotton pledgets, moistened in a mild antiseptic solution, and applied through a Sims speculum with the patient in the Sims position, or, better, in the knee chest position. The entire pelvis is packed as tightly as possible, and the pack is not removed until it is evident that a sufficient degree of dilatation is present to permit bipolar version. The subsequent delivery is effected by uterine contractions alone. The breech acts as a perfect tampon to control further hemorrhage, and since the life of the child is not at stake, haste is unnecessary. Moreover, immediate extraction is very dangerous, for the friable tissues of the lower uterine segment are readily lacerated, numerous large veins in the vicinity of the cervix predispose to hemorrhage, and rupture of the uterus is a possibility not to be ignored.

After viability, the marginal type, which fortunately is the most frequent and least serious, is best managed by simple puncture of the membranes. The presenting part is thus forced down, by normal uterine contractions, as a tampon against the placenta, and labor may offer no indication for further interference. If the bleeding is serious, however, and the cervix is sufficiently dilated to permit its insertion, the hydrostatic bag gives excellent results. After complete dilatation has occurred, delivery is effected according to the indications. If the head presents, forceps may be applied cautiously, but usually the presenting part will have been displaced by the bag and version will be necessary. If the child is dead, the remainder of the de-

livery may be left to nature, but if it is alive, extraction may be done gently.

Perforation of the placenta may occasionally be necessary before the bag can be introduced, but a rather better plan is to loosen it gently at the side and reach the sac through this opening. Cragin, the former chief of the Sloan Maternity, always advised the extraovular application of the bag, but few authorities agree with him, and I have little personal knowledge of this technique. Traction on the stem by means of a one or two pound weight may hasten dilatation. An important consideration is the size of the bag. Furious bleeding may follow its expulsion, and the largest size should therefore always be used, so that dilatation will be complete when it is expelled, and delivery may be effected at once, if necessary.

I might add that when the physician is obliged to work in the home, with no equipment and unskilled assistance, the vaginal pack followed by Braxton Hicks bipolar version probably offers the greatest margin of safety for the mother, no matter what the type of previa or the stage of pregnancy. In these days, however, of many institutions and easy transportation, such an emergency should rarely arise.

Forcible dilatation of the cervix carries with it a mortality so high that it cannot warrant our serious consideration. The case for Cesarean section, however, is rather different. It has a definite, if limited, field in the management of placenta previa, particularly of the central type, in primiparae advanced in years, with rigid soft parts, providing certain conditions can be met. The child must be viable and in good condition, and infection must be absent, at least so far as its introduction by vaginal examinations and other manipulations is concerned. Such conditions are not often fulfilled even in private practice, and in hospital practice the field is still further limited, for the majority of patients are admitted long after the initial bleeding, and after unwise examinations and hastily applied packs have made infection a contingency to be dreaded. Vaginal section, to my mind, is never indicated. The incision must be through the most vascular part of the uterus, and hemorrhage obscures the field of operation and can be controlled only with exceeding difficulty.

Even under favorable circumstances the fetal mortality in placenta previa is so high that the mother's safety should always be the first consideration. It is poor obstetric judgment to subject her to the risks of expectant treatment before the period of viability, or to the risks of Cesarean section, except under such conditions as I have outlined, for the sake of a child whose chances are at best dubious. I am aware that large series of cases have been reported in which Cesarean section has been done as a routine with excellent results, but I would call to your atention that individual men are reporting these results from their individual practice, and what the skilled individual operator accomplishes in selected cases must not be compared with what the average man can hope to achieve. Moreover, as Williams points out, no matter what the results of Cesarean section for placenta previa may be in the hands of the highly trained surgeon, its routine performance is not good obstetrics.

That the results in series of unselected cases are not brilliant is evident on every side. In a recent study, for instance, by the New Orleans Gynecological and Obstetrical Society of the two hundred ninety-one sections done in New Orleans hospitals during the last six years, thirty-three placenta previas are reported. The maternal mortality was three, rather less than 10 per cent, which is not a bad showing for Cesarean section done by many surgeons in unselected cases, though it is a very poor one if compared with the results in a similar series of cases treated by more conservative measures. But fifteen babies were lost, a fetal mortality of something over 45 per cent, which certainly is no argument for the routine performance of Cesarean section for the sake of the child. In general,

the advocates of radical measures are condemned by their own poor results, and I have been interested to note, on my own service at Charity Hospital, that our good results follow conservative measures and our deaths and infections follow a departure from them too uniformly for the outcome to be attributed only to chance.

Premature separation of the normallly implanted placenta, or abruptio placentae, is really, as DeLee puts it, an abortion at or near term, and the problem is somewhat different from that which placenta previa presents. The initial symptoms are usually such as to presage the gravity of the condition, violent pain, emesis, faintness, and marked shock. Concealed hemorrhage is decidedly more serious than the external variety, though naturally the former is always a precursor of the latter. The history is significant, vaginal examination demonstrates the absence of a placenta previa, and in from a third to a half of all cases abdominal palpation reveals the peculiar board-like consistency of the uterus which is pathognomonic. The fetal heart sounds are either faint or absent, and the fetal outlines, due to the effusion of blood, are usually obscure. The blood picture shows a marked and progressive anemia, which is sometimes out of all proportion to the external evidence of blood loss.

The degree of hemorrhage naturally depends upon the degree of separation, but because the accident is always a potential catastrophe, delay is never justified. As long as the child remains in the uterus contraction cannot occur, the sinuses remain open, and hemorrhage will continue, and the problem, therefore, is how best to effect delivery. As in placenta previa, this depends largely upon the stage of the pregnancy and the degree of the hemorrhage.

If the separation occurs during active labor, when dilatation is almost or entirely complete, delivery should be promptly effected by the most convenient means. If labor has not begun, puncture of the membranes, the application of a firm vaginal pack, as in placenta previa, and of a tight abdominal binder will usually produce active contractions and control the hemorrhage until delivery can be completed by version and extraction. It is well, in addition, to give small doses of pituitrin, three to five minims, every half hour until the pains are strong and regular. These measures are usually all that are necessary in the milder cases, which, fortunately, are in the majority.

When the bleeding is severe, more active measures must be employed. Since practically all of the babies are lost, only the mother need be considered, and her own condition should be the criterion upon which treatment is based. If the cervix is rigid, as in primiparae, in whom according to Williams the condition occurs most often, vaginal Cesarean section offers a ready mode of delivery, version and extraction being usually easily accomplished after the cervix has been incised. If, however, the hemorrhage is of the concealed type, and there is reason to believe that the uterine musculature has been affected, abdominal Cesarean section is best, since it permits immediate hysterectomy if contraction fails to occur promptly after the child has been extracted.

In both placenta previa and premature separation of the placenta postpartum hemorrhage may be a dangerous complication of the third stage of labor. In placenta previa, if the hemorrhage continues after the child has been delivered, the placenta should be removed manually—a dangerous procedure, I admit, but in this case the lesser of the two evils—and the cavity thoroughly packed with iodoform gauze. The cervix should also be inspected for possible tears, and repair should be done promptly. In abruptio placentae similar measures should be employed in the face of continued hemorrhage, but if there is not a prompt cessation, laparotomy and hysterectomy should be done without further delay. Temporizing measures are not warranted in the face of possible hemorrhagic changes in the uterine musculature, and the results of hys-

terectomy are not so good after packing and similar measures as when it is a primary procedure. Even when the third stage is uneventful, in both conditions the patient should be carefully watched for several hours afterwards.

Every effort should also be made to replace the blood which has been lost and which may be lost. A donor should be secured and should be kept at hand until the danger is absolutely over, for moderate bleeding before delivery is no guarantee that the blood loss of the third stage will not be so serious as to threaten life. I do not advocate transfusion, however, until labor is ended and the portal of exit is closed to further losses. Either hypodermoclysis or infusion may be used beforehand, to combat shock, and to dilute, as it were, the blood which is being lost.

CONCLUSIONS.

It might be well to emphasize the following points in the treatment of placenta previa and premature separation of the placenta:

1. Both are serious and potentially tragic complications of late pregnancy, and the reduction of their appalling mortality depends not upon prophylaxis but upon promptness of diagnosis and treatment.

2. In both conditions the child should be the lesser consideration, since the fetal mortality, even under favorable circumstances, is high in placenta previa, and approaches 100 per cent in abruptio placentae.

3. Prompt termination of the pregnancy should be the rule in both conditons, but in neither is accouchement forcé warranted. Placenta previa is best managed by puncture of the membranes, a firm vaginal pack, bipolar version, or the bag, according to the period of viability, the stage of dilatation, and the circumstances under which one must work. The bag is beyond question the most generally satisfactory method after viability. Cesarean section is justified only when certain definite conditions can be met. In abruptio placentae, however, it is frequently warranted, and hysterectomy is also justified if the hemorrhage is not promptly checked after delivery. In the milder cases puncture of the membranes, the vaginal pack, the abdominal binder, and small doses of pituitrin usually give satisfactory results.

4. In both conditions the third stage of labor may give rise to severe hemorrhage, and energetic measures may be necessary to control it.

5. Transfusion should be resorted to when the blood loss is at all serious, and other adjuvant measures should be employed as indicated.

6. Puerperal sepsis is a frequent complication of both conditions, and the most rigid asepsis is therefore to be employed throughout.

DISCUSSION.

Dr. A. Street (Vicksburg): I enjoyed Dr. Miller's paper very much. There is one question I want to ask him. We all realize that puerperal sepsis, as a rule, enters the body through injury to the cervix. Now, in a case that has had considerable trauma before being admitted to the hospital and you have reason to suspect a probable puerperal sepsis, I should like to know Dr. Miller's opinion as to whether, provided you can get away with a hysterectomy, the chances of sepsis would be less after the hysterectomy than they would with the uterus in.

Dr. J. W. Barksdale (Jackson): I enjoyed Dr. Miller's paper both because of his scientific work and particularly because of the conservative note he has struck. There has been much discussion here in Jackson as to whether Cesarean section is indicated or not indicated. Dr. Miller has laid down certain conditions under which it should be done and has struck a conservative note, and I want to commend him.

Dr. C. Jeff Miller (closing): Dr. Street's inquiry brings up a point which has long been a source of contention in medical societies and in the literature. Hysterectomy might be indicated in some of these cases, but it is a question as to whether so radical an operation ought to be performed simply on the chance that the patient might develop sepsis. It seems too high a price to pay. Very often we see patients whom we consider frankly infected, and yet they make uneventful recoveries. Moreover, we have no way of know-

ing, granted sepsis will occur, that the hysterectomy will be done in time. The speed with which bacteria travel is well known, and all our surgery may be in vain. For my own part, I am of the number of those who condemn hysterectomy under such circumstances.

I agree with Dr. Barksdale that Cesarean section has a very limited field in placenta previa. There are undoubtedly cases in which it is the proper method of treatment, but it certainly should not be routine. In premature separation of the placenta, on the other hand, the situation is different, and often the uterine muscle is so badly damaged that this operation is truly conservative.

I might say, in closing, that the introduction of the low Cesarean operation has definitely widened the indications for this procedure, and while I am by no means an advocate of its promiscuous use on indefinite indications, I am certainly willing to perform it by this technique in circumstances in which, a few years ago, I should have absolutely refused to consider it.

THE INFLUENCE OF HOSPITALIZATION ON THE MENTALLY ILL.*

M. S. FREIMAN, M. D.,

JACKSON, LA.

The state hospital first came into existence in this country about a century ago, and it owed its inception to the growing consciousness, on the part of public spirited and humanitarian individuals, of the inadequacy of the county system then in vogue. In the beginning, the hospital was nothing but a large boarding house, wherein lived all kinds of people suffering from a variety of mental illness, but all of whom had one trait in common: they were incapable of leading an independent social existence. At this stage, the function of the hospital was to feed and clothe the inmates, to treat them as kindly as possible, and to keep them confined within its walls. With the years, and with the growing interest in mental disease, various developments occurred, all of which resulted in improved methods of caring for and treating the mentally ill. However, all these methods were, in the last analysis, unsatfactory: they aimed at alleviating symptoms, but they did not touch the mental disease itself. In recent years, a clear understanding of the causes and nature of mental disease has completely revolutionized our treatment. A psychosis is the result of the conflict between an inferior individual and an environment which he will not or cannot accept. To understand the psychosis, we must have a clear concept of both the individual and his environment, and in order to effect a cure, we must be able to adjust the individual to his environment. Psychotherapy, therefore, aims directly at the cause of the mental upset; all other methods merely relieve symptoms, the presence of which interfere with the application of psychic treatment.

All of the remedial measures at our disposal can be classified under the following heads:

1. General Medical Treatment.
2. Physiotherapy.
3. Occupational Therapy
4. Recreational Therapy.
5. Psychotherapy.

In the treatment of mental disease, the same general principles of therapeutics prevail as in other branches of medicine. The diet, hygiene, and sanitation of the patients must be regulated; periodic examinations to discover any physical ailments must be performed. If present, these physical disabilities should be removed, for the highest mental integration can only be obtained on a sound physical basis.

Drugs do not occupy a large place in our armamentarium; the disease itself can be attacked directly by drugs only in cerebrolues and epilepsy; practically the only other drugs used are the hypnotics and sedatives, and these only when other methods have failed to achieve the desired effect.

The introduction of hydro-therapy revolutionized the treatment of the various

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excitements. Whereas formerly mechanical or chemical restraint were almost universally employed, today the use of these equally undesirable measures has been all but abandoned. The wet pack and the warm continuous bath are both employed; the latter is more efficacious in the more acute types of excitement, while the wet pack usually suffices to quiet the noisy and mildly disturbed patient.

Physiotherapy is also employed in the treatment of depression, and in some toxic states. The electric bath, producing profuse sweating, followed by the stimulating effects of the needle shower and manual massage, is of great benefit in a toxic condition such as chronic alcoholism; and there is nothing more soothing and restful to the depressed individual than a warm bath followed by gentle massage, given preferably at bedtime.

Perhaps under physiotherapy we should include such an innovation as beauty parlors for the women patients, although the results therefrom are due almost entirely to the psychic effects of the treatment. Besides improving the personal appearance of the female population, we stimulate an interest in the individual patient in her own appearance; we preserve the personality of the patient and thereby prevent or retard the onset of deterioration.

Occupational therapy, which originated years ago, as a humanitarian effort to aid the patients while away otherwise idle hours, has since developed into a position of prime importance in mental therapeutics. Any form of work which directs the attention of the patient from his morbid ideas and false sensory perceptions may be regarded as diversional occupation. The varieties of work are myriad, ranging from utmost simplicity to technical exaction; there is an occupation suitable for every taste and capacity, and the form of work assigned should be consistent with the therapeutic indication in each individual case.

Time will not permit us to go into details concerning the various employments; we should mention, however, farming and gardening, which have proven to be most popular with all classes of patients. Not alone do they offer the patient diversion, but they are also a most healthful kind of labor, inasmuch as they keep him out in the open, and their economic value is a factor of increasing importance.

Recreational therapy, like the above, has as its object the stimulation of the patient's mind into a field more closely resembling the normal. Occupation alone will soon pall; it is only when work and play are intelligently combined that the patient derives the greatest benefit from each.

The amusements range from reading, which occupies the individual, through cards and other games, which interest a small group, to such amusements as dances, theatrical performances, moving pictures, etc.

The effects of the combined occupational and recreational therapy may be summarized as follows:

1. They diminish the frequency of hallucinations and delusions by absorbing the attention of the patient in reality.

2. They retard the regressive process of dementia by renewing the patient's interest in reality.

3. They enable the patient to get into closer contact with his fellows, and thereby give him a personal interest in their welfare.

4. Occupational therapy may provide a vocational training which may enable the patient to take up a more suitable form of occupation, after being discharged from the hospital.

After all, all of the methods described have as their aim the clearing up of a symptom or a group of symptoms; whatever curative value they possess, they owe to the effect of their use on the patient's psyche.

As mentioned before, the psychosis is the result in most cases of a faulty individual-society relationship, and before psychotherapy can be begun, the part played by each of these components must be determined. The knowledge of the environment is obtained from data given by the patient, his relatives and friends; in addition, in those cases coming from New Orleans, we have the information obtained by a social service worker employed for that purpose. The mental make-up of the individual is determined by combining the information concerning his past life with the insight we get into his personality by studying him while he is in our care.

With the knowledge thus obtained, we are ready to inquire into the meaning of the various symptoms of the psychosis. Delusions, hallucinations, peculiar attitudes, mannerisms, etc., all have a reason for being; if we can interpret them correctly, we are in a position to aid the patient, by means of suggestion and re-education, to overcome them; on the other hand, if we fail to understand the mental mechanism behind the psychosis, curing the patient is out of the question, no matter how much we can improve his condition by other means.

Let us now see what the effect of the treatment as outlined has on some of the psychoses we more frequently meet.

Considering the senile psychoses, the presenile group of Alzheimer, and the large group of arteriosclerotics, institutionalization has no effect whatever, as far as the course of the disease is concerned. These patients usually arrive in a deteriorated condition and remain until a stroke or some intercurrent infection carries them off. A simple diet, hygienic surroundings, and symptomatic treatment is all that can be done for them.

Until quite recently an equally unpromising future was predicted for those individuals suffering from cerebral-spinal lues and paresis. Two to five years was the average duration of life after admission, and the course of the disease was one of progressive deterioration interrupted with an occasional intermission. Today the outlook of these unfortunates is far more favorable, due to two factors:

First: The earlier diagnosis of these conditions by means of the various spinal fluid tests, and secondly, the institution of more improved methods of treatment.

There are two methods of attack that are being widely used at the present time, both of which are yielding splendid results. The first is the treatment of spinal lues by the inoculation with tertian malaria, a method devised years ago by Von Jauregg, forgotten for a while but again brought into prominence. The second and more conservative method consists in the intravenous injection of a new arsenical preparation, trysparsamid, given in three gram doses at weekly intervals until a course of ten or twelve have been taken. The patient is then allowed to rest for several months, receiving mixed treatment in the interval. If, at the end of that time the results warrant it, he is given another course of treatment.

The literature abounds with articles on the subject, and most of the reports are very encouraging indeed. We have had experience only with tryparsamid, and our results tally with those of most other observers, in that we believe we have benefited a great many of the patients so treated; in a few such marked remissions were obtained that we were able to furlough these patients and some are still on the outside, under supervision, of course. How long these remissions will last is problematical. Some observers have reported cases that have been out over five years and are still doing well. At any rate, in the past few years, great strides have been made in treating this dread disease; and with the amount of research work now being done, directed towards the same end, we cannot help but feel that the future is even more promising.

Epilepsy has been since Biblical times one of the mysteries and problems of medicine, and remains so to this day. It is true that by the use of luminal, bromids and other hypnotics, we can decrease the frequency and severity of the seizures, or even abolish them altogether, but by so doing, we do not necessarily affect the epileptic constitution which is behind the convulsions, nor can we always prevent the gradual deterioration ending in profound dementia. Some mild cases undoubtedly recover, others can be arrested, and in some treatment seems to have no effect whatsoever. Treatment consists in the proper administration of luminal, in the provision of a low protein, ketogenic diet, and in training the patient in some form of healthy occupaton, preferably outdoor, in which he can interest himself and at the same time receive the benefits of light physical and mental work

For the mentally deficient, with or without psychosis, the treatment is purely educational. The lower grades of defectives can be trained to be of cleanly habits, to dress and undress themselves, and perhaps to do some useful work. The feebleminded can be trained in some occupation, and under favorable circumstances, may make their way in simple social surroundings.

Paranoia and the allied paranoid states are peculiarly difficult to treat, and many of these cases spend their lives in an institution. Psychotherapy offers the only hope for cure, and this is notoriously unsatisfactory in dealing with these conditions. Most of the paranoiacs are great nuisances or potentially dangerous on the outside, but when confined, they are quite harmless and make very good adjustments.

The treatment of the psychoses associated with somatic diseases is the treatment of the underlying disease, and the prognosis varies accordingly.

The only toxic psychosis we see at all frequently is that due to alcohol, and this only in chronic forms. These cases usually respond very well to ordinary medical treatment plus physiotherapy; as long as they are kept away from alcohol, they do splendidly; but when furloughed, they unfortunately often return to their former habits, with the result that a recurrence of their condition causes them to be returned to the hospital.

The prognosis of the manic-depressive group is good for the attack, as over 90 per cent of these individuals will recover, but the chances for ultimate recovery are slim, as most of the patients will have one or more subsequent attacks. The removal of the individual from the environment with which he was in conflict, will in itself often cause a marked improvement in his condition. The treatment is purely symptomatic, as outlined above; the judicious use of hydro-therapy, in conjunction with occupational and recreational therapy, will in most cases bring about an apparent cure in from a few weeks to a few months.

When the patient has reached this stage we should determine, if we can, the conditions which led to the breakdown, and appropriate steps should be taken when the patient is furloughed to see that these same conditions no longer prevail. If they are still present, the patient should be removed from that environment, or if they are inevitable, he should be taught how to adjust himself to them.

Perhaps in no other group of cases has treatment achieved such gratifying results as in the great group of schizophrenics, who form so large a part of our permanent population. Formerly regarded as incurable, neglected, and left to their own devices, it is not surprising that they gradually and inevitably deteriorated. Today, we do not find nearly as many of the noisy, destructive, untidy type as formerly, and those that we have are either old patients or those admitted in a deteriorated state. The supreme remedy in these cases is work; under the influence of hospital surroundings, occupational and recreational therapy, these cases make excellent ad-

justments and get along comfortably for years. Others respond sufficiently to psychotherapy to justify a trial on the outside, and provided no new problems arise, they can lead an independent social existence indefinitely.

The effect of the hospital on the patient should not end with his discharge. We have of necessity to deal with inferior individuals, and no matter how well they respond to treatment and advice within the hospital, problems will naturally arise on the outside with which the patient will find himself inadequate to deal. He will react to such a situation as one might expect—by lapsing into his former state.

In order to help such patients re-establish and readjust themselves, we have recently started a Clinic, held each month at the Hospital for Mental Diseases. To this Clinic we invite the furloughed patients who live in New Orleans and vicinity, and each is asked to bring, if possible, some member of his family. Both are then questioned by a physician from the hospital, and the kind of adjustment that the patient has made is determined; if he has not been getting along well, the reasons therefor must be investigated. In quite a few cases the trouble lies in the attitude of the family towards the patient, and by educating the family, the difficulties of the patient can be smoothed over. In other cases, the environment is all that can be asked and still the individual cannot get along; in these cases, the failure is inherent in him, he is incapable of leading a social existence and an early return to the institution is advised.

By means of the Clinic, we are thus able to keep in closer touch with our furloughed patients; by means of the personal contact we have with them, we hope to be able to send the patients out sooner and keep them out longer; and in case they cannot adjust on the outside, we will be aware of that fact earlier, and hence can readmit them before deterioration has sent in.

DISCUSSION

Dr. C. D. Miller (Jackson): Dr. Freiman has spoken of the medical treatment of these cases. This is very important provided he includes in this the surgical treatment as well. I have seen quite a number of psychoses that were produced by some somatic condition. Under proper treatment these cases were restored physically and their mental condition approached normal. Again I have seen cases that were due to some foci of infection and by proper surgical procedure these cases have been restored.

As to the use of tryparsamid, Dr. Freiman did not mention that in a number of these cases, in addition to getting remission, we get conduct improvement. This is very noticeable in quite a number of cases in which we do not get the remission.

As the largest number of our cases that are admitted to the hospital are not amenable to treatment by drugs, we have to rely on other forms of treatment, mentioned by Dr. Freiman, such as occupational, recreational, etc. In the cases that have to be treated this way, the result is largely obtained through discovering just what conflict is going on within this individual and then treat them accordingly.

The occupation must be pleasant and it must conform in some measure to a former occupation so that the individual is not thrown into an entirely new environment.

As regards recreation, recently we gave a play at the hospital in which only patients of the hospital took part. Out of the number we had three patients from our most disturbed ward. These patients took long parts in the program. They were able to maintain clearness of thought throughout the entire play and had perfect control over themselves for long periods.

With the treatment along the lines mentioned by Dr. Freiman, we do not say that we can cure deterioration. After the patient has deteriorated, it is impossible then to bring them back to where they were normally. But the different forms of occupation, recreation and suitable diversion certainly can prevent further deterioration. The simple praecox will work out his own salvation. The cataphrenic will have remissions, the hebephrenic, if left alone, will go down to utter uselessness. So it is in the class of the schizophrenic that we see the greatest results in this line of treatment. We can maintain them at a certain mental level indefinitely and they are not only able to appreciate conditions about them but they are self-supporting in a large number of cases.

I was impressed with Dr. Freiman's idea of following up the patients after they leave the hos-

pital. With a very little advice to the families and a little talk to the patients to help them overcome their difficulties that naturally arise in their environment on the outside, we are able to keep them away from the hospital indefinitely. And several of the social service workers have found a large percentage of patients on the outside of institutions are not only self-supporting but they are making a livelihood for themselves and their families and accumulating a little money in the bank.

Dr. C. S. Holbrook (New Orleans): I feel that we should listen with much interest to Dr. Freiman's paper. He comes from our largest institution for the insane, for the care of the mentally afflicted, an institution that takes care of about 2400 patients at the present time.

I have had the pleasure of being both on the staff of the institution and doing the same type of work outside and I know that many of the things that Dr. Freiman has brought out are quite true.

There is one thing that I wanted to stress, however, about the recovery of the patient. Often the recovery of the patient depends upon how promptly and thoroughly he is taken out of the environment that has given trouble. The earlier a psychotic person is treated as a sick patient, the earlier he is sent to the institution that is going to take care of him, the better chance has he to recover. There is no more harmful attitude that I know of in handling the psychopathic individual than to keep him at home, lock him up, tie his hands, fill him full of drugs, finally put him in jail and lastly send him to the institution handcuffed and tied. If there is any one thing that will keep these patients from getting well, it is such treatment. No matter how fully equipped the institution is and how large and efficient the staff, if a patient has been handled in this manner there is little chance of a speedy recovery, while if the psychosis is recognized early and the patient sent to a properly equipped institution, then the chances are by far better.

The treatment of the mentally afflicted is not a hopeless proposition at all. Even in the institutions like the East Louisiana Hospital, where a large number of chronic patients is sent, there is still a fair rate of recovery. I don't know just what the figures are now, but it is probably thirty-five to forty per cent recovery. If cases were sent earlier then the percentage would increase.

This is the one thing I wish to stress to this audience, that we do recognize these patients earlier, cease to treat them at home, send them off with the nurse or with the physician to one of our institutions.

Dr. Freiman (closing): I just want to thank Dr. Miller and Dr. Holbrook for their kind discussions.

THE TREATMENT OF HIGH BLOOD PRESSURE BY A NEW ORIGINAL METHOD.*

ADOLPH HENRIQUES, M. D.,

NEW ORLEANS.

The causes of high blood pressure are not definitely known. The probable causes are infectious, toxic or psychic, or a combination of these.

An instrument of precision, the sphygmomanometer, is required to determine the height of both systolic and diastolic pressure, both of which should be taken. Instruments of precision are essential to modern medicine for those physicians who are willing to subjugate the fallibility and limitations of their unaided senses to the welfare of their patients.

Where a variation of 5 or more millimeters exists on three successive readings, the author has found it more reliable to

CHART 1.

*Read before the Orleans Parish Medical Society, May 9, 1927.

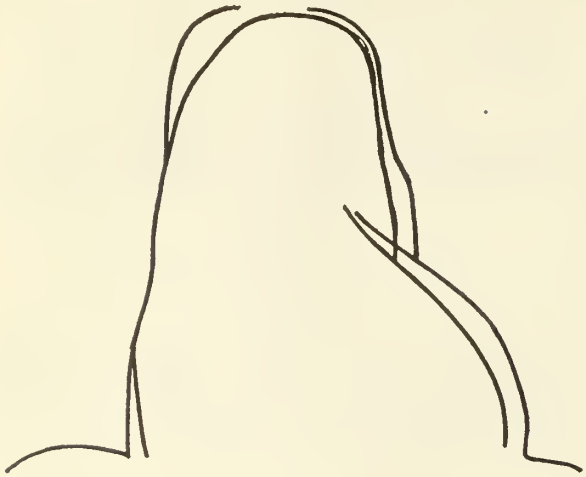

CHART 2.

take an average of six readings of both pressures at the same visit. If this is done, at times variations as great as 40 millimeters will be found to exist in the systolic pressure. A single reading is absurd.

The author's method consists of the application of radium to the basal ganglia of the brain. The effects are attributed to the action upon the vasomotor system and the general metabolism. Other effects are being studied. The method is not a cure-all.

The following effects have been observed:

1. Reduction in systolic and diastolic pressures, also in pulse pressure.

2. The symptoms are relieved, varying from improvement to complete disappearance.

3. Roentgen-ray films taken at a distance of six feet have shown a reduction in the size of the enlarged heart and even of the aorta.

The effects are gradual. Comparing the immediate effects of 209 treatments, varying from ½ to 2 hours, with 50 periods of rest in the same posture, and for the same length of time, there was no appreciable difference.

The method does not prevent sudden elevations of pressure, but when a lower level is effected for any patient, a rise from this lowered level is assuredly without the attendant danger which exists when a sudden rise takes place from a higher level. The treatment does not offer a substitute for the philosophy of self-restraint and the mastery of self. Patients should be kept under observation for a long time in order to maintain a lowered level. Focal infections should be looked for and removed, if existent, at the beginning of treatment. Some of the cases had undergone prolonged rest treatment, without results.

TECHNIC.

At present, each case requires individual study. While the dosage employed is without injury to the overlying structures, an optimum dosage is being sought. Fifty milligrammes of radium, screened by two millimeters of brass, were applied for periods ranging from ½ to 2 hours, at a distance of 1 inch from the skin. The point of application was just above and in front of the external auditory meatus.

A roentgen-ray film of the heart and aorta, made at a distance of at least six feet, yields the most accurate outlines of these organs obtainable by present diagnostic means. It is impersonal and forms a permanent record with which later comparisons may be made for the purpose of determining changes in size as a result of disease or as a result of any treatment instituted.

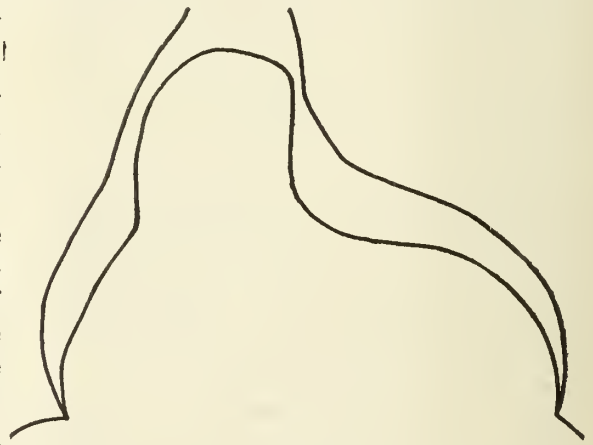

CHART 3.

Charts 1, 2, and 3 show reduction in heart size, and 2 and 3 show a reduction in the width of the aortic shadow, as a result of the treatment.

TABLE I.

Case	1	2	3	4	5	6	7
Pressure	200	185.92	274.146	171.97	230.127	182.90	160.72
1 week			235.127	135.82	202.119	144.86	126.62
1 month	152		208.121	141.90	197.122	156.90	120.66
2 months			209.124	139.91	203.107	150.83	127.66
3 months		145.75	198.117	143.87	180.115	155.80	120.61
4 months	155		199.116		185.110	154.80	
5 months			205.121		182.119	155.78	
6 months			195.112		195.112	155.81	
7 months			174.107			144.81	
9 months							141.71
12 months	140.78						
17 months		150.80					
24 months*		172.83					
30 months	153.70						
34 months	143.68	132.63					

* 5 days later 143.68; case had not been treated for 13 months.

Case	8	9	10	11	12
Pressure	184.110	192.92	194.109	178.116	205.108
1 week	146.90	168.90	146.94	141.93	183.96
1 month	174.96	158.95	147.92		
2 months	150.92	152.90	158.95	140.92	

Table I shows the pressures before treatment and the reduction obtained.

DISCUSSION.

Dr. A. B. Ledbetter: We have all been taught to seek the cause of disease. It is my belief that high blood pressure is the symptom of some other disease. However, it is our duty to endeavor to discover the cause. Of course there are certain conditions that produce high blood plessure that we are at a loss to account for, practically 95 per cent of all blood pressure running from 180 to 200 systolic and 100 to 120 diastolic are due to some pathological condition. At least 75 per cent of blood pressure running from 180 to 200 systolic and from 110 to 120 diastolic are caused from interstitial nephritis. In a great number of these cases, the urine contains no albumen or casts. We should be exceedingly careful in treating cases of high blood pressure with drugs. We all know that the nitrites reduce blood pressure, however, they often do a great deal of harm. High blood pressure is nature's compensation and we should be very careful in administering drugs to reduce it. It is my belief that we get the best results from complete rest and diet. However, in very high blood pressure, we are justified in using the iodids cautiously in order to avoid cerebral hemorrhage.

I would like to ask Dr. Henriques if he made any diagnosis, that is the cause of the high blood pressure in the case under his observation?

Dr. I. I. Lemann: The theory of Dr. Henriques and his manner of reducing blood pressure is very interesting. I would like to know, however, the scientific basis for it. Why did he think that such treatment of the skull would bring about reduction of the blood pressure? As to what Dr. Ledbetter has said, I would remark that while it is true that the greater number of cases of high blood pressure represent early stages of nephritis, there still remains a certain group of hypertensions whose etiology we do not as yet know. If we are to look upon the high blood pressure as a compensatory action on the part of nature, we must still be concerned in curbing the overzealousness of nature. Patients with high blood presure often do not die from kidney trouble—that is to say from the failure of the kidneys to function. Some die of cerebral hemorrhage or of coronary thrombosis; some are hemiplegic for a long time without evidence of great kidney impairment. Other patients suffer the pains of angina pectoris following upon long-continued high blood pressure and some of these again have heart failure depending upon degenerate conditions in the heart. These patients represent many conditions that we cannot blame primarily upon the kidneys although they may lie at the bottom of it. I believe, therefore, that we are justified in trying, as Dr. Henriques has done, to modify the hypertension, and such

an attempt may well represent a real scientific method. I understand that Dr. Henriques does not claim that his method would cure the underlying condition but that it is merely an attempt to modify the pathological course of the disease. I must say, however, that I am somewhat skeptical of any treatment unless I can understand something of the underlying basic theory.

Dr. Charles Chassaignac: I wish Dr. Henriques, when closing the discussion, would tell us whether any study was made regarding the cause of the high blood pressure. I can realize that at times, just like we do when we have elevation of temperature, it is very important to know first the cause of that elevation, yet, in the meantime, make an attempt to reduce the fever. It would be interesting and I think it would help us in the study if we could know something as to what was ascertained as the cause of these various cases of hypertension.

Dr. H. E. Bernadas: I would like to ask the essayist to tell us, if he can, how he arrived at the location? Why he selected a certain spot?

Dr. Henriques: in answer to

Dr. Ledbetter—Rest and diet have proven inadequate in the treatment of this condition. The mortality is 135 per cent greater than in cases of normal pressure. By the author's method, the blood pressure is not only lowered but the patients look and feel better. High blood pressure is an abnormal condition.

Dr. Bernadas—The location on the spot indicated in the technic, was the result of experimental work along other lines. Among other things, reduction of high blood pressure was noted and at Dr. Bass' suggestion this phase of the effect was further developed. The patients did not give up their usual vocation. One of these patients has been cooking and washing for her family of five.

Dr. Lemann—There is no basic theory for the method. The doctor is correct and well posted when he states that there are various causes, besides nephritis, for high blood pressure. These causes are not definitely known.

NEW HOSPITAL FOR CRIPPLED CHILDREN, NEW JERSEY—A citizen of New Jersey has recently endowed for $1,000,000 a new home and hospital for crippled children to be built in Shrewsbury Township as a memorial to his son, and to be known as the Raleigh Fitkin Memorial Institution. It is to educate the children as well as to improve their physical condition. A self-sustaining farm will be operated in connection with it.—U. S. Children's Bureau Bulletin.

TREATMENT OF MALUNIONS OF THE FEMUR.*

MUIR BRADBURN, M. D.

NEW ORLEANS.

The subject of femoral fractures has always interested me. The first big problem I had after I started practice was a fracture of the femur. I treated this case by the methods then advocated and which I had learned during my internship. I realized then how inadequate the ordinary Buck's extension and plaster cast were in overcoming shortening and posterior displacements. At that time I found a study of the end results obtained in about 242 femoral shaft fractures. These were treated by the method above referred to with a 90 per cent permanent disability in laborers of that group. I resorted to open reductions with much more gratifying results until 1918 when I first appreciated the value of skeletal traction. Since then this has been the method of choice in our service; however, the excellent results obtained by Dr. Sherman, who reports a series of 78 fractures of the femur which were treated by open reduction, not one of which is drawing compensation, with but one death and no cases of non-union strongly tempted me to employ his method. I mention these two methods which I think superior to others in preventing the occurrence of malunions.

At the outset I wish to state these facts:

(1) Skeletal traction properly employed will overcome shortening in 100 per cent of cases.

(2) The method advocated in 1921 by the author, viz: an upward pull of ten pounds, will overcome posterior displacement in 100 per cent of recent cases.

It is irritating to be told that the best that can be hoped from skeletal traction is one inch shortening.

Briefly, then, our method of preventing malunions is as follows:

*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

(1) Skeletal traction (our preference being by means of a solid Steinmann pin just above the condyles) employing 20 to 25 pounds for the first 24-48 hours until shortening has been overcome as shown by the roentgenogram taken by means of the portable machine; the traction is then reduced to about 16 pounds and in the 4th or 5th week to about 12 pounds.

(2) As soon as the shortening has been overcome, posterior displacement is corrected by means of an upward pull of 10 pounds, in the average adult case; when this has been corrected the pull is reduced to about 7 pounds; if there is lateral displacement the pull is exerted laterally as well as upward.

The above statements refer to patients from puberty to 50 or 60 years of age; before this period we employ either plaster casts or Russell's or so-called Australian method. After 50 years of age we usually employ Russell's method.

Malunions are difficult problems and various methods have been suggested for their correction. Putti has advocated the use of his osteoton; this has not been available nor have we found it necessary to attempt to procure it. His paper, however, adduced some interesting discussions.

In these discussions we find the annoying misstatement that with skeletal traction "one seldom obtains a lengthening of more than one-half inch" in cases of malunions with shortening.

The case of A. W. is one in which injury was received 9 months before he came to us. An attempt at open reduction had been made before he was admitted to our service; the length of limb had been sacrificed in order to approximate the ends; infection had occurred, the plate had slipped and further shortening had occurred.

We had an actual separation of bone ends of at least an inch, making in all an extension of about three inches with skeletal traction applied nine months after the accident. Further work was contemplated in this case but the patient did not return to the Hospital as instructed and I have not been able to locate him.

In a series of fourteen cases reported by Magnuson in which reduction by means of the Hawley table and compound pulley was effected at the time of operation there were three temporary foot drops from stretching of the sciatic nerve and one death from shock. This gives an idea of the serious nature of an operation which attempts at one stage to correct the shortening.

Drs. Campbell and Speed reported 10 cases of malunion in which simple osteotomy at the site of union, with resection of enough bone to secure end to end reduction, was done in 8 cases. All obtained solid union, 5 with less than one inch shortening and 3 with more than this amount of shortening. In one case by this method they were able to gain about 2½ inches, but concluded that as a general thing 1½ inch was all that could be safely gained.

In a series of 7 cases of non-union there were two deaths which these authors attributed to too prolonged efforts to overcome excessive shortening. I have quoted the statements of these surgeons of ability to show the dangers of any procedure which attempts to overcome shortening of two or three inches or more at the time of operation; in this small series, a 10 per cent mortality.

We find in reviewing our subject that the method of LeRoy Abbott in treating cases of malunion is very similar to that adopted by us. This author cites the observation of Sir Robert Jones who found that localized tenderness over the callus is definite evidence that the callus is the seat of an active change and that it has not yet reached the stage of complete consolidation. "Recognizing this as a basic principle of treatment" Sir Robert Jones has demonstrated that manipulation under anesthesia would often accomplish refracture.

We believe with Abbott that there is danger of non-union following manipulation in cases in which there is much overlapping as the bone ends "are sclerosed and the medullary canals are completely

closed by bone." He does not regard this danger as a contra-indication to manipulation as caliper extension produces the proper length and "an operation to secure union has been converted from a long and difficult undertaking to a comparatively simple procedure." This author employs 30 pounds traction and is successful in overcoming shortening in 10 to 14 days.

The time necessary for suspension in his cases is about ten weeks after which walking calipers are employed.

Quite independently and receiving our suggestions from war time experience, we believed skeletal traction following mobilization to be the method of choice in handling these cases of malunion with shortening. However, the danger of non-union with its prolongation of the disability should be taken into consideration and in adults it is better to expose the site of fracture and mobilize the bone fragments. We resect the bone ends exposing the medullary canal and apply traction by means of a solid Steinmann pin. We have not used over 25 pounds traction and this for about two or three days, then reducing it to 20 pounds. If at the end of two weeks we should have accomplished satisfactory reduction of the lateral and posterior displacements, as well as overcoming shortening, we should allow the case to remain suspended until union would occur. If, however, the correction of the lateral or posterior displacement is not satisfactory we should not hesitate to reopen the wound and employ internal splinting to hold the fragments together. In such a case the Steinmann pin is allowed to remain and suspension continued, because if there should be any infection it is a comparatively simple procedure to open the wound and employ the Carrel-Dakin method of treatment. The case at the end of four weeks is taken out of suspension when we have used internal splinting and a walking caliper applied. With the latter procedure there is a saving of hospitalization of from two to four weeks.

The case of S. H. illustrates the method above described. He was admitted to our service January 22, 1927. He had three inches shortening and a stiff knee as a result of a fracture of the femur sustained in an automobile accident two months previously. We were interested to know what kind of treatment had given such a poor result. Buck's extension of 10 pounls for 3 weeks, followed by the application of a plaster cast was responsible. On January 29, 1927, after two days preliminary treatment (of two daily baths and shaving of the limb the night before operation) an open mobilization was performed. An incision 12 inches long was made; the bones were chiseled apart; the ends freshened exposing the medulla, and the wound closed with Michel clips. After mobilizing the knee to 40 degrees a solid Steinmann pin was inserted. Traction of 25 pounds was applied. This was reduced to 20 pounds in 72 hours. At the end of ten days we found that posterior displacements persisted. On the fourteenth day we reopened the wound and applied a Lane plate, employing as in the first operation the Lane aseptic technique. The Steinmann pin was allowed to remain and the limb again suspended and immobilized by applying ten pounds to the Steinmann pin. Both operative wounds healed by primary intention. The pin was removed in this case on the 30th day and a walking caliper ordered. There was no shortening. This patient deserted before physiotherapy had accomplished a great deal in mobilization, there being only 35° flexion. However, a letter from him dated April 9, 1927, states that he is able to bend his knee well.

There is one point in the operative treatment of bones that I should like to stress. No fingers should be allowed to enter the wound. All sutures and ligatures should be tied with forceps. I heard this procedure characterized by one clinic at a recent meeting as absurd. I had heard the previous year at a meeting of the same society a report from the same clinic in which they stated that they had to remove the majority of the plates they put in.

We can recall having to remove in eight years only two plates that we had used in the open reduction of simple fractures, and our service is a very active one.*

*Recent experience would prompt us to attempt to obtain lengthening in the malunions of the femur in children by mobilization by the closed method followed by Russel's method of traction (March 13, 1928).

In the cases of malunion in children we must avoid the epiphyseal line by placing the Steinmann pin through the shaft. We believe that whenever possible mobilization in children should be accomplished by the closed rather than by the open method. We do not advocate the application of plates in these cases. The following case of C. W., aged 11 years, came to us six weeks after the accident with shortening, external angulation and outward rotation. Under ether anesthesia the union was mobilized by manipulation; skeletal traction of 11 pounds employed. These skiagraphs show the overcoming of shortening. The danger of non-union is not great in the growing bones of children. We are not greatly concerned if we cannot accomplish any better reduction than in this case, 14 years old, who came to us when callus was already present. We were able to overcome shortening but not the lateral displacement. However, we concluded that he would obtain a good leg and did nothing further. These skiagraphs were taken two years later and examination at this time showed he had 100 per cent function.

CONCLUSION.

I should like to stress the following:

(1) Prevent malunion by employing efficient traction, preferably skeletal traction in the young and middle aged adults.

(2) Operations which attempt to correct great degrees of shortening after malunited femoral fractures are usually attended with great shock and high mortality.

(3) Shortening in malunited cases should be overcome gradually by skeletal traction after mobilization of the fragments effected by the open method in adults with resection of the ends of bones exposing the medullary canal.

(4) There is a tendency to non-union following mobilization by the closed method.

(5) In operations on fractured bones no hands should ever enter the wounds.

(6) If reduction by traction in cases of mal-union is not satisfactory, internal splinting should be employed after shortening has been overcome.

DISCUSSION.

Dr. Paul McIlhenny (New Orleans): Those of us who have had the pleasure and privilege of seeing Dr. Bradburn work in the past ten or twelve years have learned that it is to our advantage to listen attentively to what he has to say, especially in regard to the treatment of fractures.

There are a few of the points that I would like to stress in Dr. Bradburn's paper. Do not attempt to overcome an over-riding, or displacement, or a marked angulation in an old fracture of the femur at one sitting. It is a surgical fact that the sciatic nerve will stretch to a certain extent, possibly an inch. In certain cases you may get damage with one inch stretching, in another case you might not. Where your malposition and union has existed for months and possibly years, you are going to have such terrific shortening and structural changes in your soft parts that it will require considerable stretching to overcome them. Besides nerve injury you may traumatize the ankle or knee have an ulcer, which will necessitate prolongatioon of the treatment.

If, at the time of operation, you find it is necessary to use a Lane plate to hold the bone fragments in apposition, or to bone graft, you should first clean out your medullary canal before attempting any bone approximation. You should then attempt to get as much bone into apposition as possible; a little spicules of bone against a large piece of bone in approximation does not do much good, you have a space between which is unstable; it takes a long graft or plate to secure immobilization. If you are going to plate, only do it after you are sure you cannot hold the parts in any other way; that also applies to bone graft. If you are going to err on the side of a plate, or graft, make an error in favor of a long plate instead of one too short. I do not think anyone should plate or graft a bone unless he can feel that he is a pretty good carpenter. Now, why do these plates have to be taken out? Dr. Bradburn mentions fingers in the wound. Another reason is that the majority of us who put plates in are not good carpenters; we do not know when to stop fastening the plate, we continue turning the screws, until we have reamed out the threads in the bone and the screw becomes loose. As soon as you ream out the threads in the bone the screw becomes a foreign body, necrosis sets in with abscess formation, resulting in removal of the plate to avoid amputation.

Do not keep your cases immobilized too long; if you have on a caliper, take it off, then have the limb massaged and actively move the limb without weight bearing, replacing the caliper for support. Let the patient do the work; passive motion in stiff joints does no good, and if there is no ankylosis we are going to stretch the periarticular structures and do harm. Massage should be begun as soon as the wound is healed; I do not mean just gentle massage, but massage up to the point of almost moving your fracture, and that is the best post-operative treament you can have.

Remember to keep your fingers out of the wound; be sure to have your plate and bone graft long enough, and when you plate, stop turning the screw before you have your screw loose.

Dr. Guy Caldwell (Shreveport, La.): It has not been my pleasure to know Dr. Bradburn or to observe his results. I know, however, from what has been said, that his work is most excellent. It might be of interest to you to see that in the Charity Hospital in Shreveport, working entirely separate from Dr. Bradburn, we have arrived at much the same conclusions that he has presented.

I had occasion to present twenty-five femur cases for 1926 in our work in Shreveport. I have a few of the slides and will present them, first to illustrate the point that skeletal traction is the only hope in certain of these cases—that is, outside of open reduction. (Slide shown.) I believe that skeletal traction is the only thing that will save us from operations which even in good hands have an appreciable element of danger. Therefore we must learn to apply skeletal traction. In so doing we recognize certain difficulties which must be overcome, and we are now working to improve and simplify the method, but we accept the principle.

When I first saw the title of this paper, "Difficult Femurs," I reflected that all femur cases are difficult. Fractured femurs in children give good results almost regardless of the treatment that they get. Fractures of the neck of the femur in old people call for treatment of the patient first and of the fracture second. We may get good results. A fracture of the shaft in the adult is a tremendous problem, economically and surgically, and in these we must arrive at some better procedure.

Dr. Isidore Cohn (New Orleans): I have profited by Dr. Bradburn's paper. There are a few points on which I want to take issue with him.

Dr. Bradburn says he gets 100 per cent results. I do not doubt Dr. Bradburn's ability to get 100 per cent, but 100 per cent is more than most people can get with any one or all methods combined.

Dr. Bradburn says skeletal traction is the only means by which we can get good results. I take issue with him. Dr. Caldwell has called attention to some of the difficulties you might encounter. Dr. Bradburn and Dr. Caldwell can put it on, but the average surgeon will have difficulty to keep from getting into trouble, possibly knee joint infections. We are not all near excellent hospitals, nor provided with necessary skill to do these things. I think in cases of this kind Russel's method of making traction will do for many surgeons in country places where they do not dare put on skeletal traction. I believe we need not go away with the idea that we must use a Steinman pin. I certainly do not want the average surgeon to stick a Steinman pin in my knee. In delayed union cases, non-union cases, why depend on a piece of steel when the osteogenetic function has already been interfered with? If we must do something let us put in a bone graft. We can overcome shortening by other means than skeletal traction and skeletal traction in the hands of some is a dangerous procedure.

Dr. E. Denegre Martin (New Orleans): If you know how to do a thing one way and get results by doing it that way, that is the way to do it. It is all right to get up and say you cannot do it; I know my limitations and do not undertake anything I know is beyond them. If somebody can do it better, that somebody is entitled to the case, but such opinions should be verified by facts, not statements.

I agree with Dr. Bradburn in his results. It is so long since we have taken out a plate in our service I do not believe I would know how to do it. This is due to two facts: first, absolute asepsis, which means more than merely not putting your fingers in the wound, and, second, avoiding trauma as much as possible.

If a loose plate is not due to infection, it is due to bad technic. This has already been stressed by Dr. McIlhenny. You must have your screw hold at the time. If you use a Sherman screw the hole has to be made with a round drill one thirty-second of an inch smaller than the screw and the screw driven with just enough force to fix it. I have given up the Sherman screw and even discussed it with Dr. Sherman himself. I told Dr. Sherman that if he would use a common wood screw he would get better results. In putting on your plate use a common wood screw and drive it through the marrow into

the opposite side of the bone. Drill the hole two-thirds the size of your screw. With the wood screw you have a big bite and it catches in the opposite side; it not only catches, it holds. Whereas, if you put in a Sherman screw you are putting it in on the same side and it is more apt to become loose—it acts as a foreign body. By paying attention to such simple matters I have not had to take out a plate for years.

In nearly all our cases we have been able to overcome the over-riding by traction. Now, you cannot in any other method that I know of, put a sufficient amount of traction on a femur of the character spoken of by Dr. Bradburn. At least thirty pounds weight must be applied and there is no way except with the pin. If properly used, no harm results. In the beginning I did not get the results I do today. Experience is our greatest teacher.

Dr. Muir Bradburn (closing): When I was speaking to the chairman about difficult femurs, I intended to write him and give him the title of my paper, which should have been Malunion of the Femur.

In discussion we have practically covered the subject, but there is one point which has been brought out we did not mention in our paper, viz: non-union. Dr. Cohn brought up the subject of bone graft. In our cases bone grafting was not necessary and probably is not necessary in a majority of non-unions of the femur; malposition and not any disturbance of osteogenetic function, is the most important factor in the production of non-unions of the femur. I did not say it was impossible to obtain good results by any other method than skeletal traction and open reduction, as I have used other methods. (Plates shown.) A case of non-union. Traction was put on until shortening had been overcome (demonstrating). We then plated. (Plate.) A case of non-union; the plate shows there is callus on the distal fragment. Non-union here is due to malposition; a bone graft is unnecessary. Put on traction to overcome shortening plate and you will get union.

I believe with Dr. Caldwell that all femurs are difficult, but we have certain cases which are more difficult than others. (Patient present.) Here we have a two and a half inch shortening and a stiff knee. Ordinary femurs are difficult, these are terrible problems. I feel certain that I can get this limb to the same length as it was before. What we want to do in this case is an open mobilization, section the ends of the bone to expose the medulla and then apply traction. If at the end of two weeks I find that the posterior displacement is not satisfactory (after employing our method for its correction), I shall reopen the wound and apply a steel plate. I wish to repeat that skeletal traction properly applied will overcome shortening in one hundred per cent of cases; you can overcome posterior displacement of the femur in one hundred per cent of recent cases.

The question as to the danger in the use of the Steinman pin was asked. I prefer not to use the pin in patients over sixty years of age or where there is considerable osteoporosis. I had one infection in an adult about 35 years of age. I had to make an incision to drain a pocket, but the infection did not prove to be serious. We have had about 65 shaft fractures and of these we have employed skeletal traction in about 55.

CAUDAL ANESTHESIA IN UROLOGY.*

FRANK J. CHALARON, M. D.,

NEW ORLEANS.

In selecting this title, there is no intention to bring out new facts about a subject so ably covered by many competent authorities, but rather to reiterate the value of a method of anesthesia that finds its broadest field in urology. The names epidural anesthesia, caudal anesthesia, and sacral anesthesia are synonymous and are applied by different authors to the injection of an anesthetic solution through the lower opening of the posterior sacral canal into the space between the spinal dura and the intravertebral periosteum.

This method was originated in 1901 by that brilliant urologist Professor F. Cathelin, who, seeking to avoid the dangers of spinal anesthesia as elaborated by Corning, Quincke and Bier and knowing from Hallion's experiments that the anesthetizing agent (cocain) acted almost exclusively on the rachidian roots and but slightly on the spinal marrow, carried out a series of experiments on dogs by which he proved the correctness of his assump-

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*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

tion, *i. e.*, that it was possible to produce deep and superficial anesthesia without penetrating the spinal dura.

Epidural injection as a method of relieving pain was promptly accepted in France and was used successfully in varied conditions, such as sciatica, orchitis, cystitis, tabes and intercostal neuralgia. However, its anesthetic worth in operative urology seems to have been somewhat over-shadowed by its use for the treatment of essential incontinence.

In this country Dudley Tait was the first to make it known; Dent, Valentine and Townsend used it at the Manhattan Hospital for the relief of urinary incontinence, and Labat introduced it at the Mayo Clinic. While Lewis and Bartels commended its use in urology as early as 1916, it is only in the past six years that it has progressively been popularized by the monographs of Scholl (1921), Crowell and Thompson (1922), Davis (1924), Syms (1926), Shaw (1926), Goldstein & McBee (1926), and, again, Davis in 1927.

The worth of a procedure is based on the results obtained by its use. For cystoscopy of the average patient the topical application of an analgesic to the urethral and vesical mucosa is sufficient, but when, because of inflammatory changes the vesical or urethral mucosa becomes hypersensitive, topical analgesia is insufficient and too transient to allow satisfactory cystoscopic manipulation. It is in this class of patients that I found caudal anesthesia of greatest value.

In vesical tuberculosis, if general anesthesia is used, the narcosis must be most profound before complete relaxation of the vesical spasm is obtained. With these patients there frequently co-exists a severe lung involvement which contraindicates such profound narcosis. Again, such deep narcosis frequently affects the kidney function and further damages a diseased organ. With proper caudal anesthesia a complete relaxation, permitting of extensive cystoscopic examination and manipulation, is obtained.

For the cystoscopic implantation of radon seeds to neoplasms, the fulguration of urethral or vesical papillomas, the meatotomy of the urethral orifice and other painful interventions in the bladder, caudal anesthesia is the anesthetic of choice. In external urethrotomy and for rapid dilatation of strictures it is superior to general anesthesia. In perineal prostatectomies it is strongly advocated by Shaw, who reports 100 consecutive perineal prostatectomies done under epidural anesthesia. Davis, who also uses this form of anesthesia, reports 107 consecutive prostatectomies without a death.

I have done two suprapubic prostatectomies, using infiltration anesthesia in conjunction with caudal anesthesia. The prostatic enucleation was painless in both cases and outside of a slight dizziness, due to the lowering of the blood pressure, there were no other disagreeable symptoms.

While using the method for the relief of a patient suffering from a severe cystitis, Cathelin and Albarran noticed that it caused a certain amount of urinary retention. This suggested its use in the treatment of essential incontinence and enuresis. The results obtained in that field of use were so clear cut that it led to its adoption throughout Europe as the best treatment for that aggravating infirmity.

TECHNIQUE.

Position of Patient: The knee-chest, Sims lateral, or just face-down, the pelvis being raised by a pillow. On passing the finger down the sacrum in the median line, a U or V shaped depression is found slightly above the intergluteal fold. This depression marks the lower opening of the sacral canal. After the usual preparation of the skin, (benzin, iodin, alcohol) a wheal is made over the depression with a fine hypodermic needle A 2½ or 3 inch (19 or 20 gauge) nickeloid needle is inserted in the center of the U shaped depression at an angle of 20 degrees until

the ligament is perforated, when the needle is depressed towards the coccyx and driven in to its full length. A 20 cc. syringe loaded with the anesthetic solution is adapted and the piston is slightly withdrawn to make sure that neither a blood vessel nor the dura has been punctured. If no blood or fluid is withdrawn the solution is injected slowly.

Anesthetic Solution: 25 to 35 cc. of 1 per cent solution of either novocain, procain or aposthesine may be used. Shaw has obtained the best results from 15 to 20 cc. of a 3 per cent procain solution. Personally, I have never exceeded 35 cc. of a 1 per cent solution. After the injection, the patient is placed on his back and 10 or 12 minutes are allowed to elapse before any operative procedure is attempted. If a suprapubic prostatectomy is to be done, the site of incision should be infiltrated since caudal anesthesia does not extend sufficiently high to numb the anastomosing branches from the lumbar plexus. Scholls reports but two failures in 150 patients and in both of these cases there was extension of bladder growths to neighboring structures not innervated by the sacral nerves. Laskownicki of Lvow, while praising epidural injection for cystoscopy, denies its value in perineal prostatectomy unless it is previously reinforced by the spinal injection of 4 cc. of 1 per cent novocain. This author's experience conflicts with the findings of most all other operators.

Causes of Failure: First. Malformation or occlusion of the sacral canal, due to bony changes.

Two. Stoutness of patient, making it impossible to feel the opening of the sacral canal.

Three. Inexperience of operator, who does not penetrate the sacral canal, but gives a deep subcutaneous injection (this can be suspected when there is resistance to the flow of the solution or when swelling appears above the site of the injection).

Four. Not enough or too weak a solution.

Five. Not sufficient time allowed to elapse between injection and beginning of operative procedure.

Disadvantages: In highly nervous and apprehensive patients, it is well to precede the caudal analgesia by the injection of a ¼ gr. of morphin. Lowering of systolic blood pressure 15 to 20 points. Marked mental excitement. This symptom is reported by Goldstein and McBee as occurring five times in their series of 518 injections. I have never seen it in any of my patients. Vertigo, nausea, vomiting, with low blood pressure, were noted in one patient who had eaten breakfast an hour before the caudal injection was given.

CONCLUSION.

Caudal anesthesia is devoid of danger and compared to spinal anesthesia is free from the latter's disagreeable sequelae such as headache, paralysis, etc. It is the best anesthetic in perineal prostatectomy and with the addition of infiltration anesthesia it can be successfully used in suprapubic prostatectomy. In enuresis and essential incontinence it has given over 75 per cent of cures. Finally, in the cystoscopy of an inflamed, irritable bladder, whatever the cause, it is superior to and should supersede all other forms of anesthesia.

DISCUSSION

Dr. H. W. E. Walther (New Orleans): For me, personally, caudal anesthesia is in the same class as paravertebral anesthesia in that I have not acquired the technique of how to use it and have been hesitant about experimenting with my private patients. I believe that the difficulties of the technique, for the average man, are sufficient to prevent it from becoming the universal method of anesthetizing your patient either for cystoscopy or perineal work. I believe that caudal is as difficult as the paravertebral. The refinements in just how to introduce your needle to do this work are not as easy as they oftentimes appear on paper or when heard in the meeting hall. Therefore, in those cases where general anesthesia is contra-indicated, I am still using local as advocated by, and according to the technique of, Dr. Carroll W. Allen, It has sufficed me for my

work in urology. I know we have cases where a general anesthetic cannot be employed and therefore some form of blocking or local is imperative. Still I feel that I am getting more satisfactory results with infiltrative novocain anesthesia than I would with the various nerve blocking methods. I am fully aware of the fact that Dr. Chalaron has quoted some very excellent workers in urology in America who have adopted caudal anesthesia for painless surgery. I do not feel, however, in private practice, that we can be guided wholly by statistics when the procedure is one that we are not just ready to accept.

I met a urologist at the Mayo Clinic who told me that he had a patient with tuberculosis of the bladder whom he was going to cystoscpe under caudal and that he wished me to see this case. So I went with the doctor to the hospital. He gave the patient the caudal and told him he was not going to hurt him. When he started to introduce the cystoscope the patient nearly jumped off the table, which was very embarrassing to the patient, to the doctor and to me. That is what happens so often when we have these clinical demonstrations before visitors.

In the Baptist Hospital, where we use oxygen and ethylene, given by trained anesthetists, with Dr. Caine at the head of the service, we get 100 per cent anesthesia and our patients are perfectly satisfied.

Dr. Frank J. Chalaron (closing): I hope I have not led you to believe that I meant all cases of cystoscopy should be done under caudal anesthesia. I do not think this is, or should be, the case, but we have cases where the bladder is painful whether due to papillomata, malignancy or tuberculosis, in which it is indicated.

The technique is not as difficult as one might believe. Cathelin, in his monograph, explains it so clearly that if you follow the anatomical points you can do it. Most men use the ordinary spinal needle, which is too long and may injure the dura; two and a half inches is long enough. Never use a needle over size 19 to 20 gauge; the tendency is to shoot the solution too rapidly and the result is not as good because the solution spreads too high and you do not get concentration on the lower nerves. Local, I use, but we have patients who are weak, feeble old men, and some whom at the sight of a cystoscope want to desert. Even doctors are afraid. The first occasion I had to use caudal for plain cystoscopy was on a doctor and the agreement was that if there was any pain there was no cystoscopy. I was lucky—the anesthetic worked.

I know of no local anesthetic agent which gives 100 per cent successful anesthesia.

REVIEWS

PREVENTATIVE VACCINATION OF THE NEWLY BORN AGAINST TUBERCULOSIS BY THE B C G.*

Statistics and Results from July 1st, 1928, to December 1st, 1928.

A. CALMETTE, M. D.

Translated by J. Birney Guthrie, M. D., from La Presse Medicale, January 11, 1928.

Following the communications which have been recently made to the Academie de Médicine upon the employment of anti-tuberculous vaccine B C G (Bacillus Calmette-Guerin) for the pre-immunization of infants, of adolescents or of adults who do not react to tuberculin, and who in consequence have probably not yet been infected by virulent bacilli, I have thought that the Academy would be interested in knowing the results of the method of vaccination of the newly born by the buccal route according to the technique which we have commenced to apply. At first the method was used very cautiously with B. Weill-Hallé on several infants particularly exposed to familial contagion. Since the 1st of July, 1924, the method has been employed on a vast scale in France and many other countries and by a large number of physicians.

The method of vaccination of the newly born by the B C G is now sufficiently well known to make it unnecessary to describe it again. I shall limit myself to recalling that it consists in provoking as soon as possible after the birth of the infant, the impregnation of his lymphatic organs with a sufficiently large number of elements of a special race of the bacillus of Koch. This culture constitutes a truly attenuated vac-

*Read before the Orleans Parish Medical Society, February 27, 1928. The discussions which followed the paper will appear at a later date.

cine in the sense of Pasteur, that is to say a living culture, capable of cultivation in indefinite series, in proper artificial media and in living organism without either losing or modifying its hereditary fixed characteristics; capable of serving as an antigen in *vitro* and in *vivo;* capable of provoking in *vivo*, the formation of antibodies; *definitely deprived of all tendency to produce virulent tuberculous lesions; and reinoculable upon sensitive animals.*

This impregnation of the lymphatic organs is more effectually realized in causing the new-born to absorb the vaccine by the buccal route, in three doses at 48 hour intervals. A convenient quantity of a recently prepared bacterial emulsion is thus administered which contains in consequence the largest possible numbers of living bacterial elements. The absorption is effected easily during the first ten days which follow birth because, during this period of life the intestine of the young infant is paved with proplasmic cells of which the phagocytic power is intense. These cells gorged with microbes pass in the lymphatic circulation into the ganglia, the spleen and the bone-marrow. These cells carry there and circulate there the vaccine bacilli without power of digesting them. These vaccine bacilli are inoffensive parasites and producers of antigenic substances whose secretion continues to determine the elaboration of defensive substances (agglutinins, etc.)

Later, about the 15th day after birth, the cylindric epithelium of the intestine forms a *revêtement* which renders the absorption of the bacilli less definite and more uncertain. However, the absorption is still effected, but with an intensity insufficient for it to be capable of utilization for anything but *re-vaccination,* when one does not purpose to *create* but to *maintain* the state of pre-immunization.

Another reason of capital importance that we seek to cause the new infant to absorb the vaccine bacilli during the first days of his life is the necessity of provoking in him this reaction with the briefest delay possible, the appearance of this particular state of resistance to infections and to virulent reinfections which characterizes the *anti-tuberculous immunity.* However, the experiments teach that for young calves, for example, the delay necessary for this effect is about 25 days. One is inclined to believe that it is the same for the human species.

During this short space of time if the infant is exposed to virulent and massive contagions when his organism is not yet in a defensive state, he is overwhelmed. It is necessary then to assure his protection as early as possible and one should strive during the period when the defensive substances are being elaborated to protect him by separation from the tuberculous mother for example, or through a relative isolation by means of scrupulous hygienic care, guarding him from the risk of grave infections. After the thirtieth day it would seem that for the pre-immunized infants, these dangers are no longer to be feared. At least this is the conclusion which we can now make on the work done up to the present time.

Since the 1st of July, 1924, the date on which the Pasteur Institute placed the vaccine B C G at the disposal of physicians and of public services, and up to the first of December, 1927, 52,772 infants have been vaccinated at their birth, some in Paris and some in the departments of France.

Of these 52,772 infants 5,749 were sent to us as children of tuberculous mothers or as living in a tuberculous environment. Each of these was entered on a card which permits us to follow his fate and to obtain regularly a report upon his condition.

A. *Infants from Birth to One Year of Age.* Three thousand eight hundred eight of these were vaccinated less than a year previous to the 1st of December, 1927. At this date one can count among them 118 deaths. Their general mortality from all causes of illness was then 3.1 per cent, while in the whole of France the general

mortality of non-vaccinated, with or without tuberculous contact is 8.5 for 100 living infants.

The general mortality of 0 to one year is then more than one-half less among the vaccinated infants in tuberculous contact than that of those non-vaccinated with or without such contact.

This is an observation particularly important because it replies to the objection of those who lay stress on the inaccuracies of diagnosis in the causes of death of young infants.

For these 3,808 infants vaccinated and in tuberculous contact the mortality for illnesses presumably tuberculous, up to the first year, has been 0.9 per cent (34 dead), so that for infants, not vaccinated living in the same conditions of tuberculous contact, this mortality varies from 24 per cent minimal for infants under supervision at the dispensary up to 70 per cent and even 80 per cent.

Denmark only, up to the present, can show for infants in contact, and not vaccinated, a mortality from birth to one year, as low as 7.7 per cent.

Even if one adopts this figure which is surely not exact for France, the difference in mortality between the vaccinated and non-vaccinated up to the age of one year will still be considerable; and of a sort that the happy effects of preventive vaccination from the first year of life will appear beyond dispute.

B. *Infants of Age of One Year to Three Years and a Half.* We can better judge at this period of the innocuousness in the long run, and the efficacy of the vaccination by studying separately the fate of vaccinated infants whose age has advanced to the period from one year to three and a half years.

Of these vaccinated infants, all in a tuberculous environment of which the youngest were born before Dec. 1, 1926, and the oldest between the 1st of July and the 31st of December, 1924. Of these we have records upon our charts at the Pasteur Institute on the 1st of December, 1927, to the number of 1,941. This group has furnished a total of 21 deaths of which 4 only are from diseases presumably tuberculous. One can find these recorded in a more complete communication which will be published in the next number of Annals of the Pasteur Institute. This will contain the detailed observations relative to each one of the 21 deaths.

The general mortality for these 1,941 infants vaccinated and in contact aged one to three and a half years has been 1.2 per cent; lower by 4 per cent than that of infants of the group aged one to four years not vaccinated with or without tuberculous contact. This reduction of general mortality measures the net gain realized by the preventative vaccination, whatever may have been the errors of diagnosis in the causes of death.

From the point of view of age and the nature of tuberculous contact these infants are classed thus:

Ages.	
From 1 to 2 years (to December 1, 1927)	1,024
From 2 to 3 years (to December 1, 1927)	812
More than 3 years (to December 1, 1927)	105
Total	1,941

Nature of Tuberculous Contact:	
Mother	628
Father	669
Mother and Father	102
Grandparents or collaterals	542
Total	1,941

The mortality presumably tuberculous (4 dead in 1,941 infants in contact) is only 0.2 per cent per 100, while that for the whole of France is for the entire infant population not vaccinated with or without tuberculous contact 0.14 per 100.

It is important to indicate that of our 1,941 of one year to three and a half years vaccinated and in tuberculous contact, the oldest which has succumbed to a presum-

ably tuberculous affection was 16 months of age. From this age onward there were no deaths from any suspicious cause.

Up to the 1st of December, 1927, 917 of these infants had reached the age of two to three and a half years and no death from disease presumably tuberculous was found among them.

The tuberculosis mortality for this group was then 0. Let us state that for this group of infants, revaccination at the 1st year was done in 298 which testifies at least to its harmless effects. It is difficult to assert that these revaccinations are necessary; but they at least serve the purpose of inciting the physicians and the families to give us news of the infants in contact which were vaccinated at the time of their birth.*

In our cases as the greater number of infants age from two to three and a half years in tuberculous contact have been submitted to revaccination at the expiration of the first year; one can attribute only to their initial vaccination, the solid resistance that they manifest to the virulent infections to which they are daily exposed.

Duration of the Anti-Tuberculous Immunity Produced by the B C G. It would seem then to follow that anti-tuberculous immunity produced by B C G lasts much longer than had at first been hoped. Perhaps it is maintained and re-enforced by the virulent contaminations—from this time on, inoffensive, for the vaccinated child brought up in a bacillus-laden atmosphere. This, we believe, is a very plausible hypothesis. It is, however, not an indispensable one. Experiment has shown us that monkeys, anthropoids, and pithecien monkeys vaccinated at the Pasteur Insittute at Kindia, French Guinea, by Wilbert in 1923 were still refractory at the end of 1927 to infection by cohabitation with monkeys artificially contaminated.

*Directions which accompany each bottle of the vaccine delivered by the Pasteur Institute indicate that revaccinations are necessary only in children in contact with tuberculosis, and that revaccination should be done at the end of the third year.

From what we have observed among a large number of infants vaccinated by Weill-Hallé and Turpin in 1921 and 1922, and which have since lived in the midst of a bacillus-laden atmosphere, it appears that the immunity lasts at least five years. That is to say, it lasts during all of that first period of life when the child is particularly exposed and sensitive to grave infections.

This observation is very reassuring. It permits us to dismiss definitely the fear of a spontaneous return of virulence of the vaccine bacilli which prevents some physicians from employing vaccine B C G systematically. It has been experimentally demonstrated that this fear seems unfounded since *no artifice of the laboratory, even successive passage through sensitive* normal organisms has succeeded in rendering B C G sufficiently virulent to cause mortality in infants and guinea pigs. The fact that the vaccine bacilli lives so long in the human organism without provoking disorders, without otherwise revealing its presence than by invoking a resistance to virulent infection, is of a nature to dispel all uneasiness as to the dangers that anyone has assigned to them.*

Professor Lignieres does not bring in any additional observations or any experimental facts which justify this restriction.

We believe that the restriction is in no way justified. The demonstration has been made in tens of thousands of healthy children who are brought up in healthy environment and which have been preimmunized by means of the B C G in the last five years in France and other countries.

*In a communication to the Academy of Medicine July 26th, 1927, Professor Lignieres of Buenos Aires, after having confirmed our experience that our culture B C G does not give tuberculosis either to the calf or to the guinea pig and that it represents truly an attenuated fixed race; that the passage through the guinea pig or through the calf does not modify it; it was observed that the preimmunizing effect that was actually determined, seemed actually to be of still longer duration than we previously believed. Professor Lignieres expresses the opinion it is wise to limit the employment of the B C G to those cases only, where tubercular contagion is to be feared.

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APPROACHING MEDICAL MEETINGS

We wish to call attention to the approaching meetings of the Louisiana State Medical Society and the Mississippi State Medical Association. By the time this number of the Journal reaches the eyes of the reader the Louisiana meeting will be only a week or ten days off, but the Mississippi meeting will still be at least a month away. The members of this State Society will have ample time to prepare themselves for what should be a yearly visit to whatever city holds the convention. At both these two meetings of organized medicine, splendid programs will be presented for the scientific edification of the audiences. There is one feature of such medical society meetings usually not mentioned but in truth deserving of accentuation. This point is not concerned so much with the education of the hearer from the scientific and academic point of view as it is with the enlargement of his knowledge of his fellow physicians. Meetings of such a type disclose scientific observations which are new or unknown, but more than this they reveal a spirit of good comradeship and esprit de corps which is worth as much as the scientific program. We learn to appreciate and to realize from our contact with other doctors that the world is a better and more cheerful sphere in which to live than it was before we came to know what really splendid men are our brother practitioners.

INDIGENT PHYSICIANS.

At the meeting of the American Medical Association in Dallas in 1926 a Committee was appointed to investigate the needs of indigent physicians. When this Committee reported to the House of Delegates at Washington, D. C., in 1927 it was appreciated that there was no need for a central home for poor physicians, incapacitated and unable to make a living any longer from their professional activities. It was felt, however, that it would be wise indeed to prepare some plan whereby efforts should be made to stimulate interest in providing for relief funds by various county and state organizations. With this idea in mind, the Louisiana Committee on the Care of Indigent Physicians of which Dr. C. A. Weiss of Baton Rouge has been chairman for some years, has been asked to co-operate with the national organization in formulating plans and schemes for this purpose. Too much can not be said in favor of the idea in general. Fortunately, it is but rarely that a physician in the last years of his life, or in the earlier years, as a result of some unforeseen disability, is unable to provide for himself and his family, but when such an event does take place, it

is deservant of commiseration greater than with the ordinary individual. A plea of help for such an unfortunate should meet with prompt response and there should be proper machinery set up to see that this is done. The practicing physician in the course of each day of his active life does so much good, benefits so many, and is so charitable to all, that when he himself has a misfortune or falls upon evil times he should be made sure that in a quiet and unobtrusive way help and assistance will be given to him.

THE AMERICAN COLLEGE OF PHYSICIANS MEETING.

A notable event of the past month was this gathering of Internists from all parts of the United States and Canada. The profession of this section was fortunate in having the opportunity of meeting the Masters, Fellows and Associates of this organization, the purpose of which is to advance the interests of Internal Medicine, including Neurology, Pediatrics, Roentgenology, Pathology and the Laboratory Sciences in general. Elsewhere in this issue will be found the record of the excellent work presented at this meeting.

A feature of the Twelfth Annual Clinical Session, which should be a source of pleasure and of pride to the profession of the South was the selection of Dr. John Herr Musser as President-elect. Dr. Musser's services to medicine along the line of study, investigation and original contribution to medical literature are well known. In the capacity of teacher he is doing valuable work, especially by his efforts to develop in students the ambition to prepare papers embodying their observations in the wards. More recently he has given time and thought to the development of this publication, with what his associates consider excellent results. No small part of the credit for the successful Session just ended is due him because of the thoroughness with which its preparations were made. We congratulate Dr. Musser heartily on the honor conferred on him; we congratulate the medical profession of the South for its recognition given a faithful servant from among their number.

GESSNER.

THE VACCINATION OF THE NEWBORN AGAINST TUBERCULOSIS.

The appointment of a Committee from the Orleans Parish Medical Society by the President, Dr. J. Birney Guthrie, to consider ways and means to study thoroughly Calmette's method of vaccination focuses the attention of the local medical community upon the important questions which have been prevailing as a result of Calmette's report, a translation of which is published elsewhere in this number of the Journal.

To him who reads superficially Calmette's report of his results from the vaccination of a large number of children with B. C. G., it would seem to indicate that a method for the prevention and control of tuberculosis has been evolved which presages tremendous possibilities for benefit to the human race. A critical minded reader may say that Calmette's controls are inadequate, that it is unwise to vaccinate any individual with a living organism which might at any time become virulent though at one time it is avirulent, that a method which can not be used except by a specially prepared fresh vaccine has certain elements about it which are questionable, that immunity may be short and that re-vaccination may be necessary. In order to evaluate these several elements of question and of dispute, and possibly with the hopes that it will be possible to try out the method, this Committee has been asked to function.

SONIAT MEMORIAL MERCY STAFF MEETING.

The scientific program of the monthly staff meeting of the hospital was of exceptional interest because of the presentation and general discussion of tularemia.

Through the courtesy of Dr. J. C. Menendez, Dr. Oriole presented an interesting case of ulcero-glandular tularemia, occuring in a young white woman. The history was of an incision on the thumb while cleaning a rabbit prior to cooking a meal. This initial injury was quickly followed by acute constitutional manifestations of hyperpyrexia, pain and marked glandular enlargement. At the site of injury a suppurative periostitis developed which necessitated incision, a quantity of pus being removed. The epitrochlear and axillary glands became enlarged and it finally became necessary to incise the axillary glands after becoming fluctuant.

Tularemia was suspected and some collected blood was sent to Washington at the suggestion of Dr. Geo. Hauser, the report confirming the diagnosis of tularemia.

The eruption was bilateral and consisted of a papule with a red areola and followed the lymph channels. Dr. Oriole went at length into the history, classification and treatment of tularemia. This was followed by a discussion on the etiology, mode of transmission and agglutination reactions by Dr. Hauser. He pointed out the virulence of the infection and the fact that apparently the domestic rabbit is not affected, but that the wild rabbit transmits the disease which is a septicemia at all times.

The paper called forth a good deal of discussion by the staff in general and in closing Dr. Oriole suggested that the profession be on the alert for this infection, because of the increasing number of cases being reported.

MAURICE CAMPAGNA, M. D.,
Secretary.

DIAGNOSIS AND TREATMENT OF ULCERS OF THE LESSER CURVATURE OF THE STOMACH.—Gastrojejunostomy is not a curative operation where the pylorus is unaffected. Excision by knife or cautery is often followed by recurrence and should not be done. Excision with gastrojejunostomy gives a fair measure of success, but may be more difficult to do and more trying to the patient. It should be confined to small non-adherent ulcers. Sleeve resection is a good operation, but practicable in only a small proportion of cases. An ulcer eroding the liver or pancreas should if possible be treated by partial gastrectomy. Jejunostomy or duodenal feeding may prove to be a valuable method of treating ulcers so high on the lesser curvature that direct attack is technically impossible.—Carson, H. W., International Clinics, December 1927.

LIFE AND LABORS OF LAENNEC—The great Charity Hospital, a household word as familiar throughout the length and breadth of this land as the name of our city, offers facilities for acquiring practical knowledge not surpassed by those of any other institution on this continent. I say this with due deliberation. Where is the hospital equal to this in size and scope to which the medical student has free access at all times and where clinical teaching and pathological researches are free from all restrictions? Is there an American medical school elsewhere than in New Orleans, in which material for instruction in anatomy, abundant, and furnished to the student gratuitously, is obtained with the sanction of the law, without the need of secrecy or of formalities which render legal provisions inoperative! Thanks to the medical profession and enlightened legislators of New Orleans, for the wise and liberal policy which has made the Charity Hospital conducive to the interests of humanity, by being subservient to medical education, as well as an asylum for the sick! Honor to Louisiana, the only State in the Union, in which the legalization of the study of anatomy is complete!—Austin Flint, Medical News and Hospital Gazette, December, 1859.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of March the Board of Directors has held its regular meeting and the Society two regular Scientific Meetings.

At the Scientific Meetings the following programs were presented:

March 12th.

Interstitial Pregnancy Unruptured, with Report of a Case.
By.....Dr. H. B. Alsobrook
Discussed by Drs. Kostmayer, H. R. Unsworth, A. Mattes, and closed by Dr. Alsobrook.

Jaundice Occurring in Untreated Syphilis.
By.....Dr. J. Holmes Smith, Jr.
Discussed by Drs. J. H. Musser, F. M. Johns, A. Mattes, and closed by Dr. Smith.

Malarial Therapy in Paresis.
By.....Dr. H. R. Unsworth
Discussed by Drs. C. S. Holbrook, I. Kimball, of Gulfport, Miss.; Drs. E. McC. Connely, F. L. Fenno, F. M. Johns, C. V. Unsworth, W. H. Seeman, and closed by Dr. Unsworth."

March 26th

Symposium of Reticulo-Endothelial System

Dr. Henry Laurens,
Physiology of Reticulo-Endothelial System

Dr. R. G. Pigford, by invitation,
Reticulo-Endothelial System in Disease

Dr. Isidore Cohn,
Surgery of Reticulo-Endothelial System.

Discussion by Drs. C. W. Duval, Urban Maes and R. T. Liles.

Upon the recommendation of the Society the Board of Directors and the President have appointed a special commission composed of the following members who have been instructed to investigate the Calmette Vaccine for Tuberculosis.

Drs. Chas. W. Duval, A. E. Fossier, F. M. Johns, E. L. King, Lucien A. LeDoux, Maud Loeber, Rudolph Matas, J. H. Musser, W. H. Robin, W. H. Seemann, Dr. John Signorelli.

Your special attention is called to the following annual report of the Judiciary Committee, which has been ordered published:

To the Officers and Members, Orleans Parish Medical Society.

Gentlemen:

As Chairman of the Judiciary Committee I wish to make the following report:

Your Committee has met and the matters referred have been taken up and the proper disposition made thereof.

There was no particular serious violation of medical ethics during the year.

It has occurred that during the course of the year numerous newspaper articles of unusual cases have appeared in the lay press, and in this connection we wish to call your attention to the following resolution of the American Medical Association:

"*Whereas*, Some of the prominent members of the regular medical profession have been guilty of bad taste, if not unethical conduct, in permitting their names, and often times a record of their professional attainments, to be published in the lay press in connection with articles or interviews pertaining to medical or surgical subjects; and,

Whereas, Such articles savor of self-exploitation and very justly may be considered as a bid for patronage or favor; and,

Whereas, That proper and wholesome education of the public may be served efficiently and well by published medical and surgical articles of an educational nature in the lay press under the auspices of reputable medical societies; therefore, be it

Resolved, That it shall be considered unethical for any Fellow of the American Medical Association willingly to permit his name to be connected with any medical or surgical article or interview, of an educational nature or otherwise, that may appear in the lay press "and possibly be construed as an act of self-exploitation, and that, with the exception of those articles that shall be issued by public health officers or *men not in private practice*, all educational articles pertaining to medical or surgical subjects shall appear under the auspices of this Association or one of its component societies or constituent associations.' "

Respectfully submitted,

JEROME E. LANDRY, M. D., Chairman.

Your attention is also called to the following:

Announcement of Appointment of Publicity Committee.

H. W. E. Walther, Chairman.
Isidore Cohn.
Randolph Lyons.

At a meeting of the Judiciary Committee the Committee was called into the counsel of the Board in regard to the function of the Publicity Committee. The Judiciary Committee advised a strict

interpretation of the By-Laws *in re* the constitution of the Publicity Committee, and declared that authority of the Publicity Committee will, in the opinion of the Judiciary Committee, be sufficient to protect any member against the charge of unethical communication to the public.

Comment: Much criticism has been voiced by the membership in the past regarding matter of publicity. It is desired to call attention to the function of the Publicity Committee and ask that this committee be consulted in advance regarding "Leave to Print" or the matter of "Lay Addresses." This course should not be onerous to the membership and is in strict compliance with the By-Laws as amended.

J. Birney Guthrie, M. D., President.

It is with regret for the Secretary to report the death of Dr. E. M. Dupaquier, who was one of the oldest members of the Society.

Treasurer's Report.

Actual Book Balance, 1/31/28	$1,462.89
Receipts during February	$2,776.50
	$4,239.39
Expenditures	$2,006.33
Actual Book Balance	$2,233.06

Librarian's Report.

Twelve books have been added to the Library during February. Of these 11 were received from the New Orleans Medical and Surgical Journal and 1 by gift. Notation of new books is appended.

The new reading room and the room built for us in the basement are completed and ready for use. The duplicates, both journals and books have been shifted to the new quarters and the consequent shift into the space vacated is in progress.

New Books.

Butler—Illustrated Guide to the Slit Lamp. 1927.
Mead—Diseases of the Mouth. 1927.
McAuliffe—Essentials of Otology. 1927.
Stengel and Fox—Textbook of Pathology. 1927.
Sluder—Nasal Neurology, Headaches and Eye Disorders. 1927.
Thom—Mental Health of the Child. 1928.
Leake—ed.—Percival's Medical Ethics. 1927.
Dana—Peaks of Medical History. 1928.
De Lamar Lectures. 1926-27. 1928.
MacGregor—Mosquito Surveys. 1928.
Montague—Troubles We Don't Talk About. 1927.
Slosson—Creative Chemistry. 1920.

H. Theodore Simon, M. D., Secretary.

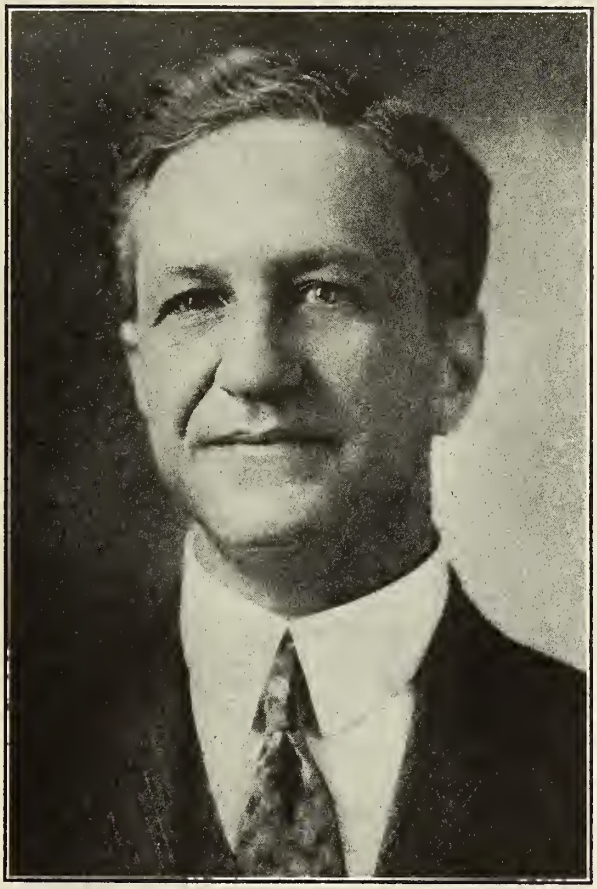
WINGS FOR THE SPIRIT.—A matter deserving the frankest discussion is the autopsy. The Jew is considered to be the most reluctant to permit autopsy of all those who constiute Occidental civilization. Much attention has been given the religious aspects of this question. It is said that the rabbis of the Talmud consented to the autopsy if it honored the dead or if it gave information of immediate value to someone suffering with the same disease as the deceased. The autopsy was to be forbidden if it desecrated the dead or if the benefit were to be of only general rather than immediately applicable value. The far reaching significance of science of all kinds was not appreciated at that time. Men know now what science has done for them and the prospects it has in store. The autopsy is the basis of much that we have learned about disease and will continue to contribute to our progress. Religion is not static but shows evolution. Modern opinion in the church is generally to the effect that the value of the autopsy to the relatives, to the community and to medicine outweighs regulations that were made at other times and under other circumstances. Rabbi J. B. Levinthal, of Philadelphia, is quoted as saying that the postmortem examination is not forbidden by the Jewish Rabbinical Law, and further, that "where a postmortem exmination may result in the discovery of the origin or cause of some serious disease, it is my firm conviction that thus to serve humanity is sanctifying, rather than desecrating, the dead." Any autopsy may serve this purpose and no one can say in advance what the results will be. Hospital administrators and officers are generally of the opinion that "the history of a hospital fatality is not complete unless the (autopsy) report of the pathologist is included," and what applies to hospital patients applies equally to those who may die at home. We must demand of our pathologists that the dead body be regarded as the material remains of a loved soul and that they treat it accordingly. Only with rare exception is such a caution necessary. In spite of all sentiment and even superstition, the autopsy may well be regarded as an honor to the dead and is certainly a service to mankind. "When a patient dies a great debt is owed humanity in order that the patient shall not have died in vain."—Karsner, H. T.: Science, 67:251, 1928.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

TO THE DOCTORS OF LOUISIANA:

In extending this invitation to you as our guests, at the approaching meeting of the Louisiana State Medical Society, it is the desire of the Committee on Publicity to lay before you some historical facts and present some bits of information that may prove interesting and instructive.



A. A. HEROLD, M. D., President
Louisiana State Medical Society

Baton Rouge is among the old towns of the southwest, having been incorporated more than one hundred years ago, in 1817. Its land titles run back many years before that period into both Spanish and French history and records. It is situated something over one hundred and fifty miles from the mouth of the Mississippi River, measured by the Lindbergh system, where it empties into the Gulf of Mexico, and is located upon the first highlands above the gulf, far beyond the possible reach of harm or damage from the floods of the Mississippi River; the line of demarcation on this City's front between alluvial and hill soil being as distinctly marked as if by the cut of a knife.

Our territory has been under the domination of at least five owerships. The native red man ruled, hunted and left here the name given it by him, and the impress of his wild, untutored life. Upon the very hill tops within our gates he held his annual revelries, dances and debauches, attracted thither by the combined elements that still contribute to our health and happiness. He called it "Istrouma," which being interpreted from the savage means "Red Pole." This "red pole," located somewhere on our river front, was a giant red cypress tree from which the bark had been peeled, and around it his spring-time dances and celebrations took place. It marked the line of limitation of the hunting grounds of two Indian tribes, the Houmas and Bayo Goulas.

Spain first became the master here and by one of those peculiar freaks of fortune this territory was not included in the Louisiana purchase by Thomas Jefferson. Even as late as 1811 Baton Rouge and the territory comprising the Florida Parishes (twelve of them), was known as the "Republic of West Florida," presided over by Henry Skipwith, as president and Chief Justice. These were simply absorbed and taken over as a part of the natural government. The "Red Pole" of the Indians was changed by the French to "Baton Rouge," and by the Americans to "Red Stick" and "Baton Rouge," because of its applied title.

Baton Rouge was the official home of one of our American Presidents, and the spot where General Taylor lived as a citizen of Baton Rouge before being elected President is now marked by a properly engraved granite block upon the old University Campus, near the Third Street entrance to the grounds. The Spaniards established a garrison here and some of the buildings erected by them are still in use and in fair state of preservation. The seat of government, removed to New Orleans when the Capital Building was destroyed in 1863, was returned here in 1881.

Within more recent years Baton Rouge has enjoyed spectacular and wonderful extension and development. A little over a decade ago, the governing heads of the great Standard Oil Company sought out Baton Rouge as the central point of

vantage for the manufacture and distribution of its various products. Its pivotal position at the head of deep water navigation and its eastern and western short line by rail, together with its well nigh perfect climate and health conditions fully justifying their choice and judgment and their investment of more than a hundred million dollars here.

Baton Rouge has become the Seventh Port in the United States; its ships, loaded here, reaching every port in the civilized world. The boundaries of Baton Rouge have been enlarged and extended until now, including suburban additions, she is near the fifty thousand mark in population, and with crude oil and natural gas at our very doors we confidently expect to pass the one hundred thousand mark within the decade.

Baton Rouge is primarily an educational city. Only recently a new, complete and beautiful home for our great Militiary and Agricultural and Mechanical College, has been designed and built almost as if by magic. It covers more than two thousand acres of ground and is the last word in college architecture and equipment. Already ten million dollars have been expended and we have barely started upon it. Its attendance runs into thousands.

No city of its size in America can excel us in the matter of public school foundation and equipment. Magnificent, modern edifices have been built in all directions, the latest high school building alone costing more than a half million dollars, while our colored population is being adequately and splendidly provided with the best educational facilities.

Every street and sidewalk within our city limits is paved and a majority of them hard surfaced, while our sewerage and drainage systems are well nigh perfect. We have spent several hundred thousand dollars on municipally owned docks and they are fully justifying the investment.

Our highways, many of them hard-surfaced, lead to every point of the compass, and there have been or are being built toll-free bridges to connect us with the wide world.

Last, but by no means least, we are the proud possessors of two magnificent, high grade and up-to-date sanitariums, equipped with every modern facility, and an honor and credit to our splendid city.

With every essential to make living wholesome and life happy Baton Rouge greets you and extends its welcome and its hospitality. We are going to make this the greatest meeting ever held by the State Society. Don't miss it.

COMMITTEE ON PUBLICITY.

BATON ROUGE.

Baton Rouge was first seen by Robert Cavalier de LaSalle, the prince of American explorers, when he came *down* the Mississippi River in 1682 and was certainly seen by Pierre Lemoyne, Sieur d'Iberville, when he came *up* the river in 1699. Up to that time it was merely the line of demarcation between the hunting grounds of the Houmas and Bayou Goula Indians. History tells us that the chief of the Houmas was named Istrouma and for that reason the name has local interest. The name of "Baton Rouge" is pure French and means "Red Stick." Diron d'Artaguette the officer in charge of this district under the French government in the early days of the discovery, writes that on the first highland that one saw when ascending the Mississippi River, there was located a red cypress tree of such huge dimensions that if felled and made into a dug-out it would make two good sized boats. The French with their characteristic perspicacity for nomenclature called the place Baton Rouge or Red Stick, after this monster landmark so palpably plain to those passing on the river. While some historians have indulged their fancies to the extent of saying that it was due to a pole on which was hung the scalps of captives, and dyed red with blood, others that the post was painted red to make it attractive, and so on ad libitum, the fact remains that as the tree was so conspicuous it was used in aboriginal times as a boundary mark between the hunting grounds of the Houmas and Bayou Goulas, and instead of being painted as claimed (and all the pigments the Indians had in those days were used in body ornamentation) but had been skinned or stripped of its bark, to make it prominent, for some distance above the ground after the custom of the Indians to blaze trails by gashing trees to mark the way others must follow. With their tomahawks they removed the bark and got the same effect as would have been gotten from painting. Some authorities have placed the Red Stick at the mouth of the old Garrison Bayou, Lake Grasse, now closed by the dyke in the formation of University Lake, but if we take into consideration the fact that it stood on the first highland which one saw when ascending the river, it must have stood where the State Capitol now stands. Also the height of the hill gave it eminence over the surrounding country and made it remarkable. Also how much more in the keeping of the eternal

order of things is the thought that where the Indians of that period met to arrange their intertribal affairs, on the same spot meets the Legislature of Louisiana to arrange the affairs of this great State. This monarch of the forest, planted by the hand of the Great Spirit was no doubt meant to mark a spot favored by the gods of this American continent, for it stood guard over the place where the greater European nations would struggle over the mastery of the Mississippi River as being the key to American commerce, and one after another they marched and countermarched and strove to conquer and hold this spot as being the strategical solution of their sought for domination. Under eight separate and distinct flags this place, originally marked by the Red Stick of the Great Spirit, has proven in recent years to be the headwater of deepwater navigation on the Mississippi, the greatest inland seaport in the country, surrounded with all the wealth of nature lavishly supplied, and, by reason of its dominance of the great river, immune from its annual rampages. These flags were:

Fleur de lys of France—white and yellow fleur de lys—flag of Bourbons.

English Flag—crosses of St. George and St. Andrews crossed in red and white.

Flag of Spain—white flag, coat of arms of Castile.

Florida Republic—Large white star on blue field.

Flag of United States—seventeen stars and seventeen stripes.

Flag of Louisiana—sovereign State of Louisiana. Flag of United States without stars—one yellow star.

Confederate Battle Flag—stars and bars.

United States Flag—stars and stripes.

In the old days the Europeans sought to hold the river for its advantages as an artery of commerce, while in modern times it still is the greatest asset of the people of Louisiana despite its destructive periods of flood stage, caused by the fact than man has endeavored to obstruct its course and divert its channels.

Dr. J. Arthur Tucker, Chairman of the Transportation Committee, has spent some time with the Highway Commission, investigating the various routes into Baton Rouge for the State Meeting. Dr. Tucker thinks it would add a great deal to the pleasures of the meeting if the doctors would drive to Baton Rouge in their cars. Baton Rouge has ample storage facilities, and if any doctor will write to Dr. Tucker he will gladly route him by the best roads to Baton Rouge.

Dr. Clarence A. Lorio, Chairman of the Golf Committee, is actively making plans to entertain the doctors during the Baton Rouge meeting. He requests all golfers to bring with them their club handicaps so as to participate in the various competitions. Prizes are being offered, the principal one being the Aesculapian handicap, in which a prize is given to the champion of the medical meeting; there are also prizes for low gross and high gross with a blind hole prize that should cheer any golfer.

Both Baton Rouge Golf and Country Club and Westdale have offered the privileges to all doctors, the badge being the admittance card.

Dr. Lorio suggests that it would add to the pleasure of the trip if the golfers would come to Baton Rouge on Sunday, April 8, 1928, and begin the golfing before the scientific sessions.

WE HAVE RECEIVED THE FOLLOWING SYNOPSES OF PAPERS TO BE READ BEFORE THE LOUISIANA STATE MEDICAL SOCIETY, BATON ROUGE, LA., APRIL 10, 11, 12, 1928.

SECTION ON MEDICINE

TUESDAY, APRIL 10, 1928, MORNING SESSION, 9:00 O'CLOCK, SECTION ON PUBLIC HEALTH, OPEN TO THE PUBLIC, GARIG HALL.

2. The Prophylaxis of Cancer, With Special Reference to the Cervix Uteri,

By C. Jeff Miller, M. D.,
New Orleans, La.

The general causation of cancer is considered, and special stress is laid on childbirth injuries and on infections as specific causes of cancer of the cervix, and on their correction as a prophylactic measure against its occurrence. The family physician is largely responsible for the education of women in this regard, and the work of organized medical bodies is also essential. Reliance on medical measures in the treatment of cancer is dangerous, and all treatment is based on a proper grouping of cases. Despite our ignorance of the etiology of cancer, the outlook is far from hopeless for its ultimate conquest.

3. Diet—An Important Factor in Health and Disease,

By Allan Eustis, M. D.,
New Orleans, La.

Recent developments of knowledge regarding diet of human beings. Experimental and clinical observations have

shown that by the proper diet nature can repair damage to tissues which were formerly considered beyond repair. The average layman is scrupulously careful in dieting his horse, cow or dog, but usually eats what is served to him by his cook. Many diseased processes are undoubtedly caused by this ignorance on the part of the layman. Distribution of knowledge as to normal nutrition becomes a public health question. Diabetes, eclampsia, rickets and probably pellagra are diseases in which diet must be considered from a public health standpoint. Dietetic principles are considered in the treatment of fevers, nephritis, liver disease, and pernicious anemia.

4. The Full Time County Health Projects Developed as a Result of the Flood in the Mississippi Valley,

By Surgeon J. G. Townsend,
United States Public Health Service, Arkansas State Board of Health.

Full time county health work existing prior to the flood of last year, the emergency health work that was accomplished immediately following the disaster, the plan of developing full time county health projects through the co-operation of the Public Health Service, Rockefeller Foundation, State Boards of Health and local county governments, the program of activities in these full time projects and what has actually been accomplished.

TUESDAY, APRIL 10, 1928, AFTERNOON SESSION, 2:00 O'CLOCK, HEIDELBERG HOTEL.

3. A Consideration of Some of the Intestinal Parasites With Report of Three Cases of Oxyuris Incognita Infestation.

By Elizabeth Bass, M. D.,
New Orleans, La.

The paper is confined to a brief description of a few of the more frequently encountered intestinal parasites with reference to their development, habitat, mode of transmission, symptoms produced in man, and the laboratory diagnosis.

4. Blood Pressure in Tuberculosis,

By Oscar W. Bethea, M. D.,
New Orleans, La.

Brief review of literature.

Statistics gathered in the male, white, tuberculosis Evacuation Service, Charity Hospital.

Comparison of these blood pressure readings with those made at the same time in a general medical ward for white, male patients.

Analysis of recent blood pressure readings made at Charity Hospital.

Conclusions.

5. The Neutrophil Nucleus Index, the Lymphocyte Index, and the Monocyte Index as Valuable Assets in the Diagnosis, Prognosis, and Treatment of Tuberculosis.

By Wallace J. Durel, M. D.,
New Orleans, La.

The neutrophil nucleus index, the lymphocyte index, and the monocyte index are discussed, and their clinical value substantiated by a careful study of thousands of blood smears from tuberculous patients in different stages of the disease.

The variations in these indices are dependent upon "toxic" elements present in the tuberculous at different periods and in various quantities.

The neutrophil nucleus index is acquired by taking the percentage of neutrophil cells with a nucleus with one lobule or with several lobules all connected by isthmus bands. This differs from the Arneth picture, and is a fair gauge for the administration of the tuberculins and in directing the exercise of our tuberculous.

The lymphocyte index is acquired by dividing the number of neutrophils by the lymphocytes, and the monocyte index by dividing the number of lymphocytes by the monocytes or large mononuclears. Thus one acquires a fair indication of the grade of clinical severity and of the "activity" in the lesions.

WEDNESDAY, APRIL 11, 1928, MORNING SESSION, 9:00 O'CLOCK, EAST LOUISIANA STATE HOSPITAL, JACKSON, LA.

8. Hysterical Hiccoughs With Associated Phenomena,

By Walter J. Otis, M. D.,

Pithiatism externalizes itself in various ways at various times in apparently healthy subjects. Violent emotions obviously prepare the soil and create a predisposition for hysterical manifestations.

The writer presents the case of a young female following psychic trauma with resultant emotional imbalance followed by a period of hiccoughs which, at its onset, failed to yield to treatment, later making a recovery.

9. Some Interesting Spinal Cord Lesions,

By D. L. Kerlin, M. D.,
Shreveport, La.

Includes report of four cases, two of which are Caudi Equina tumors, a case of a unilateral cord injury presenting Brown-Sequard syndrome, and a case of an extradural abscess of lumbar cord. A laminectomy was performed on all these cases, with very good results. All of these cases have been observed since operation, progress checked, and their condition at present, several months after operation.

10. Common Disorders of the Colon Observed in the Treatment of the Chronic Invalid,

By E. L. Eggleston, M. D.,

Battle Creek, Mich.

The pathology of the colon is very important and has not had proper attention.

1. Ulcerative Colitis: Discuss so-called non-specific type. Careful sigmoidoscopic examination of the patient is essential to proper diagnosis. Work of recent investigators has done much to excite interest in this subject and the prospects for the development of a more satisfactory therapy are very bright.

2. Spastic Colitis: This type is seen much more frequently than the ulcerative. Its diagnosis and therapy are not well understood by the medical profession. It is responsible for a great deal of physical disability and it is essential that more attention be given to this class of cases. In probably all cases it results from a nervous disturbance. Psychotherapy is an important part of the treatment.

11. Tularemia, Review of Literature With the Report of Five Cases,

By W. S. Kerlin, M. D.,

Shreveport, La.

Tularemia is an infectious disease caused by bacterium tularense. Cases have been reported from thirty-nine states of the union. Transmission to men occurs by (1) the bite of the horse fly, (2) wood tick, (3) Tick (Species undertermined)—(4) Contamination of his hands or conjunctival sac with infected organs, body fluids of infected rabbits, flies or ticks.

Four Clinical types are usually noted:

(1) Ulcero-glandular.

(2) Oculo-glandular.

(3) Glandular.

(4) Typhoid.

Convalescence is slow. It is unusual for a patient to be at work again at the end of a month. Frequently they are not able to work the second or third month. Some have not entirely returned to normal for six months to a year.

The persistence of agglutinins in the blood of long recovered cases is especially noticeable.

The treatment is symptomatic. No preventive, vaccine or curative serum has been perfected.

Five cases of the Ulcero-glandular type occurring in Louisiana, are reported with complete recoveries in four. One case at the end of four years is still incapacitated.

WEDNESDAY, APRIL 11, 1928, AFTERNOON SESSION, 2:00 O'CLOCK, EAST LOUISIANA STATE HOSPITAL, JACKSON, LA.

13. The Diagnosis and Treatment of Celiac Disease,

By C. T. Williams, M. D.,

New Orleans, La.

Synonyms: Chronic intestinal indigestion; intestinal infantalism; chronic intestinal insufficiency.

Etiology: Etiology unknown. Occurs usually at from 1 to 3 years, shortly after starting mixed diet; rarely occurs in the breast fed; the celiac syndrome is intensified by feeding fresh cow's milk fats and carbohydrates.

Diagnosis: Prominent doughy abdomen: large, semi-solid, grayish colored stools; loss in weight, or stationary weight, which may have been present for months and without other apparent illness; marked gain in weight on protein diet, after exclusion of fresh cow's milk, fats and carbohydrates.

Treatment. Three phased high protein diet of Howland. as modified by Sauer.

15. Antigens and the Precipitin Test.

By Dr. H. W. Butler, M. D.,

New Orleans, La.

Consists mainly of a series of blood serum tests, using the different well known antigens as the precipitating antigen and the last Meinicke modification as the method of choice. The slide method will also be described, using the same antigen in both tube and slide. The tests are compared with the Kolmer Wassermann reaction.

17. A Consideration of the Erythrocytic Sedimentation Rate,

By Edwin H. Lawson, M. D.,

New Orleans, La.

The sedimentation rate of erythrocytes under varying conditions is discussed, including a consideration of the different theories dealing with the variance of such rate and a comparison of the technics employed. The application and use of this laboratory procedure in the diagnosis and prognosis of disease is also considered.

18. Digitalis.

By T. E. Williams, M. D.,

Shreveport, La.

1. Short history of the use of digitalis.
2. Experimentation on animals, showing:
   a. Proof that digitalis acts upon the vagus center and vomiting center.
   b. That it acts upon the blood vessel walls and the walls of the heart.
   c. That it is united with the muscle and nerve tissue in the heart and blood vessels.

d. The method of detoxication of the heart.
e. The dilating and constricting action upon the different parts of circulation.

3. The standardization by chemical and pharmaceutical methods.
4. The frog unit.
5. Preparation and mode of administration.
6. Dosages, small and large, calculated in advance by Dr. Cary Eggleston's method.
7. Therapeutics:
   a. Pneumonia.
   b. Heart failing or threatening to fail.
   c. Fibrillation.
   d. Thyroid intoxication.
   e. Surgical conditions with a rapid heart, when the heart itself is not affected.
   f. Coronary sclerosis and myocarditis.
8. Indications for its discontinuance.

SECTION ON SURGERY.

TUESDAY, APRIL 10, 1928, AFTERNOON SESSION, 2:00 O'CLOCK, HEIDELBERG HOTEL.

2. Roentgen-ray Treatment of Malignant Bone Tumors With Report of Cases,

By C. P. Rutledge, M. D.,
Shreveport, La.

The roentgen-ray treatment of malignant bone tumors is of pronounced value. All bone tumors suspicious of malignancy should be treated with roentgen-ray while waiting for report of biopsy, even though surgery may be contemplated. Report of two cases, with lantern slide demonstration, of malignant bone tumors, diagnosis confirmed by Bone Sarcoma Registry, treated with roentgen-ray by author, clinically well one and two years respectively after treatment.

4. Experiences in the Use of Foreign Proteins in Treatment of Diseases of the Eye,

By W. L. Benedict, M. D.,
Rochester, Minn.

Foreign protein therapy is used with good results in some diseases of the eye. The substances in most common use are milk, typhoid vaccine, diphtheria antitoxin, and proprietary articles. The indications for use and the choice of substance to be used are not clearly established. The case histories of patients who have been treated with various proteins have been reviewed. The following deductions have been made.

1. The age of the patient has no bearing on the result of the treatment.
2. Boiled milk is a safe protein to use. No anaphylaxis has been observed.
3. Some patients fail to react to injections of milk. Other proteins should then be used.
4. Large doses of diphtheria antitoxin can be given daily for twenty to thirty days.
5. Some chronic diseases of the eye respond to protein therapy and should be used long enough and in sufficient quantity to be certain of an effect.
6. Protein therapy is an adjunct to general and local treatment but has great value in early inflammatory eye diseases and should be used freely in hospitalized patients. Its value is considerably less in ambulatory patients.

WEDNESDAY, APRIL 11, 1928, MORNING SESSION, 9:00 O'CLOCK, EAST LOUISIANA STATE HOSPITAL, JACKSON, LA.

7. Actinomycosis in Louisiana,

By Hermann B. Gessner, M. D.,
New Orleans, La.

In this paper are presented seven cases from the records of Touro Infirmary and Charity Hospital, two involving the lung, one the pelvis, two the jaw, one the arm, and one the foot. In all of these the diagnosis was made or confirmed by laboratory examinations. In detail is presented a case of jaw actinomycosis apparently cured in a short time by excision, radium and massive doses of iodid of potassium. Two cases not confirmed by laboratory examination are mentioned. Madera foot is discussed.

12. Genital Tuberculosis,

By H. C. Bumpus, Jr., M. D.,
and
G. J. Thompson, M. D.,
Rochester, Minn.

The subject of genital tuberculosis in the male is reviewed with special reference to the differential diagnosis, primary focus, associated urinary infection, and the results of treatment, together with the final prognosis as observed from a study of 300 cases seen at the Mayo Clinic, 175 of whom were operated upon.

WEDNESDAY, APRIL 11, 1928, AFTERNOON SESSION, 2:00 O'CLOCK, EAST LOUISIANA STATE HOSPITAL, JACKSON, LA.

11. Obscure Symptoms Presented by Anomalous Kidneys. Report of Three Cases.

By Barron Johns, M. D.,
Shreveport, La.

The finding of anomalous kidneys has become a matter of common occurrence with the modern urological technique. When diseased, symptoms and physical signs may be obscure and misleading.

Case reports:

(1) Woman with double kidney, the ureters having a common orifice in the bladder.

(2) Woman with a double kidney, the superior pelvis being pathological and acting as a definite focus of infection.

(3) Ectopic kidney, complicated by fibroid tumor of uterus.

None of these cases presenting symptoms suggestive of renal disease.

13. Arthritis—Its Cause and Treatment,

By John T. O'Ferrall, M. D.,

New Orleans, La.

The paper will deal largely with the cause and a few remarks in regard to the treatment of many cases of toxic arthritis. While it is believed that clearing up of the usual foci of infection, such as, tonsils, teeth, prostate, etc., is essential and should be done, at the same time, a very common and important focus of infection, namely, the gastro-intestinal tract, is, in the majority of instances, entirely overlooked. The methods for the proper relief of intestinal stasis and consequent absorption will be taken up, in addition to the general eliminative and stimulative treatment.

14. Surgical Emergencies,

By Isidore Cahn, M. D.,

New Orleans, La.

1. Spontaneous. (Acute perforating gastro and duodenal ulcers, acute intestinal obstruction and other conditions which apparently demand emergency surgery-.

2. Post-traumatic emergencies.

3. Emergencies arising during the course of an operation.

4. Post-operative emergencies.

Spontaneous, post-traumatic, and post-operative will be considered from a standpoint of diagnosis and treatment.

17. Pseudocyesis,

By J. M. Bodenheimer, M. D.,

Shreveport, La.

Very little in the literature on the subject. Most of our writers on obstetrics give it but passing notice. Condition occurs among lower animals. Condition has been produced upon lower animals by covering the female in heat with vasectomized males. The female of both the higher and lower form of animal life has a peculiar psychology which may account for the existence of the condition according to the psychologists.

Report of interesting cases.

18. Common Complications of Fractures.

By H. W. Meyerding, M. D.,

Rochester, Minn.

The care of fractures is of interest to every physician, and a knowledge of the immediate and late complications arising is of paramount importance. The public is rapidly becoming educated to the possible complications accompanying fractures, together with the methods of treating them, and it is demanding the best of results. The author believes that the care and treatment of fractures requires constant supervision and many of the complications that arise can be obviated if the proper precautions are taken during the first few days. Emphasis must be placed upon the prevention of infection, Volkmann's ischaemic paralysis, delayed and non-unions, joint stiffness and late deformity.

THURSDAY, APRIL 12, 1928, MORNING SESSION, 9:00 O'CLOCK, HEIDELBERG HOTEL.

19. Nasal Fractures and Treatment,

By Val H. Fuches, M. D.,

New Orleans, La.

Anatomy and physiology of nasal structures. Diagnosis of fractures. Treatment by means of copper splinting. Nasal fractures and their treatment.

20. Hypertrophic Pulmonary Osteoarthropathy.

By L. J. Williams, M. D.,

Baton Rouge, La.

This paper deals with a case of Bamberger-Marie's disease in a young boy. The condition begins with a long standing multiple abscess of lungs, followed by the secondary changes in the long bones and the "Hippocratic fingers."

21. Surgical Treatment of Pulmonary Tuberculosis,

By Alton Ochsner, M. D.,

New Orleans, La.

In attacking a tuberculous process surgically an attempt is made to immobilize and decrease the function of the affected part—at the same time not interfering with the nutrition of the involved areas.

The surgical treatment of pulmonary tuberculosis may be divided into conservative, which is non-destructive, and radical or destructive.

The conservative methods consist of artificial pneumothorax and operations on the phrenic nerve. These procedures may be used in a large number of cases in the early and also in the advanced. The indications are not as strict as for the radical measures.

The radical procedures consist of plastic operations on the thorax and apicolysis, with an attempt made to bring about an extra pleural collapse. Of the various plastic procedures the paravertebral thorocoplasty is to be preferred. A brief discussion of the various operative procedures with lantern slide demonstration is given.

22. Cleft Palate,

By E. D. Fenner, M. D.,

New Orleans, La.

1. Cleft palate and cleft lip are variations of the same developmental failure. 80 per cent of cases of cleft palate have associated cleft lip.

2. Cleft lip will be considered only incidentally, as a necessary part of the treatment of the cleft palates with which it is associated.

3. Operative procedures for cleft palate divided into two divisions:—a). Preliminary operations to close fissures of the alveolar border, done in early infancy.—b) Closure of the roof of the mouth, postponed until the end of the second year.

4. Langenbach - Fergusson method the procedure of choice.

5. Success in this work is the result of experience and long training. General surgical competence not enough to promise good results. The "occasional" operator doomed to disappointment.

AMERICAN COLLEGE OF PHYSICIANS MEETING.

The Twelfth Annual Clinical Session of the American College of Physicians was held in New Orleans March 5-9 with over nine hundred physicians from the United States and Canada registered. The scientific papers composed one-half the program, clinics in the afternoon the remainder. On March 5, before an audience which packed the large meeting room on the roof of the Roosevelt, several notable papers were read by Julius Bauer, Joseph Sailer, Maud Slye and Aristides Agramonte. The morning of March 6 was made up of a symposium on tuberculosis, at which among others spoke Dr. Charles L. Minor, former President of the Southern Medical Association, and by a symposium on anemia. On the morning of March 7 various cardiac conditions were discussed, together with a symposium on epilepsy, and in the evening a symposium on infectious diseases, in which participated Birkhaug, Dochez, Cooke and Small. March 8 there was an important symposium on diabetes, in which papers were read by Dr. A. A. Herold, President of the Louisiana State Medical Society, Dr. Frederick M. Allen and others. The last day of the meeting was notable because of the splendid symposium on tropical medicine, in which Agramonte, Castellani, James of the Canal Zone, Colonel Roger Brooke and Dr. E. R. Whitmore took part. In the evening Professor Julius Bauer of Vienna gave the Convocation Address on Individualization in Clinical Medicine.

Clinics were held every afternoon at Charity Hospital, where Drs. Guthrie, Fossier, Lyons, Daspit, Herrmann, Stengel of Philadelphia and Bauer of Vienna spoke and demonstrated interesting cases. Clinics were given at Touro Infirmary by members of the staff, at the Baptist Hospital, at the U. S. Marine Hospital together with demonstrations at the Richardson Memorial and Hutchinson Memorial. At the Marine Hospital there were held four clinics at which many cases of leprosy were presented to the members, much to their delight and edification. The visiting members of the College spoke with real appreciation of the cordial reception they had received from the New Orleans doctors and left with a feeling of gratitude to the local physicians for the time and trouble they had taken to make the clinics interesting and instructive.

PRESBYTERIAN HOSPITAL'S CLINICAL SOCIETY HOLDS ANNUAL MEETING AND ELECTION.

At the annual meeting of the Clinical Staff of the Presbyterian Hospital, Dr. John W. Lindner was re-elected president of the society, Dr. Ada Kiblinger, vice-president, and Dr. Donovan C. Browne was re-elected secretary and treasurer.

Dr. H. R. Unsworth read a paper on "Malarial Therapy in Paresis." Discussion by: Dr. J. O'Hara, Dr. C. V. Unsworth, Dr. J. M. Batchelor, Dr. Wm. H. Harris and others.

TUBERCULOSIS & PUBLIC HEALTH ASSOCIATION OF LOUISIANA

March, 1928

From April 1 to 8, Negro Health Week will be observed throughout the United States, particularly in the southern states. The Negro Health Problem, especially from the point of view of tuberculosis, is one of great economic and social importance to the south. With a death rate from tuberculosis, ranging as high as three to four times that of the whites, even in spite of its apparent decline, the number of cases of tuberculosis among negroes in the South, calls for serious consideration by white leaders in these communities. The total deaths from tuberculosis of all forms in Louisiana in 1927 were 1881; of this amount 1178 were of the negro race. We ask the cooperation of all health and social groups in the observance of Negro Health Week. An excellent bulletin of suggestions and information may be obtained by writing the United States Public Health Service, Washington, D. C.

Splendid progress in our EARLY DIAGNOSIS CAMPAIGN is being made in Louisiana. We have the endorsement of the Louisiana State Medical Society, in a communication from its secretary-treasurer, Dr. P. T. Talbot, from which we quote: "The Executive Committee in regular session Monday, March 5th, unanimously endorsed the plan of the Tuberculosis and Public Health Association of Louisiana in their conduct of an Educational Campaign on the early diagnosis of tuberculosis. They are very anxious to help in any way that you might direct toward accomplishing the desired results, and each and every

one wishes to assure you that they will do everything they can in their respective districts toward aiding in the good work."

Through the corporation of the State Medical Society, our circular "An Appeal to the Medical Profession" was enclosed with the March issue of its official organ, the New Orleans Medical & Surgical Journal, to all Louisiana subscribers. Also, through the courtesy of the Journal Committee, an editorial on Early Diagnosis and an article on "Diagnostic Standards" appear in the March issue.

The Louisiana State Board of Health has also promised its assistance, in bringing our message, the importance of Early Diagnosis, to the medical profession and lay public.

Through the courtesy of local motion picture houses, we are receiving splendid assistance in the display of our films for lay and medical groups. Fifty thousand ciculars "You May Have Tuberculosis—Let Your Doctor Decide," are being distributed through our local associations. Through the National Association and local outdoor poster agencies it has been made possible to cover approximately one hundred boards which have been provided free by the poster companies.

During the past twenty years, the death rate from tuberculosis has been cut fifty per cent. Even today, however, the value of early symptoms is not fully appreciated, as doctors still report the majority of cases that come to them for their first examination are in an advanced state of the disease. It is believed important, therefore, to conduct this campaign at this time, with two primary objects in view: first, to focus attention of the public upon the danger signs of early tuberculosis and urge them to go to their doctors for an examination; and, second, to stimulate renewed interest on the part of the medical profession in the recognition of early signs of tuberculosis.

And local groups, club, or medical society, may have free literature and posters on application. We would like our intensive work in this campaign to continue through the months of March and April, and as long thereafter as is necessary.

We again call attention to "Diagnostic Standards" for use by the medical profession. One hundred of these were issued on request to the Junior Medical Students of Tulane University, and requests for copies are being received daily from physicians throughout the state. We will be glad to furnish single copies free.

Our new unit, the Tensas Parish Tuberculosis & Public Health Association, is growing rapidly. They have registered to date 115 members in the state and parish associations for the year 1928, from the town of St. Joseph alone, and the Waterproof division has organized a Junior League composed of High School groups, who are planning to put on a health play.

We are glad to note the increase demand for Health Plays. Both from individual teachers and our local associations, requests for plays to be used in the elementary and high school classes are being received continually. One play particularly recommended at this time is "The Future Doctor's Clinic," as it is exactly in line with the idea of the Early Diagnosis Campaign. We will be glad to send a copy of this play to superintendents of schools and local associations on request.

Our Modern Health Crusade in the schools is also progressing. In the larger parishes where this has been established for some time, additional classes are being enrolled, and in many other parishes, individual teachers are requesting the score cards for their particular grades.

If you plan to attend the Annual Meeting of the National Tuberculosis Association which is to be held in Portland, Oregon, June 18th to 23rd, please do not delay making your reservation. The National has arranged a special train over the Burlington and Northern Pacific. This train will leave Chicago on the evening of June 14th., and Minneapolis on the evening of the 15th. This will enable those who have attended the American Medical Association meeting to join this train and participate in the meeting of the National Tuberculosis Association. Physicians are urged to think about the Portland meeting when arranging their trip for the American Medical Association, as both meetings can be attended with very little difference in cost. Louisiana parties desiring group reservation can arrange the same through the Tuberculosis & Public Health Association of Louisiana, by making application at once. If you are interested, let us know and we will have literature mailed you.

The St. Tammany Parish Medical Society held its regular monthly session on March 9th. with the following members present: Doctors W. L. Stevenson, Vice President, presiding; Roland Young, Secretary-Treasurer; C. A. Farmer, F. R. Singleton, J. F. Polk, J. K. Griffith, R. B. Paine, J. F. Buquoi, A. G. Maylie and L. D. R. Houk, D. D. S. as guest.

By invitation Dr. Houk read and illustrated with roentgen-ray pictures, a most interesting paper on "What constitutes Oral Sepsis" which was discussed by Drs. Paine, Polk, Griffith, Buquoi and Maylie.

Dr. Griffith led a dissertation on "Measles" (a most timely and always interesting subject to the Physician although poo-hood by laymen as of minor importance), which was thoroughly discussed, bringing out many instructive diagnostic points and symptoms, by Drs. Farmer, Stevens, Buquoi, Paine, Singleton and others.

After a very keen and earnest discussion of the question, from every angle, the Society unanimously resolved that "The President appoint a committee to confer and consult with the State Board of Health, the Police Jury, the School Board, the Dentists and whoever else might be of assistance in installing and carrying out a program for a permanently regular and systematic examination of the school children of this Parish, by *both* physicians and dentists."

It was unanimously resolved "That the Washington Parish Medical Society be formally and officially informed that this Society endorses and extends its moral and other support that it may or can in its (The W. P. M. S.) action against chiropractics."

Many of the members expressed an intention of attending the State Society's meeting in Baton Rouge next month.

The Society adjourned to meet in Covington on April 13, 1928.

Lafourche Parish Medical Society has elected 1928 officers as follows:

President, Dr. Albert Meyer, Thibodaux; Vice-President, Dr. J. Dunshie, Rita; Secretary-Treasurer, Dr. Philip Dansereau, Thibodaux; Delegate, Dr. Chas. Barker, Thibodaux; Alternate, Dr. J. Dunshie, Rita.

The Terrebonne Parish Medical Society has elected the following 1928 officers:

President, Dr. R. W. Collins, Houma; Vice-President, Dr. T. I. St. Martin, Houma; Secretary-Treasurer, Dr. P. E. Parker, Houma; Delegate. Dr. T. I. St. Martin, Houma; Alternate, Dr. P. E. Parker, Houma.

POINTE COUPEE MEDICAL SOCIETY HOLDS MEETING.

At the regular monthly meeting of the Pointe Coupee Medical Society, held in December, 1927, the first subject on the program was a paper by Dr. Carruth on the value of periodic health examination. High authorities were quoted, and data from life insurance companies, especially from the Metropolitan, which was a pioneer in advocating this work, showed that the average lives of men and women had been markedly extended during the very recent past, due to this annual or semi-annual taking stock of themselves. At the conclusion of the paper the question was freely discussed by all present endorsing the plan, Drs. Becnel, Plauche and Rougon expressing their views at some length. As a result of the discussion it was indicated that the Society would take steps in the near future to put on a campaign throughout the parish, explaining at various community centers the need and value of such periodic examination, especially to men and women past thirty-five years of age.

Next on the program Dr. Rougon read a report of three quite similar and rather unusual cases, the history of which, it was unanimously agreed by all taking part in the discussion, brought out some very interesting features.

At the conclusion of the scientific discussions, the election of officers for the ensuing years resulted as follows:

Dr. R. M. G. Carruth, President.
Dr. F. F. Rougon, Secretary.
Dr. Carruth, Delegate.
Dr. J. W. Plauche, Alternate.

The Society then adjourned to an oyster supper, when medical discussions were laid aside and a delightful social hour was enjoyed.

F. F. ROUGON, Secretary.

Dr. John T. Crebbin has recently moved from 1210 Maison Blanche Building, New Orleans, to 1528-29 Slattery Building, Shreveport, La.

Dr. Charles J. Bloom, Professor of Pediatrics with the Graduate School of Medicine of the Tulane University of Louisiana, addressed the Social Conferences of Mississippi at Jackson, Miss., March 2, 1928, on the subject of "Decreasing Infant Mortality."

DIED: Julia Stoddard Wood, Jennings, La. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1898, aged 67, died January 25, of nephritis.

DIED: George H. Jones, Lutcher, La. Medical Department of Tulane University of Louisiana, New Orleans, 1891, aged 66, died December 18, 1927, of cerebral hemorrhage.

AMERICAN CONGRESS OF PHYSICIANS AND SURGEONS.

Washington, D. C., May 1-3, 1928.

Louisiana State Medical Society:

Assuming that many of your members will attend the above convention, it occurs to me to direct attention to the superior service of our "Crescent Limited," which leaves New Orleans at 10:00 P. M. and reaches Washington at 6:20 the second morning. This train carries through sleepers from New Orleans to Washington, which are set out of the train at the latter point and may be occupied there until 7:30 A. M. Its equipment is most up-to-date in every respect, and includes such modern conveniences as club and observation cars, which are provided with ladies' and gents' shower baths, valet, maid, manicurist, etc.

The Louisville & Nashville Railroad also offers the service of "The New Orleans Limited," which leaves New Orleans at 9:00 A. M. and reaches Washington at 9:00 the following night, as well as the service of "The Piedmont Limited" which leaves New Orleans at 5:00 P. M. and reaches Washington at 3:00 o'clock the second morning. These trains likewise carry through sleepers from New Orleans to Washington, the one on the latter being set out of the train in Washington, where it may be occupied until 7:30 A. M.

In accordance with the certificate plan arrangements, under which reduced fares have been authorized for account of this convention, one-way tickets must be purchased from New Orleans to Washington at the regular one-way fare of $40.20, and a certificate receipt will be issued thereon at time of purchase. If not less than 250 certificate receipts are presented by members attending this convention, they will be signed by your Secretary and the special agent for the railroads, thereby entitling the members to return transportation at one-half of the regular one-way fare, which, in your case, will be from Washington to New Orleans at a reduction of $20.10. Northbound ticket may be purchased so as to leave New Orleans on any day during period, April 27th to May 3rd, inclusive, and return tickets may be purchased so as to leave Washington on any day up to and including May 7th.

The Pullman charges from New Orleans to Washington are: $12.00 for a lower berth; $9.60 for an upper; $21.60 for a section; $42.00 for a drawing room, and $33.75 for a compartment.

Hoping that you will be good enough to bring this service to the attention of your members, at the time informing them that, if they will phone me at Main 8268, I shall be more than pleased to arrange for their Pullman reservations for both the going and return trips; also to deliver their rail and Pullman transportation to their office, I beg to remain,

Yours very truly,

E. H. Stoll,
Asst. City Passenger Agent, L. & N. R. R. Co.

THE LESLIE DANA MEDAL.

The fourth award of the Leslie Dana Medal, presented annually through the Missouri Association for the Blind, to the person selected from the nominations received by the National Society for the Prevention of Blindness, will take place during the 1928 meeting of the American Academy of Ophthalmology and Otolaryngology, in St. Louis, Missouri.

Nominations will be received by the National Society for the Prevention of Blindness, together with detailed information prompting the nomination, until the 15th day of May, 1928. The medical profession and ophthalmological societies are invited to submit names of persons deemed worthy of this honor to the National Society, under the conditions set forth in the deed of gift, as follows:

a. Long meritorious service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight.

b. Research and instructions in ophthalmology and allied subjects.

c. Social service for the control of eye diseases.

d. Special discoveries in the domain of general science or medicine of exceptional importance in conservation of vision.

The recipient of the first medal awarded (1925) was Dr. Edward Jackson of Denver. The second annual award (1926) was to the late Miss Louise Lee Schuyler of New York City, and the third award (1927) was to Dr. Lucien Howe, until recently of Buffalo, now of Cambridge.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The North East Mississippi Medical Society, composed of thirteen counties and about two hundred members, having as its president Dr. H. L. Scales of Starkville, and as secretary Dr. James M. Acker of Aberdeen, held its first quarterly session at Booneville, Mississippi, on March 20th.

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held in Vicksburg on March 13th with the following program:

Moving Picture—"How Biological Products Are Made."

A Paper—Dr. M. H. Bell.

"Diseases of the Coronary Arteries"—Dr. L. J. Clark.

"Intestinal Obstruction"—Dr. S. W. Johnson.

The staff meeting of the Vicksburg Sanitarium and Crawford Street Hospital was held on March 10th with the following program:

"Cautery Excision of Carcinoma of the Floor of the Mouth"—Dr. A. Street.

"Carcinoma of the Cecum"—Dr. A. Street.

"Mediastinal Tumor"—Dr. G. M. Street.

"Pelvic Surgery in a Diabetic"—Dr. J. A. K. Birchett, Jr.

"Report of the Meeting of the Tri-State Medical Association at Memphis"—Dr. A. Street.

"Report of the Meeting of the American College of Physicians at New Orleans"—Dr. L. J. Clark.

Dr. J. W. Gray of Clarksdale is at present in St. Petersburg, Florida, convalescing from a recent illness.

Dr. T. G. Hughes of Clarksdale is at present in one of the Memphis hospitals.

Dr. S. D. Robinson of Clarksdale is recovering from an automobile accident which occurred a few weeks ago.

Dr. F. H. Tyner has recently located in Clarksdale.

LOUISIANA HEALTH CARS VISIT MISSISSIPPI.

Upon invitation of the State Health Officer, Dr. Felix J. Underwood, the Louisiana State Board of Health sent its health cars to McComb and Brookhaven on the 14th and 15th of February. Dr. Oscar Dowling, Louisiana State Health Officer, was in personal charge of the cars. Fifteen hundred people saw the splendid exhibits in the cars at McComb and more than two thousand at Brookhaven. Several hundred samples of milk from dairies shipping milk into Louisiana were examined by the technician in the laboratory aboard the cars. McComb and Brookhaven are rapidly becoming great dairying centers and thousands of gallons of milk are shipped into New Orleans daily. For the past two years the Mississippi State Board of Health and the local people in these communities have co-operated in an effort to improve sanitary conditions under which this milk is produced. Scores of new barns with concrete floors have been built and many of the old ones remodeled and made satisfactory. Dr. Dowling's visit was greatly appreciated by the people of these communities visited and by the State Board of Health.

The State Health Officer, Dr. Felix J. Underwood was present and made an address at the opening of the Field Hospital at Centerville on the night of February 28. The institution is splendidly built and equipped with a capacity sufficient to take care of thirty-five patients. One statement by Dr. Richard J. Field, builder and owner of the hospital, was particularly pleasing, the statement being that the hospital would not only be a refuge for the sick and suffering, but would be made a health center as well. The fact that the head of a hospital fully appreciates the possibilities of the institution in the prevention of disease and the promotion of the health of the citizens living within its territory will mean that the improvement of the public health in that particular section of the state will advance rapidly.

Dr. H. P. Rankin, graduate of Tulane University, and who received his public health training at the training station conducted by the Rockefeller Foundation at Andalusia, Alabama, was elected director of the Washington County Health Department at the February meeting of the Board of Supervisors and City Council. The Board of Supervisors and City Council met in joint session, the two Boards sharing a joint responsibility in the health department.

Dr. George E. Vincent, President of the Rockefeller Foundation, was a guest of the State Health Department of Mississippi, on Thursday, March 1. Several county health departments in the flooded area were visited and a tour of inspection of field work in those counties was made. On Thursday night a meeting was held at the American Legion Hall and Dr. Vincent was introduced by Dr. Felix J. Underwood, State Health Officer. Dr. Vincent spoke to the citizens of Indianola and the trainees at the public health training school, leaving on a night train for Florida, where he will be the guest of John D. Rockefeller, Sr., for a few days' vacation.

Are you going to Meridian, May 10-12?

Dr. Virgil Payne, formerly with the Clinic of Drs. Payne, Hirsch, Payne and Beck, Greenville, Mississippi, is now associated with Dr. John J. Shea, Memphis, Tenn.

On March 12th Dr. Philip Beekman celebrated the fortieth anniversary of his graduation. The following gathered to honor him and to show their appreciation of his service and of his leadership in the medical profession of Natchez:

Dr. L. H. Lamkin, Dr. W. H. Aikman, Mr. Ike Laub, Dr. J. D. Shields, Mr. Abe Beekman, Mr. Sam Dreyfus, Dr. Edwin Benoist, Dr. J. S. Ullman, Dr. J. W. Chisholm, Dr. Marcus Beekman, Dr. L. B. McLaurin, Mayor Sol Beekman Laub, Dr. R. D. Sessions, Dr. H. M. Smith, Dr. A. J. Kisner, Dr. L. S. Gaudet, Dr. W. K. Stowers, Mr. Alvin Laub, Dr. M. C. Reeves, Vidalia; Dr. J. C. McNair, Mr. C. C. Goetz.

Are you going to Meridian, May 10-12?

Dr. Charles E. Catchings of Woodville has completely recovered from the effects of his recent operation and has resumed his practice.

The Thirteen Counties Medical Society held its regular quarterly meeting at Booneville, March 20th, beginning at 1:30 p. m. Their program was as follows:

"Headache Classification"—Dr. J. G. Lilly, Tupelo.

"Treatment of Un-United Fracture," — Dr. W. W. McRae, Corinth.

"Spontaneous Massive Atelectasis of the Lung" —Dr. Whitman Rowland, Memphis.

Paper—Dr. T. P. Haney, Jr., Burnsville.

"The Failing Heart"—Dr. R. B. Caldwell, Baldwin.

"Blood Transfusion"—Dr. R. B. Cunningham, Booneville.

Are you going to Meridian, May 10-12?

POLIOMYELITIS IN THE UNITED STATES, 1927.—During the year 1927 the incidence of poliomyelitis in the United States was higher than it was during any other year since 1916, when a widespread epidemic of the disease occurred.

Weekly telegraphic reports from the State health officers of 38 States are available for the years 1925, 1926, and 1927. The aggregate population of these States was about 89,000,000 in 1925, 91,800,000 in 1926, and 93,000,000 in 1927.

The aggregate numbers of cases of poliomyelitis reported for 52 weeks of each year are as follows:

1925	4,903
1926	2,074
1927	7,784

The aggregate number of cases reported was not sufficient to give warning of a general epidemic until late in July, 1927, although California, Louisiana, New Mexico, Arizona and Texas reported more than the usual seasonal rise in the prevalence of poliomyelitis in June and July. This is in sharp contrast with the history of the epidemic of 1916, when New York State reported 345 cases of poliomyelitis in June and more than 4,000 cases in July.

In 1916 the peak of the epidemic was reached before the end of August, except in a few States, while in 1927 the peak was not reached until the middle of September, and the epidemic receded very slowly until after the first week of October.

The geographic distribution of the cases of poliomyelitis was irregular. This appears to be characteristic of the disease. In 1916 about half of the reported cases occurred in the State of New York, although the 26 other States which reported had almost six times the population of New York. In 1927 the States reporting the greatest number of cases were California, Massachusetts and Ohio.—Public Health Reports, 43: 378, 1928.

BOOK REVIEWS

Chemical Pathology: By H. Gideon Wells, Ph.D., M. D. 5th Ed., revised and reset. Philadelphia. W. B. Saunders. 1925. pp. 790.

This text has long since established its position in its special field of application. This latest edition has been written after a lapse of five years, during which period considerable advancement has been accomplished along these lines. The book has been more or less rewritten and in order to permit of proper augmentation to advance it to modern date, certain of the elementary portions have been omitted. The extensive literature, always a feature of the text has been increased and brought up to date which fact has made it more valuable as a research reference manual for workers in this special field. It is a fact that in the usual written pathological courses, given in medical schools, too little time is permitted for the interesting and at times important chemical considerations involved in the processes studied. Because of this occurrence the student is often referred to collateral reading for this phase of the subject, a purpose which this text fully supplies.

W. H. HARRIS, M.D.

Textbook of Pathology: By Alfred Stengel, M. D., Sc.D. and Hebert Fox, M. D. 8th Ed. reset. Philadelphia, W. B. Saunders, 1927. pp. 1138.

This text, now in its eighth edition covers the field of pathology very generally. While it does not give very extensive details, its subject matter is very complete.

A paragraph dealing with the etiology of each pathological subject, is given throughout the text. This arrangement is certainly desirable as it gives to the student the proper continuity of thought between cause and effect. It therefore links the subject of bacteriology with pathology, which is important particularly to medical students who are apt to overlook the relationships or connecting links of these two branches of study.

It is therefore a useful reference text for students as its considerations are brief but ample, and its topics replete. Instead of extensive literature the authors have preferred to select only salient, authoritative references and have even endeavored to employ those more readily obtained. The illustrations are extensive and while not outstanding are sufficient to demonstrate the lesion desired. Some colored illustrations are shown which are very representative. As a whole this text should be of value to a medical student or a general practitioner, which feature is all that its authors intend it to be.

W. H. HARRIS, M.D.

Nasal Neurology Headaches and Eye Disorders: By Greenfield Sluder, M. D., F. A. C. S. St. Louis, C. V. Moseby Co. 1927. pp. 428.

This interesting treatise of some 400 pages is the result of Sluder's years of experience in rhinology and deep interest in nasal neurology and pathology of the posterior sinuses.

An introductory chapter by Jonathan Wright is descriptive of the minute pathological anatomy in involvement of the superior accessory sinuses.

Sluder believes that the explanation of the mystery of the etiology of many eye lesions is to be found in the hyperplastic lesion of the post-ethmoidal-sphenoidal district; and to a degree of frequency, if it could be put into percentage, that would astonish us all. However he does not believe this lesion to be the explanation of all such cases and advises definite discrimination in selecting these cases for surgical interference. He says "Personally I cannot but feel that post-ethmoidal-sphenoidal surgery for the relief of eye lesions is always fraught with great responsibility. For this reason I feel that it should be executed only upon the basis of a definite diagnosis."

Special emphasis has been made on the neurological side of rhinology and the special part played by the involuntary nervous system which is superficial in the nose and nowhere else in the body.

Some of Sluder's deductions may be open to controversy, but his book is nevertheless well worth study.

H. KEARNEY, M. D.

Surgery: Principles and Practice: By Astley Paston Cooper Ashhurst, A. B., M. D., F. A. C. S. 3d ed., thoroughly rev. Philadelphia, Lea & Febiger. 1927. pp. 1179.

The text-book is an excellent one, especially for students, as it is clearly written, exceptionally well illustrated, and contains a number of excellent colored plates. The chapters on diseases of the osseous system, including fractures, infections, and neoplasia, are especially well written and complete. Of especial interest and value to the student is the complete manner in which Ashhurst has handled the chapters of minor surgery, a subject which is frequently neglected in surgical text-books.

The work shows painstaking preparation, and is an excellent review of the surgical literature, as well giving a large number of original observations.

ALTON OCHSNER, M. D.

Percival's Medical Ethics: Ed. by Chauncey D. Leake. Baltimore, The Williams & Wilkins Co. 1927. pp. 290.

Leake, although a Ph.D. and not an M. D., has been interested in medical history for some time. It has remained for him rather than a physician to have republished Percival's Medical Ethics, one of the most interesting of historical books relating to the medical profession, which first appeared over 100 years ago. In addition to the reprinting of these ethics, there is also incorporated in the book a series of essays pointing out the general principles of medical ethics as applied to the physician, not only by himself, but also by the law and the laity together with one on the influence that Percival's ethics has played on the medical profession. It also includes the Apothecaries' Oath and the several ethics adopted by the American Medical Association in 1847, 1903 and 1912. This book could be read with advantage by all medical men, and it makes a welcome addition to any physician's library, as he can spend many a physically relaxing, mentally stimulating half hour in reviewing the rules of conduct which have governed the men of his profession for a goodly century or more.

J. H. Musser, M. D.

Gastro-Enteroptosis: By Robert C. Coffey, M. D., F. A. C. S. New York, B. Appleton & Co. 1923. pp. 303.

Coffey's book on Gastro-enteroptosis is the only monograph written in the English language on the subject, and is undoubtedly a very valuable work. Glenard in the 80's called the attention of the medical world to this most important subject by his classical monographs.

Whilst the condition known as gastro-enteroptosis belongs mostly to the domain of internal medicine ,and that these patients should be treated medically instead of surgically, we must agree with Moynihan, who says in his appreciatory note prefacing this volume, that the author states his full case in a manner which will command the respectful attention and admiration of all surgeons, and to which, I may well add to all internists.

The chapters on the structure of the abdominal wall, the shape of the abdominal cavity, the suspensory supports of the abdominal cavity, intra-abdominal and intravisceral pressure, on constipation, acquired and postnatal, developmental processes, abdominal ptosis, are masterpieces and should not only be read, but should be studied by every internist.

It is most unfortunate that this work forms part of a surgical series, and is not sold individually for it would have a far greater circulation if it were easily procured by the internist and the general practitioner.

Gastro-enteroptosis has been widely written about, the literature is voluminous, but unfortunately this most important phase of medicine, which has such an important bearing upon the diagnosis and treatment of a multitude of chronic conditions, has been given but scant attention in our text-books.

It is to be hoped that in the near future a companion to this work, discussing its true aspect, and that is the medical, will be available to the medical profession.

A. E. Fossier, M. D.

Fighters of Fate: By J. Arthur Myers. Baltimore, Williams and Wilkins Company, 1927. pp. 318.

This book undertakes, by means of short biographical sketches, to tell of those who rose to renown and fame, though handicapped by tuberculosis. The foreword is by Dr. C. H. Mayo. Although the author says it is a story of men and "women," only one woman is mentioned, in a list of twenty-four. It should certainly serve as a realization that the tuberculous can be returned to a life of usefulness to himself; of benefit to his family and of happiness to his friends. I feel that to overlook to mention the life and achievements of R. L. Stevenson was unpardonable. To one who has read Stevenson's dedication to physicians, it seems a gross neglect to have been left uninvited to this assembly of the great and near great, by the host, the physician. The references, at the end of each biography make the book a good reference. Quite a number of original sources are quoted. It is written in good style and succeeds in holding one's interest.

I. L. Robbins, M. D.

The Essentials of Otology: By George Birmingham McAuliffe, A. B., M. D., F. A. C. S., New York, Oxford University Press. 1927. pp. 177.

This book represents the experience gained as a teacher of Otology over a long period of years. It is an excellent volume covering the subject matter in a highly practical manner yet thoroughly and concisely. The subject is so divided and presented as to hold the keen interest of the reader throughout. The chapter on "Equilibrium and Vertigo" is well worth reading.

For the student this book contains and presents concisely, much information rarely found in larger volumes.

F. E. LeJeune, M. D.

Gynecology: By Howard A. Kelly, A. B., M. D., LL.D., and Collaborators. New York and London, D. Appleton & Co. 1928. pp. 1043.

Just as thirty-odd years ago the publication of Kelly's Operative Gynecology marked a milestone in the progress of the specialty of gynecology, so the publication of this book, thirty years later, marks another milestone. Not often, as the author himself says in his preface, is it given to one man to write two books on the same subject at an interval of a generation, and especially a generation in which his subject has had almost literally a new birth. Gonorrhea, syphilis, sterility, orthopedic, kidney and psychiatric pathology in their relations to gynecologic pathology, endometrioma, carcinoma, plastic surgery, endocrinology, organotherapy, protein therapy, X-ray, radium, many of these subjects were unheard of or were in their infancy when Kelly's Operative Gynecology appeared in 1898. The Gynecology of 1928 is a new book, new in its conception of many things, new in its sense of values, as it most clearly exemplified in the dropping of the adjective from the title, and yet in its essence it is the same book which for more than a quarter of a century has been the encyclopedia not only of young practitioners but of men grown gray at their trade.

More than twenty gynecologists, all of them masters in their special fields, have collaborated with Kelly in the production of this book, and it must be a source of pride and pleasure to him that so many of these were trained under his own eye in the Hopkins clinics and that they illustrate one more phase of his peculiar ability to teach others to follow in his steps. One has the impression that behind every statement in the text lies a wealth of clinical experience, and that the sum of it all is what we might term the commonsense of gynecology. The clinician and the patient are the things which really count; all else, though not discarded, is only subordinate.

Amid so much that is excellent it might seem undue discrimination to comment on individual contributions, yet certain chapters deserve special mention, particularly Novak's on menstruation, Ward's and Farrar's on the surgery of the pelvic floor, and Burnham's on radium therapy. As for Kelly's own contributions, they are all characterized by his unfailing good sense and sound knowledge, and his chapters on bladder and urethral pathology in its relation to gynecology, a field in which he was virtually a pioneer, are especially noteworthy.

It might seem ungracious, in this feast of good things, to point out omissions, for in work of such scope these are bound to occur, yet one cannot fail to be struck by the fact that the very valuable work of Frank in the field of endocrinology is practically ignored, and that lipiodol as a diagnostic aid in sterility is also overlooked. Naturally also there are many points in which one would disagree with the authors, and one of these, at least must be mentioned: I have reference to Kelly's continued insistence on the safety of curettage as an office procedure. In his own hands it is undoubtedly safe and accurate and convenient, but it seems scarcely necessary to point out that the bulk of the practice of gynecology is not done by men of Dr. Kelly's ability.

As in the earlier book, so in this the illustrations set a new standard of excellence. Art in medicine could scarcely come to fuller flower. Max Broedel's own surpassing work, Horn's, Becker's, Shannon's, Freret's, all combine to make a series of illustrations absolutely unique in accuracy of detail and in real beauty.

A review of this brevity cannot adequately set forth the merits of this book. It is literally a compendium of gynecologic knowledge, the fruit of a full life of labor and sacrifice and ever-ripening wisdom. Let us hope that it is written not, as the author himself says, in the twilight, but rather in the full noonday, when the shadows of evening are still far ahead. It is a book for all, young and old, tyro and veteran, alike to read and ponder and profit by. The giants who once were on the earth are with us still. American gynecology is the richer because of Howard Kelly's life and work, and we say to the author, not the Vale he himself pronounces, but rather an Ave, with the hope that ahead of him lie other equally full and happy and fruitful years.

C. Jeff Miller, M. D.

Four Thousand Years of Pharmacy: By Charles H. LaWall, Ph.M., Phar. D., Sc.D., F. R. S. A. Philadelphia and London, J. B. Lippincott Co. 1927. pp. 665.

To the pharmacist, the medical man and the historian this outline of a history of four thousand years of pharmacy, will prove of great interest. Indeed it might be said that the book will be of interest to any individual of intelligence above that of the child of the seventh grade. It recounts in words which can be understood by the laity so many interesting and hitherto unappreciated facts of pharmacy that the reader finds himself enthralled with the interest of it all. In addition to the excellent text, almost every other page is a full page illustration adding much to the zest of reading.

J. H. Musser, M. D.

A Text-Book of Psychiatry for Students and Practitioners: By D. K. Henderson, M. D. (Edin.), F. R. F. P. S. (Glas.), and R. D. Gillespie, M. D. (Glas.), D. P. M. (Lond.). London, Oxford University Press. 1927. pp. 520.

An illuminated volume which bespeaks much sincere investigation and contact with subject matter therein.

The chapter dealing with "Historical Review of the Care and Treatment of Mental Illness" is not only well written but instructive, for so few of the medical profession, aside from those interested in neuropsychiatry, know this history in continuity.

The classification termed "Suggested Scheme" by the authors, in part is new and original. While I agree with them as to the heading "Schizophrenic Reaction Types," I much prefer the American or Kraepelinian as modified by the New York State hospitals, which includes the dementia praecox group, for we do find today cases diagnosed as dementia praecox who are not demented, and who by intelligent observation have been declared recovered from their attack, could these have been a manic depressive entity with schizoid coloring?

Each chapter abounds with new data, helpful to the medical profession at large, and especially will neuropsychiatrists enjoy these inasmuch as our views are changing to a more constructive end regarding this branch of medicine.

The chapter on "Mental Defect" in the opinion of the reviewer could have dealt entirely with the intellectual defect states, assigning a special part of the book to the emotional defect states (constitutional psychopathic inferiority) as the general public and many of the medical profession are not as yet educated to the point of discrimination, *i. e.*, that mental defect may be of one type or other—namely, that the condition should have existed from birth or an early age.

The part assigned to psychoneuroses is handled in a comprehensive manner. It is healthy to read that there is no attempt to popularize the term "shell-shock."

The terminal chapter on forensic psychiatry should be received appreciatively by not only medical men but those interested in criminology and the law, being written in a clear understandable manner, shorn of all mysterious or catchy phrases.

WALTER J. OTIS, M. D.

Nerve Tracts of the Brain and Cord: By William Keiller, F. R. C. S. (Ed.). New York, The Macmillan Co. 1927. pp. xiii+456.

This work combines several aspects of Neurology—as indicated in the subtitle "Anatomy: Physiology: Applied Neurology"—with the aim "to furnish a good working scientific basis for an intelligent understanding of the symptomatology and diagnosis of those nervous diseases that come within the domain of the general practitioner." (Part I (110 pages) is devoted to the finer anatomy of the brain and spinal cord. Part II (158 pages) contains a review of the more important pathways with emphasis on functional considerations. Part III (152 pages) embraces applied neurology. The arrangement entails considerable repetition.

The figures, numbering over 225, are grouped together at the end of the book. It is an unfortunate disposition of the illustrations, since they are thus removed from the related text matter with which they are to be compared in reading. The illustrations are for the most part crudely executed line drawings, and though in many instances they are no less instructive than more faithful reproductions some of them hardly justify publication.

In its organization and allotment of space to various subjects the book falls short of the ordinary requirements of a text, whether it be intended for a course in neuroanatomy or clinical neurology. Neither is it superior to the works previously available as references for the student and practitioner.

HAROLD CUMMINS, Ph. D.

A Manual of Pharmacology: By Torald Sollmann, M. D. Philadelphia and London, W. B. Saunders Co. 1926. pp. 1184.

Sollmann's Pharmacology, called a manual but in reality a large tome of 1200 pages has been, since the original publication in 1917, recognized throughout this country as one of the outstanding works on the subject. This new edition is published not only because of the necessity of incorporating the new material in the realm of pharmacologic science which has appeared within the last few years, but also because of the new revision of the United States Pharmacopoeia, which has required a thorough review of the pharmaceutical preparations which have been made to conform with this standard. The book is a most excellent one in every way. It should be of value to the student, to the teacher, and because of the succinct but full, thorough and careful directions for the administration of the various drugs, of particular merit for the practitioner and physician.

J. H. MUSSER, M. D.

Practical Bacteriology, Blood Work and Parasitology: By E. R. Stitt, A. B., Ph. G., M. D., Sc. D., and Collaborators. Eighth revised edition. Philadelphia, P. Blakiston's Sons & Co. 1927. pp. 837.

As a compendium of clinico-pathologic technic and interpretation, there is certainly no book that is already better known or more frequently consulted by laboratory worker or clinician.

With the collaboration of several members of the Naval Medical School, the former "pocket manual" has emerged from this revision in a considerably enlarged form and has been brought completely up-to-date by the introduction of practically all of the newer diagnostic tests, as well as a comprehensive treatise on the "Problems of Nutrition in Health and Disease."

Among the new additions to technic, particular attention has been paid to the precipitin test for syphilis, the entire Kahn test being given in great detail and well illustrated.

The chapters on bacteriology are particularly well written and include the latest discoveries in the streptococcus group. The new bacterial nomenclature is used throughout the bacterial keys, but for the most part the old names, most familiar to the present medical generation, are maintained in the general text.

The blood dyscrasias are also adequately covered, with all of the technical procedures necessary in the differential diagnosis of the anemias, such as fragility tests, volume, index and reticullated cell counts. In fact, there is hardly a modern clinical laboratory test from the blood sedimentation rate or the van den Bergh liver function test to the cultivation of amebas that is not completely covered and often illustrated.

F. M. Johns, M. D.

DeLamar Lectures 1926-1927: By the Johns Hopkins University. Baltimore, The Williams & Wilkins Co. 1928. pp. 223.

The purpose of the DeLamar endowment is to present to the general public practical knowledge of modern hygiene. This present series of published lectures carrys out well the ideas of the founder of the lectures. Eleven lectures are found in this volume, which includes discussions of such subjects as immunity, bacteriology, parasitology, environment in relation to health, results of malaria control measurements as well as more specific subjects such as heart disease, tularemia, measles, scarlet fever, and tuberculosis. The subject matter is excellent, it is needless to state, as it has been contributed by such men as Neufeld, Nuttall, Park and Barber, among others. The editorial work however can not be commended; several grave and obvious misprints will at once strike the eye and do away with some of the pleasure of perusing the work.

J. H. Musser, M. D.

PUBLICATIONS RECEIVED.

Oxford University Press, New York and London: "The Surgical Treatment of Malignant Disease," by Sir Holburt J. Waring, M. S., M. B., B. Sc. "The Abdominal Surgery of Children," by L. E. Barrington-Ward, Ch.M., F. R. C. S., "Post-Mortem Appearances," by Joan M. Ross, M. D., B. S., M. R. C. S., L. R. C. P.

Paul B. Hoeber, New York: "Aluminum Compounds in Food," by Ernest Ellsworth Smith, Ph.D., M. D. "Asthma, Its Diagnosis and Treatment," by William S. Thomas, M. D. "Muscle Function," by Wilhelmine G. Wright. "The Mechanics of the Digestive Tract," by Walter C. Alvarez, M. D.

D. Appleton and Company, New York and London: "Pharmacotherapeutics, Materia Medica and Drug Action," by Solomon Solis-Cohen, M. D. and Thomas Stotesbury Githens, M. D.

Williams & Wilkins Company. Baltimore: "Mongolism," by Kate Brousseau.

W. B. Saunders Company, Philadelphia and London: "Local Anesthesia," by Geza de Takats, M. D., M. S.

P. Blakiston's Son & Company, Philadelphia: "An Elementary Text Book of General Microbology," by Ward Giltner.

MacMillan Company, New York: "Brain and Mind or the Nervous System of Man." by R. J. A. Berry, M. D., F. R. C. S., F. R. S.

F. A. Davis Company, Philadelphia: "Handbook on Diet," by Eugene E. Marcovici, M. D. "Safeguarded Thyroidectomy and Thyroid Surgery," by Charles Conrad Miller, M. D. "Diseases of the Intestines," by Anthony Bassler, M. D., F. A. C. P.

U. S. Government Printing Office, Washington, D. C.: "The Medical Department of the United States Army in the World War, Volume VII, Training," by Col. William N. Bispham, M. C.

Free Press Printing Company, Burlington, Vt.: "The Springtime of Physick, being a Diverting Outline of Medicine and Surgery," by Laurance D. Redway, M. D.

Johnson & Johnson, New Brunswick, N. J.: "First Aid and Medical Service in Industry," compiled from a Survey.

Reprints.

"Syphilis of the Bladder," by Winfield Scott Pugh, New York.

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and
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LOUIS PASTEUR*

ANDRE LAFARGUE,

New Orleans

I have seldom had the opportunity of addressing an audience composed almost in its entirety of men who have acquired the awe inspiring privilege of adding to their names the cabalistic and significant letters M. D.; men who because of their training, learning and experience are the consecrated and official arbiters of that which we hold most sacred and precious in this world, our life; men who wield the enormous power of shortening or increasing our span of life and through whose certificate and signature alone we are pronounced definitely, absolutely and conclusively dead, even though nature might have accomplished that task some time before. Is it to be wondered therefore that I should appear before you with some little feeling of apprehension and trepidation. But I believe that I number here none but friends and I derive comfort in the thought that if anything should really happen to me, physically or mentally, I can be taken care of, can be given first aid and emergency treatment and if need be, can be examined authoritatively and declared "non compos mentis."

I have selected as the subject of this address, one whose labor and achievements are closely allied to the activities of the medical profession, one whose work has benefited your learned and exalted calling in a signal manner, whose friends and staunchest admirers as well as greatest detractors and enemies belonged to the medical profession but who himself preferred to remain unto his dying day a chemist, feeling that in that less exalted professional domain he might accomplish his work with the quietude, the concentration and the methodic atmosphere to be found in the laboratory.

I do not know that there is anything new that I can tell you concerning the great man, whose life work and incomparable achievements I am to dwell upon. I am sure that most of you, if not all of you, have read and reread all that has been written about him, but I firmly believe that in this age of materialistic supremacy, at a time when humanity, still reeling under the shock of the greatest war that the world has ever witnessed, has become to a certain extent pleasure mad, seeking every new form of entertainment that human invention can devise, from the raucous tones of a jazz band to the thrill to be obtained by trying to cross the Atlantic or the Pacific in aeroplanes, under most forbidding circumstances, it is wholesome, salutary, inspiring, illuminating and mentally refreshing to review, were it only briefly, what Louis Pasteur, the great French scientist, has done in his great humanitarian efforts to lessen the sum of human suffering, loss of life, to blaze the trail for future discoveries and experiments and to earn the title of one of the

*Address delivered at the annual meeting and installation of officers of the Orleans Parish Medical Society, January 9, 1928.

greatest benefactors that humanity is indebted to.

The life of Louis Pasteur is essentially that of a man who through sheer will power, force and mental determination never swerved a single moment from the path that he had chosen and which he knew would lead to the goal that he had set himself. He had made up his mind while still very young that he would dedicate his life to the service of humanity, that he would do something that would help his fellow men, would increase their material well being and he unflinchinlgly, faithfully and unsparingly devoted himself to that great and noble ideal. Never did modern knight buckle on his armor and unsheath his sword in a holier or nobler cause, and never were battles fought with greater tenacity and faith in his ideals than those that the great man of science was called upon early in his career to fight, and bring to a successful and victorious termination.

A Christian, a firm believer in almighty God, a worker, a man of high and exalted ideals, Pasteur was none the less endowed with that sane, practical, cold blooded and scientific turn of mind which the laboratory student and investigator must possess to become successful. Morally, spiritually and physically he was fitted to carry out the great and humane work which has shed so much lustre upon his name and upon that of his native country, France.

Born at Dole, in the Province of the Jura, in a mountainous and picturesque section of France near the Swiss border, in 1822, Pasteur's early life was a rather uneventful one. As his most eminent biographer and son-in-law, Mr. Rene Vallery Radot, has truthfully said, Pasteur was not an infant prodigy. Unlike the average human genius, of whom it has so aften been said that he was born with the mark of genius stamped upon his features, Pasteur as a boy revealed none of the traits which later on brought him fame and immortality. He was a strong wholesome boy, studious to a point and enjoying fully the amusements which his comrades and himself would indulge in.

His father, a retired army officer of the Napoleonic regime, one of those famous "demi solde" or half pay veterans of the Grand Army that Balzac has so vividly described and written about, and his mother, a quiet, gentle, sweet and loving soul, brought him up at Arbois, where the family had moved some few years after his birth, and where his father conducted a tannery. In the midst of a household where peace, order and discipline prevailed, under the spiritual and refined influence of Christian teachings, Pasteur grew up to manhood, devoted to his father, his mother and his sisters. This wholesome and early influence in his childhood days proved very helpful to him in later life, as he stated time and again. It equipped him for the great battles which he was about to wages and from which he emerged victoriously for the greater good of humanity at large.

The great and cherished ambition of the father of Pasteur was to have his son become a professor at the college of the little city of Arbois. It was not an overweening ambition. It was typical of the splendid man who was the father of the great scientist. The older Pasteur would have been perfectly satisfied and happy had his son, as a result of his studies in Paris, been appointed to a mere and humble professorship at Arbois. He did not know at the time that fate had decreed otherwise for the greater renown of the family and of the world of science.

Pasteur soon evinced the qualities of mind and heart which later on brought him success and everlasting fame. He was above all scrupulously honest with himself and with others. He was a very harsh and relentless judge of everything that he undertook or did and never allowed himself to be carried off his feet by that which would not constitute, in the last analysis, an apparent success.

At the age of 20 he successfully passed his examinations for admission to the celebrated Normal School at Paris, but he was not satisfied with the number given his paper. Out of 22 candidates he ranked fourteenth. Dissatisfied with this result and feeling that perhaps he was not fully prepared for the higher course of studies which he intended to pursue he decided that he would study, or put in an additional year, and present himself a second time for examination. He ranked fourth in this second attempt and felt that he was then fully qualified to take up his studies in the great school, the cradle of so many of the most illustrious men that France has given to the world. I have mentioned this at length because it is characteristic of the thoroughness with which he undertook and carried out his later work.

While at the Normal School he conducted his early experiments in the realm of crystalline reactions and solutions which brought about his great discovery of molecular dissymmetry and which opened the way for his subsequent and more important discoveries in the kingdom of the infinitesimally small germs, microbes and bacteria. With his usual scrupulous and thorough method, he checked and rechecked the various phases of his discovery and only acquainted his professors with the result of his work after he had convinced himself beyond a doubt that he had really made a world startling discovery.

Always in quest of further and fuller knowledge in the field of biological and chemical research, Pasteur discovered that fermentation was a chemical process due not to spontaneous generation as scientists had previously and definitely proclaimed and asserted, but to small, infinitesimally small organisms, which if properly isolated and done away with would prevent the chemical transformation and pollution which fermentation would very often create. The discovery was of priceless value and once and forever set at naught the theory of spontaneous generation. It enabled the great scientist, who was then dean of the faculty of science at the University of Lille, at the age of thirty-two, to prescribe and establish the necessary methods for the preservation and purification of beer, alcohol and the other distilled products that the northern section of France manufactured in large quantities.

His method of sterilization was later on applied to milk and wine. By heating up wine to a certain degree he proved conclusively that he could free it from all obnoxious principles and could prevent fermentation and decomposition. The wine industry of France hailed him as a savior.

By that time, Pasteur, like all great men, had incurred the enmity of some of the great academic minds of his country, Foreign chemists and scientists of renown in other lands scoffed at the methods and discoveries of this young chemist whose ideas, of a startling and revolutionary character, they did not approve of. An attempt was made to show that his sterilization process was hurtful to the taste and flavor of wine. The accusation was a serious one. If substantiated it would nullify the value of his discovery. Pasteur calmly and composedly called the scoffers together. He placed in front of them ten glasses of wine, the contents of five of which had been sterilized, while the wine in the other five glasses had been left untouched and as drawn from the barrel or the bottle. It was found that the sterilized wine had absolutely the same taste as the unsterilized wine and that its flavor or "bouquet" as real connoisseurs call it, its main quality therefore had not been the least impaired by the purifying and germ killing process which Pasteur had applied.

It was his great pleasure, coupled with a little innocent and justified malice, to confront his most persistent and virulent enemies with the inaneness of their assertions or to refute in most convincing fashion their calumnies or skepticisms. By a one vote majority he was made a member of the Academy of Medicine of France, he

who was not a doctor. It was plain to him and to his friends that some of the great leaders in the medical profession did not approve of his methods and of their results. Some of them were actuated by professional jealously pure and simple; others had preconceived and well settled scientific ideas and principles which they felt should not be transgressed upon. Always courteous and considerate but cool headed, dignified, calm and firm, Pasteur undertook to convince them that they were wrong. He was accused of being actuated by deep religious principles when he announced in most positive fashion that the theory of "spontaneous generation" was a scientific fallacy. Pasteur replied as follows to the accusation:

"Had I discovered, in the course of my studies and research work, that matter alone, inert matter, can produce a live cell or of itself bring forth a living organism, I would unhesitatingly come here in this very amphitheatre and proclaim and announce my discovery with honesty and with legitimate pride. And if further urged to do so, I would say: This is a scientific fact, an undeniable one, spontaneous generation does exist and I am sorry for those whose religious beliefs are hurt thereby. Today with the same legitimate pride and assurance I say to you—and I defy any of you to prove that I am wrong—that the doctrine of spontaneous generation is exploded, that it is a mere chimera, as conclusively shown by scientific researches of the most precise character. And I further add: If this discovery clashes with the philosophical, political or utilitarian views of my colleagues, or of any of you, I cannot help it." And the great man, who was as good a Christian as he was an eminent scientist further stated in one of the many verbal arguments that he would have to enter into with his doubting colleagues. "In each of us there are two men: one, the scientist, who is guided and governed by nothing else than by observation, detection, experiments and reasoning, the man who wishes to know, to understand and fathom the secrets and the forms of nature; the other, the man of traditions, of faith or of doubt, the sentimental man, the man who weeps over his departed children and dear ones and who hopes that he will see them in the other world although he cannot prove this scientifically, the man who refuses to believe that a human being dies as a mere animal does, or as mere plants or infinitesimal organisms of life disappear and sink into everlasting chaos. The fields of science and of religion are separate and distinct. Woe to the man who tries to have one encroach upon the other. Human knowledge in its present condition is too imperfect to accomplish that result."

Thus the great man most admirably summed up the creed of his life, the great and guiding principles which he never swerved from throughout his laborious and fruitful existence. Pasteur was a Catholic, but a liberal minded one, and he never at any time allowed his religious beliefs to interfere with the results of his scientific discoveries. To him there was nothing incompatible between a religious mind and a scientific one. Because of his great and profound religious ideas he felt urged and encouraged in his efforts to aid, comfort and alleviate suffering humanity. His one predominating thought was to accomplish work that would prove beneficial to his fellow men.

The great sterilizing process that he discovered was used to purify the food so essential to humanity in the cradle—milk. Think of the many young lives that he has saved through his wonderful discovery, the result of patient and laborious efforts. "Pasteurization," as a word, has become synonimous with sterilization and purification. All the large dairies, throughout the world to-day, have their Pasteurizing plants. Pure unadulterated milk is given our children because of the wonderful discovery of this great man of science. Drinking water is extensively pasteurized and made free from contagious or infectious

germs. Think also of the services, of an incomparable order, rendered surgery through the process of sterilization. The great Lister, the foremost surgeon of the day, wrote to Pasteur that his sterilization method had saved hundreds of lives, which formerly were snuffed out because of the lack of proper prophylactic and germ killing facilities.

Pasteur was next called upon to determine the cause of a disease which affected silk worms and thereby threatened seriously one of the most thriving industries of France. In vain he stated that the field was one that he was not familiar with. One of his former professors who had suggested that he take up the work, wrote to him as follows: "You say that you know nothing about silk worms and their diseases. So much the better. You will thereby grapple with the problem without any of the preconceived ideas on the subject."

Through months of patient, steady and unrelenting scientific observation and experimental work, Pasteur wrestled with the well nigh insoluble problem and finally discovered and prescribed a method whereby the contaminated eggs laid by the female butterfly could be sorted out and destroyed before they could destroy or contaminate other eggs prior to the evolutionary cocoon stage. Millions of dollars were saved thereby, and the process is now being used in every section of the world where silk worms are raised and where the silk industry thrives.

At this stage of his life, Pasteur's health failed him. The good man had taxed his physical and mental strength to the straining point and as a result he suffered a stroke of paralysis which threatened to cut short his glorious career. Pasteur's love for his country, his intense patriotism were amply demonstrated at this time. Thinking that he was about to die he said to his friends: "I regret to die just now. There were better and greater services that I could have rendered my country."

As a scientist, a man whose intellectual faculties were concentrated upon problems of an exalted and humanitarian character, Pasteur abhorred war. As he stated time and again: "The children of men have been brought into this world to love one another and not to exterminate one another." But like all great men Pasteur believed in his country first, second last and all the time and when the Franco-Prussian war broke out, with a saddened heart but with patriotic fervor, he told his most promising students who had been called to the front and who had stopped to bid him "au revoir," that the highest duty a man could perform, one that primed every other, was service in the defence of the native soil.

When war was over Pasteur with redoubled courage and faith in his work resumed his research work in the field of bacteriology. Having discovered and finally isolated the bacillus of chicken cholera he conducted a series of experiments through which chickens were rendered immune by the inoculation of an attenuated form of the very virus which usually proved fatal to them. He fought fire with fire, if I may so express myself, and germs with germs, and thereby laid the foundation for his great immunization process.

Charbon at the time was a disease that levied a heavy toll upon the cattle and sheep of France and other countries. Pasteur was asked to isolate the bacillus or germ of charbon. He not only did so but likewise prepared a serum which he eventually and triumphantly demonstrated would render immune the sheep or cattle in which it was injected. This great experiment was conducted at Melun, not far from Paris, on a large and well stock farm. The foremost veterinarians, biologists and scientists of the day had been convened and some came fully convinced that Pasteur would fail in his demonstration. Sixty sheep had been set aside for the experiment. Twenty-five of them were in-

oculated with two doses of the attenuated virus or serum, given at twelve and fifteen days intervals. Shortly afterwards these 25 inoculated and presumably immune sheep together with twenty five other sheep which had not been vaccinated were given several injections of virulent harbon germs. The sheep that had not been inoculated with Pasteur serum died each and every one of them of the dread disease and the twenty-five serum injected ones weathered the first mild symptoms of the malady and not a single one of them died. A sure cure for animal cholera had been found, one that caused the name of Pasteur to be heralded and proclaimed throughout the world with gratitude and praise.

But the crowning achievement of the great scientist's wonderful and fruitful life was his discovery of the bacillus or germ of hydrophobia and as a consequence thereof the manufacture and preparation of a serum which from that time has saved thousands of human lives and has enabled man to cope successfully with a disease of a most hideous and soul torturing nature, one which was formerly looked upon as being a necessarily fatal one. In finally isolating and using for preventive purposes the dreaded virus or bacillus of hydrophobia Pasteur gave further evidence of the ingenuity and alertness of his mental power of observation and detection. He had noticed that hydrophobia was a disease which had its seat or center in the nervous system. It occurred to him therefore that his efforts in the discovery of the elusive germ should be directed to the very center of the nervous system, the brain. To locate and isolate this germ in the gray matter of an affected dog was not an easy task, and even after the bacillus had been detected and segregated, as it were, the next problem that confronted him was how to prepare a serum of an immunizing character. Tests were made on the brain matter and marrow of rabbits and various animals and finally a proper medium found wherein the attenuated virus could be preserved and kept to its highest degree of efficiency.

Pasteur's biographers have told us of the great mental anguish, of the trying moments he went through, when he first tested his hydrophobia serum on a human being. A little Alsatian boy, Joseph Meister, was brought by his mother to Pasteur's laboratory on July 6, 1885, for immediate treatment. The case was an aggravated one. The child had been bitten by a mad dog fourteen times, once on the face. Some time had elapsed since the accident. Pasteur, with his usual modesty, had some little hesitancy in applying his remedy. He was in doubt as to whether his serum had been developed to its highest point of curative efficiency. He consulted his eminent friends and disciples, Doctors Roux, Vulpian and Grancher, and they at once pointed out to him that they had the utmost confidence in the efficiency of his serum and that it was his duty to try it upon the child. The sacred and magic word "duty" had the needed effect upon the scientist. He tenderly lifted the young boy in his arms, placed him upon a bed and had the serum administered. That night and the following day he watched with the mother by the bedside of the patient, anxiously leaning over him every now and then, to detect any symptoms of the dread disease, knowing full well what a great scientific battle was being waged. Weeks went by, weeks of great mental strain and nerve wracking anxiety, and finally little Meister was declared out of danger.

What a never to be forgotten event in the annals of medicine, in the field of modern therapeutics, in the world at large, was this discovery of a cure for hydrophobia. How everlastingly indebted to Pasteur humanity stands today for a scientific achievement of unparalleled grandeur and far reaching effect. Had Pasteur accomplished nothing else, in the course of his wonderful and humanitarian career, his name would be found today on the lips, and his memory enshrined in the hearts of

the thousands of fathers and mothers whose dear ones after being bitten by mad dogs that roam throughout our cities and our populous centers, have been saved by the timely application or injection of a merciful serum. The Pasteur treatment is now in use in every section of the globe. Pasteur Institutes, patterned largely after the one which stands today in Paris as a lasting and enduring monument to the great man, have been founded and established in all the larger cities of the universe. The name of Pasteur is the one which invariably comes to the mind and lips of those who accidentally and when they least expect it are set upon and bitten by vicious dogs or other animals affected with rabies. Formerly a bite from a mad dog meant usually, after an incubation period of lesser or greater duration, death under most distressing and heart rending conditions. Today, thanks to the wonderful discovery of Louis Pasteur, a positive cure can be effected in every case where the preventive treatment has been given in time. Surely the great scientist must have felt amply repaid for his struggles, labor, his studies and exhaustive researches, the time, the attention, the mental and physical efforts which he was called upon to exert in the course of his fruitful life, when he became convinced that he had found an infallible remedy for one of the most dreaded of human afflictions.

The great man died as he had lived, a Christian, a patriot, and a servant of humanity. There never lived a man whose sense of humanity and of duty, whose unflinching will and spirit of perseverance were of a higher or more exalted order.

Today, in Paris, there are two shrines, two mausoleums that contain the remains of two of the most illustrious sons of France. One is a huge brown marble sarcophagus, under the dome of the great Invalides, within which is entombed all that is left of the greatest general that the world has ever known, Napoleon Bonaparte. The other one is a smaller and less pretentious sarcophagus, erected reverently and affectionately in the crypt of a great medical and scientific institute. There are just two simple dates upon it—1822-1895. Three words are written on the arch which surmounts the portals to the crypt: "Ici repose Pasteur," "Here lies Pasteur." It is a most impressive and wonderful burial place. Four trumpeting angels, symbolic of Faith, Hope, Charity and Science, seem to proclaim his fame to the world at large. There is no necessity for it, for within the heart and the mind of humanity at large Pasteur's name and memory will live forever. He has done so much for humanity that humanity cannot forget him.

SOME COMMON CAUSES OF UTERINE BLEEDING*

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Both the conception and the treatment of uterine bleeding have undergone radical changes within the last thirty years. The new science of endocrinology, the development of the various glandular extracts, the employment of basal metabolism tests and other refinements of diagnosis, the application of irradiation to gynecology, these and similar improvements have completely changed our old ideas and methods. But confusion still exists. Uterine hemorrhage is still being treated too casually in some instances, too radically in others, and the tendency is still common to regard it as a disease in itself rather than as a manifestation of pathology which is not of necessity uterine in origin.

Because bleeding from the uterus is at certain times, and in certain quantities, both normal and physiologic, there is a rather natural tendency on the part of both physicians and patients to make light of an excessive or irregular flow. Neither menorrhagia, that is, prolonged or excessive bleeding at the menstrual epoch, nor

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metrorrhagia, that is, bleeding of any degree at other times, is ever normal, and the latter, particularly, should always be looked upon as evidence of real pathology.

If we recall the various factors which are concerned in menstruation, or normal uterine bleeding, the unwisdom of jumping to the conclusion that all abnormal bleeding is due to intrauterine pathology will at once be apparent. The uterus and its endometrium are little more than the creatures of the ovaries, and it is the ovaries, plus the nervous system, chiefly in its vasomotor aspect, which furnish the stimulus without which menstruation cannot occur. Even the local factor supposed to be present in the endometrium for the purpose of diminishing the normal coagulability of the blood that the monthly flow may occur, is merely given off there; its point of origin is the ovary. It is obviously erroneous, therefore, in considering the causes of uterine hemorrhage, to lay the entire emphasis on anatomic pathology, since physiologic function is quite as likely to be at fault.

In all of these cases a carefully taken and interpreted history is of the utmost importance. The patient's age, the familial tendencies, her own previous history of illnesses and operations, all these may shed light on the condition. Naturally the menstrual history must be considered thoroughly; the age of onset, the type of period prior to the present trouble, the duration and amount of the flow, the presence of clots, the existence of dysmenorrhea, all should be carefully inquired into. The patient's own norm should always be sought; menstruation differs in different individuals, and it is not the duration or the quantity of the hemorrhage which matters so much as the variation from the previously established type of period. A possible exciting cause should always be sought. A general examination is necessary to eliminate constitutional conditions, and, except in young girls, a thorough pelvic examination should never be omitted. If it is unsatisfactory, or if there is doubt as to the diagnosis, examination under anesthesia, and diagnostic curettage, if necessary, should follow promptly. Only by such a detailed study as this can the proper perspective be obtained and an accurate diagnosis be arrived at.

It is not my intention to include in this paper a consideration of the various hemorrhages of pregnancy; if the history of pregnancy is clear, as it usually is, these carry their own diagnosis. I might say, however, that it is always well to bear in mind in the married woman in the childbearing age that the bleeding may date from an abortion so early as to have been entirely unsuspected by the patient. I have often seen such patients, sometimes with evidence of a somewhat hypertrophied or subinvoluted uterus, sometimes with no local evidence beyond a bogginess and general lack of tone, in whom diagnostic curettage revealed, usually only under microscopic examination, fragments of placental tissue or decidua. In such cases, as the hemorrhage is due solely to the presence of a foreign body, curettage is curative as well as diagnostic.

In searching for the causes of uterine bleeding, purely local conditions, though not very common, must not be overlooked. Thus in the vulva and vagina old syphilitic lesions, ulcerations from pessaries, inflammations of Skene's glands, and similar lesions, sometimes obvious, sometimes so minute as to be found only after careful search, may be responsible for bleeding, usually in the form of a metrorrhagia. Nonmalignant lesions of the cervix, such as follow obstetrical injuries, with resulting infection, erosion and eversion, cyst formation, ulceration and similar sequelae, may also cause an irregular bleeding or staining, particularly as they are so often associated with hyperplastic conditions of the uterine mucosa and consequent venous congestion.

Since the gland changes upon which the diagnosis was once based are now proved

to be purely physiologic in character, chronic endometritis is no longer regarded as a frequent cause of uterine hemorrhage. There is, however, a type of endometritis, the so-called polypoid or fungoid type, which may give rise to quite profuse bleeding. Most important of the true endometrial affections, however, is hyperplasia, which is always associated with more or less hemorrhage. It may be encountered at any period of menstrual life, though it is most frequent at the menopause or at puberty. Its exact origin is still unknown, but there is reason to believe, as I shall point out later, that it is always associated with some ovarian dysfunction. The microscopic findings are uniformly characteristic, both in mucosa and stroma, and thromboses, venous congestion, and even extravasation of blood into the tissues may be present in extreme cases.

Arteriosclerosis of the uterine vessels is responsible for only an occasional case of abnormal bleeding. When it does occur, it usually follows repeated pregnancies or puerperal infection, and age seems to play no part in its production. Decidedly more frequent, however, is the condition described, for lack of a better term, as uterine insufficiency, in which the mucosa is normal, and the pathology is quite definitely in the mesometrium, the essential lesion being either a pathologic defect of the uterine musculature, or an undue excess of connective tissue over muscle structure. It is a common cause of bleeding in young girls, in whom full development of the organ has not taken place; in adult women who have had repeated pregnancies; and in women near the menopausal years, when, in my opinion, loss of the normal rhythmic contractile power of the uterine musculature is also a factor in its production. In every case, failure of the ovarian hormone is probably either a contributing or a primary cause.

Obstetrical injuries are frequently responsible for abnormal bleeding, and in such cases the diagnosis is usually self-evident. Retrodisplacements of the uterus which are in any way marked naturally cause a mechanical interference with the circulation in the pelvic structures, so that a constant state of venous congestion results. The bleeding may be particularly profuse when prolapse is present and the entire weight of the uterus falls on the broad ligaments; in such types these structures may exhibit marked varicosities.

Polyps, either of the cervix or of the uterine body, may give rise to furious bleeding, usually of the metrorrhagic type, though they may be so small that they cannot be detected except by the curette. Their effect is always that of a foreign body which the uterus is attempting to expel. Fibroids also are a frequent cause of bleeding in women over thirty, and they are peculiarly likely to be present in the unmarried or the sterile woman. Their size has nothing to do with the amount of the hemorrhage; I have seen patients who were almost exsanguinated by bleeding from a submucous growth no larger than a nut. The adenomyoma, that type of fibroid which contains endometrial elements and which infiltrates the uterine musculature and adjacent tissues, instead of developing as a discrete tumor, is often responsible for prolonged and profuse menorrhagia, which is frequently associated with a characteristic grinding pain, due to swelling of the areas of endometrium within the uterine wall.

Always in elderly women, and particularly in women who have passed the menopause, metrorrhagia, if no more than a spotting after coitus or exercise, demands a prompt and thorough investigation. It may be due to senile atrophic changes in the vaginal or cervical mucosa, or to a mild senile endometritis, but in the majority of instances it is due to malignancy. Indeed, metrorrhagia demands investigation at any age. Malignancy is not frequent in young women, but it does occur, and the possibility should always be borne in mind. Diagnostic curettage should be done

promptly, with microscopic examination of the scrapings, and if the cervix is at all suspicious, a section should be removed from it also for laboratory study. Profuse bleeding is not an early symptom of cancer, it is a very late one, and we shall never hope to better our mortality until we learn to interpret even the slight initial signs which that most treacherous of all diseases exhibits.

Tumors within the tubes usually give rise to uterine bleeding, and any type of salpingitis may exhibit this symptom, but it is by no means constant. Amenorrhea is rather more frequent if the tuberculous type is present, especially in the late stages, and I agree with Novak in his conclusion that excessive bleeding always means that the local disease is more pronounced than the general. Simple cysts of the ovary rarely affect menstruation, but the multilocular type, papillomata, dermoids, and malignant growths may be responsible for considerable hemorrhage.

The tendency in recent years is more and more to attribute all uterine hemorrhage, beyond what can be traced to definite local pathology or to constitutional conditions, to some endocrine dysfunction, usually ovarian. A complete consideration of the subject is obviously impossible here, but I would remind you that the simplest way of proving the validity of the theory of the ovarian control of menstruation is to remember that oophorectomy results in an automatic cessation of menstruation, no matter how normal the uterus and its endometrium may be. Dysfunction of the other endocrine glands, particularly of the thyroid, as evidenced by studies in metabolism, may also play a part in the production of uterine hemorrhage, but the ovary is mainly responsible. The function of the pituitary, the suprarenals and the pineal body is still obscure, but the latter at any rate, is unimportant.

Endocrine disturbances may produce abnormal bleeding at any era of functional life, but they are most common at puberty or the menopause. Usually local pathology is absent, except for the hyperplasia I have already mentioned. It should be emphasized, too, that this hyperplasia is the result of ovarian dysfunction and is not primarily a uterine condition. Curettage does not correct it, as it does the polypoid type; the endometrium which is regenerated is no more normal than that which was removed, and it is plain that although the effect may have been temporarily eliminated, the basic cause is still operative. The whole subject of endocrinology is still largely in the realm of theory, but one point, at least, is very clear, that physiologic pathology, as evidenced in a disturbance of the glands of internal secretion, may quite as frequently be the cause of uterine bleeding as anatomic pathology.

Constitutional conditions should never be overlooked. Especially in young girls excessive menstruation is often due to faulty habits of life, overwork, lack of exercise, constipation, and similar bad hygiene. Any occupation which entails incorrect posture, long standing or heavy lifting, and which predisposes to chronic pelvic congestion, may be an exciting cause. Diseases of the circulatory system are sometimes responsible, especially if there is a history of previous rheumatism or valvular heart disease, and renal disease, particularly if accompanied by high blood pressure, must always be considered. In young girls, and sometimes in older women, chlorosis and anemia may set up a vicious circle, in connection with the uterine hemorrhage, by which one condition aggravates the other. Liver disease with portal stasis, occasionally tuberculosis, though amenorrhea is then most usual, and some of the infectious diseases, notably influenza, may also be causes, as may syphilis, drug addiction and chronic poisoning. In all of these complications the entire treatment should be directed to the constitutional disease. This is particularly important in young women, in whom I have more than once seen uteri removed for ex-

cessive bleeding, with no evidence of local pathology, when either constitutional conditions or endocrine dysfunctions were the real source of the trouble. Psychic influences are responsible for an occasional menorrhagia, but all other causes should be eliminated before that diagnosis is made.

It has been possible, because of the limitations of time, to do little more than recite the principal causes of hemorrhage from the non-pregnant uterus. I have, however, tried to emphasize the point that proper diagnosis of the condition involves considerably more than a search for purely local pathology. And in closing, I may say briefly that the type of treatment should never be decided upon until the etiology of the hemorrhage has been established. The curette is not a panacea. In some instances it does good, in others it does none at all or actual harm, and its field in uterine hemorrhage is largely diagnostic. What the treatment is to be, general measures, drugs, glandular therapy, irradiation, curettage, or surgery, can only be logically decided when the underlying pathology, of which hemorrhage is merely the symptom, has been sought for and definitely identified.

PELLAGRA AMONG CHRONIC ALCOHOLIC ADDICTS.—Klauder and Winkelman, report on a study of 100 cases of pellagra. With few exceptions, all were chronic alcoholic addicts. Of the 100 patients, seventy-one were men and twenty-nine women, ranging in age from 25 to 79 years. The conclusion seems warranted that alcoholism in many instances plays some role, either predisposing or etiologic, in the causation of pellagra. The importance of this role has apparently not been generally recognized. The authors failed to transmit pellagra to a monkey injected with the blood and spinal fluid of patients with pellagra, supplemented by a minimum diet and the ingestion of alcohol. From a pathologic point of view there is apparently an intimate association between alcoholism and pellagra, especially in view of the fact that in other conditions in which alcohol is a factor, e. g., tuberculosis, similar pathologic conditions are absent. It is interesting to note that the pathologic manifestations of pellagra are not inflammatory, but resemble what is seen in toxic states with known etiology.—J. A. M. A., 89:1928.

THYROIDECTOMY.*

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The development of thyroid operation during the past forty-five years owes much to three of America's greatest surgeons, Dr. W. S. Halstead, Dr. C. H. Mayo, and Dr. Geo. Crile. The first of these planned a most refined operative procedure. He established the truth of the law which states that a transplant of an endocrine gland will live only if a physiological need for it is created. This law is known by his name. His contribution to hemostasis by the use of forceps in 1879 and his pioneer research work with local anesthesa did more than that of any other man to give it its prominence in surgery today, thus doing a great deal toward robbing thyroid operations of their danger.

It was Dr. Mayo who supplemented Kocher's unilateral with a bilateral procedure. Dr. Crile taught us the value of doing toxic goiter operation amid surroundings presenting no disturbing element, with a combined anesthesia which has all the advantages of a local and a general with none of the dangers of the latter.

The time limit prevents me giving credit to all those who have contributed so many of the cardinal principals of goiter surgery. According to Bartlett, whose latest work has given me most of the data embodied in the foregoing, four factors are to have a major share of the credit for the high degree of perfection to which this branch of surgical therapeutics has developed: (1) General anesthesia; (2) antisepsis and asepsis; (3) modern hemotasis; (4) local anesthesia.

In Halstead's own words, "The extirpation of the thyroid gland for goiter typifies perhaps better than any other operation the supreme triumph of the surgeon's art. A feat which today can be accomplished

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by any really competent operator without danger of mishap and which was conceived more than one thousand years ago might appear an unlikely competitor for a place in surgery so exhalted."

"There are operations today more delicate and perhaps more difficult but they have followed naturally and easily in paths made clear for them. But is there any operative problem propounded so long ago and attacked by so many which has caused so much thought and endeavor and so many lives before its ultimate solution was achieved? And further, is there any problem in surgery having required for its solution such intrepid throbbing and prolonged striving of the world's greatest surgeons which has yielded results so bountiful and so adequate?"

It is not the purpose of this paper to present the whole problem of goiter, nor will I attempt to discuss the symptommatology in full. Patients with a fully developed exopthalmic goiter do not present any great diagnostic problem. A most excellent paper on diagnosis of exopthalmic goiter appears in the A. M. A. Journal of May 7, in which Kessel and Hyman state that: "The classic triad of exopthalmos, goiter and tachycardia, to which may be added the tremor and elevation of basal metabolic rate, is usually unmistakable."

The thyroid, one of the most important glands of internal secretion, has as its principal and probably only function the elaboration and secretion of thyroxin.

An idea of the importance of the thyroid gland may be gained by considering the amount of blood which passes through it. Chaney points out the fact that while it weighs but forty-five grams, all of the blood in the body can pass through it in one hour. It has twenty-eight times the circulation of the head, thirty-four times the circulation of the brain, and five and one-half times the circulation of the kidneys. Yet, in spite of this great blood supply, the amount of its internal secretion poured into the blood stream per day is very small. A normal individual must have from twelve mg. to fourteen mg. present in the body at all times, exclusive of the thyroid. Therefore, it can clearly be seen that one of two abnormal conditions can exist—either an over activity of the thyroid, producing an hyperthyroidism, or the opposite, an under activity of the gland, producing an hypothyroidism. Simple hyperthyroidism can be produced by giving thyroxin and is seen clinically in adenomatous goiter with hyperthyrodism. In exopthlmic goiter we have more than a simple hyperthyroidism. It is a hyperthyroidism plus a dysthyroidism.

If we are dealing with hyperthyroidism it is certain that the goiter is either of the exopthalmic type or is a toxic adenoma. If hyperthyroidism does not exist then we have either a colloid goiter or an adenoma without hyperthyroidism.

Diseases of the thyroid gland, according to Plummer, may be divided into the following types: (1) Diffuse colloid goiter; (2) adenomatous goiter without hyperthyroidism; (3), adenomatous goiter with hyperthyroidism; (4), exopthalmic goiter; (5), myxedema; (6) cretanism; (7), myxedema of childhood; (8), thyroiditis; (9), malignant diseases of the thyroid.

In order to determine the presence of hyperthyroidism we must keep in mind several special characteristics: 1. An increase in appetite; with 2, a decrease in weight; 3, decreased tolerance to heat over a rather prolonged period; 4, a weakness in the quadriceps muscles. There are many other minor points of importance but the above are especially the ones to be noticed.

Each of the types of goiter which I have mentioned demand special treatment, and every case to my mind is a law unto itself. However, the ones which I wish to consider here are the toxic adenoma and exopthalmic goiter.

The surgical treatment of these two conditions does not begin nor does it end with the operation itself. The successful termination of these conditions depends largely upon the method of approach, for the patient must be made to have implicit faith and confidence in those to whom she has placed her life. The history taking, the routine examination, preparation for operation, and in fact every step, must be made in such a manner as to instill a feeling of safety and well being in the patient.

As soon as the diagnosis is made and the patient has fully made up his or her mind to go through with the operation, they should be put to bed and absolute rest for a period of ten days to four weeks is to be enforced, depending entirely upon the condition of the heart, for, after all, the success or failure of thyroidectomy rests upon the ability of the heart to withstand the strain placed upon it. For this reason, and this alone, is the patient placed in bed for a prolonged period.

However, it is very important for the patient to be allowed to get up and walk about for a time each day for four or five days preceding the operation. This will not only give the operator an opportunity to see what effect this pre-operative treatment has had upon the heart but will prove to the patient that he is really stronger and can withstand an operation. During the period of rest a careful check should also be made upon the kidney function.

The pre-operative diet should be liberal, though highly stimulating foods are excluded. Water in large quantities is of foremost importance. The daily fluid intake must be as high as three thousand cc. In aggravated cases with persistent nausea and vomiting as much as seven thousand cc. are administered. If these quantities cannot be taken by mouth normal saline solution is given by hypodermoclysis or proctoclysis. To this solution may be added a 3 per cent glucose. As a routine an ice cap should be placed over the heart. For improving the myocardium and the kidney function tincture digitalis should be administered in two cc. doses at intervals of four hours for eight doses. If this does not have the desired effect another course may be given, the effect of each dose being carefully observed.

Rest is essential, and it has been my custom to give luminal sodium at bed time to insure against insomnia. To protect the patient from a temporary thyroid deficiency subsequent to the sudden withdrawal of the gland secretion, thyroid extract, grs. 2 may be given the night before the operation and the dose repeated the following morning. To my mind the most important step has been the following of Plummer's suggestion that Lugols solution be given for a week or ten days preceding the operation and continued for several days following. Dose is ten to fifteen drops three times a days. Following the operation, if the patient is too nauseated or objects to taking it by mouth, Lugols may be given in the proctoclysis.

For the operation itself I prefer local anesthesia in extreme cases, at all times, however, being prepared to combine with it nitrous oxide and oxygen. One-half hour before the operation one-quarter morphin and atropin one-150th are administered by hypodermic. Some of my patients have complained that they could not stand morphin. To these I have given an H. M. C. with very happy results.

At the present time following Crile's custom most of the severe exopthalmic goiter cases are operated on in the patient's room, under local anesthesia plus analgesia. So far, in none of my cases have I done this and in no case have I noticed that the moving of the patient to the operating room or the sight of the operating room itself has had any effect whatever upon the patient's nervous system.

During the course of the thyroidectomy the perfect blocking with local anesthesia is a very necessary factor in the maintenance of good analgesia. These patients

are hypersensitive to external stimuli and therefore must be approached with great caution. The anesthesist should attempt to secure their co-operation by means of suggestion rather than command. He must interpret the respiration of the patient and the expression of his eyes in order to judge accurately the exact stage of analgesia. Again, there must be perfect co-operation between the surgeon and the anesthesist.

The following technique is used in producing local anesthesia: Two solutions are used. (1) 200 mils of ½ per cent procain solution to which is added twenty-five drops of a 1 to 1000 adrenalin solution. (2) 100 mils of a 1 per cent procain to which is added twenty-five drops of adrenalin. The patient is placed on the table, which is inclined about thirty degrees. A sand bag is placed beneath her shoulders and neck so as to bring the goiter prominently into view.

The soft tissues of the anterior portion of the neck are supplied by the anterior branches of the second, third and fourth cervical. The terminal branches, the auricular mastoid, transverse cervical, and supra clavicular, emerge at the posterior border of the sterno mastoid muscle. Anesthesia of this region may be produced by peripheral infiltration, but in order to obtain deep anesthesia the nerves must be reached at their emergence from the spinal column. This nerve blocking is done in the following manner: The line of skin infiltration for the cervical plexus is vertical and is determined by two points. Above, a point one finger breadth below the tip of the mastoid and below, a point five cm. lower down corresponding to the upper border of the thyroid cartilage. Three wheals should be made with a very fine needle at the upper and lower end of this line and in the center. Through these wheals by using a six cm. needle the spinal column should be encountered about five cm. below the skin.

An injection is made at the point of emergence of the nerve from the spinal canal, and then, as the needle is withdrawn, a fan-shaped injection of a 1 per cent solution is made. At least five cc. of this 1 per cent solution should be made through each one of the points of the injection. This is repeated on the opposite side of the neck. The patient will usually complain of slight pain when the needle strikes the bone, but if care is taken this should be negligible. Peripheral infiltration of the skin overlying the neck is now made through one of several wheals, the one-half of 1 per cent solution being used for this purpose.

The usual collar incision is then made, taking care to mark cross-ways of this incision at at least three points in order to make a perfect approximation in closing the wound. The pre-glandular muscles in most instances are divided in a line about one-half to one inch above the line of the skin incision. In small thyroids I never divide the muscles, but where the gland is very large and pulling upon it would be necessitated, I always divide the muscles between special clamps. This affords a wider field for operation, allows more thorough hemostasis and less discomfort to the patient by not necessitating pulling on the trachea. The right lobe is usually attacked first, and if at this point the patient complains of any pain the lobe itself is infiltrated. The superior pole with its vessels is clamped, ligated and then divided. The same is done at the inferior pole. This allows the thyroid to be pulled forward without any tugging on the trachea. Mouse-tooth clamps are then placed on the gland and as much tissue as desired is removed, the division being made between these forceps. Any return of symptoms following thyroidectomy for exopthalmic goiter is an indication that an insufficient amount of gland has been removed. While no one has been able to tell us exactly how much gland to remove, the amount left should in general be the functional equivalent of a normal gland. In hyperthyroidism this would mean that only a very small portion should be left. In all my cases I have endeavored to leave a very small portion

posteriorly in order to insure safety to the parathyroids and to the recurrent nerve. Enough is left laterally and anteriorly so as not to interfere with the nerve and connective tissue of the trachea. Both lobes and isthmus may be removed intact but it is my rule to remove them separately. The wound is then sponged and all bleeding points ligated. Closure is made with cat gut, care being taken to closely approximate all divided muscles. A cigarette drain is placed in the wound for three days, the skin incision being closed with metal clips.

Post-operative treatment: During the operation there is always a hyperhydrosis which leaves the patient's garments saturated with perspiration. These wet clothes should be removed and warm, dry ones substituted immediately after the operation. Because of this fluid loss, saline hypodermoclysis or saline and glucose by proctoclysis should be given. This will hasten the elimination of waste products and acidosis will be reduced to a minimum, while at the same time shock will be averted. The patient should be placed in a semi-sitting position with pillows banked up under each arm so that there will be no danger of turning. For the alleviation of pain morphin or codein should be given as necessary. The ice cap is replaced over the precordium. The diet for the first thirty-six hours should be soft and gradually increased as the patient's appetite begins to return. The second morning following the operation if the patient's condition permits an enema should be given. The dressing should be removed on the morning following the operation. The clips should be removed on the third day and the drain at the end of twenty-four hours.

Complications which may follow thyroidectomy are those affecting first the wound and second those affecting the organism. The former respond readily to treatment while the latter are often dangerous and sometimes fatal. The most frequent complication is the presence of serum in the wound. This condition is accompanied by a slight redness and induration about the site of drainage. Should this occur hot moist dressing should be applied and as soon as fluctuation occurs the fluid evacuated. The same is true of hematomata except in a case where oozing persists, the wound should be opened and packed. Infection should be treated radically by opening a portion of the skin incision, cleaning out the wound with mercurochrome or Dakin's solution and instituting free drainage. The complications affecting the organism are very few if proper precautions have been taken prior to and during the operation. When there is post-operative sign for need of cardiac stimulation tincture digitalis should be given as it was pre-operatively. If in the early post-operative period there is a loss of appetite or any lessitude, thyroid extract should be given in two grain doses three times a day until this deficiency has been compensated. Time does not permit me to enter into the post-hospital management of these cases, but suffice it to say that they should be under the care and advice of a physician for several months. In this way the patient can be advised as to amount of exercise, diet, etc.

REPORT OF CASE.

Mrs. A. S., white, female, widowed, aged fifty-six, occupation, housekeeper. Family history: Father died at the age of fifty from stomach trouble. Mother died at the age of seventy from paralysis. One brother died at the age of sixty from cancer of the stomach. Seven sisters, one died from goiter, one from pellegra, one from pelvic tumor, probably malignant, and the causes of the deaths are unknown but feel positive that one other had goiter. Only one sister living and she is in poor health on account of stomach trouble. Chief complaint, nervousness, shortness of breath, and, as a patient expresses it, "heart trouble."

Past history: Practically all the diseases of childhood and within the last few years, influenza, tonsilitis, and infected antrum. Tonsils removed in November, 1926, and on January 29, 1927, an abscess of the tooth resulted in infection of the antrum which was drained.

Present illness: Patient noticed an enlargement in the right side of her neck thirty years ago but paid no attention to it until 1918 when she consulted a physician. He put her on some form of iodid. As well as she can remember it was a syrup of iodid of iron. Within a few

weeks the enlargement disappeared and iodin was continued intermittently to the present time. The patient states that she has had several attacks of palpitation and has noticed a gradual reduction in her body strength. She has loss of appetite and within the last few weeks has begun to lose weight. Her usual weight is one hundred and forty-three pounds.

Physical examination: Patient weighs one hundred and seventeen pounds. She is five feet six inches in height. Her hair is slightly gray and lusterless. Her eyes are slightly prominent, skin of face and body dry and of a yellowish tinge. Throat normal, teeth in a very good condition. Examination of the chest was normal. Apex beat in the sixth inter space one inch to the left of the nipple line, showing an enlargement of the heart. All heart sounds normal. By ausculation over mitral area there were 120 contractions of the left ventricle, while radial pulse was only 90. The examination of the abdomen and pelvis, negative. Marked quadriceps weakness present as elicited by having patient step up on box. Blood pressure systolic, 120; diastolic, 70. On previous readings she states that her blood pressure varied from 110 systolic to as high as 180. Blood examination was negative. Examination of the neck showed an irregular mass in the thyroid region more prominent on the right and on palpation it was very nodular. On ausculation there were no thrills nor bruits. Laboratory examination of urine was acid in reaction, sp. gr. 1020, albumin and sugar, negative and one plus bile. Microscopically very occasional hyaline cast. I might state that on previous examination this patient had shown traces of albumin and many granular hyaline casts.

Diagnosis: Adenomatous goiter with hyperthyroidism. This patient was given the preoperative treatment as outlined above and following the technique which has previously been given, I removed both lobes and isthmus. Laboratory examination corroborated the preoperative diagnosis. The operation was performed on February 4, 1927. The post-operative convalescence was uneventful, patient leaving the hospital February 12. Pulse 82, respiration 18, temperature 98 3/5. This patient has reported every week and has shown a steady improvement. Present weight 140, skin moist and a good color, pulse 72, and she states that she has just begun to live again.

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DISCUSSION.

Dr. V. B. Philpot (Houston): A word about the technic. I think the easiest method of removing a goiter is the same incision as Dr. Culley made but by going through the gland directly, leaving as much as you want to leave (usually about a third I prefer to leave), and with clamps and ligating as we go, or clamp first and without tying anything first. In that way there is no danger at all of clamping or severing the internal laryngeal nerve, and in my opinion it is the easiest way to do a thyroidectomy. It is the way they do it in Rochester; it is a simple method; and there is less danger of doing the wrong thing.

VENEREAL DISEASE CONTROL.—John H. Stokes, reviews the status of the venereal disease control movement and discusses problems of prevention and treatment, research organization, and ethical and social collaterals. It is in the hope that the physician may become an active participator in the solution of these moral problems, which sometimes seem to lie across the path of direct medical solution of a venereal disease issue, that Stokes would urge all venereologists to participate in the social hygiene movement, to inform themselves on birth control and the family, to avoid cynicism and to have an open mind for ideals in the matter of sex ethics. The physician in venereal disease work is of necessity an advocate of birth control under medical direction. The Wisconsin experiment and Hall's study of it have shown that he can be a capable and even enthusiastic cooperator in the development of checks on marriage which tend to reduce the danger of transmission of infection within this most important of human relationships. It remains now to be seen whether the physician can be interested in other more social phases of venereal disease control, the more inspiring because the more constructive of character and the more expressive of idealism. Can he, for example, be made to tell the sincere and attentive student from the moral side of the tremendous wealth of personal knowledge of the sex habits and thinking of mankind which his work, like that of the priest, brings to his door?

ABSCESS OF LIVER.*

WITH CASE REPORTS.

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Liver abscess is of two principal varieties. First, that resulting from amebic infection, and, second, that caused by bacterial infection. Infection may be carried to the liver by several routes, the most important of which are: By way of the portal vein, the hepatic artery, the lymphatics, the bile ducts, and by direct continuity from an adjacent process.

Amebic Infection. This infection is carried to the liver from the bowels and probably by the portal vein.

Race. White people in the tropics are said to be more liable to amebic liver abscess than the natives.

Age. The majority of cases occur between the ages of 20 and 40 years.

Sex. Much more common among men.

Distribution. Amebic colitis is a tropical disease, but cases are not uncommon in this section of the country. In our clinic Dr. Lippincott in 1923 found amebic histolytica in the stools of 14 cases, which was 14.74 per cent of cases examined. In 1925, 2 cases, which was 1.42 per cent of cases examined. In 1926, 2 cases, which was 1.54 per cent of cases examined. Cases are also reported in patients living in the northern part of the United States.

Some cases of amebic colitis give a history of dysentery, but it is not uncommon to find positive cases who have had no bowel symptoms, as is illustrated by cases reported in this paper. If the lesions in the colon are in the lower part of it, bowel symptoms are likely to be present; but if the lesions are high in the right part of the colon, bowel symptoms are less likely to be present. Sérège has pointed out that the portal vein probably has two streams, one from the superior mesenteric vein which is distributed to the right lobe of the liver, and the other from the inferior mesenteric and splenic veins which is distributed to the left lobe. If this is correct, it would seem to indicate that infection is most often carried to the liver from the right half of the colon, as it is the portion of the bowel from which blood flows through the superior mesenteric vein.

Preceding amebic abscess, there is a hepatitis, probably due to damage to the liver cells by toxic products of amebic infection (Councilman and Lefleur). This gives rise to a slightly enlarged tender liver, and there may be a question as to whether or not suppuration is present. Rogers gives emetin in such cases, stating that if hepatitis alone is present, the emetin will cure it, thus differentiating hepatitis from abscess. However, complete recovery of cases of abscess have been reported to occur under emetine treatment alone.

Pathology. Amebic abscess may be multiple or single. The abscess cavity contains thick, reddish brown or chocolate-colored pus, with more or less of shreds of necrotic liver tissue. The surrounding liver tissue shows hepatitis. A fibrous capsule surrounds the abscess only in cases of long standing. The location is usually in the right lobe although occasionally a left lobe abscess is seen. The pus from the abscess may contain amebae, but often does not. It may contain bacteria which have developed as secondary infection, but it is often sterile. After the wound has discharged for a few days, amebae are more often found in the smear than at the time of operation.

Symptoms and Signs. First, are those which may be caused by pus concealed under tension wherever it may be located in the body; second, those especially referable to suppuration in the liver. The first group includes fever, chills or chilly sensations, sweats, aching extremities, malaise, fatigue, anorexia, digestive dis-

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orders, loss of weight and anemia. The blood count is usually increased, although in some cases it has been found normal. Those cases with secondary bacterial infection in the abscess will have very high counts. Fever is almost a constant symptom. It may be very high with chills and sweats, or very slight and intermittent.

The symptoms especially referable to liver suppuration are:

Pain in the liver region. It may radiate to the right shoulder, to the epigastrium, or the lumbar region, according to the location of the abscess.

Tenderness under the right costal margin or lower right lateral chest is usually present. The tenderness of the lateral chest region is best elicited by sharp, sudden pressure about the level of the 9th rib.

Enlargement of the liver, upward and downward, is present in all liver abscesses of any considerable size.

Edema of the lower right lateral chest wall, especially if abscess has come to the surface of the upper right lobe, is a very characteristic sign.

Cough, with rales, dullness and sometimes bronchial breathing at the base of the right lung. These symptoms are ape to occur in abscesses located on the upper surface of the right lobe.

Nausea and *vomiting* are not usually marked, but are likely to be present, especially in cases with abscess located on the under surface of the liver.

Jaundice is not a prominent symptom of amebic abscess but a sallow complexion with slight jaundice is usual. Jaundice is likely to be more marked if the abscess is located on the under surface of the liver.

Roentgen-ray and *fluoroscopy* are of much assistance. The characteristic finding is a high and immobile right diaphragm. The condition of the overlying lung and pleura is also demonstrated by the roentgen-ray, and this is of great importance in differentiating liver abscess from pulmonary and pleural disease. Artificial pneumoperitoneum used with the roentgen-ray study is of value in some cases.

Abscesses coming to the surface below the liver may give rise to symptoms of peritonitis, with rigid abdominal muscles and acute abdominal pain.

A history of attacks of dysentery and of residence in the tropics is important.

Diagnosis of Liver Abscess. The pain and tenderness must be differentiated from that of gall-bladder disease and from disease of stomach and duodenum, appendix, kidney, pleura and lung.

The liver enlargement must be differentiated from enlargement by other causes, such as, Hanot's cirrhosis, syphilitic enlargement, infectious hepatitis, ecchinoccus cyst, and benign and malignant neoplasms.

The fever must be differentiated from that of all varieties of fever resulting from concealed pyogenic infection, from malaria, and tuberculosis.

The cough and chest signs must be differentiated from disease of the lung and pleura.

In discussing the diagnosis I would like to call especial attention to cases presenting symptoms of chronic gall-bladder disease, especially when there is progressive loss of weight and strength. In my experience, cases of chronic desease of gall-bladder alone do not rapidly lose weight and strength, and if these symptoms are present in such cases it probably means disease of other organs, and especially of the liver or pancreas. Liver abscess and amebic hepatitis should be carefully excluded in these cases.

The clinical course varies enormously. Some cases start with a chill and high fever and remain violently ill with severe septic symptoms until relieved by treatment or until fatal termination is reached. Others will run temperature for a while

and then spontaneous improvement occurs followed by periods of recurrence of symptoms. Other cases, even with fairly large abscesses, complain of only the slightest symptoms and have only slight elevation in temperature. It is probable that the cases running violent courses have virulent secondary bacterial infection, which is absent in mild cases.

Prognosis, if untreated, is bad. The general course of the disease in acute cases is rapidly downward. In chronic cases, although there may be remissions, the patient slowly loses ground, and if he lives long enough the abscess usually perforates, above into the lung or below into the peritoneum or the bowel. Rarely an abscess may perforate the abdominal wall and rupture through the skin. By the time perforation occurs the patient is so exhausted that his chances are poor.

Positive diagnosis is obtained usually by exploratory puncture or by operation. Exploratory puncture has the disadvantage of possibly infecting the pleura or peritoneum and of causing hemorrhage. While puncture should not be used indiscriminately, so good an authority as Rogers uses the method extensively both in diagnosis and treatment of the amebic type.

Treatment is surgical and medical. Many cases are reported cured by simple aspiration followed by emetin treatment, others by syphon drainage, done by introducing a tube into the abscessed cavity through the canula following trocar puncture. An extension from this tube is dropped down over the side of the bed into an antiseptic solution which forms a water seal, preventing access of secondary infection, and providing slight suction.

I prefer exposing at least the wall of the abscess by open operation. If it is located on the surface of the right lobe, as it most often is, a rib, usually the 9th or 10th, is exposed in the mid axillary line, and resected subperiosteally. If the pleural cavity has not been obliterated by adhesions it is closed off by a suture around the drainage area. An exploring needle is then passed into the cavity to make sure of its location. The diaphragm is then incised. If the peritoneal cavity has not been obliterated it is best to pack against the liver surface until peritoneal adhesions have isolated the field. Attempts to suture the liver to the edges of the wound have not been satisfactory owing to the friability of the liver and tendency of the sutures to pull out and cause bleeding. Fortunately both the pleural and peritoneal cavities are often found already obliterated by adhesions at the site of the abscess. With the cavities properly closed off incision is made into the abscess cavity, the contents evacuated by suction, and drainage provided. This procedure is not applicable to all cases. In some the abscess is so situated that laparotomy is necessary to confirm the diagnosis and locate the abscess. The abscess is then either drained through a separate incision or through the laparotomy wound, according to the location. If drainage through the laparotomy is planned it may be best to pack down to the surface of the abscess, establishing a walled off tract through which the abscess is opened later, and drainage introduced. In other cases the abscess has invaded the abdominal wall to such an extent that simple incision only is required. Mortality following operative treatment has been sharply reduced by promptly following the operation with emetin administration. We give one grain by intramuscular injection each day for one week, then stop treatment for a week, and give the same dose each day for another week. It is well to mention that emetin is an extremely toxic and dangerous drug. Poisoning does not result from a single therapeutic dose; but from continuing the administration too long and getting cumulative effect. The symptoms of emetin poisoning are: extreme weakness, neuritis, rapid pulse, nausea, vomiting, and diarrhea. In animal experiments emetin has been found to be about three times as toxic when given in the vein as when given subcu-

taneously. (Legal Medicine and Toxicology, Peterson, Haines and Webster.) For an adult patient one grain given in the muscle daily for seven days has proven entirely safe. Yatren is reported to be even more efficient in the treatment of amebiasis than emetin. We have used stovarsol with good results.

Pyogenic abscess of the liver may be a part of a general septicemic process, with multiple small abscesses, or it may result from a septic process extending up the bile ducts; but such abscesses come more under the heading of septicemia and of bile duct disease, and will not be discussed in this paper. However, I do wish to discuss the pyogenic type of abscess resulting from infection carried to the liver by the portal vein. The original source of this infection is from some suppurative process in the area drained by the portal vein. This area includes the intestinal tract, the spleen, pancreas and gall-bladder. As the appendix is by far the most frequent location of such a process it is not surprising that the majority of cases of pylephlebitis and liver abscess follow acute appendicitis. The beginning of the abscess is probably as pylephlebitis, with septic thrombosis of small portal branches. For this reason pyogenic abscess is likely to be multiple. The location is most often the right lobe.

Pylephlebitis and abscess can occur at any time during the course of appendicitis or following it, and occurs both in cases that have been operated on and those that have not. A common history in such cases is as follows: acute appendicitis, usually of severe suppurative type with thrombosis of vessels in mesoappendix. After the usual appendectomy the patient may do well for a few days, then develop chills, irregular fever, and sweats. If only a small portal branch is involved the symptoms may be of moderate severity, but if there is extensive septic pylephlebitis the symptoms will be violent. Jaundice almost invariably develops, also anorexia and occasionally vomiting. As the process advances pain in the liver region may develop and any or all of the symptoms and signs of abscess mentioned in connection with amebic abscess.

Clinical Course. Some cases of this type have an insidious onset and run a more or less chronic course. Such a case may return, having gradually developed liver abscess symptoms as long as two or three months following the original inflammatory process in the portal area. However, the majority of cases of pyogenic abscess are acute with high fever and with chills and sweats and severe prostration, continuing until relieved or until fatal termination occurs.

Diagnosis. An abscess is very likely to be mistaken for a right lower pneumonia, or for pleurisy.

A subphrenic abscess may occur in the same type of case that is liable to have a liver abscess. It occurs especially following cases of extensive generalized peritoneal infection, such as perforated ulcer of the stomach or duodenum, and septic general peritonitis following perforated appendix. It may be impossible to say before operation whether some abscesses are located between the liver and diaphragm or within the liver. However, septic symptoms are usually less severe in subdiaphragmatic abscess than in liver abscess. Symptoms referable to disease of the liver itself are less marked in the subphrenic type.

The treatment of abscess is open operation and drainage of the abscess, preferably by rib resection and incision through the diaphragm if location of the abscess or abscesses permit. Several operations for drainage of different abscesses may be necessary in a single case.

Prognosis. Since abscesses are often multiple, and accompanied by septic pylephlebitis, occuring in patients already weakened by a suppurative lesion in the peritoneal cavity the outlook is bad. The mortality is about 46 per cent.

The following table indicates some important differences between amebic and bacterial abscess:

AMEBIC TYPE	BATERIAL TYPE
1. History of dysentery, and stools may show amebae.	History of preceding or coincident suppurative lesion in portal area.
2. Usually insidious onset.	Onset usually abrupt with violent symptoms.
3. Usually solitary.	Often multiple.
4. Jaundice mild.	Jaundice more marked.
5. Mortality when properly treated less than 15 per cent.	Mortality high (46 per cent).
6. Emetin indicated in post operative treatment.	Emetin not indicated.
7. Blood count usually high but not always.	Blood count high.

CASE REPORTS.

Case 1. J. H. M., aged 36 years, single, a white railroad conductor, was admitted July 21, 1926. He is a resident of Mississippi and has been in the U. S. all his life.

His complaint was of intermittent fever for 3 months. The onset had been with general aching and pains in the legs and he had had persistent annoying frontal headaches. He had been having temperature from 100 to 103°F, with chills at irregular intervals. There was slight jaundice. He had had discomfort in the right upper abdominal quadrant, marked anorexia, malaise, and loss of 12 pounds in weight. There had been slight nausea, but no vomiting. No respiratory symptoms. The bowels were regular. Previous history: Malaria, whooping cough, smallpox, frequent colds and occasional sore throat. Urethritis in 1919. No attacks of diarrhea. Physical examination: Temp. 100. Pulse 94. Respiration 20. The patient was thin, looked ill, and was very slightly jaundiced. The pupils reacted to light and accomodation, and were equal. The teeth and tonsils were normal. An aurist reported chronic non-suppurative otitis media. The right frontal and right antrum were hazy. Examination of the thyroid, heart, and lungs showed nothing abnormal. The abdomen was of normal contour with no rigidity. The spleen and liver were not palpable. There was a slight tenderness under the right costal margin. The liver dullness extended 1½ inches below the costal margin and was not increased upward. Roentgen-ray and fluoroscopic findings were normal. The gall-bladder (Graham method) was entirely normal. The blood count showed leukocytes 18,200, of which the neutrophils were 85 per cent, lymphocytes 9 per cent, and large mononuclears 6 per cent. Feces examination was normal.

The temperature ran an irregular course during the following seven weeks, at times 102 to 103°, and at times 99 to 100°. Jaundice was not marked. The tenderness became more marked in the liver region and in the seventh week the patient had an attack of severe pain in right upper quadrant of abdomen accompanied by vomiting and symptoms of local peritonitis. There was a definite mass under the right costal margin.

Operation was performed August 25, 1926. Under local anesthesia a transverse incision was made under the right costal margin. The parietal peritoneum was edematous and on opening it a large abscess cavity located in the right lobe of the liver, perforating through the under surface, was entered. Five pints of dark brown pus and much semi-solid material were removed. The temperature fell promptly and was subsequently normal. Ten days after operation a diarrhea developed for the first time during the patient's history. An examination of the stool showed numerous amebae (histolytica). Up to this time the patient had failed to gain appreciably in health. Emetin treatment was started and improvement followed promptly. The recovery was rapid and the patient has since been in perfect health.

Case 2. F. K., a white male resident of Mississippi aged 40 years, single, was a tractor salesman, and had lived in South America from 1919 to 1922. The present illness began in February, 1926, with attacks of fever and malaise every four to six weeks, each attack lasting three or four days, There was no nausea and the appetite was good. During the following eight months there were intermissions of three to six weeks without symptoms. During the eighth month epigastric pain developed, intermittent in character, lasting two or three hours at a time, and being worse at night. This pain had no relation to meals, and food caused no discomfort. There was a gradual loss of weight. The epigastric pain became more severe and more constant, and the patient was unable to sleep because of it. The patient says he was told he had duodenal ulcer, and had been put on Sippy diet for three weeks in October, 1926. During that time he was relieved. In November, 1926, the pain recurred and extended to the region under the right costal margin. A cough developed and there was a return of the fever. From this time until the operation on December 21, 1926, there was intermittent fever, cough, pain in right lower lateral chest which was worse on coughing, loss of weight, and weakness. Appetite remained good and food was enjoyed. He complained much of insomnia. Previous history: Had urethritis in 1921 and lues in 1917. There had been no dysentery. From 1919 to 1922 he was in South America and was in the hospital with a prolonged fever for 60 days. There had been no diarrhea during that time. Physical exam-

ination: The patient was well developed, though thin. He was 5 feet 10 inches in height and weighed 120 pounds (normal weight 150 pounds). The pulse rate was 120, temperature 100°, systolic blood pressure 110. There was no jaundice. The head and neck showed no abnormalities. The heart rate was rapid, the rhythm normal. There was no enlargement, no murmurs. There was slight dullness and diminished breathing over the right lower chest posteriorly. No rales were heard. The abdomen was of normal contour, with no rigidity. The spleen and liver were not palpable. There were no masses palpable. There was slight tenderness in the epigastrium. The liver dullness extended from the fourth rib above to one inch below the costal margin in the right nipple line. The blood count showed 16,500 leukocytes of which 81 per cent were neutrophils, 3 per cent large mononuclears, and 16 per cent small mononuclears. The roentgen-ray and fluoroscopic report was as follows: "Right diaphragm is high and mobility diminished. There is a localized upward bulging of the right diaphragm slightly to the right of the center. Roentgen-ray of stomach shows normal stomach and duodenum. Gall-bladder (Graham method) normal. Lungs are clear." Stool examinations showed no abnormalities. Blood Wassermann negative.

The diagnosis of liver abscess was made, but we did not feel certain that this diagnosis was correct, and exploratory laparotomy was decided upon.

The operation was performed on December 21. Through an upper right rectus incision the gall-bladder and stomach were found to be normal. On passing the hand over the dome of the liver a large indurated area was felt on the upper right surface of it. There were a few adhesions over this surface which were easily separated from the diaphragm. An aspirating needle introduced into this area yielded a chocolate colored pus. The abscess cavity was emptied by suction and contained one pint of pus. A tube drain was passed into the cavity, a strip of packing was placed below the tract of the tube and the wound was closed to the exit of the drain. Examination of the pus showed numerous bacilli and micrococci. A culture showed a short chain streptococcus. No amebae were found. Subsequent examinations failed to show amebae.

Following the operation the temperature promptly came to normal and remained so, but the discharge continued to be copious. After one month of this free discharge emetin treatment was begun. The patient promptly began to feel better and the discharge became rapidly less. There was remarkable improvement in the patient's general condition following the emetin administration and the sinus rapidly healed. However, the tube was kept in the tract as long as possible. The patient was seen on April 7, 1927, and was perfectly well, had regained his normal weight, was sleeping well, and had no symptoms.

Case 3: T. W. S., a white male, resident of Louisiana, aged 45 years, married, and a banker by occupation. Present illness: One year ago he had had an acute suppurative gall-bladder, at which time a cholecystostomy was done, with the removal of multiple stones. Recovery followed, and two weeks after his discharge from the hospital there was an attack of acute right upper quadrant abdominal pain followed by an abscess in the laparotomy scar, which ruptured. This healed promptly, and the patient remained well until a few weeks before the present admission when he had several attacks of pain in the gall-bladder region. Three days prior to his admission he had sharp pain in the right upper quadrant of the abdomen, radiating to right shoulder, vomiting, marked abdominal distention, tympanites, high fever, and severe prostration. The bowels had been kept open with enemata. There was no cough. Physical examination: (September 1, 1926.) The patient looked extremely ill; the skin was flushed and there was slight jaundice. Respiration was labored and rapid. The temperature was 103° F., pulse 122. The head and neck were normal, heart was of normal size. No irregularities nor murmurs were present. The systolic blood pressure was 130. Pulmonary resonance was normal. No rales were heard. Abdomen showed marked gaseous distension. The muscles felt rigid. There were no palpable masses though there was marked tenderness in the right upper abdomen. The white blood cells were 19,100; neutrophils 86 per cent. The urine showed a heavy trace of albumin and a few hyaline, fine and coarsely granular casts. No urinary sugar was found.

A tentative diagnosis of acute inflammation of the gall-bladder was made but operation was delayed for further observation. The condition became steadily worse and on the third day there was dullness over the right lower chest posteriorly with numerous rales and bronchial breathing. It then appeared that the patient had a right lower pneumonia. Vomiting was controlled by a duodenal tube left in place in the stomach. Fluids and nourishment were supplied by daily administration of solution of glucose and salt intravenously. After a stormy course for two weeks, with a high septic type of fever and with delirium, the patient gradually improved and the temperature came down to a range of 98° to 99°. The leukocytes then were 13,500, neutrophils 74 per cent. After one week the temperature gradually began to climb, running from 99° to 102°. The

marked dullness, bronchial breathing and rales persisted at the right base. The blood count on November 6 showed 27,300 leukocytes with neutrophils 85 per cent. An exploration of the pleura showed a small amount of clear amber fluid; culture sterile. Roentgen-ray examination showed the right lower chest opaque. An outline of the diaphragm was not clearly made out. The liver dullness extended from two inches below the right costal margin to the third interspace in the nipple line. There was a recurrence of slight jaundice. Operation: (November 8.) The ninth rib was exposed in posterior axillary line, under local anesthesia. Subperiosteal resection of two inches of the rib was done. Incision of the pleura (pleural cavity at this location had been obliterated by adhesions) and exploratory needle passed through the diaphragm yielded thick chocolate colored pus. Incision of the diaphragm opened into a large cavity in the upper right lobe of the liver which had ruptured and walled off in the subdiaphragmatic space. Tube drainage was provided and patient made a rapid, uneventful recovery. Culture of the pus showed colon bacillus. All pulmonary signs promptly disappeared. After convalescence, roentgen-ray study of the gall-bladder showed it small, but with good filling and emptying. (Graham method.)

Case 4: Miss M. B., a single white female, aged 63 years, was admitted April 5, 1927. Present illness: The onset had been four days previous with a diarrhea, which lasted only a few hours. Then there had been absolute constipation up to the time of admission. She had had general abdominal discomfort until 18 hours before admission, then she had violent epigastric pain following a large dose of a saline water. She vomited once. This pain subsided in two or three hours and had been fairly comfortable since. She had had no bowel movement for the previous three days. The history was otherwise unimportant. Physical examination: The patient was fairly well nourished and looked acutely ill. The temperature was 100.4°, pulse 136, respiration 26. The head and neck showed normal findings. Pulmonary resonance was normal. Voice and breaths sounds were normal. There were no rales. The heart was of normal size and there were no murmurs. The rate was rapid and regular. The abdomen was very distended, with slight tenderness, which was not confined to any one area. The spleen was not palpable. The liver was not palpable. The liver dullness extended from the costal margin to the fifth rib in the nipple line. No masses were felt. Slight rigidity of the right rectus was noted. A pelvic examination showed the pelvic structures to be normal, freely movable, no masses. The leukocyte count was 18,600; neutrophils 84 per cent. The urine showed albumin, granular casts, and scattered pus cells.

A diagnosis of acute appendicitis was made, and immediate operation performed, April 5. On opening the abdomen the general cavity was found filled with a milky fluid which gushed from the wound. The appendix was retrocecal, and on separating the cecum from the postero-lateral abdominal wall a large cavity containing thick, dark, foul smelling fluid was entered. The gangrenous perforated appendix was removed from this cavity and drainage provided. Patient did well for one week. She then developed a pain in the right lower lateral chest with a marked friction rub over this area. On April 14 there was slight jaundice. At this time there was marked dullness over the right lower chest behind, with numerous rales and harsh bronchial breathing. The liver dullness extended from the costal margin to the third rib in the nipple line. There was marked edema of the lower right lateral chest. There was no vomiting. The bowels moved well and the patient took nourishment well. The temperature varied from 99° to 101.5°. The pulse was from 130 to 136. The blood count showed 25,700 leukocytes, with 91 per cent neutrophils. A roentgenogram showed the right diaphragm markedly elevated. The lungs were clear.

A diagnosis of sub-diaphragmatic or hepatic abscess was made. The patient was extremely ill during the period of development of the abscess and then seemed to get a little stronger. By April 21 her general condition was definitely improved and it was decided to proceed with operation.

Operation: An exploring needle was introduced at the level of the ninth interspace laterally and milky fluid was withdrawn. The needle was left in place. Under local anesthesia two inches of the right ninth rib were resected sub-periosteally. As the pleura was not adherent, the pleural cavity was closed off by suture around the drainage area. Incision through the diaphragm opened into a large sub-diaphragmatic abscess, containing about thirty-two ounces of extremely foul pus. Tube drainage was provided. A culture of pus showed colon bacilli and gram positive astreptococci.

Following the operation the patient's condition promptly improved and the chest signs disappeared. Her convalescence was uneventful.

SUMMARY.

Case 1 was an amebic abscess without a preceding dysentery or residence in the tropics. Amebic dysentery with positive stool findings did appear, however, during convalescence following operation. The abscess was located on the under surface

of the liver and gave symptoms of peritonitis, as is usual in that location.

Case 2 was an amebic abscess with a history of residence in the tropics but without a history of dysentery. The abscess was near the upper surface of the liver. Cough and pain in the chest were prominent symptoms, as is usual in abscesses located on the upper surface.

Case 3 was bacterial abscess following suppuration in the gall-bladder. At onset the symptoms and signs strongly suggested acute infection of the gallbladder, and later as the abscess came to the upper surface, were absolutely those of pneumonia.

Case 4 was a subdiaphragmatic abscess following suppurative appendicitis with general peritonitis. It may have begun as a walled off part of the general peritonitis, or may have started as pylephlebitis with a small abscess on the upper surface of the liver rupturing into the subdiaphragmatic space.

Amebic infection is not uncommon. In dealing with cases of fever of obscure origin the characteristic findings of amebic liver disease should be borne in mind and carefully sought for. Emetin in addition to surgical treatment is indispensable. Bacterial abscess should be kept in mind when dealing with suppurative processes within the portal area. Symptoms of liver abscess may be easily confused with those of disease of the overlying lung and pleura, and with disease of the gall-bladder.

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DISCUSSION.

Dr. John Darrington (Yazoo City): This is a valuable paper and should not pass without discussion. Dr. Street has evidently gone to a great deal of trouble to prepare this paper, and I do wish to say he should be commended for the very careful and painstaking examination he has given these people. Abscess of the liver is not one of those things which come on suddenly and in which diagnosis is easy. It comes on very insidiously, for weeks. I think many of us have made a mistake in treating these patients for some type of fever. I have seen cases of abscess of the liver treated as malarial fever. Of course, we know that any case that does not respond to treatment with quinin for several days is not malaria, but doctors are prone to keep on treating as malaria any continued fever, particularly with rigors now and then. Sometimes quite a number of weeks will have elapsed before we can make an accurate diagnosis. The roentgen-ray has proven of great value. In one film there you noticed not the picture of an abscess but that the diaphragm was pushed up. To me, particularly, this paper of Dr. Street's has been one of great interest and great value.

Dr. S. H. Hairston (Meridian): You have all been confronted with a patient on whom you have operated for appendicitis, the patient continues to run a temperature and you do not know what the trouble is; you are puzzled. You need help, and the patient needs help. There is not sufficient drainage there to warrant your going back in there. You know something is wrong, but just what it is you do not know. I have had occasion to do a postmortem on three of these patients that had appendicitis and went on and died. They developed temperature and probably some tenderness over the liver. The roentgen-ray findings do not warrant a diagnosis of liver abscess; we naturally think of sub-diaphragmatic abscess and do not know what to do; and the patient goes on and dies. I have held postmortems on three of these cases within the last two years and found little multiple abscesses all over the liver. I think Dr. Matas defines that as suppurative hepatitis. Dr. Allen can verify that. I find these little abscesses all over the liver, often overlooked. If you remember this possibly it might help you. I do not know what you can do for them, unless you let them go ahead and do their own dying.

Dr. C. A. Sheely (Gulfport): I want to ask Dr. Street a question on two cases of liver abscess I had last year. In both my cases I did just as the doctor suggested, resected a rib under local anesthesia; and in the first case I found after I had resected the rib and made an opening down on the liver that there was no adhesion between the liver surface and the parietal peritoneal wall.

So I thought of suturing, just as I had seen Dr. Hedblom do in his cases of pulmonary abscess; but I found, just as Dr. Street says, that it is very difficult to suture the liver to the parietal wall. The sutures will not hold. So I packed it with some iodoform gauze and left it in position for forty-eight hours; then with a cautery I opened directly into the liver abscess which was very large and contained some two or three pints of pus of the character he mentioned. In the next case, which had gone on for some time, I did a similar operation, resecting a rib under local anesthesia and opening the pleura. The roentgen-ray showed very much as his did, though the patient had cough there was no involvement of the lung. I inadvertently opened into the pleural cavity. As the air rushed in I recognized that I had opened the pleura and so closed it immediately. In this case I felt that it would be better to have opened a little lower down, on to the liver. I found in this case that there were adhesions between the liver and diaphragm. So I sutured the pleural opening and waited for a few days and then opened into the liver abscess, which was very large. These cases, just as Dr. Darrington said, are not cases in which you must rush in and do a great deal of surgical work, but you must do conservative surgery—that is, in several stages—because you have plenty of time. The first case began to recover promptly, just from drainage alone, and I could see and everybody could see that the case was getting well. In the second case there was prompt improvement so far as the drop in temperature, free drainage, and everything of the kind was concerned; but there was only temporary improvement in this patient. Although he had a very large tube (three-quarters of an inch) going into the cavity, with free drainage, there was only temporary improvement. The liver began melting, as it were, great shreds coming away. I filled the cavity with a solution of emetin, closing it up in there, hoping thus to stop the suppuration. The whole right lobe came away by suppuration. The patient's nutrition was failing; he failed to put on flesh and died from inanition.

I should like to know if Dr. Street used general anesthesia in these cases.

Dr. Street (closing the discussion): In reply to Dr. Sheely's question about anesthesia, we have done all our cases under local anesthesia except one of exploratory laparotomy in which the diagnosis was not certain until confirmed on exploratory laparotomy.

I believe that most of the beneficial results of emetin are from the hypodermical or intramuscular injection; I do not think that local applications in the abscess cavity are very likely to cause much benefit.

Speaking of the multiple abscesses in the various branches of the portal vein, that condition is very commonly associated with septic Pylephlebitis; and, as I said, bacterial abscess is very liable to be multiple and several operations may be necessary in dealing with a single case of bacterial abscess of the liver, if they live long enough.

I should just like to call attention to the fact that an amebic infection is not uncommon; and in cases that are suspicious, that give suspicious symptom of amebic infection or suppuration of the liver the administration of emetin or some other form of treatment for amebiasis will very often clear up the whole situation and do away with all of the symptoms, because a very small amebic abscess or amebic hepatitis will clear up under emetin treatment administered hypodermically.

ACUTE ABDOMINAL DISASTERS.*

A. E. HERTZLER, M. D.,

HALSTEAD, KANS.

Under this title I mean to include those pathological processes occurring within the abdomen which, if not combatted by the surgeon, will most surely result in death. I wish to exclude those diseases which are distressing and in a measure dangerous but in which the attendance of the surgeon is not emphatically required.

Some surgeons are satisfied to make a diagnosis of an acute surgical condition within the abdomen, allowing the details to be worked out after the abdomen has been opened. Unfortunately, often this is the best we can do but if possible an accurate diagnosis should be made, for on this depends the proper planning of the operation. If the incision is improperly placed additional trauma must be inflicted and additional time consumed. If local anesthesia is to be used an accurate diagnosis is imperative. In fact, local anesthesia is contra-indicated unless the surgeon is reasonably sure of his topographic diagnosis.

Since even after the exhaustion of our diagnostic skill we may be mistaken, the

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operation partakes more or less of the nature of an exploration. Unless one has a clear understanding of the relation between the pathological condition and the symptoms present he may still be confused after the abdomen is open. The surgeon must know, once he has the lesion in hand, whether or not it is responsible for the patient's complaints. During the years I did pathology it was nothing unusual to perform an autopsy after the surgeon had operated on the wrong thing.

I propose, because of this experience, to discuss the diagnosis after the abdomen is open as a supplement to the clinical discussion. I shall divide the abdominal disasters into two groups. First, the perforative group. This includes the diseases or traumas of the hollow viscera, the stomach and duodenum, the appendix, the gall-bladder, and the intestines, small and large. Second, the thrombotic group which results in no solution of the continuity of their walls resulting in an acute general peritonitis as is true in the first group, but there is injury to the walls due to disturbance of the circulation. In this group is included those conditions in which the circulation of the blood is interfered with. Acute pancreatitis, intestinal obstruction, thrombosis of the mesentery, tumors with twisted pedicles, hemorrhage into a cyst or tumor, gangrenous appendix, and the like, make up this group.

I group the disasters into these two groups because I wish to emphasize the fundamental pathology in the beginning of the disease. In the perforative type the initial pain is due to the irritation of the gut wall and parietal peritoneum by the escaped intestinal contents. The peritonitis appears later and dominates the field. In the second group the pain is due to the presence of clotted blood in the tissues. It is the pain of dying tissue. Profound constitutional disturbance is and remains the chief factor, as is exemplified in pancreatitis, intestinal obstruction, and in fact any injury in which extravasted blood plays a part. Inflammation follows after a time, but rarely suppuration, unless indeed perforation follows as the result of gangrene.

I want to emphasize at the outset that one must consider the time which has elapsed since the onset of the disease. If seen in the first few hours the picture is quite different from that we encounter after a duration of many hours or several days. One must have a thorough understanding of the life history of the disease in order that one can diagnosticate the condition at the time the patient is first seen.

It is necessary to secure a clear understanding of the earliest symptoms in order to determine the point of beginning and therefore an idea of the organs involved. To fix this point in mind I have divided the abdomen into triangles, each triangle representing a viscus.* Generally speaking, the point of maximum pain at the outset will indicate the organ which is the seat of the disease. After some time has elapsed the infection may spread, and with this spread the clinical picture may change.

In the perforative group, in which the important factor is the ensuing infection, the incision must be placed at the site of the lesion, otherwise the infection will be carried to the non-infected regions, thus adding much to the burden the patient must bear. On the other hand, in the thrombotic group we are not dealing with an infection but with a disturbance of the mechanics of the circulation. We may carry the affected region across the abdomen without adding to the burden of the patient.

DISEASES OUTSIDE THE PERITONEAL CAVITY SIMULATING INTRA-ABDOMINAL DISEASES.

Before beginning the discussion of the two groups above enumerated it is necessary to consider those diseases from which abdominal disasters must be differentiated. Confronted by what appears to be an acute

*Hertzler, A. E. The Peritoneum, St. Louis, 1919. C. V. Mosby Company.

surgical disease of the abdomen I always ask myself, "Is the trouble really in the peritoneal cavity or is it an extra-peritoneal disease? If the disease is within the peritoneal cavity, is it one of the surgical disasters or a minor acute abdominal pain?" In the minor group I would include gallstone colic, acute appendicities, tubal abortion and less common affections of like severity. If it belongs to this group, I allow the assistants to work up the case, and look at the evidence later. If the condition is one belonging to the abdominal disasters, it must be solved immediately.

We may first consider the extra-abdominal diseases which may simulate abdominal crises.

THORACIC DISEASE.

Diseases within the chest may produce pain referred to the abdomen, provided the parietal pleura is irritated. This is notably true in children. The distinctive feature is general abdominal pain not distinctly localized and most pronounced along the distribution of the tenth, eleventh and twelfth intercostal nerves. The rigidity is not as pronounced as in peritoneal inflammation. The tenderness is superficial, often most pronounced when a fold of skin is picked up between the thumb and finger. After the confidence of the patient is obtained it is noted that deep pressure does not increase the pain as in peritoneal inflammation. This sign is more easily elicited after a hot wet pack has been placed over the abdomen for half an hour. When the diaphragm is irritated there may be pain in the neck transmitted to the third and fourth cervical nerves by way of the phrenic. These pains are aggravated by deep breathing or by coughing. In pneumonia the leukocyte count is often higher than is ever seen in early peritonitis.

Examination of the lungs early in the course of the disease may disclose only a hyper-resonance, often crepitant rales, and in later cases an area of dullness can be made out. The latter must not be depended on unless the disease is of some days' duration. In adults an important sign is the rapidity of the respiration and the height of the temperature. In children it must be remembered that the height of the temperature is greater in proportion in peritoneal disease than in adults. The most common cause of error is the failure to examine the chest carefully, particularly the posterior portion. In children, fortunately, upper abdominal diseases are exceedingly rare and the chief concern is the possible presence of an appendicitis. The presence of bladder disturbance, even to retention, may be present in appendicitis in children which is not a part of chest diseases. Rectal examination may reveal a resistance near the pelvic border.

It must not be forgotten that thoracic and abdominal disease may coexist. A case in point: An ex-athlete weighing some 230 pounds was taken during the night by excruciating pain in the abdomen located in the mid and right portion. Half a grain of morphin secured only partial relief. The onset of the pain was preceded by a chill. His physician found in him a temperature of 104 and a respiratory rate of 38, the abdomen distended. When I saw him on the second day his respiratory rate was 40, the temperature 104.2°. There was distinct dullness in the lower lobe of the right lung, but without friction rubs. Obviously the patient had pneumonia. The abdomen was distended, there was slight rigidity in the lower rectus and some deep tenderness. Obviously the severe abdominal pain would not be dependent on a pneumonia, most certainly not without a coexisting pleuritis. The severe pain and the slight abdominal signs did indicate a gangrenous appendix. Operation revealed a gangrenous appendix approaching necrosis.

When it is probable that so serious an abdominal lesion exists as a necrotic appendix, a perforation or an obstruction complicating a pneumonia, exploration should be done, in such cases of course under local anesthesia.

CARDAIC DISEASE.

Pericarditis and anginas sometimes produce pain of considerable intensity in the epigastrium and even lower in the abdomen. Usually in angina pectoris there is a history of previous attacks. When a portly old man is seized by an intense pain soon after eating a hearty meal one thinks first of pancreatitis, but if it follows exertion one naturally thinks of angina pectoris, particularly if there is pain down the left or even the right arm. In angina the patient usually is reclining or sitting in a chair when his doctor arrives. The patient with pancreatitis lies down. The face of the anginal patient is pale, not ashen as in pancreatitis. In angina the wild eyes and pale, sunken features gives credence to the patient's expressed fear of death. In most instances the patient will have recovered from his anginal attack spontaneously before the surgeon arrives. If the patient has received morphin the cause of the amelioration of symptoms may not be perfectly clear. Ordinarily, examination of the heart gives evidence of disturbance, but so many men of past middle life have cardiac and vascular changes before they have either an anginal attack or an acute pancreatitis. It is in such cases that the aid of the internist is greatly to be desired.

Sudden decompensation of the heart with distension of the liver is frequently confused with gall-bladder and appendiceal inflammation and sometimes with graver diseases. Palpation of the liver and examination of the heart usually clarifies the situation. The symptoms, particularly the pain, are not severe enough to simulate an abdominal disaster and few would be tempted to operate on a simple appendicitis or gall-bladder colic when there is any doubt as to the condition of the heart. Error here is possible only when the heart is forgotten.

There is even less excuse to confuse a pericarditis with severe abdominal disease. Careful examination of the heart should solve the problem, but when the patient is deeply under the influence of morphin the surgeon may have some anxious moments particularly if everything is all set for operation when the surgeon arrives.

GENITO-URINARY SYSTEM.

Renal stone and hematogenous infections of the kidney are most apt to stimulate serious abdominal diseases. Renal colic in its typical form is fairly characteristic but there are so many variations that a knowledge of the typical picture is of little use in half the cases. Only about half of the cases have the typical pain and tenderness in the kidney region. It may be most noted in the region of the gall-bladder, or over the entire abdomen, or in the lower abdomen only or even on the unaffected side only. Conversely, the pain of gall-stone colic may be felt in the kidney region. I once saw a distinguished surgeon cut down on kidneys three times in one week to find gall-stones instead of a kidney stone. That was before the days of the roentgen-ray and visualization of the gall-bladder of course. With all our refinements it is still possible to be wrong in whole or in part. Blood in the urine is absent in half the kidney stones and is present in many of the disasters within the peritoneal cavity. The error I fear most is the confusion of a gangrenous appendix with a renal colic. A very severe pain which subsides with or without a hypodermic characterizes them both. In both, the abdomen is usually somewhat sensitive to pressure. The roentgen-ray may show a stone, or a rectal examination may show pelvic peritonitis indicating an appendicitis, but a low stone may leave sensitiveness here. After all the evidence is sifted and there is still doubt I am quite willing to remove the appendix and see how it looks.

It may seem ridiculous to mention uremia in this category. I once performed an autopsy upon a woman brought to the hospital with severe epigastic pain, distention and vomiting. The history indicated a long standing disorder of the stomach. The

urine was reported normal but of light specific gravity. The autopsy showed kidneys not larger than walnuts, the smallest kidneys I have ever seen, and viewed in retrospect they grow smaller still. I mention here, with a feeling of pride, that I have never diagnosed a Dietl's crisis. I have studied the kidney and ureter in the laboratory and I am sure it is not possible to so kink the ureter sufficiently to occlude its lumen.

Hematogenous affections of the kidney usually present a stormy beginning. The temperature is usually too high for an intra-abdominal crisis. Deep tenderness in the renal triangle is usually very characteristic. If one remembers that the urine may be normal the first few days in the kidney infection, error is not likely.

Testicular inflammation when associated with inflammation of the lymph gland at the border of the true pelvis, may simulate an intra-abdominal inflammation. Therefore the testicle should always be examined. Prostatitis, particularly acute seminal vesiculitis, may cause severe referred pain. Patients with one of these affections may give wholly misleading histories, particularly if members of their family are present. It is rare that diseases in this region are severe enough to simulate abdominal disasters. The patient may complain vociferously enough but he does not look the part.

INJURIES TO THE SPINE.

In rare cases of injury to the spine or ribs, which involve the spinal nerves, there may be associated abdominal pain and tympany. Fever, leukocytosis and true muscular rigidity are absent and the tympany arises too early to be due to a peritonitis. When associated with traumatism sufficient to produce shock the differentiation from a visceral lesion may be difficult. If the lesion is a pinching one, as being caught between two heavy objects or run over by a heavy vehicle, or kicked in the belly by a Missouri mule, without associated injuries exploration is advisable if there is evidence of shock and an ascending leukocytosis. The exact analysis of the nature of the trauma is of the greatest aid. When in doubt it is best to explore.

DISEASES OF THE NERVOUS SYSTEM.

Tabes not infrequently produces a series of symptoms which suggest severe abdominal disease. Sometimes a history of indefinite pains in the epigastrium associated with a pain between the shoulders suggests ulcer. If on this history severe epigastric pains supervene one may be led to think of a perforating ulcer. Careful examination of the nervous system will make the diagnosis clear, but this requires talent not always available. Usually a superficial examination will save the error. It is recorded that a tabetic may actually have a perforating ulcer.

Lead colic may simulate an abdominal crisis. I once attended a young painter who fell from his ladder writhing with pain in his abdomen. I did not operate on him because the master painter made the diagnosis of lead colic. I recall he rolled about in his lamentations in a manner not imitated by those who have a perforation and the cold beaded brow was not in evidence. Examination of the gums and blood should give evidence of lead poisoning.

MINOR INTRA-PERITONEAL AFFECTIONS.

This group of affections I shall not consider. It includes gall-stone colics, cholecystisis, inflammation of the appendix and the great group of pelvic diseases. They rarely cause great difficulty in diagnosis and they are not emphatically surgical. There is sufficient time to permit examination. Those cases which simulate grave diseases will be considered in connection with the differential diagnosis of the major diseases.

MAJOR INTRA-ABDOMINAL DISEASES.

Perforative Diseases.—As above indicated, these will be considered in two groups, the perforative and the thrombotic. It is important, let it be emphasized, that these be separated because on this is de-

pendent the proper planning for the operation. In perforative diseases it is highly important that the incision be placed over the point of perforation. To place it elsewhere is very apt to be a fatal error. In the thrombotic type exact localization is frequently impossible nor is it important for we are not dealing with an infection and the wide exposure of the peritonial cavity is not attended by any considerable additional danger.

Perforations of the Stomach and Duodenum.—In every language the superlative adjectives have been commandeered to express the intensity of pain associated with perforation in this region. The French apply the word "diabolical". Considered in its historical sense it is about as expressive as any. The words "awful, terrible, unbearable," assume a new meaning when pronounced by patients in the throes of an acute perforation. In a typical case the patient is suddenly seized with intense pain in the epigastrium. The pain at first comes in paroxysms. In the periods of lesser pain the patient lies panting with a look of anxious apprehension on his countenance. "There comes another!" he cries as he writhes in renewed agony. In some cases the patient falls as if shot. The face becomes blanched, the eyes wide, the pupils dilated, and the beads of cold perspiration on the brow aid in depicting the look of terror on his countenance. The pulse is rapid and threadlike, the abdomen is flat and boardlike but not tender to the touch, though the patient wards off the examining fingers fearful that any manipulations will increase his sufferings.

I once opened an abdomen under local anesthesia in this acute stage. An opening in the duodenum came promptly into the operative field as soon as the peritoneum was incised. With the onset of the pain a jet of cloudy fluid spurted from the opening, and the surrounding intestinal coils and the stomach contracted to the most extreme degree. With the temporary relaxation of the spasm the pain partly subsided. Suturing the hole and the covering of it with omentum did not increase the pain.

The signs of inflammation in this early stage are absent. The initial pain would seem therefore to be primarily a spasmodic one, the spasm being induced by the irritation of the peritoneum by the irritating fluid escaping through the perforation. When not operated on in this early stage the fluid continues to escape and trickles down the watershed of the great omentum and colon producing irritation of the peritoneum as it goes. Commonly some of the fluid reaches the pelvis. After some hours the symptoms of peritonitis dominate the field. Rise of temperature begins, the distention and muscular rigidity appear, and if the escaped fluid reaches the pelvis signs of irritation of this region may be marked. The appearance now is that of a peritonitis, and when the patient is first seen at this time the problem is to determine the cause of the peritonitis. This can be determined only by the proper evaluation of the early symptoms.

The history should make the diagnosis easy. There are two difficulties that may be encountered. Not all cases begin in this acute manner. Stomach perforations particularly may be partly protected by adhesions, making the onset less dramatic. The physician may promptly administer a hypodermic of morphin, and as the right abdominal pain advances he diagnoses appendicitis, and in the history given the surgeon the degree of the epigastric pain may be minimized to fit the epigastric pain generally believed characteristic of beginning appendicitis. In such cases it is necessary to break through the professional barrier, and hear the patient's or a friend's account of the first symptoms.

Examination shows muscular rigidity extending from the epigastrium to the pelvis involving the whole right half of the abdomen, and if the pelvis is reached by the exudate, the lower part of the left rectus as well may be rigid, thus mimicing

a primary pelvic disease. An acutely inflammed appendix lying lateral to the colon and approaching the liver may give rigidity of the whole right side of the abdomen, but the general course is not as stormy as in an acute perforation. It may closely simulate a slow leak.

Intermittent perforation may present a confusing picture. Not infrequently the impending perforation may be so protected by adhesions so that only a small amount of fluid escapes. The initial pain in such cases may be that of a local inflammation only, a perigastritis which it is in fact. The small amount of fluid escaping may find its way to the pelvis, and there set up an inflammation which may appear to be the major lesion. I once mistook such a condition for an ovarian cyst with a twisted pedicle, so big and round was the inflammatory conglomerate produced. More commonly the inflammation simulates an appendicitis. When operating in such a case the surgeon must know whether or not the local changes found in and about the appendix explain the symptomatology produced. In my pathology days I did several autopsies after the surgeon had removed the appendix never suspecting the presence of a perforation higher up.

The perforation may be so walled off as to prevent all but a local abscess. The large amount of inflammatory exudate may so deform the stomach that a malignancy is diagnosed. The process may be so slow that neither a rise of temperature nor a leukocytosis may be detected even after the process has continued for some weeks. In such a case it is not a perforation, thanks to the protective action of the surrounding peritoneum.

Diagnosis with the Abdomen Open.—When an abdomen is incised through the right rectus the pyloric region is exposed. Usually an exudate is at once encountered, and usually the site of perforation comes readily into view. In the very rare perforations posteriorly the lesser peritoneal cavity is the recipient of the stomach contents. If this is the case one must consider a pancreatitis. An examination of the omentum will show the absence of fat necrosis, and there is no evidence of hemorrhagic infiltration of the pancreas. Sometimes when the fluid does not appear at once in the region of the pylorus an examination of Morris' pouch and the watershed of the great omentom may show the exudate. This is particularly true when an ulcer has slowly perforated and has become closed by secondary adhesions. Should the operator have made the error of assuming an appendicitis existed, the exposure of the appendix will show an organ in which there is insufficient reaction to account for the severity of the symptoms. Only a gangrenous appendix can produce the acute pain that can compare with a perforation of an ulcer. Often the exudate so irritates the colon and appendix that they are reddened and increased in thickness. Such an appendix does not produce a pain that can simulate an acute perforation.

Perforation of the Gall-bladder.—The differentiation between a gall-bladder colic and the beginning of a perforation may not be so easy. Usually the perforation comes on after a cholecystitis has existed for a number of days. If the site of impending perforation is partly walled off before the actual perforation begins the process may be gradual, and it is only the extension of the pain downward along the colon that indicates a perforation. It was my opinion until recently that when the inflammation extends as far as the pelvis a perforation has most surely taken place. But it is not so. The inflammatory exudate, non-infective from an intact but thrombotic gall-bladder, may reach the cul-de-sac and produce a pronounced irritation, without there being a perforation present. How then shall we differentiate? I do not know. This is one of the conditions in which the fates design to down the surgeon, and he is helpless and must procede with an uncertain diagnosis. When there is a sudden pain or a marked exacerbation of the pain in the hepatic region, and there is

evidence of an inflammation extending downward to the pelvis, the surgeon had best proceed to operation.

When a necrotic gall-bladder gives way there is usually a surcease from the colicky pains for some hours and the patient feels relieved until a generalized peritonitis begins. When the wall suddenly gives way with a rapid extension of peritonitis it may or may not be accompanied by evidence of shock. Such a sudden perforation of the gall-bladder is more rare. In such instances I see no way in which a differentiation can be made from a duodenal perforation. A case in point is that of a man who had a perforation while in my hospital visiting a brother who had a cholecystectomy performed a few days before. As he was leaving the hospital he dropped on the steps because of an excruciating pain in the right upper abdomen. An unqualified diagnosis of a perforation of a hollow viscus was made and the duodenum was suspected. He was taken at once to the operating room and a right rectus incision made. A hole near the fundus of the gall-gladder was found from which purulent bile and stones had already escaped. There was no inflammation, not even a hyperemia of the peritoneum. The irritation caused by the escaping contents must have been the cause of the extreme pain, since inflammation had not yet begun. In this case gangrene of the gall-bladder had not taken place. The accumulated gall-bladder contents had burst the friable necrotic wall.

Diagnosis with the Abdomen Open.—Usually the presence of bile or a greenish purulent fluid appears as soon as the abdomen is opened. Sometimes, when the perforation takes place through one or more openings and the exudate is cloudy, one may think first of a duodenal perforation. However, in such cases the gall-bladder is thickened and there are usually new or old adhesions to the gall-bladder. A careful inspection at the point of attachment of these adhesions will show the small openings through which the gall-bladder contents are escaping. It is a good rule whenever there is any doubt as to the cause of an abdominal crisis to look for fat necrosis, for not infrequently pancreatic disease follows or is associated with pronounced gall-bladder affections.

Appendicitis.—I wish to include in this category only the gangrenous and perforative type. The average case of acute appendicitis cannot be regarded as an abdominal emergency.

My memory goes back to the days when operation was not the rule in acute appendicitis and the mortality was not great. Appendectomy is generally regarded as the proper field for the beginner. This is true for the mythical chronic type The operation for acute appendicitis in my judgment taxes the resources of the surgeon more than any other common lesion within the abdomen, and unless a skilled surgeon is at hand the patient is better off under the protecting wing of his family doctor.

Gangrenous appendicitis is another matter. Here, unless relieved by operation, the patient will surely die. This type of disease is characterized by sudden very severe abdominal pain generally diffuse at the beginning. Let it be repeated that the one important diagnostic point is the very severe pain at the outset of the disease. After a period the pain subsides and there is but little reaction in the region of the appendix. The temperature may be but little elevated, and the pulse but little increased in rate. There is usually slight discomfort in the appendiceal region but no actual inflammatory reaction. The reason for the subsidence of the symptoms is that owing to the occlusion of the appendiceal artery the whole appendix dies, and dead tissues transmit no pain. It is not until the necrotic tissue separates and the contents escape that generalized peritonitis begins. The dead appendix does not excite the surrounding peritoneum to preparatory reaction, and the gut contents is poured into the unprotected peritoneal

cavity. Hence the almost universally fatal results.

In the beginning this type of appendicitis really belongs to the thrombotic type, but because perforation will sooner or later occur it is included here. Because of the death of tissue this type closely resembles intestinal obstruction or mesenteric thrombosis in its early manifestations. The subsidence of the pain after ten or twelve hours, the absence of tympany, and certain limited local reaction, suggests a gangrenous appendix.

Diagnosis with the Abdomen Open.—When the incision reaches the preperitoneal tissue there may be some edema. If this is most pronounced in the lower end of the wound the diagnosis is all but confirmed. If, however, the reverse is true, one thinks at once of the possibility that the irritation is coming from a perforation above. After the abdomen is opened the fluid will be bloody in most instances, which at once excludes perforation of the stomach or gall-bladder. The appendix is sought and will be found to be big and black. If the appendix is not the seat of gangrene the bloody fluid spells intestinal obstruction, mesenteric thrombosis or some other disease disturbance of the circulation, and the surgeon must at once search toward the median line. If on the other hand the exudate is floculent, milky or contains food particles the incision must at once be extended upward.

Perforation of Typhoid Ulcers.—In the course of a typhoid fever if there is sudden pain, particularly to the right and below the umbilicus, perforation must be suspected. If the leukocyte count before the advent of pain is known, shows a slight rise, particularly in the number of the polymorphs, the probability of a perforation is established. Local tenderness likewise adds additional evidence. The condition of the patient may be such that the primary pain is not noted, and the local tenderness and increased tympany may be the first evidence of perforation. Operation on suspicion is justified. Fortunately these patients lend themselves particularly well to exploration under local anesthesia. This makes the operation practically innocuous, and the surgeon need not hesitate to proceed.

Diagnosis with the Abdomen Open.—A low right rectus incision brings one best to the seat of trouble. If an incision four or more inches long is made, after a thorough anesthetization with novocain, one can lift up the abdominal wall and view a considerable area of intestines without manipulating them. Usually there is some attempt at adhesion which guides one to the area of trouble. If not, one needs but explore the terminal yard of small gut to find the seat of perforation.

Perforating Malignancies.—Sudden pain with evidence of inflammation is in evidence. To associate it with malignancy is dependent on the ability to diagnosticate a pre-existent malignancy. Progressive loss of weight antedating the beginning of the pain, and the general appearance of the patient, are the chief guiding signs. Carcinomas of the stomach and of the sigmoid are the most apt to perforate, and the initial pain in these regions may furnish the first suggestion as to the nature of the trouble.

Diagnosis with the Abdomen Open.—An area of infection is encountered, and with it a thickened gut. The question to be decided is whether the thickening is due to a neoplasm or to an inflammation. This condition is usually found about the sigmoid. Then it is a question of diverticulities or carcinoma. In carcinoma there is thickening of the gut above a constriction or a tumor.

Perforation of Pelvic Tumors.—A hemorrhagic myoma bursting through its capsule, or a rupture of the walls of pseudomucinous cyst produces sudden pain and shock. Usually a bimanual examination reveals a pelvic tumor and the added symptoms discloses a rupture or a twisted pedicle.

Diagnosis with the Abdomen Open.—In a bursted myoma bloody fluid together with a myoma will be found. If a cyst has bursted the intestines will be found floating in a mass of pseudomucin. A tumor with a twisted pedicle will appear as a blue-black tumor often surrounded by a hemorrhagic exudate.

THROMBOTIC DISEASES.

In the preceding group of diseases the fundamental factor was the escape of the fluid contents of an organ into the unprotected peritoneal cavity through an artificial opening. It is a problem of inflammation of the peritoneum. In the group now to be considered the fundamental factor is the death of tissue. Inflammation enters the problem late if at all. Therefore the evidence in these is to be found in pain and general tenderness characteristic of the peritonitis following perforation. In all of this group there is disturbance in the circulation and the extravasation of blood. This hypothesis rests on the fact that this is the only constant factor in these diseases. It simulates conditions in which thrombosis and extravasation of blood, particularly the later are present. In lesions within the abdomen in which thrombosis and extravasation do not take place the symptomatology characterizing this group is absent.

Intestinal Obstruction. — The primary symptom in acute intestinal obstruction is to be found in the injury of the gut wall, and only secondarily to the interference with the fecal circulation. This fact is often demonstrated clinically, for instance, in intestinal obstruction by a foreign body just large enough to occlude the lumen. There are intermittent cramping pains but no vomiting and no constitutional reaction. I have observed this a number of instances in obstruction from gall-stones and once by a conglomerate of paw-paw seeds. This can be confirmed by animal experimentation. When a gut is simply compressed sufficiently to occlude the lumen by means of a lead plate, no symptoms follow immediately. Later on, peristalsis becomes more active, as one can readily observe under the fluoroscope. Following this come distention and evident discomfort. If, on the other hand, the plates are made to compress the gut sufficiently to occlude the circulation, increased peristalisis and evidence of discomfort begin at once.

The clinical picture of an acute intestinal obstruction due to injury to the gut, as by twisting, or pinching, is that of a sudden severe pain accompanied by general constitutional disturbance. The pain is spasmodic in character, and there is evidence of increased peristalsis. This peristalsis is the effort of the bowel to free itself from its predicament, and not due to the disturbance of the fecal circulation. This is seen clinically when but a part of the wall is pinched, as in a Richter's hernia. The bowel is not occluded at all, but there is just as much fuss in the belly as if there were a complete occlusion. The vomiting is reflex, and occurs if there is anything in the stomach to vomit or not. The vomiting of obstruction on the other hand is due to the regurgitation of the gut contents as one can readily see and smell. The violence of the pain is in general proportional to the degree and extent of gut involved.

Therefore while the initial pain in perforation and obstruction may be alike and both accompanied by increased peristalsis and vomiting, the perforation is followed at once by evidence of peritoneal inflammation. Intestinal obstruction on the contrary is attended by increasing distention, but not by muscular rigidity as in inflammation. True enough if the injured gut can come in contact with the parietal peritoneum there will be a reaction to the circulation in the parietal peritoneum and an associated tenderness, but it lacks the muscular rigidity of peritonitis. Furthermore, perforation usually takes place in certain areas as above enumerated. In intestinal obstruction, on the other hand, unless some antecedent condition, as old scars or tumor, is present to form a clue, one has no defi-

nite guide as to the location of the trouble. The statement that early vomiting indicates an obstruction high up, while late vomiting indicates a low lesion, is seldom of real use in a concrete case. More often it is more of an indicator of tissue injury rather than of location.

After a time both temperature and pulse may become elevated. Blood count and temperature is that of blood extravasation, about 12,000 leukocytes, with a temperature of less than 102°. This, it will be noted, is about the disturbance one sees in tubal abortions, ruptures of viscera, and in general following extensive operations. The pulse rate, too, is generally low, but may be high if there is sufficient disturbance to produce a shock. When these signs begin one may be sure that the gut wall is suffering injury from the obstructing agent.

That the pain is due to the injured tissue and not to the distention is indicated by the fact that when the gut dies at the point of obstruction the pain ceases and the patient is free from pain, though the patient is still distended and vomits incessently. This cessation of pain with the advent of necrosis often leads the patient to believe he is improving. Once, in consultation, in such a condition in reply to the statement of the physician that the patient was better my assistant, the late lamented Wuttke, gave vent to the following axiom; "A patient with obstruction who feels better without passing anything from his bowels is worse; gangrene has begun."

I want particularly to emphasize the importance of the anatomic changes in the gut wall because in the present intensive studies in physical chemistry investigators are prone to forget that obvious changes are taking place in the gut wall. This is particularly important to the operating surgeon, who with tissue in hand reads in large measure the past and future of his patient.

Diagnosis with the Abdomen Open.—In intestinal obstruction, unless there is some evidence to warrant a presumptive topographic diagnosis, it is best to make a midline incision. Usually distended intestines protrude as the incision is made. If serious exudate greets the operator he may be hopeful that gangrene has not developed. If bloody fluid escapes he must expect to find dead gut. In the first event he may look for a constricting band or an early twist. Usually, if the distended gut is followed the point of constriction will be found or conversely, if collapsed gut is followed until it meets the distended gut the lesion will be found. This alone is not sufficient. A definite organic constriction must be found. Sometimes a part of the gut is collapsed and a part distended without there being any constriction at all. If there is a bloody exudate, injured gut must be found or else the entire gut searched. If no definite construction is found other lesions must be looked for. In distention from other causes it is not unusual to find a part of the guet distended and a part collapsed without there being any constriction.

The inexperienced operator is very apt to diagnosticate a volvulus. Unless there is evidence of local circulatory disturbance a volvulus cannot be diagnosticated. This most assuredly is true if there is constitutional disturbance. Failing to find evidence of constriction, other causes capable of producing the symptoms presented must be sought. Fat necrosis particularly must be sought. I have seen repeatedly at autopsy cases in which a volvulus had been diagnosticated and the real lesion overlooked. The most common error was an unrecognized pancreatitis. The next most common was some heart lesion. Unfortunately pathologists commonly are empolyed on a salary and they are not always in a position to tell all they know.

Acute Pancreatitis. — Hemorrhage into the pancreas begins with excruciating pain in the epigastrium. It may extend straight through to the back and may even be felt most intensely there. There is collapse, vomiting, and extremely rapid

pulse. There is early abdominal distention without notable local tenderness. The features early become sunken and the complexion ashy.

The subjects are usually well fed males of middle life or beyond, and the attack comes most often after a full meal has been eaten. Not uncommonly acute pancreatitis attacks patients known to be suffering from gall-stones. The question then arises whether the attack is one of gall-stones or not. A succession of milder degrees of pancreatic disease may precede the serious attack. If these have been diagnosticated as gall-bladder colics one is apt in a serious attack to think first of the gall-bladder trouble, particularly of a ruptured one. Usually a glance at the patient convinces one that the attack is too acute and too severe to be from gall-bladder spasm, but the differentiation from pancreatitis and perforation of the gall-bladder may be quite impossible. The pain in ruptured gall-bladder is in the hepatic triangle, that of pancreatitis in the epigastrium, and when it is referred to the back it is exactly in the center of the back, the gall-bladder disease to the right shoulder. Intestinal obstruction often is diagnosticated in pancreatitis. The collapse, very rapid pulse, the location of pain and the color of the face is not that of obstruction. Mesenteric thrombosis most closely stimulates pancreatitis in suddenness of onset, but there are no back pains and the ashen color is lacking and the patient younger. Distinguished men who die of "acute indigestion" after a banquet usually are victims of acute pancreatitis.

Diagnosis With the Abdomen Open.—When pancreatitis is diagnosticated one looks first for bloody exudate, then fat necrosis in the great omentum or mesentery. Fat necrosis is one of the most characteristic lesions found in the abdomen and is the one most commonly overlooked or looked at and not seen. The whitish gray spots set in the yellow fat of the omentum or mesentery is as if a hole had been punched out and filled with caseous material.* Not finding either or both, the pancreas is palpated. If found normal, the gall-bladder is examined. If found negative, search must be made for intestinal obstruction If this is negative, the region of the appendix is approached, and if a lesion is found here a new incision must be made. Conversely, when operating for other acute abdominal lesions fat necrosis should always be sought for if there is any question as to the cause of the symptoms.

Thrombosis and Embolism of the Mesenteric Vessels.—Any condition which occludes a mesenteric vessel of any magnitude produces a disturbance of the blood supply of the gut wall resulting in anemic necrosis or hemorrhagic infarction. Hence the symptomatology is similar to that in intestinal obstruction, though the lumen of the gut is not narrowed.

Pain is nearly always the introductory symptom. It is sudden in onset, diffuse in distribution, constant and dull in character, but there may be colicky exacerbations in the beginning. In some cases the pain is gradual in onset, particularly in those cases which are superimposed on inflammatory conditions resulting from some previous infection. One can hypothecate in such cases the gradual occlusion of the vessel by a thrombotic mass with a good deal of confidence. Local symptoms follow when the parietal peritoneum becomes irritated by the distressed gut.

Vomiting is common, and when the vomitus contains blood it has diagnostic significance. Diarrhea is present in the majority of cases, generally bloody in character, and when taken in conjunction with the initial symptoms above detailed, warrants a presumptive diagnosis. This sign is particularly valuable in superimposed cases, say coming on some days after operation for acute suppurating appendicitis. The initial symptoms are apt to be ascribed to acute intestinal obstruction associated with the operation and the

*The Peritoneum, St. Louis, C. V. Mosby Co., 1919, Vol. II, Fig. 213.

drainage introduced. Bloody vomiting or bloody stool turns the attention to the mesentery. Distention and tenderness are associated in variable degrees but bear nothing distinctive.

Stress is placed sometimes in the search for a primary focus for an embolic process. In none of my cases has there been a cardiac lesion.

Diagnosis With the Abdomen Open.—A bloody exudate is almost sure to greet the operator. The affected gut when found may feel like a garden hose, so firm are the walls. When seen within a few hours after the onset this thickening of the gut walls may be absent and the blue gut walls the only thing distinctive. Sometimes this is so little marked as not to be noticed. The mesenteric vessels must be examined and can usually be demonstrated as being thrombotic.

Torsion of the Omentum.—The majority of cases of torsion of the omentum are associated with large inguinal hernias. When a patient so encumbered has gradually increasing pain and swelling in his hernial sack with increased resistance in the lower abdomen extending upward from the inguinal region, the diagnosis is fairly easy. However the onset may be sudden. One of my patients dropped in his tracks while walking along the street and had to be transported to the hospital by a passer-by. Another who long had an irreducible inguinal hernia was seized with severe pain as he stepped from a ladder in his dry-goods store. The differentiation between torsion of the omentum and strangulated irreducible omental hernia is dependent on the fact that in strangulated hernia the induration of the abdominal wall does not extend much above Poupart's ligament, while in torsion of the omentum it extends up as high as the umbilicus.

In a minority of cases the twist in the omentum occurs in the absence of a hernia. The pain is as severe as in the preceding affections. In such cases the only guiding evidence is found in the fact that corpulent individuals are most commonly affected. In my single case the back pains and rapid pulse of pancreatitis were absent but I diagnosticated pancreatitis just the same. The general symptoms are severe pain widely distributed not to be distinguished from intestinal obstruction or mesenteric thrombosis.

Diagnosis with the Abdomen Open.—Unless the patient is exceedingly corpulent a mass can be felt once the patient is anesthetized. Bloody fluid is always present. A hard black tumor is readily made out, which when delivered can readily be made out as belonging to the omentum. When a hernia is present the exploration of the sac shows the omentum to be black, and when delivered shows torsion to be the cause of the necrosis. Sometimes in a hemorrhage into a myoma, to which the omentum had previously become attached, the huge omental vessels may suggest a torsion but by following the omentum downward the differentiation becomes easy. Besides the surgeon should know of the presence of the myoma before operation which should suggest the correct diagnosis.

Summary.—Nowhere in medicine is a working knowledge of the pathology of the living so vital as to the surgeon when confronted by the major lesions within the peritoneal cavity. Clinical diagnoses are never certain and the surgeon must be able to orientiate himself quickly and certainly after the abdomen is open. Error at this point is far more disastrous than a wrong diagnosis before the operation. It is of vital importance to differentiate between an infection and one in which infection does not play a part. Thus orientiated the skilled surgeon can correct minor errors in diagnosis without detriment to the patient.

CONCLUSIONS.

1. Abdominal crisis must be distinguished from extra-abdominal affections and milder intra-peritoneal affections.

2. An effort should be made to distinguish between perforations of hollow viscera and conditions attended by disturbances in the circulation.

3. The best clinical observation possible must be supplemented by observations made after the abdomen is open lest a minor lesion be mistaken for the major one.

DISCUSSION.

Dr. Urban Maes (New Orleans): It is my good fortune to have read Dr. Hertzler's complete paper, which he has touched upon only briefly in his remarks, and I have no hesitancy in saying that I have never encountered a more accurate or more comprehensive discussion of the diagnosis and management af acute abdominal conditions. Moreover, he speaks with an authority which few of us dare claim, for he has co-ordinated all of his processes; that is, he has traced his cases through diagnosis, operation and final laboratory study. It is the last step, I need not point out to you, which makes the analysis of real value.

In the management of acute abdominal conditions it is almost axiomatic that the more accurate the diagnosis, the better are the end results. Most of these patients are extremely ill and can endure only a minimum of shock, which means, in turn, a minimum of manipulation and of anesthesia, a result which can best be secured by a correct pre-operative diagnosis, not an indefinite one or one made to fit the treatment.

To secure this happy result Dr. Hertzler has outlined certain definite steps. First, the patient's previous history is essential, not only a most careful account of the onset of the present attack and a detailed study of the clinical symptoms, but also an investigation into his past illnesses and general health. Second, there must be a painstaking physical examination which will localize externally the area of greatest inflammation, as evidenced by the chief symptoms of pain or tenderness, and rigidity, and will further differentiate it into upper or lower abdominal pathology. Finally, considering together the evidence presented by the history and the physical examination, the actual diagnosis is made, the systematic elimination of possible diseases being a helpful if mechanical step in the process.

The correct placing of the incision naturally depends upon a correct preliminary diagnosis, and, once the abdomen is opened, confirmation of it should promptly be sought by a search for the area of greatest inflammation, within which the primary pathology will almost invariably be found. Routine attention to this apparently simple point will mean the elimination of promiscuous and unnecessary surgery. How many harmless appendices, to take a most obvious illustration, have been removed before the true pathology was located elsewhere.

I agree with Dr. Hertzler, indeed I have long believed and taught, that all of the great abdominal catastrophes can be divided into two groups, the perforating type, and the vascular, or, as he puts it, the thrombotic type. Usually a tentative diagnosis of this sort can be made before operation, and generall it is revealed immediately after the peritoneum is opened, by the character of the fluid present. Invariably glairy fluid with a few flocculent particles means a perforating lesion, while bloody fluid means a gangrenous lesion. I might add, however, that thrombosis of the renal vessels, which Dr. Hertzler has mentioned, is one of the most difficult diagnostic problems of abdominal surgery, and particularly when it appears in children it may lead to considerable confusion before the true pathology is established.

Dr. Waldemar R. Metz (New Orleans): Dr. Hertzler has brought before us this morning a surgical subject of the very first importance. I, like Dr. Maes, had the pleasure of reading his paper before he arrived here and I really regret that he did not stress more the valuable points and suggestions therein contained.

The acute abdomen is, of course, important to the surgeon, but it is likewise equally important to the general practitioner who, perhaps, sees these cases first, and upon early diagnosis depends in no small measure the best operative results. The problems of the acute abdomen, both as to diagnosis and surgical approach, are manifold. They are frequently most complex and, when seen late, almost impossible to battle. Surgical judgment is perhaps the greatest asset that can be accorded to any surgeon, and there is probably no place in the whole of general surgery where its application is more important, its exercise so imperative as in these acute abdominal conditions. I think it was Galen who said: "Experience is fallacious and judgment difficult," and this well applies to the acute abdomen.

The abdomen is a large cavity, its contents are numerous and they are closely related both by anatomical disposition and by physiological function. The abdomen is peculiar in that its disease is usually deep-seated, far removed from our usual methods of diagnosis, such as inspection and auscultation, and even percussion has a limited field unless there is an enlargement of some organ or free fluid is present. Therefore the diagnosis must be made by the palpating

finger, or by a thorough, comprehensive, subjective history alone. The diagnostic tripod of pain, vomiting and muscular rigidity may stand on all three legs, or only on one or two, so that we must summon accessory aid in coming to a conclusion. This aid is the laboratory and through blood chemistry and other tests we are helped, the laboratory findings often backing up our surgical judgment in what course to pursue. There is a growing tendency to stress the laboratory to the detriment of clinical findings and physical examination; it is the shifting of clincal responsibility to the microscope and it is calculated to undermine our diagnostic acumen. How often acute appendicitis gives only a slight leukocytosis. And again I remember cases where the leukocyte count is very high and the operator removes a normal appendix. A well-trained, well-educated palpatory sense and an intelligent investigative subjective history remain the sheet anchors in early diagnosis, and early diagnosis is the avenue to surgical success in acute abdominal conditions. It is the avenue to low mortality and to a lessened morbidity.

I hope Dr. Hertzler, in his final remarks, will touch more upon the detailed portion of his paper, as it is most instructive and interesting. If he does not, I commend it to you when the paper is published.

Dr. D. I. Hirsch (Monroe, La.): The classification of the peritoneal and non-peritoneal conditions of the abdomen brings back a classification in the study of intestinal obstruction some years ago. I have observed simple obstruction of the intestines without acute symptoms for twenty-four to forty-eight hours after signs of obstructions. In classifying intestinal obstruction I use the term strangulation in order to avoid confusion with the condition of thrombosis of the mesenteric vessels.

Another point with reference to the appendix. Dr. Hertzler says he would rather keep his than take a chance with any surgeon. I understand that the mortality in appendicitis has not lessened in twenty years. May I ask Dr. Hertzler which ones to take out and which ones to leave in?

Dr. Arthur E. Hertzler (closing): In answer to Dr. Hirsch's question first. I will say that if the patient has the services of a good surgeon like you and I, all of them should be operated on. I would certainly qualify that in the late peritonitis cases where the patient looks like a balloon and is in an apparently hopeless condition. To such cases it is best to leave them alone because the distended intestines are doing a good job of walling off and if you open the abdomen you increase the rate of absorption.

The question of the non-peritoneal type, I rather like the terms strangulation and vascular disturbance mentioned by Dr. Maes. I am also going to hitch those up with my thrombotic scheme, but I am going to keep my pet. The point is well taken; you have the pains before the thrombosis, you have vascular disturbance which causes exudation.

HERNIA OF OVARY AND FALLOPIAN TUBE.*

ISIDORE COHN, M. D.,†

NEW ORLEANS.

The object of this paper is to place on record a case of an inguinal hernia in a female child six months of age.

The features of the case which prompt placing it on record are: (1) the age of the patient; (2) the content of the sac; (3) and the diagnosis.

The following is a brief account of the case with the operative findings:

April 14, 1925. Baby G., age six months. Diagnosis: Incarcerated inguinal hernia. Final diagnosis: Strangulated inguinal hernia, right ovary and tube with twisted pedicle in sac.

Present Illness: The baby's bowels have not acted for 36 hours and her temperature has been going up steadily during this time. A mass has appeared in the right groin since the onset. The baby seems to be suffering a great deal especially when this mass is touched. The onset of trouble has not been preceded by any prodimata as far as the mother knows.

Past history: The child was full time, normal delivery. Dr. Maud Loeber, who kindly referred the patient, told me that the child had been in good health prior to the present time. The mother had trouble with her breasts, and the baby was weaned at about three months.

Physical Examination: Well developed and well nourished baby, apparently suffering quite a bit of pain. The general appearance is excellent. The child is very fat, especially about the limbs. The head and neck are apparently negative. No teeth. The gums are normal. The lungs are clear, there being no rales heard. The heart rate

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is rapid but no murmur can be detected. The abdomen is distended and tender to the touch. The slightest palpation causes the baby to cry. No organs can be felt. In the right inguinal region there is a mass about the size of a pigeon's egg which is slightly fluctuant. There is no impulse imparted to the finger. There is an apparent neck of the tumor at the internal ring. The mass is movable slightly in all directions over the deeper structures. The labia on the right side is red and swollen. The skin is edematous, but not adherent to the mass. Rectal examination reveals nothing of note. The extremities are negative, but are very fat.

Operative record: An incision about 3½ inches long was made over the mass. As soon as a large amount of fat was divided, we saw a small globular mass about one inch in diameter which had a thin wall and presented a dark bluish appearance. This was dissected away from the surrounding tissue so as entirely to isolate the mass. The constricting band at the internal ring was incised and the aponeurosis of the external oblique was incised for about one inch. Immediately there was a retraction of the muscles and then the sac was opened. We saw a black solid organ which seemed to be pedunculated, the pedicle being twisted like a corkscrew. To the left of the mass there was an organ which we were not able to identify for the moment. After examination of the solid organ which was outside of the cavity, we realized that it was the right ovary and tube with a twisted pedicle, the pedicle being twisted about 5-6 times on itself. The ovary and tube were then removed by ligating the infundibulo pelvic ligament and ligating at the uterine cornu. After this had been done, however, the uterus did not return to the abdomen and it was found that the round ligament was very short and adherent to the sac. It was necessary therefore to cut this between ligatures. The uterus was then dropped back into the caviety without further difficulty. The hernial opening into the peritoneum was closed and two sutures approximated the transversalis fascia. The further repair of the abdominal wall was done after the Bassini method.

Progress record:

4/14/25. Admitted this afternoon and operated upon immediately by Dr. Cohn.

4/15/25. Temperature 102. Bowels acted. Some swelling of vulva.

4/17/25. Abdomen soft. Bowels acting. No nausea nor vomiting since operation. No sedative for pain since first night. The edema of the right labia has practically disappeared.

4/19/25. Wound dry. Dressing changed. Allowed to go home.

Laboratory findings: Specimen: Hernia, tube and ovary. Tube measures 3 cm. by ½ cm. by 1 cm. Deep red in color and flabby in consistency. Course is straight. Fimbriated end is found patent. Ovary measures 3 cm. by 1½ cm. by 1 cm. Outer surface is smooth and glistening, deep red in color, and flabby in consistency. Incision, which offers small amount of resistance to the knife, shows the cut surface which is deep purple in color with light pink in color. Attached to the tissue between the tube and ovary is a small solid structure tubal in character measuring 4 cm. in length ½ cm. in width. Outer surface is covered by peritoneum and is flabby in consistency, deep red in color. Diagnosis: Extensive hemorrhage in ovary, otherwise negative.

Inguinal hernias in females are rare when compared to the same conditions in males.

In 1912 Wm. B. Coley and J. P. Hoguet reviewed 8589 hernias of all types operated either by them or under their supervision at the Hospital for Ruptured and Crippled, and other institutions in New York. Of 6090 of these cases there were 369 in adult females and 690 in female choldren. Of the 2037 remaining inguinal hernia cases there were 182 in females.

In the Coley series the ovary and tube were found in nine cases; tube alone in four; and the ovary alone in four cases.

In a personal communication, under date of August 5th, 1925, Dr. Coley stated "that the only case of a strangulated hernia in which a strangulated fallopian tube was found in the right femoral sac was in a woman 30 years of age."

He further states "I have never seen a case of ovary and tube in a strangulated hernia in a child as young as your patient. I believe there are few such cases reported in the literature, and I think you ought, by all means, to publish your case."

At Touro Infirmary during a three years period, 1924 to 1926 inclusive, there were 671 hernias of all varieties operated. 144 were females and of these only three were under two years of age.

There were four hernias in which the contents of the sac are recorded to have been ovary and tube.

The patient, 6 months, author's case, contained the ovary and tube strangulated by a twisted pedicle. The ovary was hemorrhagic.

One case 3½ years of age, another 25 years, and the fourth 34 years.

The contents of the sac in the majority of oblique inguinal hernias, as is generally known, is the omentum, intestines and in a relatively small proportion even in a large series, do we find a genital organ.

In 1912, Dr. Paul Heineck reviewed the literature of hernias of ovary and fallopian tube in two extensive articles. He found forty-eight cases of inguinal hernia in individuals under five months in which the sacs contained genital organs.

Hernial sacs containing tube and ovary are more frequent than either tube or ovary alone.

Since Heineck's review of the literature the following cases have been found:

The youngest case on record which was operated on was eleven weeks.

Cuff (1918) reported the following case in detail:

"A child, aged 12 weeks, was brought to the Tynemouth Jubilee Infirmary, North Shields, on account of a painful swelling in the right groin which it was stated, had been present since birth, and increased considerably in size on coughing or other exertion. A small elastic swelling about the size of a pigeon's egg was noted in the right inguinal region; it was dull on percussion, expansile and reducible. A diagnosis of hydrocele of the canal of Nuck was made."

"A small incision, parallel to Poupart's ligament, was made, and the sac, which was firmly adherent to the round ligament near its fundus, opened. It contained a small quantity of pale straw-colored fluid; the right tube and ovary were adherent just beyond the neck. There were several small petechial hemorrhages. The adhesions were separated by gauge dissection and the ovary and tube replaced. The sac was ligated with catgut and removed, and the wound closed in the usual manner. The child was allowed to go home with its mother after the operation, a collodion dressing being applied. Recovery was uninterrupted."

George Mueller, 1918, reported a child five months of age with an acute strangulated tube and ovary on the left side. A salpingo-oophorectomy was done. Five weeks later a hernia occurred on the right side containing the tube and ovary. He was able to replace the contents within the abdomen.

In 1920 Ludington operated on the following patient:

"V. S., female child aged nineteen months. About a month after birth swelling was first noticed by the mother over the left external inguinal ring. This swelling remained constant in size, and did not disappear when the child was asleep. No truss was applied."

"The child first came under the observation of Dr. Smirnow, who failed in several attempts to reduce the sac. He noted the hard nodular character of the mass and inclined to the diagnosis of a cyst under tension. The examination showed a symmetrical swelling over the external inguinal ring the size of a silver dollar, not adherent to the superficial tissues and freely movable on the deep structures. It was dull to percussion and gave only a suggestion of an impulse when the child cried vigorously. To palpation, the mass under the skin was hard and nodular, apparently not very sensitive, and refused to yield to taxis. In spite of the history of irreducibility and the absence of a history of vomiting, I felt that it was probably an omental hernia.

"At operation the sac was found to contain the uterus, both tubes, both ovaries, the broad ligament, and a small knuckle of gut presented itself during the procedure. The presence of the ovaries lying close to the uterus gave the nodular sensation which was found on examination. The deep epigastric artery was seen on the mesial side of the sac, which should therefore be classed as an indirect hernia. The sac was intimately adherent to the cremaster fibres and infundibleform fibres. I believe the hernia was congenital. The operation was a routine herniotomy. The convalescence was uneventful."

Eustace and McNealy record a case of strangulated inguinal hernia of the ovary and the tube in an infant of 6 months. The right labium majus was red, swollen, tender, and pitted on pressure. There was no fluctuation or pulsation in the mass. At operation a torsion of the tube and ovary of

180 degrees was found. The adnexa were resected and the child made an uneventful recovery.

In 1923 Hewitt reviewed the literature and he was able to add 10 cases to those which had been reported by Heineck. The total number of cases which Hewitt could find in the literature amounted to 411.

In 1924 Simmons reported "a female child, aged three, whose mother stated that a small lump had appeared and persisted in the groin for about a year. On examination a movable oval tumor, about half an inch in length and a quarter of an inch in width, was felt at about the position of the right external ring. It rolled easily under the skin, but could not be moved over the deep structures. There appeared to be a slight impulse on crying.

"The child was admitted and the inguinal canal explored by Mr. A. J. R. O'Brien. A hernial sac was found and when opened the tumor proved to be the ovary. An elongated extension of the broad ligament was present, and at about the middle of this a thickened band was adherent to the sac. This was freed, when the ovary slipped easily back into the abdomen. The sac was excised and recovery has been uneventful."

Dr. John Wesley Long reported a child aged 3½ months in which the sac contained uterus, tubes, and ovaries. An uneventful recovery followed the operation.

Dr. Harper, of Selma, Alabama, reported a child aged 4 or 5 months, with strangulated ovary resulting in recovery.

According to Heineck there is a relative frequency of these hernias during the first year of life, then a gradual decline from the first to the fifteenth year; the maximum is noted during the fourth decade.

In regard to the etiology of these cases one immediately is confronted with the theory of the origin of inguinal hernia in general. All are familiar with Russel's (Australia) ideas—that indirect inguinal hernias are congenital in origin, that is, in practically all cases. This attitude has been, I believe, largely accepted in America if one takes the works of Coley and his associates as authoritative criteria.

On the other hand you are familiar with Arthur Keith's opinion. He considers many hernias the result of a defect in the normal "shutter mechanism" of the muscles of the abdominal wall.

In this particular paper and in the group of cases under consideration, that is, indirect inguinal hernias in children, the weakness of the abdominal wall and the increased intra-abdominal pressure does not enter into consideration. I believe that we must take for granted that practically all of them are due to congenital factors, particularly the persistence of the canal of Nuck.

In adult life one would probably have to consider many factors; these have been summarized by Heineck. Those interested in the subject, as it applies to adults, will profit by reference to his article.

As a rule these cases are unilateral.

The hernial sac may contain tube alone or both tube and ovary. The genital organs are recorded as having been normal, lying free in the sac or they may be adherent to the sac; or there may be a hemorrhagic condition of the organs in the sac. A twisted pedicle, such as was found in our case, is not an unusual finding in tubo-ovarian hernias.

Heineck stated that this condition is generally found in irreducible genital hernias in the inguinal region, and Watson emphasizes its frequency in children under two years of age.

Although these cases are infrequent there are enough of them on record to make it necessary for every surgeon to keep this particular type of sac content in mind. This is particularly true when one considers the fact that early operation, if the nature of the sac is suspected, may enable one to save an ovary which would of necessity be sacrificed by continued interference with its circulation.

Lejars says that "These hernias are almost always surprises."

Hewit states " that hernia of the ovary in young children should not be difficult

to diagnose, the diagnosis is more than suggested by the fact that these hernias are usually irreducible and when irreducible the ovary and tubes may be easily felt."

This is a particularly interesting statement, and it may be absolutely true immediately after incarceration has taken place, but after there has been a transudation of bloody serum into the sac it is difficult to see how the outlines of the solid organ can be made out. Certainly we could not make out a solid organ in the mass in our case. Reference to our records does show that there was a mass about the size of a pigeon's egg which was slightly fluctuant. It was also tender and soft.

In regard to diagnosis of hernia of the ovary and tube Watson reminds us that these organs, as a result of the presence in the sac of an inguinal hernia, are naturally exposed to trauma and strangulation. The symptoms are "indefinite crying, restlessness and irritability. Vomiting and tympanites are rare. There is an irreducible tumor in the hernial region which is swollen, tender, and painful."

DIAGNOSIS.

In summarizing the opinions, which we have found in the literature, it would seem that little difficulty should be experienced in arriving at a correct diagnosis. I believe that one might readily admit this if the child from birth has had a protrusion in the inguinal region and the contents of the sac has been palpable prior to a strangulation.

Under these conditions the presence of a solid organ in the female in the hernial sac would naturally suggest the presence of an ovary, but when the swelling in the groin has appeared suddenly, and this swelling is irreducible and there is an associated distension of the abdomen, the possibility of incarceration of the intestines cannot be avoided or overlooked.

In these cases, that is, strangulated ovarian hernias, the acute toxemia of intestinal obstruction is absent.

Blood chemistry may help in making a differential diagnosis particularly if there is a high carbon dioxid and a low chlorid content.

It should be suggested here, however, that operation should not be delayed until this determination has been made. The two may be done coincidentally.

The treatment is surgical. Operation is imperative in irreducible inguinal hernias irrespective of the contents of the sac. In hernias of the ovary and the tube the imperative indication lies in the fact that with prolonged strangulation the torsion, which exists in the pedicle, will interfere wit the blood supply to such an extent that it will be necessary to remove the tube and ovary if they are both contained in the sac. If on the other hand operation is done before this time it may be possible to return the organs to the abdomen and treat the hernia as one would any other hernia.

It is important, of course, to save an ovary wherever possible. This is hardly a necessary statement, but it, nevertheless, can do no harm to repeat.

A very unusual report was returned by the pathologist in this case. He states that he found graafian follicles in the excised ovary.

SUMMARY.

1. This paper records a strangulated hernia in a female child six months of age. The sac contained an ovary and tube with a twisted pedicle.

2. Pre-operative diagnosis was a strangulated inguinal hernia.

3. Graafian follicles were found by the pathologist.

4. Reference to the literature proves that tubo-ovarian hernias in children under two years are not uncommon.

During the past three years, four cases of inguinal hernias in the female have been operated on in which the contents of the sac

were ovary and tube. The present case is the only one under six months of age.

Infrequency at this time of life is suggested in the literature, by the fact that Wm. B. Coley has not seen a patient that young with a strangulation of the tube and ovary.

It is desirable when hernias in female children are irreducible to operate early. If there is any suggestion of a solid organ attempts to manipulate and reduce by taxis are distinctly contraindicated.

Whereever possible the ovary should not be sacrificed.

DISCUSSION.

Dr. John Dicks (New Orleans): Dr. Cohn is certainly fortunate to have a case of this kind to report, of which he says there are 411 cases recorded in the literature. When I was asked to open this discussion I considered the condition very rare, so rare in fact that it was almost a medical curiosity, but after looking up the statistics I found that it is not as infrequent as one might think and one doing surgery should bear in mind the possibility of this particular sac content. The interesting points of Dr. Cohn's paper are the age of the patient, the twisted pedicle and the pathologist's report. He confines his remarks to herniation of the ovary in infants, but has said nothing of this condition in the adult. The earliest record of a case of hernia of the ovary in an adult was reported in 97 A. D.

Hernia is more frequent on the right side than on the left. It is about six times less frequent in the female than in the male, but the reasons for this are quite apparent: the canal of Nuck is less patent than the inguinal canal in the male; the round ligament is less bulky than the corresponding structures in the male, the internal ring in the female is higher up than in the male. Also, the female is subjected to less strain than the male.

Dr. Cohn has worked this case up in detail and as usual has brought the literature up to the minute. He certainly deserves the thanks of this section.

Dr. P. Graffagnino (New Orleans): Whenever Dr. Cohn presents a subject he is so concise, so thorough, that there is usually little left for the discussants of his paper to add. Dr. Dicks has covered the other points as thoroughly as possible, so I will merely present, in abstract, two recent cases of hernia of the ovary operated upon at Charity Hospital within a year.

First Case: A child of five, ruptured since birth, was admitted to the hospital for the repair of a gradually enlarging left inguinal hernia. A full term baby, normal delivery, who had never been seriously ill, although she had experienced the usual diseases of childhood. The physical examination revealed a well developed and nourished female child with the findings entirely negative except for an easily reducible left inguinal hernia. No laboratory examinations were made. The tentative diagnosis was congenital inguinal hernia, left side.

Hernioplasty was done under ether anesthesia. An incision was made parallel to Poupart's ligament over the inguinal ring. A good deal of hemorrhage was encountered. The sac isolated, opened, and the contents, consisting of the left tube and ovary were found adherent to the sac; these were dissected free with great difficulty. All the raw surfaces were sutured over, the ovary and tube replaced in the abdomen and the sac ligated with No. 1 chromic, the same material being used for the fascia. The skin was approximated with silkworm gut.

Convalescence was uneventful and the treatment routine. No prolonged high temperature, either vomiting, wound infection or other postoperative complication retarded the patient's progress. When the patient was discharged, the wound was well cicatrized and she was in excellent condition.

Second Case: A white female of forty-five who complained of headaches, pains in the lower abdomen and dysmenorrhea, recently came under my observation at Charity Hospital. Except for this menstrual irregularity, both as to interval and duration, dating from menarche, her history up to two years ago was uneventful. She had "never been seriously ill," "had had three pregnancies, all normal deliveries." In 1925 she was operated on for appendicitis and uterine displacement. From this time her menses were always painful. In 1926 a second operation was performed for post-operative adhesions and ventral hernia. Subsequently, she felt well in every way for nine months, although the hernia recurred after the sixth month and steadily increased in size. Three months ago she started vomiting in the morning, as during pregnancy, and experienced discomfort from gas and indefinite, generalized abdominal pain, at times cramp-like in character.

The examination revealed a moderately well developed and nourished female, with the following abnormal findings: Tenderness (not well localized) of the lower abdomen on palpation,

with a definite herniation two or three inches to the right of the incision and just above Poupart's ligament, increased on coughing and replaceable. Vaginally, a small, hard, movable uterus could be palpated and tenderness was elicited on each side of the pelvis. The perineum was relaxed and a marked cystocele was present. The Wassermann reaction was negative. The urine was negative. A kidney functional test was normal.

On February 21, 1927, under general anesthesia, I did a modified Hegar's perineorrhaphy first, then a laparotomy. A transverse abdominal incision was made about four inches below the umbilicus, extending from the outer edge of the rectus muscle on one side to the opposite side, the fascia was opened in the same direction, the muscles exposed, separated, and the peritoneal cavity opened longitudinally. The omentum was adherent to the upper line of the incision and the gall-bladder and transverse colon were being drawn down by these omental adhesions. Although covered by adhesions, the gall-bladder emptied readily. The adhesions were liberated.

Pelvic exploration showed the uterus attached to the anterior abdominal wall; on the right side the ligament had been brought through the abdominal cavity, carrying with it the tube and part of the ovary. A large hernia existed at this point where the tube, part of the ovary, and ligament had been brought through the peritoneum. A rapid supravaginal hysterectomy was performed, removing both tubes and ovaries. The adnexa were normal, but as the patient was forty-five years of age I felt that this work could be done quicker in this way. The hernial opening was closed from within with interrupted catgut sutures and the abdominal incision closed as per routine. The rectus fascia was then overlapped and sutured and the skin closed with silkworm gut.

The microscopic examination on the uterus and adnexa was: Leiomymoa of uterus—hyperplastic and cystic endometritis—chronic exudative and proliferative salpingitis—follicular cysts (serous and hemorrhagic) of ovary.

A very smooth convalescence followed after the first seventy-two hours, during which there was complaint of discomfort and pain due to abdominal distension, which was relieved in the usual way. The highest temperature elevation was 100.2° and the patient was absolutely afebrile after the third day. When allowed to go home on the thirteenth post-operative day, her condition was good. Three weeks later she returned to the follow-up clinic. An examination showed a good operative result, the perineorrhaphy in good condition, the vault of the vagina held well in position, and the abdominal wound tightly sealed.

The case is most unusual, and it is the only one I have ever seen. In looking up the literature on the subject I could not find a parallel instance. Apparently the round ligament was crossed through at, or near the internal ring, and this new opening gradually enlarged until the round ligament, tube and ovary herniated.

Dr. C. H. Mosely (Monroe, La.): I operated on a woman some six or seven years ago, a very old woman past the menopause, with a strangulated hernia of the left tube and ovary. I did not know it was of such infrequent occurrence until sometime shortly after her death when I was discussing some part of the surgery with a doctor associated with us in Riverside Sanitarium who had a similar case. It was then I learned of its rarity.

Dr. Isidore Cohn (Closing): I appreciate and thank each one for his discussion. In closing I would like to call attention to three things, the importance of blood chemistry, of early diagnosis and of early operation. Dr. George Mueller, in 1918, recorded a case of double hernia in a child of six months. He operated on one side and found the ovary in the sac, which he saved. Five weeks later he operated on the other side and found the tube and ovary in the sac, which he was also able to save. If he had not operated early that patient might have gone through life without developing.

Another thing is the importance of blood chemistry in these cases to see whether the patient has evidence of intestinal toxemia, because there may be an associated herniation of the bowel, in which event the indication is clear. In these cases we may have acidosis. Make your diagnosis early and save as many ovaries as you can.

THE ACTIVE PRINCIPLES OF THE POSTERIOR LOBE OF THE PITUITARY GLAND. I. The Demonstration of the Presence of Two Active Principles. II. The Separation of the Two Principles and their Concentration in the Form of Potent Solid Preparations.—From the Research Laboratories of Parke, Davis and Company there comes an interesting publication by Kamm, Aldrich, Grote, Rowe and Bugbee. They show that the posterior lobe of the pituitary gland contains two important active principles. One raising blood pressure, another contracts uterine muscles. It is possible to practically entirely separate these two active principles by method devised by the authors. Pressor principle has been obtained in the form of a white soluble powder and the more important oxytocic principle in the form of a soluble water powder 150 times as potent as the important standard powdered pituitary. The separation of a pure hormonic principle of a glandular substance permits a thorough investigation of the chemical nature of the hormone and a thorough study of their physiological properties, much as has been done with insulin and thyroxism.—J. A. Chem. Soc., 50:573, 1928.

CERTAIN PHASES OF GALLBLADDER FUNCTION—THEIR CLINICAL VALUE.*

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AND

LEON J. MENVILLE, M. D.,

NEW ORLEANS.

The very recent advancements in our knowledge of gallbladder function have been derived from studies of the visualized organ. Initially it was the behavior of the gallbladder shadow, produced on the roentgen-ray film, after the administration of opaque dye substances, which afforded the information. Subsequently the action of the gallbladder shadow under the influence of various drugs and foods administered to man taught us more regarding this important biliary vesicle. By analagous methods of utilizing the roentgen-ray to demonstrate the gallbladder, physiologic experiments on animals have also convincingly proven that the gallbladder is capable of emptying. Witness the work of Whitaker with his lipiodol injection method. The physiologic observations on the animal operated under local anesthesia by Higgins and Mann, are almost revolutionary. These authors find that not only does the gallbladder empty but it does so through the contraction of its own intrinsic musculature. The purpose of this communication is to discuss the clinical application of this knowledge of gallbladder function, taking into consideration some important phases of diagnosis and treatment. In this respect the examination of biliary contents, including, in certain cases, bile derived from the gallbladder itself, plays an important role.

Following the announcement of Graham and his coworkers that they had been able to visualize the gallbladder by the use of dyes, the writers were able to determine that the gallbladder could empty following the introduction of magnesium sulphate solution into the duodenum. However, it was later observed by ourselves that repeated injections of the drug were required to really produce marked reduction in the size of the shadow. It was noted that a very much darker and concentrated bile was obtained from the duodenum when the gallbladder reacted and emptied. These findings in part confirmed the contention of Lyon that the darker bile comes from the gallbladder. Whitaker, Boyden and others demonstrated that the ingestion of fat by mouth produced rapid emptying of the gallbladder as evidenced by marked reduction or disappearance of the shadow. Graham states that the simple procedure of administering fat is very much more effective in emptying the gallbladder than the more complicated one of using magnesium sulphate by the Meltzer-Lyon method. He then goes on to say that the additional evidence that bile passes out through the cystic duct is derived from the finding of the thick dark gallbladder bile by the Lyon method. For the very reason that this constituent of the bile may be obtained for analyses one is justified in utilizing the duodenal procedure. Furthermore the constant feeding of fat in certain types of gallbladder disease (cholesterosis of Mentzer) is contraindicated.

How, then, can duodenobiliary drainage with the additional knowledge of cholecystography be of practical value in the diagnosis of biliary disease? According to Mateer and Henderson, in performing a duodenobiliary drainage a microscopic examination of the fasting gastric and duodenal contents should always be carried out as a control for the interpretation of the bile examination. These authors believe that the finding in the bile of bile stained pus cells and bile stained colonies of bacteria, when other sources have been excluded, affords direct evidence of a chronic cholangeitis (probably involving the common bile duct) and indirect evidence of some degree of cholecystitis. In the experience of Jones a careful

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examination of a large number of sediments of duodenal contents has shown that certain features may be of diagnostic significance. Bile stained leukocytes and epithelial cells in any quantity do occur in the presence of an inflammatory condition involving the biliary tract. The finding of abnormal amounts of cholesterin, bilirubin or calcium bilirubinate has been of real diagnostic value.

Piersol, Bockus and Shay in a critical review of the diagnostic data obtained from a large series of advanced gallbladder disease proven by operation, devoted particular attention to the examination of bile obtained through duodenal tube by the Lyon-Meltzer method. The gross examination of bile obtained by this method proves of considerable importance in estimating the function of the gallbladder. These writers state that cholecystographic study in conjunction with bile drainage constitute an almost infallible diagnostic team in gallbladder disease.

While some gallbladders do visualize and even retain the function of drainage, the shadow may be so distorted from intrinsic disease such as stones or a few adhesions that the organ is immediately recognizable as requiring surgery. On the other hand, however, numerous cases of chronic low-grade biliary tract infection present no interference with gallbladder outline or function and fall within the realm of medical treatment.

Relative to the therapy of some of our cases of gallbladded disease, it is still unsatisfactory. There are certain types of gallbladders where no matter how badly diseased they are intrinsically operative surgery does not afford relief. This is the type of gallbladder that we see in women past middle age, usually having started with their gastro-intestinal symptoms during or after pregnancy. Those cases are described as being due to a disturbance in mentabolism, an excess of fat in the blood, particularly cholesterol. The removal of the gallbladder alone or the stones does not afford relief and medical treatment has to be instituted, principally involving low fat diet.

Plummer recently described a type of gallbladder of considerable interest, usually found in women complaining of right upper abdominal pain with gastric symptoms. These women he describes have very fine hair and are lovers of music. The examination reveals that there is a low basal metabolism. He thinks there is some connection between the disturbed biliary apparatus and the thyroid and institutes the use of thyroid in the treatment of these cases in addition to the measures directed to the gastro-intestinal tract.

DISCUSSION.

Dr. D. C. Browne (New Orleans): Dr. Silverman has focused our attention on a subject which has in the last few months undergone considerable revolution. A crystallization of our thoughts at this particular time is well taken. There is a tendency to adopt every new diagnostic method without first an attempt to establish the true relationship of one diagnostic procedure with another, or to compare their relative value.

First, I wish to say that to these workers, Dr. Silverman and Dr. Menville, certainly are to be given the credit for having first demonstrated radiographically the changes which occur in the gallbladder following the administration of magnesium sulphate intraduodenally. The subsequent work which Dr. Silverman speaks of only serves to strengthen their original conclusions.

I would like to call attention to one or two points. First,with reference to the gallbladder visualization and the method we are using at the present time; this is by no means a fixed procedure. Neither are the results as consistent as many practitioners have been led to believe.

The oral administration of the tetra-iodid phenol phthalein is quite extensively used now, though it has not, in our experience, been satisfactory. The absorption varies somewhat in the individual, and there are many instances of complete failure of visualization, even though the capsules have been dissolved. However, if these patients are given the dye intravenously, you will find that a considerable percentage will have a fairly good visualization. This only means that the present method of cholecystography is not standardized, and that the liver function itself may play a role. In either event, a diagnosis of cholecystitis or

biliary tract infection is never justified wihout a careful study of fresh biliary drainage. To me this gives those who are experienced in studying these contents a better idea than simply a cholecystograph.

It is true that there are certain cases which fall distinctly in the surgical field and it is in this differentiation that careful diagnostic methods either lend success or failure in the treatment. In the instance of common duct obstruction it is of vast importance to determine whether the pancreatic enzymes are functioning. This may serve to localize the obstruction. In chronic biliary tract disease, cholecystectomy may remove that part resident in the gallbladder itself, and break that part of the viscious circle, but beyond this non-surgical regime proves far more efficient if carried out under proper control. It is often amazing the quantity of bile that can be drained from the liver and common duct by the continuous method, using magnesium sulphate. Administration of fat as a therapeutic measure in biliary tract disease, I agree, is not advisable. The simple contraction and emptying of the gallbladder does not answer the question of therapy in chronic biliary tract disease.

Dr. S. J. Menville (New Orleans): The visualized gallbladder by means of the Graham and Cole method, by either the oral or intravenous administration of the sodium salt of tetraidophenolphthalein has been a remarkable advancement in modern diagnosis. The reports emanating from authorities all over the world bear testimony to its usefulness. We are able to study the visualized gallbladder in a similar manner to the gastrointestinal tract. Noting its position, size, shape, contour and also noting the effect of digestion as evidenced by a reduction in size of this organ. Of importance is the study of the appearance and emptying time of the dye, deriving the same information as the P. S. T. test, with which you are all familiar.

The intraoral route of administration of the dye is reliable if proper care is exercised. and in the case of a non-visualized gallbladder, before a diagnosis is made, we must be certain that the patient has retained the capsules and that they have properly dissolved. In those instances where some doubt may exist as to the diagnosis, the intravenous method may be employed. The intravenous administration of the dye should be done by one familiar with intravenous therapy. A certain amount of reaction may follow the intravenous administration which would prohibit the indiscriminate use of this method.

Dr. D. N. Silverman (New Orleans) (in closing): I just want to say a word. I agree with Dr. Browne that a diagnosis of gallbladder disease, especially to such an extent that the gallbladder will not visualize by the oral method is certainly not justified unless, as Dr. Menville has stated, an intravenous injection is given. It is surprising the number of cases that repeatedly will have the pills of tetraiodophenolphthalein given by mouth without visualization of the gallbladder, and subsequently one intravenous injection of the dye will not only bring the gallbladder out but the report will come back that the shadow of the gallbladder is perfectly normal.

THE ROLE OF THE PRIVATE PRACTITIONER IN A COUNTY HEALTH PROGRAM.*

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The writer presumes to discuss the above subject feeling that no person is in a more advantageous position to observe and unbiasedly analyze the attitudes and actions of the private practitioners than is the full-time health officer. The latter is indeed one of the guild, enabled by study, training, and frequently personal experience, to appreciate professional statements and actions; but is at the same time an outside observer unhampered by personal interests.

There are in Mississippi twenty counties maintaining full-time health departments of greater or less personnel and budgetary support. The other counties are served by part-time health officers, the majority of whom are carrying on county-wide health programs of varying intensity and scope. Therefore, at this time the question of the relationship of the private practitioners to county health programs is exceedingly pertinent.

Year by year the science of our profession has widened and intensified with amazing rapidity; at the same time dividing itself into a number of fields of special endeavor. In fact we are wont to speak of

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the present period of the age of specialties in medicine. As has been true of every branch of our profession, preventive medicine had its period of development and uncertainties,—if you please, its experimental state,—during which mistakes were made, efforts and money wasted, and disappointments and reverses experienced; but withal a period of progress and triumphs adding many brilliant chapters to the archives of science. However, unlike many branches of medicine, it has included both in spirit and practice, practically every other branch of the science; until now every member of the profession wherever and whenever possible invokes methods of prevention among his clientel. The latter is, at this time, another great factor in the pertinency of the subject of the relation of the private practitioner to health work.

Pertinent though the subject is, it is not the object of the essay to enter into a discussion of the details of the matter. Indeed time does not permit such for the subject is a large one whose full discussion would require a treatise of great length; and in addition its several phases have been dealt with at length on varied occasions—on the convention floor of this association, in the professional and lay press, and otherwise. It is the desire of the writer to merely call to the attention of the association certain generalities of the subject.

Neither is it the purpose of the essay to deal with policies of organized health work; such indeed is neither within the capability nor within the authority of the writer. It might well be said here, however, that two outstanding desires exist with every full-time health worker in our state; desires that are at the same time personal and official; namely—that health work shall not encroach upon the field of, nor in any way abridge, the rights of the private practitioner; and secondly, that the private practitioners of our state shall feel that preventive medicine, as practiced here, deserves and is worthy of their whole-hearted sympathy, support and co-operation. On the part of the various health organizations of our state, the writer feels justified in pledging every effort to the perpetuation of the above ideals.

Among full-time health officers there is frequently used the following expression—"the doctors of a county can not always make a health department, but they can break one any time they choose." The humble opinion of the writer is that there is no single factor making more for the success or failure of a county health program than the attitude and actions of the private practitioners of the county.

Of the several factors entering into the making of this situation, the most important and potent is the psychology of the average layman toward his family physician. No person enters the home or receives at his office enjoying as much confidence or wielding as much influence as the loved and trusted family physician. It is unquestionably true that his influence is the most potent one entering the family life, the clergy and priesthood not excepted. This idea is neither new nor original, but is mentioned here because it is the keynote of the physicians' highly potential influence on a county health program.

Every county-wide health program embraces one or more, or all of the following phases of health work: control of communicable diseases, sanitation, child welfare, and education. For the purpose of illustration, the writer will cite a few concrete examples of the influence of local physicians on each of these phases of health promotion activities.

Aside from the matter of reporting reportable diseases, a question which is constantly being discussed by proper authorities, the local practitioners' influence is most keenly felt by the health officer in enforcing quarantine and the use of specific vaccines. Let it be understood that the writer does not intimate that we have any physicians who would willfully make trouble for the health worker; however, a

few physicians thoughtlessly make the work harder by expressing to the laymen their differing in opinion with the health officer without first talking the matter over with the latter. It frequently happens that the health officer excludes a child from school on account of a communicble disease; and the family physician not concuring in the diagnosis or in the health officer's opinion as to the danger involved, so informs the parents, thereby causing hard feelings toward and criticism of the health officer. In many cases, of course, the health officer is in error; however, it seems only logical and fair that the family physician give him the same courtesy of consultation and respect for views which he would accord a brother practitioner. The writer has frequently had occasion to use a specific vaccine—particularly diphtheria and scarlet fever immunizing processes—in schools or communities where a large number of persons were exposed. The greatest obstacle encountered in such work was cases in which the parents on consulting the family physician received advice contrary to that given by the health officer. As a general rule the parents' statements to the physician about what the health officer had said were confused, and, therefore, here again was an occasion where a few minutes talk with the health officer would have been of immense benefit to the work and to the community.

In the matter of sanitation the health worker usually encounters his most difficult problem. Fortunate indeed is the health officer who has the undivided backing of his county physicians in this line of work. Here in this state excreta disposal betterment is the outstanding problem in sanitation and it is one which essentially requires every available influence and aid for its successful consummation. A favorable word from the family physician will install a sanitary mode of excreta disposal in the home more quickly and easily than an all-day interview with the health officer. When a health officer sets out to put over an excreta disposal campaign his success is guaranteed if every family physician will say a "good word'" to his clientele about the matter.

In child welfare work the success of the program is likely more dependent on the private practitioners of the county than in any other phase of the work. There is likely no other type of work in which the layman is more apt to go to the family physician for advice, or for confirmation of the health officer's advice than in this line, and therefore the physician has the greater opportunity to determine the success or failure of the program. A word from the family physician is frequently more productive of good results than days of effort by the health officer or nurse. In baby conferences, school examintions, and other events in which a medical examination is given, the private practitioner can aid immensely by speaking favorably of the procedure, and if possible by giving a part of his own time and efforts in assisting with the actual work of the examinations. The latter is an item in promoting and encouraging the work for which there is no substitute.

It has been well said that 90 per cent of public health work is education. At this stage of public health development and activity the health worker has to attempt to bring to the laymen a message, scientific or quasi scientific in nature, which is frequently a new and unusual item of information as far as the average layman is concerned and one which he likely will receive with a pronounced skepticism. Here again a few words of confirmation and approval from the family physician will remove doubt and bring about a full acceptance of the health worker's teachings.

The above are only a very few of the many items in which the private practitioner can exercise his potent influence on health work in the county; there are many others of which time and space do not permit a discussion. They are cited merely to show that in every field of health promotion

endeavor the private practitioners can either give or withold from the program vital and essential co-operation and aid.

In view of the above discussed generalities and illustrations it might well be said that the role of the private practitioner in a county health program consists of the following types of co-operation:

First. A realization that the health worker and private practitioner have a common objective-service to mankind, and in rendering such a service the field of endeavor of each is peculiarly his own in most respects, but in other respects of necessity overlap to a certain degree; in the latter case a meeting and frank discussion as one physician with another will amiably and efficiently dispose of such problems as may arise. And a further realization that by virtue of this connection with the family life of his clientele the family physician holds an eminently stronger position in medical matters than does a health worker who is frequently a stranger or newcomer to the community, and therefore each and every family physician has therein an opportunity to broaden and render more effective his own service to humanity by encouraging and promoting the programs of organized preventive medicine.

Second. The use of a reasonable portion of his own time and talents in aiding the actual work. As has been intimated, a word of sympathy and support from the family physician; a word of explanation where he sees confusion in the mind of the layman; a consultation with the health officer when opinions differ; and finally an active participation in such events as public meetings, administrations of vaccines, medical examination of children with advice and co-operation in the matter of correcting defects, are highly potent and supremely valuable aids to the program.

Third. The acceptance of the health officer as a brother physician who is worthy of, sincerely desires, and is entitled to the rights and privileges of consultation and co-operation which the ethics of our profession prescribe.

CONTROL OF CONTAGIOUS DISEASES IN CHILDREN.*

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No matter what kind of a fire department a city has its efficiency depends upon the notification it gets of the fire and its ability to get to the scene before the fire spreads; so in the control of communicable diseases.

The backbone of the control of communicable diseases is the immediate notification of the existence of the disease and the quick response of the health officer in putting into effect the machinery to limit the spread of such a disease. The state law is ideal. Paragraph 4847 of the code of 1917 reads as follows:

"Every practicing or licensed physician shall report immediately to the secretary of the State Board of Health every case of yellow fever, cholera, dengue, smallpox, or other virulent epidemic contagious diseases that occur within his practice, unless the State Board of Health shall otherwise direct. Any practicing or licensed physician, wilfully failing to report shall be guilty of a misdemeanor and upon conviction shall be punished as provided by law for misdemeanors."

By this law every practitioner is required to report contagious diseases immediately to the secretary of the Board of Health, unless otherwise instructed. The Board of Health has instructed the physicians of the state to report these diseases to their county health officers upon a clinical report card which gives the name, age, color, sex, and residence, together with the date of onset. So far as ideal notification is concerned, this fills the bill.

*Read before the Mississippi State Medical Association, Jackson, Mississippi, May 10-12, 1927.

Paragraph 4843 reads as follows:

"It is the duty of the county health officer to enforce the rules and regulations of the State Board of Health in the prevention and spread of all contagious, infectious or epidemic diseases in his county, to investigate and examine into the causes thereof, and to recommend rules and regulations to remedy the same."

This paragraph requires the county health officer to go at once to the patient so reported and put into effect the rules and regulations of the State Board of Health which are given him in pamphlet form. If these laws are carried out by the physicians and county health officers, it is almost impossible for contagious diseases to spread. If this was done promptly by every physician in the State of Mississippi the problem of the control of communicable diseases would be greatly lessened.

The regulations require that the county health officer indicate on the report card the date on which he has put into effect the rules and regulations of the State Board of Health, and these cards together with a summary report card, are mailed to the Bureau of Vital Statistics every Saturday night. From this information the statistics can be ideally kept. Valuable information can be given the physicians from time to time relative to the prevalence of these diseases and in what age groups they are occurring.

As the statistics which are used in the weekly telegraphic report to Washington have been compiled, these cards are sent to the Bureau of Communicable Diseases where each case of communicable disease is entered on the map by means of colored tacks. Therefore, the State Epidemiologist can see at a glance on his map the foci of the infection and he may visit any epidemic almost immediately and give assistance to the local health officer in controlling the same. If every one would appreciate the great advantage of this reporting system and would lend their support, then much of the time that is spent securing reports could be spent in getting data together which would be of great help to physicians. Much time could be spent in educational programs to the public, which would cause a greater number to go to their physicians to be vaccinated against these diseases.

In the educational program it is desirable to train the public that the vaccination against diseases should be routinely employed, and that the physician is just as responsible morally for the vaccination against smallpox and diphtheria as he is for putting the drops in the eyes of the new born.

After the acute infectious diseases give way, routine health examinations can be urged and thus the program of preventive medicine can be gotten over to the public. Every physician should hail the day when he will sit in his office and make more money with less effort from health examinations than he used to gain by driving over muddy roads to see sick patients.

CARRIERS.

It would be expected that a knowledge of the nature of communicable diseases and of their transmission would enable a health officer to prevent the development of all communicable diseases by the efficient control and treatment of every affected person. Health officers probably would be able to eradicate contagious diseases if they could know of the existence of every case. But refined methods of diagnosis, especially those of the laboratory, have shown that many persons in good health, carry and harbor disease germs in their bodies. These persons mingle freely with others without taking precautions against the spread of the germs. Well persons who harbor disease germs are called carriers. Persons who have communicable disease in such a mild form that they continue to mingle with other persons as usual, are also classed as carriers.

Disease germs in carriers are found in at least three locations: 1. In cavities,

such as the gall-bladder and the crypts of the tonsils, etc. 2. In the outer layers of the epithelium. 3. In abscesses, running sores, and discharging ears. In all of these locations the germs are outside of the flesh and blood, and yet in a position in which the conditions of food supply and warmth are favorable to their growth.

Most persons who are carriers are themselves proof against the disease. The defensive forces of their bodies are principally in the blood, and are able to overcome the germs wherever the blood flows. Blood is absent from the cavities of the body and from the outer layers of epithelium. Disease germs may, therefore, grow in these parts of the body without being able to penetrate the tissues or they may persist there after the blood has overcome them in the tissues.

The principal diseases which are spread by carriers are diphtheria, typhoid fever, scarlet fever, and epidemic cerebrospinal meningitis.

The number of carriers in a community is often considerable. Diphtheria carriers may probably be found in every village, and during an epidemic of the disease the number of carriers may be several times greater than the number of persons who are known to be sick with the disease. About 1 per cent of persons who have had typhoid fever continue to harbor germs of the disease for weeks or months after their recovery.

When an epidemic of a disease occurs there is likely to be a number of mild cases in whom the signs of the disease are vague and uncertain, or even almost absent. For example, many cases of sore throat are caused by unsuspected diphtheria or scarlet fever, and many stomach aches are due to unsuspected typhoid fever. Carriers and missed cases account for the infection of a very large proportion of those who have communicable diseases.

The danger from a carrier is the same as the danger from a person whom the germs have made sick. Carriers usually harbor fewer germs than the sick, but the lesser danger on account of the number of the germs is counterbalanced by the freedom with which carriers mingle with other persons.

The virulency of the germs in carriers is sometimes less than the virulency of germs in persons who have a disease in a severe form, but sometimes it is fully as great. A deadly form of scarlet fever is sometimes caught from a person who has had the disease in an extremely mild form. The virulent strain of diphtheria germs which are used by New York City laboratories was originally taken from a person who had only a mild sore throat.

Diphtheria carriers constitute the greatest number of carriers with whom a health officer has to deal. The danger from these carriers depends largely on whether or not the germs are virulent. The virulency of the germs may be determined by injecting a culture of the germs into a guinea-pig or other animal, and noting their poisonous effects. If the test shows that the germs are not virulent, the carrier is not considered dangerous.

The duty of a health officer is to discover carriers whenever he possibly can do so. His fourth duty is to control them so far as may be necessary. A health officer can choose between two measures: 1. He can subject carriers to quarantine and other procedures which are enforced against persons who are actually sick. Experience has shown that this extreme degree of control is seldom necessary or practical. 2. A health officer can advise carriers concerning the nature of their trouble and the means of preventing the germs from spreading to others, and he can keep them under supervision to see that they observe this advice. This is the proper method to adopt when the carrier is a reliable person.

The means of freeing carriers from their disease germs will be discussed in the description of the individual diseases. How to deal with carriers is one of the greatest problems which confronts a health officer. Carriers are not sick, and they often resent any interference with their liberty. The detection of disease germs in their bodies is usually by a laboratory test which the carriers cannot understand. They often ascribe measures of control to personal animosity on the part of the health officer. It is difficult to make people realize the danger from carriers, for they do not see how disease germs can grow in the body when the ordinary signs of sickness are absent. The control of carriers will remain unsatisfactory until people become educated concerning the problem.

What measures can the people take to protect themselves against the uncontrolled carriers which are in every community? The answer is that an observance of modern standards of cleanliness, decency, and the rules of polite society are usually efficient protections against infection. For example, typhus fever was common in the days when a louse on the body was considered no more disgrace than a fly is today. It disappeared when people began to consider it a disgrace to be lousy. People are fairly well protected from infection when they observe cleanliness of their persons, houses, and yards, and practice the customs of polite society regarding the contact of one person with another.

CONTACTS.

When persons have been exposed to communicable diseases, it is often a problem what control to exercise over them from the time of exposure until the onset of the sickness. Many cannot tell whether or not they have actually been exposed, and many who have been exposed do not contract the disease. The health officer will make his decision according to the following principles:

1. Immune persons who are not carriers may be dismissed from supervision.

2. Non-immune persons may be allowed their freedom up to a day or two before the expiration of the shortest period of incubation of the disease.

3. If necessary, a culture shall be taken or a serum test made in order to determine if the exposed person is a carrier or has had the disease.

4. A protective serum or vaccine shall be given if possible.

5. The exposed person shall report to a physician or the health officer upon the first signs of sickness.

Procedure of Investigation—If there is an epidemic in a community a health officer or epidemiologist will investigate and control it by certain standard methods of procedure, which are: (1) To discover all the cases; (2) to obtain uniform data from each case; (3) to analyze the data in order to determine the source of the infection; (4) to apply the remedy.

FINDING CASES.

The first duty of a health officer in the suppression of an epidemic is to discover all the cases of the disease in his jurisdiction. The probability is that physicians report only those cases which are well marked; that many mild cases go undetected; that many cases have no doctor to call to see them; and that there are a number of carriers who have not been sick at all. It is the duty of the health officer to discover as many of the mild, missed, and carrier cases as possible.

One of the reasons that epidemics develop is that they usually begin with cases that are mild and do not resemble well-marked cases. For example, smallpox now usually gives only mild symptoms, and the eruption only partially develops as compared with the virulent form of the disease of years ago. The epidemic is usually well under way before the disease is recognized.

One of the first things which a health officer will usually have to do in the presence of an epidemic of one of the rarer diseases is to instruct the physicians in the methods of recognizing the disease. He will endeavor to retain their good will and respect. He will not chide them for ignorance but will explain to them the new and unfamiliar forms which diseases assume in new conditions of modern civilization. He will also explain to them the use of modern methods of diagnosis, such as lumbar puncture in poliomyelitis. When the physicians are all educated in the recognition of cases, and are willing to co-operate with the health department and report all their cases, the health officer may feel that he has laid a sure foundation for the suppression of the epidemic.

Another thing which the health officer must do is to make an inspection for the discovery of cases which are not seen by the physicians. There are a number of mild cases and of carriers in nearly every epidemic, and their presence explains the mysteriousness of the origin of many of the known cases. A public health nurse making a house to house canvass is a great aid in finding cases which have been missed or concealed. Rumors of cases and common gossip are clues which are worth following up, for they lead to the detection of many cases which otherwise would not be discovered.

UNIFORM DATA.

The second step in the investigation of an epidemic is the collection of answers to uniform questions which are put to each sick person. The object is to obtain a history of the person extending backward beyond the possible time of receiving the infection. The questions will vary according to the disease that is under investigation, but they will be along the following lines:

1. Personal history; name, address, age, and sex.

2. Date of onset of the sickness.

3. Contact with known cases.

4. Source of supplies of water, milk, groceries, green vegetables and other foods that are eaten raw.

5. Places visited, and meetings, dinners, and other gatherings attended.

6. Visitors received.

7. Sanitary condition of the home and working place. A health officer will obtain these data from the reports of physicians, by the investigations of public health nurses, and by his own inspections. A health officer will need a considerable degree of skill and diplomacy in obtaining the data and of judgment in judging the truthfulness and value of the information.

ANALYSIS OF THE DATA.

The third step in the investigation of an epidemic is to analyze the data in order to discover something in common with all the cases which will point to the source of the infection and the method of its transmission. The health officer will tabulate the cases according to the dates of their onset, their geographic distribution, their school attendance, their supplies of milk and water, and their association with previous cases. He will take into consideration the period of incubation of the disease, and will lay special stress on the actions of the cases at the time when infection most probably occurred. There may be a large number of possible sources of infection in each case. The source or route which is common to all, or to a considerable number, will probably be the principal source or route which the health officer will have to control. The original source of infection may be evident from the outset of the investigation, or its detection may require a high degree of skill and judgment, especially in those diseases which are spread by contact. The details of the methods of investigation will vary according to the nature of the epidemic. They will be enumerated in the discussion of each disease.

Two valuable devices in investigating and reporting an epidemic are the graphic chart and the spot map. An excellent form of chart is that in which the number of cases developing during each day or week or other period of time is indicated by the height of series of black columns, one for each period of time. Such a chart shows the progress of the epidemic and the results of the various methods for its suppression. The chart also has an educational value to the public, especially when explanatory remarks are printed with it.

A spot map indicates the location of the individual cases by means of circles or disks. A line connecting each case with its source of infection shows at a glance the origin of the case, and the chains of secondary and tertiary cases that have developed from each focus of infection. Such a map is a great convenience in recalling the sources of the cases and in demonstrating their origin and the methods to be adopted for the control of the epidemic.

CONTROL OF AN EPIDEMIC.

When a health officer has discovered the cases in an epidemic and has determined the modes of their transmission, the method of controlling the disease will be evident. It may be extremely simple, as for example, the exclusion of a person with a sore throat from a dairy; or it may be difficult, especially when the disease is spread by contact with carriers. The control of an epidemic, like that of a fire, is easy at the beginning, but is hard when it has produced a number of mild cases and the carriers which are difficult to discover. The time to begin active measures for the discovery and suppression of a contagious disease is when it first appears.

DISCUSSION.

Dr. D. J. Williams (Gulfport): I did not expect to discuss Dr. Frizell's paper, but there are some things in connection with the control of contagious diseases among children that might be emphasized. I want to refer first to the first part of the doctor's paper, in which he dealt with the reporting of diseases. The average doctor in Mississippi seems to think (and in thinking that way he is in perfect accord with the majority of the health departments throughout the country—I mean state health departments, too) that it is perfectly satisfactory for him to make a report of a disease three weeks after the patient has recovered. I do not understand why the state health laws in many of our states require that these reports go first to the secretary of the state board of health and why we have instructions of that kind from our epidemiological departments insisting that these reports go to the heads of the state departments before they reach the health officer. It is an absurdity, on its face. I receive in our county repeatedly reports of diseases after the patients are convalescent, and many times after the patients are dead. Such reports are worthless, and I believe it is the duty of the health officer to let it leak out that the doctor who is tardy in making these reports is not rendering the service to his patrons or patients or the community that he should. It is the quickest way to whip them into line.

There is another thing that we are neglecting; the doctors are neglecting it, the school authorities are neglecting it, and the health authorities are neglecting it. I say so because in a recent meeting of the health officers in this state the idea was expressed by some of the leading health authorities of this country that it is perfectly useless to attempt to control such diseases as measles, mumps, chicken-pox, and whooping cough, referring particularly to measles. I want to say, if you boys do not already know it, that measles is a dangerous disease. It kills folks and kills them from infancy to old age. I have proof of it, when last month we lost seven people in our county and the death certificates are marked measles. They ranged in age from less than one year to eighty-three. This month we had recorded some deaths from measles in the acute stage of the disease. It is necessary to control these diseases in childhood. If you do not control them in childhood you will find, if you follow your cases of measles, that the old idea once prevalent that many cases of tuberculosis follow measles was incorrect. But where you find one case of tuberculosis following in the wake of measles, whooping cough, and mumps, you will find many cases of nephritis. Too many people are dying thirty years after they have recovered from the acute effects of these diseases. There are many important points in the prevention of the diseases of childhood that many of us are guilty of neglecting.

There are many excellent points in the doctor's paper which I might mention; but I feel if this thing sinks home and the doctors of Mississippi realize the importance of reporting these cases promptly, so that measures can be applied to pre-

vent the spread of these diseases, we shall have made a great step forward.

Dr. W. D. Beacham (Hattiesburg): Since we have plenty of time and this is such an important subject, I am going to reiterate some of the things you all know. There was discussed on this floor a year ago the importance of giving babies toxin-antitoxin to keep them from having diphtheria. Don't forget that. Possibly the physician who fails to advise a mother to have toxin-antitoxin administered to her offspring when that child is six months old, or soon after, will be derelict in his duty to the extent that that mother might lose that child. Two years ago, when we had this campaign in south Mississippi educating the doctors and the mothers to the importance of utilizing this splendid aid in medicine, some of our doctors came to me and said: "Beacham, why do you urge giving toxin-antitoxin when we have a cure for diphtheria in antitoxin?" I said, "Doctor, last year there were 385 deaths from diphtheria because they did not get the antitoxin in time." That same doctor this year lost a patient from diphtheria, and I wonder if now he doubts the value of toxin-antitoxin.

Dr. Bloom, of New Orleans, has been the outstanding man who has done something in controlling whooping-cough with vaccine. He says he has administered whooping-cough vaccine to more than two thousand children and fewer than one per cent of those children have had whooping cough. Our experience has been that whooping-cough vaccine given in large doses before or soon after the exposure will control whooping cough to a great extent but not with such outstanding results as Dr. Bloom has had. I call your attention to these things along with this splendid paper that Dr. Frizell has just given us. Let us not forget preventive medicine; let us urge it.

Another thing. I have come to the conclusion that it is the best thing to placard the homes and let it be known. I have told children that if they bring whooping cough and measles and those things to school knowingly I will make an affidavit against their fathers for sending them, if the children have not reached the age of accountabilit.y I have also told the teachers that if a child has been exposed to whooping cough and coughs within the next three days to send that child home, and if a child has been exposed to measles and within three days afterward it has a cold, send it home.

Whooping cough and measles are serious diseases. Let's not think of them lightly; let's get busy and do our part. Report to the health officer immediately, and if the health officer does not do something report to the State Board of Health and brand him as not doing his duty. We may not be guilty of the sin of commission in these diseases, but we are guilty often of the sin of omission, and indirectly we are Herods and are contributing to the toll of infant life.

Dr. W. H. Anderson (Booneville): I think this is one of the finest papers I have heard, and I have certainly enjoyed the discussions. I should just like to bring before you a little slogan or a saying that I think if we get before the people will help as much as any one thing. One old philosopher said, "Never put off until tomorrow what you can do today." In the matter of contagious and infectious diseases let's get before the people this saying, "Never have today what you can put off until tomorrow."

Measles is a serious disease. Last week a young man eighteen years of age had measles (just breaking out), went out on a fishing trip, got exposed, developed middle ear disease, and then general septicemia, and died. Measles is a disease in which you have to take care of yourself if you have it. Another point: it is one disease in which you do not have to give any medicine for fever. They do not need it in measles. You want to stimulate the circulation and bring heat to the skin.

There is a point in diphtheria about which I want to ask a question. I have had no experience in the use of toxin-antitoxin in diphtheria, but I am going to use it and see what I think of it. But let somebody answer this question: If the disease itself will not confer immunity, how can you produce a vaccine that will confer immunity? I understand that diphtheria has been cut down all over the United States to a very low rate compared to what it was a few years ago. In my county I will guarantee you that the number of cases has been reduced as much as in any other county in the United States during the last five years, and so far as I know there has not been a dose of toxin-antitoxin given in the county. We have followed a different plan. When I have a case that has diphtheria this year, I look for that patient to have diphtheria next year if the tonsils and adenoids are not removed. I make cultures of every case; I cannot tell you how many cultures I have made. I do not want to say anything against toxin-antitoxin, but I do want to bring this point to your attention. Don't forget the tonsils and adenoids and don't forget to look after the nose—and the ears, too.

Dr. C. M. Shipp (Bay St. Louis): In Hancock County we immunized 1,100 children under three years of age. That was three years ago. Notwithstanding the fact that we have had several cases of diphtheria in the county, not a single one of those 1,100 children have developed the infection.

Dr. S. S. Caruthers (Duck Hill): In regard to this preventive program, we are all heartily in sympathy with the movement. The toxin-antitoxin works. About two years ago Dr. Applewhite came to our town and gave the Schick test to all the school children. To those that had a positive reaction he gave toxin-antitoxin. Since that time we have not had a case of diphtheria in the community, and prior to that time I don't think we ever went through a winter or spring without having one or more cases. It has worked.

The vaccine against whooping cough works fairly well; but as to measles, the disease that we dread on account of its widespread prevalence and the severity of its force in many epidemics, I have not heard any practical way of meeting the situation. I do not know of any plan that has been proposed that has offered us any help in controlling the spread of measles. Three years ago we had an epidemic of measles, mild in type. This year we had more measles than I ever remember to have seen at any one time in my life before, and we have had one death. We have tried to isolate and quarantine and every kind of scheme, nearly, that you could think of, but none of it seems to have done anything. In one community that was far away back up in the hills, practically a mile across the woods and hills from any other settlement, the people kept their children at home, and the measles was kept out of there until recently. The adults seem to have been immune. Just how measles got in there I have been unable to find out. It appeared in a say no one had been there who they knew had been say no one had been there who they knew to be exposed to measles. But it spread everywhere. If the authorities and those engaged in this kind of work have any practical plan to combat measles, let's have it, so we can get busy on the job. I have never heard of any plan that was worth a snap of your finger. We tried it in the army; we have tried it in the schools; we have done everything that has been suggested; and nothing has been done so far. I should like for them to get busy on that job and see if they cannot solve it as well as they have solved the diphtheria and typhoid fever and other problems.

Dr. R. G. Lander (Purvis): I want to put in a word for the general practitioner. It seems to me to be the fashion for the health officers to bunch together and the general practitioners to bunch together. I believe we have to get together on this. There is no question that the general practitioner has a part to play in preventing the spread of contagious diseases. How is he going to do that? By catching them early. I believe the whole thing has to be an educational process. We have to educate school teachers. When teachers send a child home for a cough of any kind or for any sign of sickness and tell him not to come back until he brings a certificate from the family physician or is entirely well, then we shall be able to do something. I had a hundred cases of measles in my county this winter before I knew it. I am going to my school teachers and insist that they do this, so that these cases will get in the hands of the medical profession—where they belong. We can not do anything unless these people come to us. The majority of cases of whooping cough never see a doctor. We must educate people to go to the doctor for any ailment, because it might become serious.

Dr. H. H. Hays (Jackson): Over here on the right there is an exhibit of the Board of Health and this is the exhibit of the Bureau of Communicable Diseases over here. When the cards that report the communicable diseases are brought in to my office there is a tack put up in the state map for every case of communicable disease that is reported, and I hope every man in this room will notice the distribution of the different communicable diseases that we are having throughout the state.

I have talked in 280 schools this year and have called attention to the giving of toxin-antitoxin and also have called attention to the scheme of controlling communicable diseases, and I must say that the children have been wonderfully interested in this program. There will be about 25,000 high school boys and girls who will write an essay this year on the control of communicable diseases. I wish every doctor here could see those essays and find out how intelligently these children are comprehending our program for the control of communicable diseases. I entered into this program, gentlemen, in order that the public might intelligently co-operate with you in the control of these diseases. I have said to each one of these children that a disease that is unreported is exactly like a fire, a danger to all the community, and just as soon as that disease is reported if the county health officer does not go at once and put into force the rules and regulations of the State Board of Health, then that fire is likely to spread. So I am trying to get the public to co-operate with you in the control of these diseases.

A question was asked a while ago about measles. Of course, we have known for the past few years that convalescent serum would prevent measles, and in delicate children the child specialists are using convalescent serum, but I do not see why all of us should not use this convalescent serum. Given an older child who has measles, we might withdraw from that child ten c.c. of blood and inject it into a smaller child. Or if we take the serum we might inject three c.c. of serum into the smaller, delicate child and

prevent that child from having the measles. Of course, we have a great deal to work out before we get an antitoxin for measles, as we have for whooping cough and scarlet fever.

The main things I see in the control of children's diseases is reporting of those diseases promptly, isolation of the patients, and the use of toxin-antitoxin for the prevention of diphtheria and scarlet fever. I thank you.

Dr. W. A. Dearman (Gulfport): I should like to say a word or two with reference to the susceptibility and immunity in diphtheria, in conjunction with what Dr. Anderson said. So far as we know, and so far as immunologists can advise, there are only two ways of becoming immunized. It is either cellular or humoral. It is outstanding and well known that infectious diseases, as scarlet fever, chickenpox, measles and parotitis, confer a lifelong immunity. I have never seen, to my knowledge, an individual who has had measles twice. I have heard it said that some people have had it twice.

I never encourage anybody to rush into a contagious disease. I have seen them go into the valley of the shadow of death and never emerge from it because they have been guided by the light of superstition and ignorance. It is possible for a person to be born, live his lifetime, and never have measles. It is also possible for him to have measles, have serious complications, and die or be crippled for life.

I want you to understand me, doctor; I believe it is possible for an individual to have whooping cough or measles two or three times, but I have never seen it. Sometimes, when a doctor tells me, I believe it; but when a patient tells me I believe it was possible for someone to have been mistaken about the first attack. I had a man tell me the other day about a boy who he thought had scarlet fever. He had swelling of the glands of the mouth and broke out in a few days with a rash. The doctor bombarded him with scarlet fever antitoxin and immunized everyone in the house. I came in and found that the boy's mouth was full of Koplik spots and that he also had mumps. The rash was a measles rash, not a scarlet fever rash. It was the mumps that misled him. The boy had a double header, but he recovered, without any further administration of vaccine.

As to tonsils and adenoids, unless the child is susceptible to diphtheria he will not have it even if the tonsils are rotten. His immunity is due to antitoxin in the blood, and if he hasn't enough he will develop diphtheria, either mild or malignant.

The next point is this. All these diseases confer what we feel to be lifetime immunity. We feel safe in letting children go to school, if there is measles or mumps in the home, if they have had it. As to carriers, we cannot control them. We find them sometimes in diphtheria. I had a girl down in Yazoo City shut up for three months, until she threatened to commit suicide if I did not let her out. We had the tonsils and adenoids removed and let her out, and she soon cleared up.

As to toxin-antitoxin, you may give it and the child still may develop diphtheria. Why? Because it has not had time enough to develop immunological bodies to prevent him from having the disease. When we come to study the immunological defenses of the body, I think we have it on a fairly logical basis.

Dr. Frizell (closing the discussion): I wish to thank you gentlemen for your intelligent discussion of this subject.

In answer to the doctor who criticized health officers a little bit, I might say this paper was not brought up to arraign health officers. We have to work together in order to combat these diseases.

Dr. Anderson asked about a vaccine's conferring immunity when the disease does not, and Dr. Dearman answered that. It is not the vaccine that confers the immunity but the defenses developed within the body.

As to Dr. Shipp's work down on the coast, probably his cases were not among his vaccinated groups but were others.

In regard to carriers, I think we often overlook domestic animals as carriers. Cats and often chickens have diphtheria.

I don't believe in quoting any company's vaccines. These laboratories make these things to sell, and I should like to see these things given a thorough trial before you advise your clientele to use that line. Let it come from some health authority.

As to vaccination for measles, I have nothing to say along that line. It is still sub judice.

I want to thank you gentlemen for the discussions.

THE PROBLEM OF VENEREAL DISEASE CONTROL.*

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A review of the literature reveals an increasing number of discussions of this subject which proves that the medical profession is arousing to the fact that the scourge of sex diseases is really a serious entity and a problem that confronts it and must be combatted with great vigor and seriousness.

The problem of social disease control is really one of the paramount objectives of the Health Department and should have the full co-operation of each and every medical man for it is through him that the Health Service must expect to carry on in this great work.

It is a known fact that the majority of the unfortunate inmates of our institutions for the insane and feeble-minded are there as the result of venereal disease; that a vast number of sterile women and impotent men are sufferers from a social illness, and opthalmia neonatorum is the cause of 20 per cent of the blindness in institutions. It would be difficult to estimate the economic effect of social diseases, but the inroads made into the ranks of labor must certainly cause a great loss annually to industry. Fischer states that there are 250,000 deaths each year due to venereal disease.

It was Osler, the great leader in modern medicine, who said: "Know syphilis in all its manifestations and relations and all other things clinical will be added unto you." Many leaders in the social sciences are now saying in effect—know syphilis in all its manifestations and the cause of many social ills will be revealed.

Medical science has aided social science in the discovery of the cause. Social science in turn can aid medical science in removing the cause and tempering the effect.

The medical profession and the public have a natural aversion toward these diseases—the attitude being very inconsistent. There should be no distinction made between venereal diseases and many other of the epidemic diseases. The principles of control should be the same. We take great care to treat, isolate and prevent the spread of smallpox, diphtheria, measles, tuberculosis and leprosy, but apparently, from our attitude, a venereal disease is just a natural course of events and needs no special attention other than a few therapeutic measures, which in many instances fall far short of their mark, due to ignorance or the failure to follow up by the physician or to lack of perseverance on the part of the patient.

A person afflicted with a social disease should not be regarded as a law breaker or culprit but rather as a victim of an unfortunate circumstance. He needs sympathy and help. He should be treated as humanely as a case of pneumonia and the public welfare demands that he be accorded the best of care.

It is startling when we stop to realize that in most of our large cities few hospitals will take cases of acute venereal infection when it is in this stage that it is especially communicable. Cook County Hospital in Chicago has 200 beds for such diseases in a population of over 2,000,000.

The prevalence of venereal diseases among the population at large can only be approximated. Definite figures, however, are at hand for selected groups. Cunningham says that 60 per cent of men acquire venereal infection some time, 20 per cent of these are incurred before the 20th year, 50 per cent before the 25th year, and 80 per cent before the 30th year.

Of the first 990,592 physical records received by the Surgeon General, U. S. Army, under the Selective Service Act, a total of 28,411 men had venereal disease—2.86 per

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cent. Of these, 23,049 had gonorrhea, 4,412 had syphilis, and 941 had chancroid. Camp medical examiners found a higher percentage—5.4. These figures indicate the minimal amount of venereal disease coming from civilian life among the first million men drafted.

Zinsser estimates that 10 per cent of the men registered for draft under the Selective Service Act were actively infected. There were 24,234,021 men between 18 and 45 registered. It is conservatively estimated that of this number 2,600,000 were diseased, of whom 500,000 were syphilitic.

Banks states that we have nearly two and one-half million venereal cases occurring annually in the U. S., about 1 person in every 40.

Venereal diseases reported to the State Boards of Health in the civilian population in the nine corps areas of the army for the year ending June 30, 1925, are: Syphilis, 201,692; gonorrhea, 166,208; chancroid, 6,742; total, 374,642. The venereal disease incidence per 1,000,000 in an estimated population of 115,378,094 covering the nine corps areas for the year ending June 30, 1925, is: Syphilis, 176; gonorrhea, 145; all venereal infection, 321.

Of the communicable diseases reported generally throughout the United States, syphilis had the third highest incidence for 1924; measles and chicken pox lead.

These figures will give a fair conception of the extent of the scourge.

The reports of social disease statisticians are encouraging for they show that the efforts to control these diseases are bringing results. The report of the Surgeon Generals of the Army and Navy will be a fair example:—for the army, reports show that the average venereal disease admission rate per 1,000 men for the period, 1915-1917, which was 98.78, declined to 59.95 for 1922-1924, a reduction of 39.30 per cent, and declined to 55.82 for 1923-1925, a reduction of 43.49 per cent. For the navy the average rate for 1914-1916 was 154.61, for 1922-1924 it was 129.43, a reduction of 16.28 per cent.

The question that naturally arises in our minds is what methods are best to combat the inroads made by such a dreaded enemy of the human body.

I believe we will all agree that education is the mightiest weapon we have. The reports of the Public Health Service of every nation and the committees and conferences on venereal disease control lay great stress on education when used in the proper manner. There is no doubt but that an important factor in the spread of these diseases is found in ignorance of the populace, or the insufficient knowledge of sexual life and its dangers. If the young people were aware of the danger of premature or unclean sexual relations, they would probably take much better care of themselves than is now the case.

Every boy and girl upon reaching the age of puberty should have knowledge of sex and every man and women before reaching the marriageable age should be informed on the subject of reproduction and the dangers of venereal diseases. This sex education must be adequate. Knowledge alone of the danger of venereal disease does not avail if the young person is not brought up to develop a determination of self-restraint. While the importance of moral education is generally recognized, the age at which sex education is to begin is not entirely agreed upon. If the dangers of venereal disease were pointed out too early, the danger of arousing in the young person a sexual excitement might result, thus doing more damage than good. The opinion is voiced that it is less dangerous and more sensible to have sex education given by competent persons in the manner desired, than to have it come from unauthorized persons (servants, schoolmates, etc.)

Instruction in sex hygiene should emphasize the rewards of strength and virtue,

rather than the penalties of weakness and vice.

The whole bugaboo of sex education lies in the loss by adults of the attitude of the child mind and their total inability to converse in a sane, wholesome and truthful manner. Straightforward truthfulness is necessary because the truth is bound to be learned, and the more simple and direct the route, the wiser the sources, the better.

The person to impart this information may be parent, doctor, minister, friend or teacher. In any event, two qualifications are essential: knowledge of the facts and an impressive personality. The schoolroom or the lecture hall is not the place for such instructions for the young person cannot attain the proper reverence, therefore individual instruction in these matters is the ideal method.

Some of the facts all young men should know are: that the true purpose of the sex function is reproduction and not sensual pleasure; that the testicles have a two-fold function, reproduction and to supply force and energy to the other organs of the body; that occasional nocturnal emissions are normal physiological activity; that sexual intercourse is not essential to the preservation of virility; that continence is compatible with health; and that sex instinct in man may be controlled. Experience has shown that arduous physical and mental labor is best performed when the sex organs are not exercised; that is, sexual excess distinctly impairs muscular strength and mental efficiency.

Continence, of course, is the one and only sure way of preventing venereal disease. The great majority of the male population truly believe that it is absolutely physiological and essential for man to deplete his sexual organs by a natural coitus at intervals rather than have nocturnal emissions. In fact, I have heard young men say that these emissions were harmful to the body. This is just an example of the gross ignorance that pervades the minds of youth concerning things sexual. It will take intensive propaganda to bring about the proper mental education pertaining to sexual hygiene and the social diseases, and it is up to the physician to initiate such a move in his community.

The prevention of venereal disease hinges around another very difficult custom — that of prostitution. Civilized nations from time immemorial have struggled with this problem, even imposing heavy penalties upon the unfortunates, but without success. Many of our great cities have tried to suppress prostitution, but with only temporary results — the women being driven to other districts to carry on as before.

If a man has connection with a prostitute he should not be surprised if she infects him, even in those segregated districts under municipal medical observation or in those houses that have their private visiting physician, a man is not safe from infection, especially gonorrhea. A simple douche just before examination will remove all the evidence of incipient gonorrhea. Then the woman may become infected or manifest her first symptoms of the disease between the visits of the doctor. The so-called cured, but really chronic cases form a very important contaminating source in this group. It is possible for a woman to be negative for gonorrhea by all the clinical and microscopic examinations and yet pour out millions of the organisms from the mucus glands under the stress of sexual excitement. Huhner says, "That practically once a woman has had gonorrhea there is no way of telling from physical examination whether she is cured or not."

The next source is the "sure thing." So often men will present themselves with an active case of gonorrhea that they must have caught innocently for their only sexual relations have been with a girl of whom they were absolutely "sure." The only answer for this is that if the girl has sexual relations with one man she will with another and that absolutely eliminates the last element of safety.

The "respectable married women" present another group. If a man can entice one of these women to have sexual intercourse with him he should not blaspheme her later for infecting him with a venereal disease, for he did not stop to take into consideration the fact that she has a husband who probably had brought the infection home to her.

When a man has unlawful sexual relations with any woman he must be able to vouch for the purity of the other men with whom she has relations before he can feel safe, but this is a practical impossibility. The whole thing resolves itself down to the equation so tersely put by Huhner: "Illicit sexual intercourse equals venereal infection.'"

The rubber or animal skin condom has been recommended as a social disease preventive, and I believe it is a valuable adjunct for it lessens the amount of actual contact during an intercourse, but I have seen innumerable cases infected because the condom ruptured. Then, too, we have all seen the extra genital lesions that was not covered by the condom, especially on the lower abdomen or around the base of the penis.

Now we come to that greatest of all preventions for those individuals who must have illicit sexual coitus—immediate self-disinfection.

Metchnikoff and Roux in 1906 announced that certain mercurial salts in an ointment would kill the syphilitic germ on the genital organs if used within a short time. It has been found that a 33 per cent calomel in lanolin ointment is the most effective and has become the most commonly used of all the preparations. This is also effective in gonorrheal prophylaxis, but urethral injections have been added as adjuncts. Prophylaxis is possible, but it takes a great deal of vigilance and care, and the double method must be promptly and skillfully applied in order to be effective. It has worked well in military organizations where there was complete control of the men, but the results are less productive in civilian life. It requires a little time, some intelligence and sobriety to correctly apply self-disinfection.

So often sexual intercourse is indulged in while under influence of alcohol and we all know that the effect of this makes the likelihood of infection more probable. A man even partially under the influence of alcoholic liquor will not think of using prophylaxis at once and even though he does, it will be carried out in a haphazard manner.

To be efficient the disinfectant should be used not later than three hours after coitus but preferably within one hour. This will usually catch the germs before they have made any headway into the tissues.

The best method of using the prophylactic:—before coitus use a liberal amount of vaseline or other lubricant. This aids in preventing abrasions and forms a coating through which organisms penetrate with difficulty. As soon as possible after intercourse wash the genitalia well with water and plenty of soap. Soap is a spirocheticide and there is good evidence that chancroid can also be prevented. A wash of a 1-1,000 solution bichloride of mercury can be used following providing the person has sufficient intelligence or if carried out under medical supervision. Dry the parts well and apply about 1 dram of a 33 per cent calomel in lanolin ointment. This should be rubbed in for about 10 minutes paying particular attention to the glans, corona, entire penis, scrotum and lower abdomen and should not be removed for twelve hours.

For the prevention of gonorrhea a 10 per cent argyrol or 2 per cent protargol solution should be held in the urethra for two consecutive periods of five minutes each.

This method is practically that used in the army and navy since 1908. Many medical officers have published favorable

reports. Riggs reports 5,103 prophylactic treatments with only 81 infections.

In actual practice the number of infections appear to be cut nearly in half. The expectancy depends almost wholly on the factor of time.

Should a chancre appear even after the use of the prophylactic the best method to follow is the immediate use of an arsphenamine which will dry up all external lesions and kill the spirochete in them, although it may miss the organisms in the deeper tissues, thus rendering the individual harmless. If this could be done in all cases there would be very little transmission of lues. Notification, early recognition and prompt treatment become our most important prophylactic measures against syphilis.

Prophylaxis is much more easily carried out with the male than the female patient. If we could carry out a 100 per cent thorough prophylaxis on men thus preventing the disease in them we could stop the spread of venereal diseases and the incidence would be cut to the minimum.

The notification to the Board of Health of all cases of venereal diseases should be diligently carried out by all physicians for it is not possible to control any communicable disease, especially one that is pandemic, without knowledge of the cases and deaths. Every case known and properly cared for is a focus of infection neutralized.

The single standard for men and women must be insisted upon and the boy as well as the girl have equal rights in insisting upon a statement of health upon proposal of marriage. Any young man, properly warned and informed will be anxious to learn from his doctor before marrige if he is fit to be a husband and father.

Carnal lust may be controlled by hard work of the body. Idleness, stimulating food, impure thoughts, evil associations and alcohol excite the passions and usually travel with venereal disease. Physical exercise and outdoor life divert the mind and act as a safety valve for excess animalism of youth.

The public should be taught the necessity of thorough cleansing of the external genitals in both sexes daily. Circumcision is recommended as an aid to cleanliness and a prophylaxis against the skin lesions that usually occur on the prepuce and glans.

The prevention of innocent infection can be carried out by education concerning the hazard of kissing, the public drinking cup, unsanitary barbers, etc.

Snow and Brunet have put the responsibility of the practitioner in the fight to control and eradicate all venereal diseases as follows:

1. Every physician should understand the problem of combating the venereal diseases.

2. He should be equipped to diagnose cases of syphilis and of gonorrhea in his field of practice, or to secure such assistance whenever the presence of these diseases cannot be clearly eliminated from his diagnosis.

3. He should be qualified to treat such cases arising in his practice or to arrange for their adequate treatment.

4. He should endeavor to follow up his cases to insure their continuous care and supervision until completion of treatment.

5. He should instruct his patients how to protect their own families and the community from infection by themselves, or make definite arrangements for their instructions.

6. He should co-operate with hospital and clinic authorities in earnest efforts to secure prompt and adequate treatment of all cases discovered in the community.

7. He should likewise co-operate with the health authority in endeavoring to discover and correctly diagnose all cases, and

to record and appropriately use data regarding the progress of the work for control of these infections.

8. As a special measure of exceptional importance, he should promote the diagnosis and treatment of prenatal cases and of infections among children and married women.

9. He should do his share toward educating the people of his community regarding the dangers and the prevention of venereal diseases.

10. He should be interested in research on problems of syphilis and gonorrhea infections related to his specialty, and contribute the data collectible from his own practice to the advancement of medical and sociological knowledge of these diseases.

The State of Mississippi is well supplied with laboratory facilities including the excellent State Hygienic Laboratory and we should and must make more use of them. I was taught in Medical School to suspect syphilis in every patient until definitely ruled out. In following this instruction I have picked up many cases of lues that would have passed unsuspected for the clinical symptoms did not point to the real underlying cause.

The doctors simply must be more careful in their examinations, locate these unsuspected cases of venereal infection and treat them if we are to help control and eradicate so treacherous an enemy of the human body.

I should like to see legislation passed whereby those infected with a venereal disease would be compelled to follow out treatment until discharged. These cases should be reported by name and address and a strict account of them kept until given a clean bill of health by his physician.

The Health Department restricts interstate traffic of cattle, sheep and horticultural plants that are infected with scourges peculiar to them, why cannot they quarantine persons infected with a dreadful venereal disease? Some of the States have such laws.

Therefore, in order to control and ultimately eradicate the three principal social diseases syphilis, gonorrhea and chancroid, we must educate the population with respect to social hygiene, results of infection, personal prophylaxis, personal hygiene, strict legislation that can and will be enforced and lastly, recognition of infection by the profession.

DISCUSSION.

Dr. T. P. Sparks (Jackson): I personally want to congratulate Dr. Linfield on his paper. I think it is a well prepared paper well presented. He has gone into the thing frankly and openly, and I think that is the only way to deal with venereal diseases. He mentioned education as our chief method of prevention, and I want to indorse that view. I see Dr. Hays over here, and I think we all know that Dr. Hays believes that.

One thing I question. If we should attempt to make it a legislative proposition and attempt to make every case be reported by name and address, I wonder if we shall not drive away from the doctor the cases that need treatment, they knowing that they will be reported to the state and that they will be followed up and—in their opinion probably—that they will be persecuted. Knowing this, probably they will seek ways of treatment other than those available at the hands of physicians, and we may have the venereal bootleggers. This thing will be operated outside of the law. I just mention that; I have no firm conviction about it and have not had enough experience to form a definite judgment. That is just an opinion.

The doctor mentioned one other thing with reference to the education of children, to emphasize to them the rewards of virtue rather than the penalties of immorality. I cannot help but feel that you cannot overemphasize the penalties of immorality. There are a great many times when a person will not be deterred because of moral reasons when the fear of a thing will deter them.

I enjoyed the doctor's paper very much and think it is one of the best papers I have ever heard on the subject.

Dr. Hardy Hays (Jackson): I wonder if we realize what a wonderful paper we have just heard. It has been my good fortune—or misfortune—to be associated with venereal disease con-

trol ever since the war and I have never heard a paper in my life that was any more comprehensive and that dealt with the subject more completely than this paper that Dr. Linfield has just read. It is an excellent paper, and I hope that you gentlemen when you get home will get this paper and reread it, because oftentimes our interest may be in something else while an essayist is presenting his paper. I commend to you this paper as an outline for the study of this great problem.

We know we have two great big appetites that stimulate us into every activity known to the human. The first is the hunger impulse and the second is the reproductive impulse. The reproductive impulse is even greater than the hunger impulse, and when dealing with this impulse we are dealing with something vital to the human race. We cannot go to work and disregard that impulse, and if we let people grow up thinking this impulse is something low and base we shall have venereal disease as the outcome. But if we teach our boys and girls in the tender years that this is a holy impulse, it is an impulse that is natural, that it is not degrading or debasing, that it does give us the highest and best things we have in life, then we can shape our control of venereal diseases. For instance, when we tell a boy that it is a debasing thing to have sexual relations, he is going out and have it with some negro, he will have it with some prostitute; but if we teach him it is holy, that God gave it to us to impart life, that with it he can carry on the spark of life into the future, then we can give that boy the proper attitude. After habits of immorality have been fixed in a boy's life he is not going to be moral, he will not think about the sexual impulse in the sacred way he ought to; but he will if we start in the tender years of his life and impress on him that it is a holy impulse.

Dr. Linfield said that venereal diseases are on the decrease. I am sorry to say, gentlemen, that I question this. I have been in conference with venereal disease control officers all over the United States, and we have discussed this a great deal. Dr. Sparks brought out a point there. In a great many of these states they have clamped down the law that these diseases must be reported by name, and those are the states that are having the decrease; those are the states that are showing this big decrease. Dr. Leathers and I discussed this thing of reporting by name or by number. Dr. Leathers, with his practical mind, said: "What are you going to do with those things? You have not social agencies to follow them up, as they do in these well regulated cities, so what are you going to do with the reports?" When I answered that we would simply tabulate them, he asked why we could not let the physicians report at the end of the month on the morbidity and then tabulate. So we did it that way, and Mississippi is showing an increase every month. Beginning five years ago with nine thousand cases, this past month we had over fourteen thousand reported. Gonorrhea started with nine thousand five years ago, and we have gotten up to over twenty-two thousand cases of gonorrhea. I do not know whether we are increasing so rapidly, or whether we are getting them into the hands of the medical profession. When I started this campaign several years ago there were fewer than fifty physicians in the State of Mississippi who would give arsphenamin. My first step was to go to physicians and teach them to give it, if they did not know how, and urge them to do it. I see doctors in this audience with whom I was present when they gave their first dose. There are more physicians in general practise giving arsphenamin today in Mississippi than in any other state. Then we clamped down on the druggist who sold drugs for the treatment of these diseases, requiring them to give the name and address of the persons to whom they sold such drugs. Then we wrote letters to those persons telling them they were going at it in the wrong way by trying to treat themselves or having the druggist treat them and urging them to go to physicians.

Alabama, our sister state, has $25,000 for the control of venereal diseases; in Mississippi we have nothing. You physicians know that venereal diseases are more prevalent in Mississippi than any other contagious diseases. We started by sending arspenamin free to you for charity cases, subsidizing the laboratory to send you tubes for sending blood, etc. We cannot do any of those things for you today. Why? Because we have no money. If we earnestly believe that this social disease problem is the greatest one that we have in the state, then we ought to make ample provision.

There is just one thing I cannot pass by without mentioning, and that is to speak of the reward of health rather than the danger of disease when we are talking to these boys. Of course you and I are old enough to understand what the dangers of the disease are; but remember, when you are talking to that boy, that he rather likes danger. If you tell him anything is dangerous he will go into it much more quickly than he would otherwise; he thinks it is heroic. Don't tell him of the danger, but tell him of the number of prize fighters who have to be continent in order to maintain their vigor, tell him of the other athletes who have to be continent. You can never scare a boy, and don't try to.

Dr. Adams: I should like to thrust a lance into error and hold up the truth, and I

know of no more vital point to sustain the truth and no more vulnerable point to puncture error than in this great problem of venereal disease control. The doctor's paper was very illuminating to me, and I hope his data are a little overdrawn. Whether that be so or not, we must admit from the reports of the splendid physicians in this state that we have an alarming condition in Mississippi. We must admit that this is one of the greatest economic problems confronting this splendid civilization, when we consider the fact that twenty-two thousand cases of gonorrhea were reported last year and that fourteen thousand (I believe) cases of syphilis were reported last year among the citizenry of this state, the finest blood that flows in the veins of any citizenry on the face of the globe, when we consider that Mississippians, the white race in Mississippi, have been contaminated and that we are confronted with the problem of building a five-million-dollar institution to care for one class of gruesome wreckage that comes from this disgraceful story—and that will not care for them in the near future if we do not arise to the situation and do our part to educate the public and try to eliminate the source of this great wreckage. I have been heartbroken over the attitude of the citizenry of this great commonwealth, for I swear by them and believe in them. I was here for approximately three weeks and saw this legislature making appropriations for tick eradication, $25,000; for killing ants and potato bugs, $125,000, with no appropriations for preventing diseases that scourge the citizens of the state and that fill these institutions, that burden us to death with taxation, with wreckage that is a disgrace. I felt discouraged that we had only $10,000 for this venereal disease program, and then that was taken away from us by this last legislature. I went away with a sad heart.

Dr. Linfield said approximately sixty per cent of insanity and feeble-mindedness comes from venereal diseases. Whether that be true or not, we know a large percentage does come from them. The greatest economic problem confronting this state today is the care of the gruesome wreckage that comes from these two scourges. We have not recognized one factor, and that is the feeble-minded all over the state, everywhere, embarassing the normal children, hindering them in their work, hampering them in their work, embarassing the parents. As I went over the state in 1925 I saw them everywhere, children that should have institutional care, embarassing the other children, hampering them, and perhaps a source of contamination. What shall we do? The highest expression of citizenship, of religion itself, is service; service to those who need it, service to the unfortunate. Certainly no greater field could be opened up than to reveal to the citizenry of this state their duty to care for the unfortunate, for the insane, for the feeble-minded; but certainly greater service comes in preventive measures. I want to appeal to you as physicians and as apostles of truth not to lapse into indifference on this great question, because you can be emissaries of truth and arouse the public to interest in this great economic problem.

I would not minimize the importance of fighting the great white plague. They have estimated twenty thousand cases in the state. Here we are confronted with the proposition that there are thirty-six thousand cases of these disgraceful scourges in the state—reported, and you know the tendency of families and of physicians to cover up these things. How many are there not reported? We know that tuberculosis is not a disgraceful scourge and that syphilis is a disgraceful scourge. We ought to feel disgraced as a church, as a civilization, so long as we tolerate the disgraceful scourge that is bordening us with this gruesome wreckage that comes to our hospitals for the insane. Gentlemen, it ought to be a privilege for you to arouse the public to the importance of the eradication of this great scourge and say it can be done and shall be done.

Dr. H. H. Ramsay (Ellisville): Not with the intent of criticism but for fear of misunderstanding in the reading of Dr. Linfield's paper and also in these discussions, I should like to bring out the fact that the prevention of venereal disease and venereal disease control will not prevent feeble-mindedness. In fact, I have often stated to Dr. Hays that we shall not control venereal disease in the state of Mississippi—or any other state—until we control feeble-mindedness. The lower in the scale of intelligence we go, the more degenerate human beings become and the more apt to acquire venereal diseases. In fact, a large percentage of venereal diseases in Mississippi is transmitted by the degenerate and feeble-minded in our state. The statistics that Dr. Linfield gave I presume he got from the authorities, but they do not agree with the figures I got from Tredgold, who is our most noted authority. Five per cent of mental disease is due to syphilis, congenital syphilis. The symptoms usually outstanding, in the teeth, etc., are usually present; and usually on a Wassermann; the organisms can be gotten from the blood of the patient.

In the writings of the older men, English and all, feeble-mindedness is said to be hereditary, transmitted from parent to child or from grandparent to child through defective germ plasm, and that it is an entity in itself. I should like to correct, if possible, without disagreeing with the essayist or anyone discussing this paper, that the prevention of venereal disease will in no wise control the problem of mental deficiency. The end to which I am working and the end to which many

men in many states are working is the control of hereditary feeble-mindedness, feeble-mindedness which comes from a defective line of stock. Of course, we are anxious to control, as well, that percentage of cases of feeble-mindedness due to venereal disease—about five per cent. Twenty per cent of all cases of mental deficiency are due to accidental or disease conditions of the brain, while 80 per cent are due to hereditary or defective germ plasm.

Dr. T. B. Holloman (Itta Bena): I do not want to discuss the paper but to add just a word of appreciation. We are all creatures of habit and all have some pet scheme. In listening to the discussions you can pick them out. We all have our hobbies; I have mine.

I should like to know, in the twenty-two thousand cases of gonorrhea and fourteen thousand cases of syphilis in the state of Mississippi, reported by the doctors of Mississippi in the past year, how many were in the white race and how many in the black race. I do not know how it is all over the state, but in my practice the cases of syphilis and gonorrhea have fallen off very much in the last few years in the white race. It is the rarest thing that I see a high school boy with gonorhea or syphilis, unless he is of that class that Dr. Ramsay speaks of—a lower class boy who has no aspirations to do anything in school, who cuts and loafs as much as he can. In the higher class I never see it.

Coming to the hobby—how many of you who have boys have ever sat down with them quietly and talked with them about venereal diseases? Hold up your hands. I have four boys, and I don't know that I have talked to one of them on that subject. Yet I determined when each was born that I would circumcize him in early life and talk to him about these diseases, but I have never circumcised one and never talked to one. It is hard to talk to your boy individually about these things, but it is easy to talk to them when they are in a group of other boys. There are two organizations in Missisippi, the Hi-Y and the Boy Scouts. It is the ambition of my boys to get in the Hi-Y, and they get in as soon as they are old enough. They study that Boy Scout stuff and get in as soon as possible. I talked to my boys, told them to live a clean life, if they want to make good in athletics. I do not want to make a personal reference, but I will say this—I am small, and during my four years in college I was the best all-around athlete. Why? Not because of my size, but because of a clean life. The other athletes smoked cigarettes; I did not. In any town where you have a Hi-Y or any other organization of the kind make it a point to meet with them, to associate with those boys, never repeat a dirty joke to them, instill into them the idea of living a clean life if you want to succeed in anything, and you will get results.

Dr. R. L. Hagaman (Raymond): I think this is the best paper I have ever heard on the subject, and I think it ought to be given a little extra publicity.

We have a high school here, and I have been called upon every year to give a lecture to boys only on this subject. I should like to say, in support of Dr. Linfield's statistics, that I have seen results from that work in the reduction of disease; and I think if every doctor here would do as Dr. Holloman suggested and take it upon himself to talk to boys in such organizations a great work would be done.

I cannot agree with Dr. Ramsay over here that feeble-mindedness is affected by this, but I should like to say that feeble-mindedness and tuberculosis and so many other diseases start with venereal diseases.

Dr. Linfield (closing the discussion): I appreciate this discussion. I had hoped that I would bring out a lot of discussion, so as to make the medical profession of this state sit up and think a little. I hope it has borne fruit.

I hope that the statistics Dr. Hays can give us during the next five years will show a great decrease in the number of cases of venereal disease reported, rather than an increase, and I hope this discussion will have a lot to do with that. I do not know, but it may be that the increase in the number of cases of venereal disease in the state may be due to the fact that doctors are taking more interest and reporting a greater number of cases.

We should try to work on the legislators in our home county and town and get them to give us an appropriation for the bureau of venereal diseases so we can work on this problem and have legislation passed so that drug stores cannot sell a man a bottle of argyrol and a urethral syringe and tell him to use it. Another situation might arise such as that in my home town, Gulfport, where a negro doctor is cleaning up financially because these feeble-minded boys Dr. Ramsay spoke of, who have not intelligence enough to apply for scientific treatment, go to him, and he is charging $8 for a complete cure—$5 for examination and $3 for a bottle of medicine. It is a mighty low mind that will do a thing like that, because you know he knows that they will not be cured. They will become chronic cases and spread infection everywhere.

THE RELATIONSHIP OF FEEBLEMINDEDNESS TO THE FIELD OF GENERAL MEDICINE.*

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The nervous system is the first structure to form in the fecundated ovum. All other structures develop from it, and it is the basis of their growth, nutrition and function.

Brain development is the most rapid of all body structures. At birth it weighs from 280 to 330 grams. At six months its weight is from 600 to 680 grams. By the end of the first year it weighs from 700 to 800 grams. At puberty its weight has increased from 1100 to 1200 grams, or almost normal for the adult, which is 1200 to 1400 grams.

The cause of the rapid development is apparently a provision of creation. The brain and its auxiliary connections, the sympathetic nervous system, internal secretory system, are merely preparing for the nutrition and development of muscle, bone and so forth, as well as the proper functioning of all body structures.

This rapid increase in the size and weight of the brain is due to rapid multiplication of cells, as well as to individual growth of the same. Development does not occur in all parts of the brain at the same time. The nerve cells of some areas reach maturity much earlier than in the other areas. Those cells of the frontal and parietal regions are the last to reach maturity. These are the seat of the higher intellectual functions. The normal brain is characterized by, first, perfect contour, or gross perfection, equality of hemispheres, orderly arrangement of cells, having clear cut and acute angles. Here it must be remembered that this development is germinal, and a normal brain develops from normal germ plasm cells, transmitted by heredity. From the conception of the fetus, therefore, the extent, or limitation of brain development and consequent intelligence is dependent upon the character, perfection, or imperfection of the germinal cells transmitted from parent to offspring. While it is often the case that gross abnormality and imperfection is found to exist in the brains of the feebleminded, especially those of very low intelligence, it cannot be accepted that feeblemindedness is due to gross pathology or imperfection, as was once believed by the older anatomists and pathologists. Gross imperfections are not so constant in the brains of feebleminded persons, as the histologic imperfections. Primary or hereditary feeblemindedness then is not a condition of arrested development of brain cells, but a lack of inherent capacity of the cells to develop normally.

On post mortem the brains of feebleminded persons show three distinct features as compared to normal brain. First, imperfection of the cells; second, numerical deficiency of cells; third, irregular arrangement of cells.

We must, therefore, conclude that there is an actual physical basis, which reflects one's intelligence, energy, power of adaptability, personality, will power, emotions, etc.

Furthermore, we are now certain that actual brain pathology of inherent character is translated into social pathology; as examples, the feebleminded prostitute, the feebleminded criminal, the pauper, the habitual liar, and many other abnormalities due to subnormal intelligence are certain and outstanding elements.

The medical schools have given such elementary courses on this subject, that after the student has finished, he has hardly learned enough about the brain to fully realize that it is the physical basis of the mind and intellectual capacity. This field of research so full of possibility and hope for the improvement of the race has not been accorded that place in our medical

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teaching, which its great importance would justify.

Mental deficiency of the average imbecile and moron types is one of the physician's stumbling blocks. When the child begins to fail in school, all sources except the true cause are looked for. It is advised that his tonsils be removed, he is fitted with glasses, and in many cases all sorts of glandular extracts are resorted to without improvement. The mongolian type of defective is often mistaken for the cretin, the thyroid extract is administered over long periods of time, without any improvement. These efforts are often honest on the part of physicians, who are anxious to do something for their patients but with the passing of the old order of things and new teachings, with ample clinical material at hand the physician of the present and ftuure should be better prepared to advise his clientele accurately concerning these varieties of defect which in the main are innate and not amenable to cure or even treatment by drugs, or gland extracts. These instead are subjects for proper training, suited to ability, or life long care and supervision.

If physicians were better trained in the inherited pathology of the nervous system, they would better understand many of the phobias, hysterias, peculiarities and weakness of patients who are constanly setting up difficult situations; most of which are the result of an inferiority complex. Finally, the physician cannot ignore the field of inherent pathology. It is his greatest field of usefulness and embodied in its careful study, followed by proper remedial measures, the physician will finally come to his highest service to man—the preservation of the race, and the reproduction of a higher type of citizenship.

DISCUSSION.

Dr. Felix J. Underwood (Jackson): More and more the general practitioner is called upon and expected to find the cause, and when possible remove it, of all mental and physical deficiencies of human beings. In this country the time has passed and gone for the doctor whose investigation consisted of and whose diagnosis depended upon a simple "stick out your tongue," and "feel of your pulse."'

It is being realized more and more by thoughtful members of our profession that the reasons that quackery and cultism have been able to attract so many followers are—first, untrained and unscientific medical men—second, lax and loose methods on the part of many members of the profession who have the ncessary knowledge but who do not take the time necessary to examine patients—third, unwillingness on the part of the profession to give proper publicity to the accomplishments of the profession in the field of preventive and curative medicine. There are many other reasons that could be enumerated, but it is unnecessary here.

In order to understand the cure of any ill, it is necessary first to study and if possible to find the cause. In the field of preventive medicine little or nothing could be done without a knowledge of the etiological factors relative to communicable diseases.

There is a relation of mental deficiency to the field of general medicine. In other words, the general practitioner of today is being called upon and in the future will be called upon more to look over the families that he serves in the capacity of medical advisor and friend once a year, or as often as necessary, not only to find physical defects and to correct them early; not only to prevent typhoid fever, diphtheria, scarlet fever, smallpox, and and other diseases that are so easily prevented, but he will also be expected to find and to roughly classify children who are mentally defective.

Many will be supervised and treated by him at home. Others will be sent to institutions by him where they can be adequately cared for and some of them receive training that will make them more or less useful citizens of the state.

This cannot be done unless the physician is willing to devote some time to the study of mental deficiencies. It is felt that the people should be protected against all forms of quackery as much as possible, and we as a profession must realize that what we are to accomplish for our clientele and for ourselves in the field of medicine and surgery will depend upon our own ability and energy and that we cannot succeed by constantly spending our time cussing the greatest of all Amrican jokes—chiropractic and others equally shameful and nonsensical—imposed upon the body politic.

In line with this subject, let us consider at this time the causes of mental deficiency. They are many and complex. In this discussion, I shall

consider the definitely feebleminded, and then the group of retardations, which cannot be diagnosed as feebleminded.

We prefer, with Tredgold, to divide feeblemindedness from an etiologic standpoint into two general groups, primary or intrinsic (endogenous) amentia, and secondary or extrinsic (exogenous). Primary amentia results from a pathological process or a variation which has affected the germ plasm prior to conception. We shall restrict the term "congenital" to this meaning. In this sense also primary amentia results from extrinsic causes—that is, any pathological process which harmfully affects the offspring after conception has taken place; in point of time this may be intra-uterine, during labor, neonatal, or later in infant live. In this sense feeblemindedness is "acquired." There may be also combinations of primary and secondary causations.

PRIMARY AMENTIA

There are two general views of the origin of the germinal impairment which is held to be the basis of the primary group. The first that this variety of germ plasm is a direct inheritance, through countless years of evolutionary process of forms of mentality which have failed or lagged behind in the process, and have never gained those characteristics, the absence of which we call defects, or which were incapable of further development. The second view is that germinal defect may arise from various causes in a stock which previously was normal. The following are the main causes which are considered to bring about, sooner or later, germinal defect:

(1) Neuropathic inheritance: the presence in one of both of the parents or the family as a whole, of mental disease, epilepsy, or other convulsive disorders, neuroses, and psychopathies.

(2) Unfavorable environment: conditions of life, habits, labor, and manner of living which are unhappy of unhygienic.

(3) Tuberculosis: While it is not a direct cause of feeblemindedness, it may produce in the offspring weakened nervous systems and general impairment.

(4) Alcohol: It may initiate a germinal impairment which will later produce mental deficiency. Alcoholism is frequently found among mental defectives and is to be regarded as a symptom rather than a cause. It may lead to further deterioration of the stock or to its elimination.

(5) Syphilis: Study has been made by means of the Wassermann test on many groups of cases, and positive reactions have been obtained in percentages varying from 2 to 40 or more. Studies of parents of mental defectives, although lesser in number, do not throw any more conclusive light upon the question. Negative Wassermann reactions in cases undoubtedly syphilitic in origin are occasionally met with. Syphilis may either produce a germinal impairment or may impair the embryo after fertilization.

(6) Consanguinity, and age of parents are factors only when a neuropathic diathesis already exists, or, in the case of advanced age of one of both of the parents, if some disease process has brought about physiological deterioration.

Feeblemindedness seems to result from faulty germ plasm in the large majority of cases. In Tredgold's series of 200 cases 80 per cent, and in Goddard's 300, 65 per cent may be designated as hereditary. The manner in which mental defect is transmitted from one generation to another has been the object of much speculation, and the two chief theories of heredity, that of Galton (1822-1911) and of Mendel (1822-1884) have both been utilized to explain the phenomena.

After much deliberation, Goddard concludes that feeblemindedness of the hereditary or primary type behaves as a "unit characteristic," is "recessive" and is transmitted according to the Mendelian theory. This may be illustrated in the six possible matings, as follows:

(1) Normal with normal, resulting in all normal children. Both parents are "duplex normal," that is, they each inherit normal traits from both parents.

(2) Feebleminded with feebleminded: all children feebleminded.

(3) Feebleminded with normal: all children simplex normal, that is, outwardly or apparently normal but each possessing the power of transmitting mental defect.

(4) Simplex normal with feebleminded: half the children feebleminded and half simplex normal.

(5) Simplex normal with simplex normal: one duplex normal, two simplex normal, one feebleminded.

(6) Duplex normal with simplex normal: half duplex normal and half simplex normal.

Davenport represents a different view, and does not believe feeblemindedness is a unit character. He believes rather in the transmission of traits according to the Mendelian theory. He states that feeblemindedness is no elementary trait, but is a legal or sociological, rather than a biological term, and is due to the absence now if one set of traits, now of quite a different set. Only when both parents lack one or more of the

same traits do the children all lack the traits. So if the traits lacking in both parents are socially important, the children all lack socially important traits, e.g., the feebleminded. If, on the other hand, the two parents lack different socially significant traits so that each parent brings into combination the traits that the other lack, all the children may be without serious lack and all pass for normal. However, as many of these traits of such "normals" are derived frim one side of the house only (are simplex) they may, on mating with persons of like origin with themselves, produce obviously defective offspring.

SECONDARY AMENTIA

There are numerous causes which may produce secondary amentia. Apparently this group of cases comprises about one-fifth of the whole (19 per cent in Goddard's series). We may classify these causes according to the period in which they are operative, prenatal, during labor, or postnatal.

PRENATAL CAUSES

The most frequent prenatal cause is an abnormal physical state of the mother. Toxic conditions of pregnancy, typhoid, typhus, smallpox, and cholera are examples of diseases which have been known to produce secondary amentia, also maternal alcoholism, tuberculosis, syphilis, and lead-poisining. Ballantyne's works on the "Diseases and Deformities of the Fetus" (1895) and "Manual of the Antenatal Pathology and Hygiene" (1904) contain valuable contributions to fetal pathology. There is no question that through similar studies much new light will be thrown on the many obscure points in the etiology of feeblemindedness. The mongolian type of mental deficiency seems to be due to some intra-uterine or fetal disease process. Mongoloid signs, however, are found singly, or in various combination in other types of mental deficiency. Amaurotic family idiocy (Tay-Sachs disease) is probably also of prenatal origin.

CAUSES ARISING IN PARTURITION

Mental deficiency arising during the birth process is less common. Little, in his series of cases of physical and mental defects, resulting from abnormalities of labor, published in 1862, found a small number in which cerebral hemorrhage was followed by some degree of paralysis, and mental impairment ("Little's disease"). The infantile cerebral palsies of which Little's disease is one, in which there is nearly always some mental impairment, are due, however, to causes arising in fetal life or early in infancy rather than during labor.

POSTNATAL CAUSES

Such causes are frequently secondary to some infectuous disease such as scarlet fever, whooping cough, diphtheria, easles or some form of meningitis. Trauma, so frequently given by parents as a cause of mental deficiency, is apparently of little or no importance in etiology. The large group of causes in which mental deficiency is accompanied by disorders of the glands of internal secretion is receiving attention. Cretinism, which is due to absence or diminished secretion of the thyroid gland, is the best known example. Other glands of internal secretion, the pituitary, pineal, parathyroid, thymus, adrenal, and gonads, may be the cause, singly or in combination of pathological states in which brain function is affected. The origin of these endocrine disturbances is a matter of speculation, and it is unknown if they are simply a part of a hereditary defect, or if they develop in utero, or in the postnatal period. They are tentatively classed as arising in the later period. Malnutrition never produces mental deficiency if we restrict the term to simple malnutrition following insufficient or improper food, insufficient sleep, recreation, fresh air, or light or other error in personal hygiene. Malnutrition rather is one of the most frequent causes of mental retardation as distinguished from actual mental deficiency.

CAUSES OF RETARDATION.

The causes of retardation, especially in school children, have been considered above. In addition to malnutrition, retardation may be caused by physical defects or disease, of which the following are examples: tuberculosis, bone disease, deformities and poliomyelitis. Disease of the eye, errors of refraction, diseased tonsils, adenoids, and teeth are also often the basis of backwardness. Speech defect is a frequent and important cause of retardation. Sometime these conditions, such as stammering and stuttering, are removable by training; in other instances, the speech defect is only part of a more general language defect, due to imperfect or arrested mental development; here the prognosis is relatively poor and the case is to be considered one of mental deficiency rather than retardation. Deafness nearly always has at least some retarding effect. The earlier the onset and the severer the degree of impairment, the greater the retardation. As in speech defects, some cases are of congenital origin, and often when the deafness is of severe grade, or complete, there is an accompanying retardation ("deprivation defect") or there may be actual mental deficiency of varying grade depending upon the extent of brain defect.

Retardation is usually a functional rather than organic defect, and may arise at any biological stage; for example, the retardation that may accompany delayed puberty. The internal glandular mechanism undoubtedly is much concerned in the production of these states. Often there is no apparent cause for the retardation. In some

instances the child or the individual seems to stand still mentally, then suddenly becomes active and devlops intellectually. Such cases are not rare, even in adult life.

On the other hand, in children an apparent retardation may really represent a condition that will result in "arrest" at a subnormal mental level.

In the face of these facts, which to my mind clearly show the real relationship of feeblemindedness to the field of general medicine, would it not behoove us to make the necessary preparation for a work which we will surely be called upon to do. Let us be prepared to do the job in a satisfactory manner. This will not only insure that these unfortunates get a square deal, which they are now denied, but it will insure a good conscience on our own part for the reason that an obligation will be discharged to the satisfaction of all concerned.

Dr. H. H. Ramsay (closing): This short paper was prepared with single purpose of impressing the members of this association with the fact that there is an actual physical basis which reflects the individual intelligence and emotions. Furthermore, inherent brain pathology reflects a great amount of social pathology with which we are dealing. It is a peculiar situation that for hundreds of years we have neglected the field of inherent brain pathology and fail utterly to recognize the fact that the poor mental equipment of such individuals in our midst is due to the transmission of defective germ plasm from generation to generation. Dr. Frizell, in his discussion hit the key-note of the whole proposition with the plan of recognition, segregation and sterlization. However, preceding any effectual measure for the control of feeblemindedness there must be brought into action a rather extensive educational program for the purpose of bringing about community responsibility for the defective members of the race. We have been carrying only a partial health program for the reason that we have left the brain entirely out of our health examination. It is as easy to determine that a child has a normally developing brain which will carry him through life as an acceptable citizen, as it is to determine that his heart, lungs or other organs are normal and in failing to examine children mentally we are extending all the saving and strengthening power of our health department to the imbecile and morons and thus enabling them to live and reproduce themselves at a more rapid rate. Therefore, our well intended effort in public health work, without recognizing the feebleminded and giving them such classification, supervision, and education as they especially need, is augmenting our social and economic burdens.

I appreciate Dr. Underwood's reference to the retarded child with special reference to such retardation being due to focal infections, defective sight and other conditions which may be amenable to treatment by the physician or specialist. These, however, form a small percentage of retardation. The majority of cases of feeblemindedness are strictly hereditary and it is this form of feeblemindedness in which the state is especially interested from a standpoint of prevention. In approximately 80 per cent of the cases the retardation, or failure of mental development is not due to arrested development of the brain cells, but to a lack of inherent capacity to develop normally. The retardation which is most evident about the age of puberty, is only comparative. The child has been sub-normal all the time but the retardation is more apparent as it grows older. In other words, in the little child with a child's mind, defect is not so evident, but the large boy or girl with the litle child's mind is a contrast which becomes very apparent. There is very little excuse for mistaking mongolianism or cretinism and the administration of thyroid extract to this type of defective. It is true there is a similarity between the two conditions, but each is a clear cut clinical picture within itself. As Dr. Underwood pointed out, we as physicians, must not forget the focal infections or other remediable physicial handicaps, which may retard the nervous system, but at the same time we should be careful not to fool ourselves and trusting parents in the cases of the large number of children who are the victims of inherited feeblemindedness and for whom supervision and occupational training suited to their mental capacities is the only remedy.

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THE FORTY-NINTH ANNUAL SESSION OF THE LOUISIANA STATE MEDICAL SOCIETY

The medical profession of Louisiana met at Baton Rouge in their Forty-Ninth Annual Session the first part of last month. At this meeting there were presented many interesting papers dealing with a variety of subjects. The discussions were actively participated in by the members of the society and from a scientific point of view the meeting was extremely successful, thanks to the notable efforts of the essayists.

It is the carefulness of the arrangements, the hospitality of the hosts and the extremely businesslike manner in which all the functions of the organization went off that we wish to accentuate. There have been few medical meetings so smoothly conducted and at which such a warm and cordial greeting was given the medical profession as by the hosts of Baton Rouge who welcomed the delegates and the attendants at the meeting. Everything was done to make them comfortable and their visit a success. The delightful entertainment prepared by Dr. T. J. Perkins was especially enjoyable and the visit to the State Insane Asylum well repaid the time it took to reach this institution.

The Louisiana State Medical Society is to be congratulated upon their choice of the new President-Elect, Dr. Frank T. Gouaux of Lockport. Dr. Gouaux well deserves the honor conferred upon him and the society honors itself by his election. There have been extremely few men in organized medicine of Louisiana who have been more active in advancing the interest of the medical profession than this distinguished Councilor for many years of the Third District.

To the retiring president Dr. A. A. Herold, the Journal wishes to extend its compliments for the able, conscientious and thoroughly efficient manner with which he has conducted the affairs of the State Medical Society. To the incoming president, Dr. Leon J. Menville, the Journal wishes all success in his endeavors to further the aims of the organization and in his efforts to make the semi-centennial meeting a standard for all future anniversary conventions.

SEMI-CENTENNIAL OF THE ORLEANS PARISH MEDICAL SOCIETY.

The Fiftieth Anniversary of the Orleans Parish Medical Society's existence will be celebrated at a special meeting on the seventh day of May. At this meeting Dr. A. E. Fossier will read a paper on the medical history of the organization, and Dr. Rudolph Matas and Dr. Ernest S. Lewis,

two of the oldest and most distinguished living members of the organization, will also appear.

The fifty years of uninterrupted growth of any organization deserves to be commemorated in a fitting manner. During the fifty years that have elapsed since the inception of this society, many have been its trials and tribulations; yet it has weathered these successfully and now stands forth as one of the most active, progressive and forward moving parish and county organizations in the country. Fifty years is a long span of time according to some standards. According to other standards it is but a short period. When one looks back on the changes that have taken place in medicine in the past fifty years, during which time the entire conception of the science of the healing art has changed, during which time such revolutionary changes have taken place as the development of aseptic surgery and knowledge of microbiology, a one half century is indeed a long period of time. It is during this era that the parish medical society has been able to present to its members all these epoch making contributions to medical science in some form or another. It has lead and guided, directed and taught, always.

May the Orleans Parish Medical Society have many more semi-centennial anniversaries!

HEART DISEASE AND PREGNANCY.

A question which is of interest both to the internist and the obstetrician has to do with the advice that should be given a woman with heart disease who wants to know the advisability of remaining in a single state. Questions that will be asked the doctor include such as: "What is the possibility of my bearing children?" "How dangerous will it be?" "Must I always be childless if I should marry?" "When is the greatest danger, in the early or later stages of pregnancy?" "Will you advise me as to how I must take care of myself if I do become pregnant?" The patient may ask these and similar questions of three or four different physicians and she may receive three or four different answers. It is for this reason that the perusal of a recent paper affords food for thought. The authors call attention to the necessity of treating pregnant women with diseased heart, primarily as cardiac patients; to the emphasizing of rest the four to six weeks before labor; to the lessening of nervous and physical exhaustion in the first stage; to the diminishing of physical strain in the second stage. They note that the majority of the patients with crippled hearts are capable of pregnancy and labor without any great additional risk, but they also stress the importance of noting cardiac failure in the early months of pregnancy which refuses to respond to treatment. This they say should be treated by immediate intervention. A second pregnancy should not be vetoed unless in the former pregnancy there was definite evidence of cardiac failure. They state moreover, that risks are unduly stressed and that pregnancy in a woman with cardiac disease is overclouded by fear and apprehension. This is unfortunate because the hearts respond in a most wonderful way to care and treatment properly applied.

*Hay, John & Hunt, Elizabeth: A Record of 50 consecutive cases of pregnancy and parturition in patients with crippled hearts. Lancet, 1:214. 1928.

TRANSACTIONS OF THE SONIAT-MERCY STAFF.

Drs. Colclough and Daboval were appointed to the junior visiting staff.

The scientific program was taken up by the presentation of five cases of diabetes, each type a problem in itself and requiring varied methods of treatment to curtail the glycemia. The problem of the diabetic in maintaining an adequate diet was gone into and the financial difficulties encountered by the average patient who by necessity must work during treatment. A diabetic diet must be varied in its routine and the carbohydrate, fat and protein equilibrium must remain the same in these patients as well as in the patients as well as in the patients hospitalized and receiving insulin. This is a large factor in their treatment and the problem was gone into with each case presented in an attempt to demonstrate that the indiivdual patient must be re-educated in a limited food intake, though adequate enough for maintainance of body metabolism.

The discussion was opened by Dr. Randolph Lyons who emphasized the financial side of the diet in an individual of moderate means. Dr. Dimitry spoke of the diabetic from the standpoint of opthalmology. There then followed a general discussion by the staff.

In closing Dr. Campagna made a plea for a more systematic method of treating and dieting the diabetic, emphasizing the necessity of a blood sugar determination, the urinary sugar being very deceptive and not a true criteria of the condition of the hyperglycemia.

Dr. Ph. DeVerges cited a case of a child fifteen days old having a four plus Wassermann.

Dr. Maurice Campagna.
Secretary.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

ANNUAL REPORT OF THE RETIRING PRESIDENT—DR. A. E. FOSSIER.

The walk of time is rapid. Although a year has elapsed since you honored me with the great distinction of being your president, it seems but yesterday that I stood on this same rostrum, flushed with pardonable exultation as I expounded in my inaugural address many principles to be presented to the society for its adoption, and a few innovations for its consideration. I gave scanty thought then of this night, this inaugural night, when custom compels the newly elected president to enumerate the deeds he hopes to accomplish, and the retiring president to give you a resumé of the activities of the Society during the year of his administration. Your retiring president must confess that it is with trepidation that he is making this report in which the accomplishments of the past year must be discussed and presented to you, the judges of their merits or demerits.

In many respects, 1927 was a notable year, not only for this society, but for our city as well. It will ever be impressed on our memories. The spell of uncertainty and the fear of disaster hung as a pall over this fair city during the time the mighty Father of Waters threatened our homes; our ardor was dampened to such a degree that during that distressing period, all activities, save that of preparedness, were curtailed. In that time of impending calamity this society did its full duty. It organized its forces in a Committee for Medical Relief in Disaster, and every one of its members stood ready for instant mobilization to the post of duty to which he was assigned.

It is gratifying to note the excellency of the scientific meetings of the past year and their large attendance. This is as it should be, for on the final analysis, advancement in medicine must ever be the dominant aim and purpose of this society. This city is most fortunate in possessing a faculty of physicians, which, by culture, scientific attainments, learning, beneficience, personality and in high standard of ethics, I will state with justified pride, makes the city to stand preeminently among the prominent medical centers of this great country.

Contributions of great medical value were presented at these meetings, not only by members of

this society, but frequently by distinguished visitors, specialists of renown in their different fields of activities. We are indebted for this successful scientific year to the indefatigable efforts of Doctor Leopold Mitchel and his committee, as well as to the enthusiastic response of the essayists of this society.

It is with great pleasure and satisfaction that we must announce the fact that "LONGER LIFE WEEK", both from a medical and lay point of view, was successful beyond our fondest hopes. The inauguration of this movement will be an innovation which will redound to the greater benefit of humanity, for by propounding the idea of LONGER LIFE to the mind of the public by inculcating the necessity of periodical health examination by the family physician, we are performing an altruistic duty, true to the noblest precepts of our profession, the prevention of diseases, the promotion of health and longer life, as well as the greater happiness of our fellow men. The encouragement received from the public at large, and the cheerful help given by our City Fathers, our health authorities, our great newspapers, our large corporations, our merchants. our institutions of learning, our sanitariums, our civic clubs, and many of our other associations too numerous for enumeration, command us to continue this good work, and we would indeed be laggard in our obligation to our public if we would permit this movement to die in its inception. This activity whilst public in its scope must ever remain under the leadership of the Orleans Parish Medical Society. Not only a week in each year should be dedicated to this purpose, but at frequent intervals articles of a medical character should be published in the lay press under the auspices of this body.

The newspaper is the most powerful medium of instruction for the public relative to the conservation of health. Properly regulated, real, truthful and valuable information can be disseminated to the large multitude who read the daily papers. The public has decided that it wants health talk. It is vitally interested in the prolongation of life, and in the prevention of disease, but the knowledge to be diffused should be accurate, impersonal and free of all tinge of commercialism. The scope of the work of this society should be increased so as to include education of the public in health matters.

Dr. Paul J. Gelpi and the gentlemen comprising his efficient committee are deserving of unstinting praise for their indefatigable efforts, and unrelenting zeal in forcing "LONGER LIFE WEEK" December 5 to 10, 1927 to such a successful termination.

Although the primary object of this society is the advancement of medicine and surgery and the encouragement of scientific and philosophical studies, the safeguarding and the promotion of the physical well being of its membership deserves its due consideration. For the first time in the history of this society this phase was given practical attention by the introduction of group insurance for its members. Two hundred and forty-four members of this society availed themselves of the privilege of participating in that plan of life insurance. On the fifth day of December the contract was signed with the American National Life Insurance Company. It is our earnest hope that in the very near future many more of us will take advantage of the exceptional rate of premiums offered by this company. As far as it can be ascertained this is the first Medical Society of this country which has availed itself of this group plan of insurance.

A serious effort was made for the proper regulation of the so-called society practice. It is a vital question which demands careful and deliberate study, for under present conditions it does not work to the best interest of the public and the physician. The society was circularized in order to be able to give this matter due consideration. But for the shortness of time and the negligence of many members in answering their questionnaire this important subject is still in abeyance. It is sincerely to be hoped that this matter will not remain dormant, for with renewed effort it can be brought to a successful solution. A complete report of the result of these questionnaires will be made to the society in the near future.

During the past year the By-Laws have been completely revised, and will soon be ready for distribution.

A joint meeting of the Hospital Abuse Committee of this Society and the Medical Committee of the Board of Administrators of the Charity Hospital was held in the office of its Superintendent on Friday, December 16, 1927, for the purpose of discussing ways and means by which the abuse of the clinics of the hospital by persons not deserving of the charity of the state could be curbed. This is the first time in the history of that magnificent institution that the Board requested a consultation with the medical profession through its organization relative to the management of the institution. Despite the enactment of a law to minimize abuse in our State Charity Hospitals, this evil has grown to such a proportion, that unless steps be taken to curb it, the really needy will be deprived of their constitutional rights in this institution, or, the very resources of the State will be taxed beyond reasonable response. Our Charity Hospital is the fifth largest state or municipal institution of its kind in this country, and is only surpassed in the number of its beds by hospitals of Chicago, New

York and Philadelphia. If we consider the fact that New Orleans ranks the eighteenth city in population, and Louisiana the twenty second State in the Union we readily appreciate that our Legislature has been most generous in appropriations and the State is doing its full duty in caring for its indigent poor.

A conference of the chiefs of staff of the various hospitals of the city and the superintendent of the Charity Hospital was called on Thursday, October 13, 1927, by your president, for the purpose of discussing the feasibility of diverting ambulance patients who are fully able to pay for their hospitalization in the sanitarium of their choice. Under the present ruling of the board of Administrators of the Charity Hospital, all accident cases, irrespective of the wish of the injured person, or that of any member of his family, must be brought to the Charity for treatment. Whilst this arbitrary decree may be based on proper grounds, yet the injured has the inalienable right to the choice of his physician and sanitarium, and besides, this is one of the many causes of overcrowding of the institution. Through the courtesy of Dr. Leake a survey of the ambulance services in other cities was made, and doubtless in the near future a solution of the perplexing question will be found.

I wish to take this occasion to extend the sincere appreciation of the members of this Society to the Administrators of Charity Hospital for their interest in that vital question of abuse, which bodes its early solution.

The activities of this committee were greatly curtailed by the premature demise of its Chairman, our deeply regretted confrere Doctor Maurice Provosty.

> The evil, that men do, lives after them,
> The good is oft interred with their bones.

I frequently wonder if the immortal bard thought of the physician when he expressed this beautiful thought. The philantrophist is kept in remembrance by his charity, the artist lives forever in his art, the poet gains immorality by his verses, the name of the architect or engineer is perpetuated by the edifices he has erected, the gallantry of the warrior and the diplomacy of the statesman make history; but, the physician whose lifo is dedicated to the cause of science and the welfare of his fellow men, is soon forgotten, the good he has done is interred with his bones. This thought was forcibly impressed on my mind when writing the history of the Charity Hospital. The names of every one of its donors, no matter how modest their contribution, are inscribed on a tablet in the main hall of that institution. But of the physicians who labored within its portals, not only members of its visiting staff of yore, but even its early house surgeons, many were forgotten, and it was only with great difficulty and assiduous research that a nearly complete list of these pioneers of our profession in this city was procured. Yet many of these doctors were distinguished, famous and renowned, of a reputation universally recognized. Sic transit gloria mundi.

By honoring our most distinguished member this Society honored itself. On December 20, a banquet was tendered to Doctor Rudolph Matas under the auspices of this society. One hundred and fifty-one of its members payed homage to the greatness of a fellow Louisianian, and expressed their sincere appreciation to that standard bearer, who by his accomplishments and his learning, carried the banner of this society and of his Alma Mater, the Medical Department of Tulane University, to the foremost corners of the medical world. This was a memorable occasion, for it was one of the very rare instances when a whole faculty of medicine arose as one with such devotional affection to pay tribute to the greatness of one of their number. This occasion will ever be inscribed on the pages of the medical history of this city, and in generations to come will recall to our successors the esteem, the respect, and the love in which we held our Matas.

I respectfully submit for your consideration the suggestion that the name of our revered Chaillé be perpetuated by a yearly monetary prize and a medal to be awarded for the most meritorious essay on some medical subject to be chosen by the board of directors of the society, instead of an oration. The attendance at the Chaillé Memorial Orations have, I am sorry to say, not been as great as the occasion demands, and I am firmly of the opinion that the purpose of this memorial will be best carried out by the idea suggested.

I will repeat from my inaugural address the following, with the hope that at some time the same will fall on some willing ear, and this urgent necessity be realized: "The problem of cheaper hospital facilities is everywhere being agitated. The wealthy and indigent enjoy every medical, surgical and therapeutical advantages, but the great middle class who have not sufficient means to pay for the necessary expensive refinement of medical treatment, and who are too proud and self respecting to accept free service, are penalized for their commendable self-respect, and for their determination to pay their own way."

"There is a paralellism existing between our great medical teaching institutions and our pay hospitals. The time was in the recent past that a medical college was self-supporting and could ably function from the fees obtained from its students. Today these institutions are all endowed, the tuition fees furnishing but a small proportion

of the necessary revenues. It is impossible to bring all hospital facilities within the reach of persons of moderate means, for under present conditions even the best managed institutions show an operating deficit. This condition will become more acute in the future. The only solution is the endowment of these institutions. There is no field of human endeavor which should be more attractive to our philanthropists, for by alleviating the burden of the high cost of hospitalization they will produce great beneficent results, and will prevent the pauperizations of their fellow creatures, and what is still more important, help them retain their self respect."

In many respects the past year has been a year of activity. To be president of this society is a great honor, but it is also a great responsibility for its demands are most exacting. In the past few years the scope of its work has greatly increased; its function was once altogether limited to scientific discussions, but today, we have incurred responsibilities, not only concerning the material welfare of its membership, but we are gradually taking our proper place of influence among the civic organizations of this city, and we are exerting more and more, and properly so, our influence for the public weal.

I wish to express my gratitude to the Board for their courtesy, and I must confess that these meetings were always a source of great pleasure, and their pleasant recollections will be long remembered.

I must also acknowledge my indebtedness to our genial secretary for his guidance, and to his unabating zeal and unrelenting energy must be accredited the major portion of whatever success we may have achieved.

For you, my confreres, who have honored me far beyond my just dues, I owe a debt of gratitude which can never be liquidated. I wish to thank you for your support given to every policy advanced by your officers; without this help and encouragement the past year would have been devoid of constructive results.

In relinquishing this gavel to my successor, I have the satisfaction of knowing that I have performed my duty to the best of my ability, always with one purpose and one thought in mind, the greater good of the Society.

ANNUAL REPORT OF SECRETARY, DR. H. THEODORE SIMON

1927.

To the Officers and Members, Orleans Parish Medical Society:

It is the duty of your Secretary to submit a report of the many happenings of this past year. Some of the enumerated facts will be further mentioned and elaborated, and I beg your indulgence in a repetition which your By-Laws makes necessary.

I feel that there can be little question but that this Society in 1927 has gone through the most active year of its existence in both the number and unusual character of the many happenings.

During this year we have been fortunate in having one of our members signally honored, Dr. Rudolph Matas, having been elected an Hon. Fellow of the Royal Academy of Rome, Italy; Hon. President and Fellow of the Surgical Society of Barcelona, Spain; Hon. Fellow of the Institute of Practical Medicine of Barcelona Spain; Lecturer, by Invitation, at the School of Medicine of the University of Barcelona; Hon. Member and Lecturer, by invitation, at the Spanish National Congress of the Medical Sciences ("Jornadas Medicas") held in Madrid, October 18-23, 1927; Corresponding Member of the Royal Academy of Medicine of Madrid; Member of the Association Francaise de Chirugie; and in America, Hon. Fellow Boston Surgical Society; Hon. Fellow Southern Surgical Association (Pres. 1912).

Membership: The year ended with a total membership of 493 of whom 466 are Active Members, 18 Associate Members, 6 Interne Members and 5 Honorary Members. Rabbi Mendel Silber, also a Doctor of Medicine, and Dr. W. H. Knolle, who had retired from active practice, were both elected to Honorary Membership. Losses during the year numbered 21, these were due to Deaths 7, removals 9, and resignations 5. It is pleasing to report that no members were dropped for delinquency. There was a net gain of 36 which is represented as follows: New members 33, reinstated 3. There is a net increase in the total membership over last year of 10. We have, however, a net increase of 18 in the active membership, which is the largest increase since the year following the World War. This one fact should encourage the membership at large in an endeavor to bring in the remaining 30 or 40 eligible licensed practitioners of medicine in Orleans Parish, there is little possibility of there being more than this number of eligible candidates for membership when we consider 603 licensed physicians and surgeons with likely 80 being internes, there re-

mains only a little over 120, and from this number we can easily assume a possibility of 75 per cent being ineligible (negro physicians, unethical and undesirable white physicians).

Meetings: Your Board of Directors has held 10 regular meetings and 4 special meetings. All members of the Board deserve your consideration for their attendance at meetings and their diligence in co-operating with the President and other Officers in their attempts to dispose of the many matters brought before them.

The Society has held 20 general meetings during the year. Of this number there was the Installation Meeting, 3 Quarterly Executive Meetings, 2 Clinical Meetings, 1 joint meeting with the New Orleans Gynecological and Obstetrical Society, 3 special meetings and 10 regular scientific meetings. The average attendance at these meetings was 90, which was somewhat less than the attendance in 1926. This average has been greatly lowered by the attendance at the Clinical Meetings, when only a mere quorum of 20 members were present on one occasion. The Scientific Meetings, however, were better attnded than those of the previous year. The papers read at the Scientific Meetings were extremely interesting and were on all phases of Medicine and Surgery, some of the work being original. From a scientific standpoint the Society has had a most excellent year. This, I feel, is due to the ceaseless and untiring efforts of the Scientific Essays Committee and its Chairman, Dr. Leopold Mitchell. 20 Scientific papers were presented by the membership and it was also a pleasure of the Society to have as its guests the following, all of whom delivered additional papers on some interesting topic: Mr. Marshall Ballard, Editor of the Item-Tribune; Miss Mary Louise Marshall, Assistant Librarian; Dr. Joseph Reviere of Paris, France; Dr. Jennings C. Litzenberg of Minneapolis, Dr. Henry Laurens of Tulane University, Rabbi Mendel Silber of New Orleans, Dr. Valeria Parker and Dr. Wm. F. Fisk of Chicago.

Stanford E. Chille Memorial Oration: The second Oration commemorating the memory of the illustrious and well-known Dr. Stanford E. Chaille, was held on Tuesday, December 6th, 1927, and Dr. M. G. Seelig, professor of Clinical Surgery of Washington University of St. Louis, was the Orator of this occasion. The attendance on this occasion was very poor when the auspiciousness of this oration is considered.

Revision of By-Laws: After untiring efforts on the part of the Board of Directors the revised By-Laws were referred to the General Body for their consideration. With several meetings of the General Body the complete revision was approved together with some changes in the Constitution. The revised By-Laws and Constitution is now in the hands of the printers, and in the very near future each member will be furnished with a new copy.

Committees: During this past year there has been activities in some few of the Committees. The Hospital Abuse Committee, unfortunately sustained the loss by death of its Chairman, Dr. L. Maurice Provosty, but despite this it has been unceasingly active, having met with the Medical Committee of the Board of Administrators of Charity Hospital in an endeavor to enforce the laws relative to Hospital Abuse which were passed at the last meeting of the Legislature.

The Committee on State Medicine and Legislation has been active and in conjunction with the similar Committee of the Louisiana State Medical Society it presented at two of the special meetings of the General Body some important phases which will be encountered at the next meeting of the Legislature in the spring of 1928.

The revised By-Laws call for a standing Publicity Committee. Unfortunately, with the many other happenings of the year, this Committee has not functioned. It is, however, the recommendation of your Secretary that in this coming year more attention be given the activities of this Committee, especially since the Louisiana State Medical Society has been very active along the lines that this Committee from Orleans Parish should work.

The Judiciary Committee has had many matters referred to it for disposition on several occasions.

Medical Relief in Disaster: Following the suggestion of the American Medical Association, your Society in 1926 approved the plan of medical relief in disaster. It was little our thought then that this organization would be called upon to make plans for disaster in the very near future. However, in the recent flood, which seriously threatened this commonwealth, the entire organization was formulated for immediate medical relief if the flooded waters had entered the city. Acting with the American Red Cross, your Society was completely organized to furnish medical relief in every section of the city. This organization, though merely a paper one, is in the files of the Secretary, and can, at a short notice, be called into active service if the occasion should ever warrant. While it was our good fortune that this Committee had no occasion to function, the city was crowded with refugees from the flood waters of St. Bernard and Plaquemines Parishes. At the request of the Medical Committee of the Citizen's Relief Committee, through its Chairman, Judge

Rufus E. Foster, your members ministered medical aid over a period of several months to many of the refugees.

An honorarium of $122.00 per annum was voted for your Secretary. The odd figure of $22.00 representing the annual dues of the State and Parish Society giving a cash honorarium of actually $100.00.

Group Insurance: At the suggestion of our President, group insurance for your Society was finally voted favorably and a group insurance policy is now in force with 245 members participating in its benefits. The individual policies are for $3,000.00 and the premium is extremely reasonable. Although in force but one short month, the beneficiary of one of our Associate Members will be the recipient of $3,000.00.

Phonographic records and motion picture films of our distinguished members will be taken from time to time, this being approved by the Society following the suggestion of Dr. Emile Bloch, who was later made Chairman of a special committee to investigate this matter. To the present date phonographic records have been made of Dr. Ernest S. Lewis, and motion pictures have been taken of Dr. Ernest S. Lewis and Dr. Rudolph Matas.

Longer Life Week: The Periodic Health Examination Committee, with its Chairman, Dr. Paul J. Gelpi, has launched the first Periodic Health Examination Week December 5th to 10th. During this week the importance of annual physical examination was vividly brought to the attention of practically all of the educated populace of this city. The details of this week will be contained in the report of this Committee.

The Board of Directors has this year sent Miss Mary L. Marshall, Assistant Librarian, to the annual convention of the Medical Library Association. They have found that a delegate to this meeting is of considerable value to the Library, and have recommended that annually a delegate be sent to this Convention.

Rudolph Matas Dinner: A banquet was tendered Dr. Rudolph Matas on December 20th by 150 members of this Society. This was given to Dr. Matas on his return from Europe after receiving his many honors.

It is with regret that I must report the loss by death during the year of the following members:

Drs. Edmond Moss, Philip W. Bohne, Florena G. Rich, Frederick W. Parham, P. B. McCutcheon, L. Maurice Provosty and Chas. A. Adolph.

During this year the following Delegates and Alternates to the Louisiana State Medical Society have been elected for a term of two years:

Delegates.

Dr. John A. Lanford
Dr. W. H. Seeman
Dr. R. B. Harrison
Dr. D. N. Silverman
Dr. Chaille Jamison
Dr. Fred L. Fenno
Dr. M. T. Van Studdiford
Dr. J. C. Cole
Dr. W. H. Harris
Dr. E. L. Leckert

Alternates

Dr. C. V. Unsworth
Dr. Homer Dupuy
Dr. Jerome E. Landry
Dr. B. A. Ledbetter
Dr. A. E. Fossier
Dr. Chas. Chassaignac
Dr. O. C. Cassegrain
Dr. J. Signorelli
Dr. Paul J. Gelpi

Office Organization: The work in the office has increased considerably, due to the number of circular letters sent to the Membership, together with the detail work of collecting and paying the premiums of the group insurance.

I wish to thank Miss Lucille Maier, our Assistant Secretary-Treasurer, for the most satisfactory and business-like manner in which this work was executed, together with her faithfulness and promptness in her endeavors to co-operate.

In conclusion, I wish to thank the President and each member of the Board of Directors for their hearty co-operation and efforts in making the work of your Secretary a real pleasure, and lastly I extend my thanks to the General Membership for the opportunity they have given me to serve the Society and for my re-election to the office of Secretary for the coming year.

Respectfully submitted,

H. Theodore Simon, M. D.,
Secretary.

The following is a brief summary of the annual receipts and expenditures of the Orleans Parish Medical Society:

REPORT OF GENERAL FUND, 1927.

Balance on hand, January 1st, 1927	$ 1,214.56
Receipts	15,243.03
Expenditures	15,971.73
Actual book balance	485.86
Total office expenditures	112.14
Incidentals	445.87
Total special receipts	1,946.33
Total special expenditures	11,278.33

Respectfully submitted,

John A. Lanford, M. D.,
Treasurer.

ANNUAL REPORT OF LIBRARIAN, 1927.

During the year several additions of note have been made in the library. There have been added 870 books, making a total of 13,108 bound volumes. Of the new books, 491 have been received by binding, 58 by subscription, 13 by exchange, 35 by purchase, 140 by gift, and 133 from the New Orleans Medical and Surgical Journal. Notations of new titles has been made monthly in the local journal.

Gifts have been received from 34 sources as noted below, showing our various connections and affiliations.

H. B. Gessner.
Haidee Weeks.
W. A. Lurie.
H. W. E. Walther.
T. J. Dimitry.
Medical Library Association.
Northwestern University Medical School Library.
Marquette Medical Library.
University of Indiana Medical School Library.
Tulane University School of Medicine.
Joseph Hume.
J. A. Lanford.
Leland Stanford University Medical School Library.
University of California Medical School Library.
University of Minnesota Medical School Library.
Iowa State Medical Library.
St. Louis Medical Society Library.
E. McConnely.
Maurice Lescales.
H. Dickson Burns.
E. G. King.
Lane Medical Library.
Paul J. Gelpi.
Montefiore Hospital, New York.
Jefferson County and University of Louisville Medical Library.
Mrs. P. B. McCutcheon.
W. H. Block.
Mrs. John Ochsner.
S. M. Blackshear.
J. H. Musser.
Allen Eustis.
Columbia University.
I. L. Robbins.
Waldemar Metz.

We would call your attention to the new equipment added to the Library during the year, namely, 5 sections of double-face steel shelving, a nine-drawer catalog case, and two oscillating fans for the reading room, as increasing the efficiency of our service and the comfort of our patrons.

The constant reference use of our library is evidenced by the fact that during the year 39 formal bibliographies have been added to our permanent files, on subjects as listed from month to month in our current reports. These bibliographies are available for the use of the membership at any time and form a valuable adjunct to our collection.

Our Library was this year represented for the first time at the Medical Library Association in Washington, and we would announce with some pride the fact that our delegate was made Chairman of the Membership Committee. This representation has proven so much worth while that we shall hope to make it precedent for repetition each year.

In closing, we would commend for your consideration the use of your professional library, including any service or bibliographic guidance which the Assistant Librarian may be able to give you.

Respectfully submitted by
DANIEL N. SILVERMAN,
Librarian.

INAUGURAL ADDRESS OF PRESIDENT DR. J. BIRNEY GUTHRIE.

Mr. President, Fellow Members of the Orleans Parish Medical Society, Friends:

Tonight it is not difficult to imagine the plight of Phaeton, entrusted for the time being, to drive the chariot of the Sun, praying that the horses will not run away and that the return will be safe and sound. There is a sense of unworthiness that comes to one who has become, for the moment, the selected leader of a body of men and women such as this. Nothing short of infinite wisdom and maturest judgment can suffice under the present need. Your leader must see every opportunity to advance science and organized medicine personified in you. He must be the first to see the pitfalls in the path of the marching columns and turn aside in the journey to avoid them. Every life-function of this organism must he know and the structure of its body. He must be able to sense the things which are harmful, to avoid them and to seize upon the favorable things to keep the body sound. Where is there such a leader? Certainly he who stands before you has no such wisdom or subtlety of misunderstanding. Yet you have chosen him to guide your chariot during the coming year, and knowing his own unworthiness he undertakes the work, finding comfort in the thought that you will overlook numerous mistakes if the task you have set him is moderately well done; and your servant has been sincere and diligent. This much he engages now to you and the rest is in the lap of the gods.

This is no time and this is no place to elaborate an extensive program for the Society for this year. However, there are measures which it may be well to state just now, that appear to demand our attention.

This year marks the half-century of the organization of the Society. One of our honored seniors told us a short while ago of its inception during the summer of 1878 and its public relationship at this time. It would seem that we owe it to ourselves and to the founders of this Society to make some fitting commemoration of the anniversary of the date. Celebrating a birthday which came during the time of severest trial.

DR. J. BIRNEY GUTHRIE
President Orleans Parish Medical Society.

My friends, we know that our medical organization is to be trusted to do its duty, whatever be the emergency—Yellow Fever or War. We are not given to self-adulation; we just carry on; because that is all we know, *noblesse oblige*—and we are brought up so to do. If the public takes us for granted and fails to understand us and the articles of our code, it is because we have never taken the pains to bring about the understanding. Organized medicine in America today has pretty thoroughly laid it down as a plan, that regularly designated channels of communication shall be established with the public through professional workers in the lay press and through professional medical speakers who shall go out and teach the public what it must know of the essential facts of medical knowledge.

You have heard the Librarian's Report and the report from the Treasurer as to the financial condition of the Society. It would seem that under present conditions a proper use of available funds would be to further build up the Library and still further increase its usefulness to the membership. New Orleans today is a great city and in many quarters regarded as a medical center. Carrying out this destiny, our files must be completed and our Library gradually increased until we shall have the necessary reference files on instant call, when needed. Books of the right selection are increasing in value every year and at a rate exceeding the interest rate on any bonds that we can buy.

The organized medical body of Orleans Parish is more than a group of men and women who gather together for scientific discussion. There is an obligation resting on our shoulders which often we are tempted to evade,—the relationship to the public health. In the emergencies of flood, pestilence or war there is none to deny this responsibility. Both the State and City Health Officers have expressed from time to time a wish for our co-operation. Surely, even in times of peace and tranquility, it would seem to be the proper function of this Society to participate in conferences called for consideration of health matters; and it is probable that this Society will approve steps toward that end.

Our By-Laws call for a publicity committee which shall act in a liason capacity between the members of the Society and the public. It is sincerely to be hoped that a strong and active committee operating as laid down in our organic law will help to bring about the mutual feeling of trust and confidence that should exist between the medical profession and the public.

Not long ago, it was announced that at the next meeting of the State Legislature of Louisiana, there would be introduced a bill which would be an attack on the medical practice act. It seemed necessary to undertake a canvass of the entire prospective city delegation to bring political influence to bear upon each one to secure by some means, his pledge, that he would help to keep inviolate the Medical Practice Act now on the statute books. My friends, was it not pitiful that the mere announcement that the medical profession desired such a course did not suffice to assure its status? The road to medical practice is every

day becoming more and more difficult and the study of medicine more and more expensive as to time and expenditure of money. Young men who have undertaken the journey in good faith and have given their best and done their utmost to fit themselves thus to serve, must have such protection at the journey's end that they will not find themselves forced into competition with the so-called "practitioners" graduates of correspondence courses or the like.

Two years ago a large delegation of the membership of this Society had to leave its work and go to Baton Rouge and take part in a bitter fight to the end that one of the largest public charities in the State be authorized to exclude from its benefits persons who were able to pay. The Board of Administrators of this public charity chose the extraordinary attitude of applying for additional public funds and refusing to receive authority from the State to limit its dispensations to the poor. My friends, if the public had been properly taught by the organized medical body; if the public appreciated its obligation to the medical profession, no board or no legislator would oppose its sincere demand that hospital abuse be curtailed.

Your outgoing President has been most active in the past in the movement I have mentioned, and was the author of the plan which offers more than any other for a solution of this difficulty. Hospital abuse exists today and the Board which at first refused to receive the power to act in the matter has done little to remedy the abuse. It is for us to carry on the movement. If we secure the services of an "investigator" who will bring up the records, specific instances of a violation of the legislative act, we can secure convictions under the law, and the law will become an active force instead of a subject for jest.

A light seems to have dawned, and those in authority are now apparently ready to welcome a movement on the part of the medical profession which, by eliminating the imposters, will give more funds for the care of the poor. If this attitude is in earnest, then can the profession and the administrators work in harmony. If, on the other hand, the abuses continue, the profession is bound, in honor, to speak of them, and our committee will keep the Society informed.

Here again our duty to the public and to the profession seems plain. We must see that public funds are not squandered on imposters, that public servants carry out the law; and that young medical men are not forced to go to these same public institutions and hire themselves out in order to make their start in medicine.

One of the great compensations for work such as you have put upon me to do is the contact with the willing workers who stand always ready to give aid or counsel or effort in our cause. There is a group of devoted men who never have been found wanting when the work was there to do.

It matters not whether it was a collosal organization such as the entertainment of a great national medical convention; a campaign before the legislation; or a systematically planned piece of public education such as our "Longer Life Week". Always this group of men was there to give of their effort and of their time.

I ask now what I know shall get, the helpful co-operation of everyone of you and your patient forbearance when mistakes occur.

In this number of the Journal is a picture of the President of the Orleans Parish Medical Socity, Dr. J. Birney Guthrie, who is now carrying on his duties as President of the organization.

Dr. Guthrie has long been connected with the Charity Hospital of New Orleans. His thirty-one years of continual official service have included all grades of medical service in that hospital from extern and intern to chief of a large service. He has been connected with Tulane University for a period of seventeen years, and is one of the professors of clinical medicine. Dr. Guthrie during the war was early called to service. He spent nearly two years in this country and France. Since the close of the War he has been actively interested in the Medical Reserve Corp, in which he holds the grade of Colonel. Besides being Commanding Officer of the 312th Medical Regiment, he is Division Surgeon of the 87th Division. In addition to being President of the Orleans Parish Medical Society Dr. Guthrie is also Third Vice-President of the Louisiana State Medical Society, and is a Fellow of the American College of Physicians. His bibliography is extensive and contains some notable and thoughtful papers, singling out more specifically those upon digitalis, insulin treatment and pellegra.

During the month of April the Board of Directors has held its regular meeting and the Society its first quarterly executive meeting and one regular scientific meeting.

At the meeting of the Board the routine business was taken up and dispensed with.

The following Doctors were elected to membership: Active Membership—Dr. Peter Cocchiara and Dr. J. W. Warren. Associate Membership—Dr. Wm. A. Chapman.

At the Quarterly Executive Meeting reports of the various Standing and Special Committees were read.

The Condolence Committee, Dr. J. Frank Points, Chairman, proposed the following resolution, which was adopted:

Whereas: By the will of God, Dr. E. M. Dupaquier, our Confrere, was taken from among us.

THEREFORE BE IT RESOLVED: That this Society desires to express to the family of Dr. Dupaquier its regrets and sincere sympathy in its dereavement.

BE IT FURTHER RESOLVED, that the Society adopts this resolution that it may be spread upon the minutes and a copy thereof be sent to the family of the deceased member.

Mr. Paul Godchaux, Jr., was the guest of the evening at this meeting and read the following: "How the Commercial Houses in New Orleans use the New Orleans Retailers Credit Bureau and Collection Department."

At the Scientific Meeting held April 23rd, 1928 the following papers were read and discussed:

"Glandular Fever. Report of a small epidemic in a local orphanage." By .....Dr. I. I. Lemann. Discussed by Dr. D. D. Warren.

"Extensive Osteomyetitis with massive resection." By Dr. O. C. Cassegrain. Discussed by Dr. Alton Ochsner.

"The Presentation of a Case of Type II Pneumonia." By Dr. Chaille Jamison and Dr. H. F. Brewster. Discussed by Dr. H. F. Brewster.

During this past month resignations were received from Dr. George B. Grant who moved to Houston, Texas, and Dr. J. T. Eagleton who moved to Oil City, La.

It is with regret that we report the death of Dr. Nathan Eisnemann, one of our Associate Members.

TREASURER'S REPORT.

Actual Book Balance, 2-29-28	$2,233.06
Receipts during March	3,444.63
	$5,677.69
Expenditures	$2,373.09
Actual Book Balance	$3,304.60

LIBRARIAN'S REPORT

117 books have been added to the Library during March. Of these 82 were received by binding, 10 by gift, 19 from the New Orleans Medical and Surgical Journal and 6 by purchase. Notation of new titles is attached.

Subsequent to the decision of the Society in regard to Library affairs on March 26, Miss Marion Billon has been engaged as Library Assistant, under the new plan.

Word has been received by Miss Marshall, that she has been elected to fill a vacancy occuring on the Executive Committee of the Medical Library Association. The annual meeting will take place in New York in the first week of September.

The new Library furniture has been installed and the reading rooms are in constant use.

New Books

Nelson's Loos-Leaf Surgery, v. 1-4. 1928.

Killer—Nerve Tracts of the Brain and Cord. 1928.

Kelly—Gynecology. 1928.

Sollmann—Manual of Pharmacology. 1927.

LaWall—4000 Years of Pharmacy. 1926.

Wells—Chemical Pathology.

Blumer—Bedside Diagnosis.

Vaques—Diseases of the Heart. 1924.

Nostrums and Quackery. v. 1. 1912.

Mumford—Healthy Growth.. 1927.

Hume—Max von Pettenkorfer. 1927.

Annals of the Pickett—Thomson Research Laboratory. 1927.

Brosseau—Mongolism. 1928.

Smith—Aluminum Compounds in Food. 1928.

Johnson—First Aid and Medical Service in Industry. 1928.

Ashhurst—Surgery. 1927.

Henderson—Textbook of Psychiatry. 1928.

Bind—Regional Diagnosis. 1927.

Arrom—Tratado de Patologia y Clinica Circulatoria. 1928.

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

REPORT OF HOUSE OF DELEGATES TO GENERAL ASSEMBLY.

Baton Rouge, April 12, 1928.

Gentlemen:

We wish to make the report of the activities and business completed by your House of Delegates which adjourned just a few minutes ago after completing all executive business presented. Owing to the unusual shortness of time which is very regrettable it will only be possible for me to report the salient features of the meeting of the House.

The Presidential report was replete with many valuable constructive suggestions so ably presented for consideration by the President's Committee. These points of interest will be more elucidated when publishing the proceedings in our Journal. A detailed financial report and activities of the Secretary-Treasurer's office was reported and adopted. The various Councilors and Committeemen presented valuable reports which after due consideration were passed.

One of the principle reports was that of Dr. Rudolph Matas, Chairman of the Committee on History of the Louisiana State Medical Society. His report gave a prospectus of the needs for the proper function of this work, and also dealt with the necessary expenditures to properly catalogue and put in book form the many important features of our history. When completed this should be a book of ready reference which each and every one of us should be justly proud. In conjunction with this report it was decided that the semi-centennial of the Louisiana State Medical Society which will be in 1929 should be suitably commemorated by some set program jointly with that of the Orleans Parish Medical Society. Their semi-centennial occurs in 1928 and unquestionably agreement will be reached by these two organizations to have arranged a suitable program for this very worthy occasion.

The Committee on Public Policy and Legislation presented a most elaborate report the principles of which imbodied the necessity of every medical man lending his support to the defeat of Chiropractic Legislation which will be introduced in the approaching Legislature.

According to the recommendations made by the Medical Defense Committee and approved by the Journal Committee the annual income from their surplus of $3,000.00 invested in six per cent bonds would be diverted to the Medical Defense Fund for its use.

The following officers were elected:

President-Elect—Dr. F. T. Gouaux, Lockport.

First Vice-President—Dr. C. A. Weiss, Baton Rouge.

Second Vice-President—Dr. F. C. Bennett, Monroe.

Third Vice-President—Dr. J. Birney Guthrie, New Orleans.

Secretary-Treasurer for a term of two years—Dr. P. T. Talbot, New Orleans.

Chairman House of Delegates—Dr. J. J. Ayo, Raceland.

COUNCILORS.

First District—Dr. H. E. Bernadas, New Orleans.

Second District—Dr. Urban Maes, New Orleans.

Third District—Dr. C. C. DeGravelles, Morgan City for the unexpired term of Dr. Gouaux.

Fourth District—Dr. S. C. Barrow, Shreveport.

Fifth District—Dr. D. I. Hirsch, Monroe.

Sixth District—Dr. A. G. Maylie, Covington, for the unexpired term of Dr. Weiss.

Delegate to the A. M. A. for two years—Dr. W. H. Seemann, New Orleans.

Alternate to the A. M. A. for two years—Dr. J. Q. Graves, Monroe.

The various committees were re-elected as of 1927 with the exception that Dr. J. H. Musser was placed on the Committee on Medical Education and Dr. Blackshear and Dr. Kostmayer were elected to succeed themselves on the Journal Committee for a three year term.

The next meeting of the Society in 1929 will be held in New Orleans, La., time to be determined by the Executive Committee at their next meeting.

Suitable resolutions were passed thanking the various agencies in Baton Rouge for their manifestation of cordiality and entertainment during our stay in Baton Rouge. The wonderful work of Dr. C. A. Weiss, Chairman of the Arrangement Committee in conjunction with his Sub-Committees we are indebted for the pleasant arrangement of our social features, entertainment and details for the function of the Scientific Program. Dr. Weiss' devotion to the many details surrounding such a meeting has not only been a distinct pleasure and great deal of assistance to our office but has most materially been the means whereby the members of the Louisiana State Medical Society have had such an enjoyable occasion.

Respectfully submitted,

P. T. TALBOT,
Secretary-Treasurer.

The Seventh District Medical Society held its Spring meeting at the Majestic Hotel, in Lake Charles, on Wednesday, March 21, 1928 at 7:30 p. m. It was the banner meeting of the year, having an attendance of about 60 members.

The program was exceedingly interesting and varied. "Cancer Prophylaxis"—presented by Dr. J. C. Willis of Shreveport, La., was well received —bringing out many points in early diagnosis.

"Salpingitis—The case for expectant treatment," by C. Jeff Miller, of New Orleans, left with us an indelible impression of the advantage of conservatism, and expectancy.

"The several types of uremia", as presented by Dr. John H. Musser of New Orleans, completed the program with everyones' senses alert to the last. It was extremely enlightening, giving to the audience the newest concepts of the physiology of the kidney—and classifying the types by case reports.

The officers elected for the coming year are:

Dr. J. W. Fonk, President, Crowley, La.

Dr. J. D. Hunter, Vice-President, Rayne, La.

Dr. S. R. Henry, Secretary-Treasurer, Crowley, Louisiana.

Dr. E. M. Ellis, Delegate, Crowley, La.

A wonderful dinner was served, during which several violin and piano numbers were rendered.

A motion was made and seconded, that our guests be made honorary members of our Society, passed unanimously. A fitting place for adjournment—so moved—meeting adjourned.

Submitted by,

B. GOLDSMITH,
Secretary-Treasurer.

OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY.

The scientific meeting of the New Orleans Ophthalmological and Otolaryngological Society was held at the Eye, Ear, Nose and Throat Hospical, on Thursday, March 15, 1928. After the disposition of the executive meeting in which Dr. Hume presided, the chair was turned over to Dr. Meyer, Chairman of the Scientific Meeting, in which the following ten cases were presented.

Dr. Cox presented a case of cerebro-spinal rhinorrhoea in which there was no pathology within the nose, no nasal surgery and a negative physical examination save for the rapid drainage of cerebra-spinal fluid from the nose, and choked disc. The history of the case was very brief; a severe headache in right frontal and occipital regions of three weeks duration continuously day and night followed by a sudden gush of fluid from the nose which not only annoyed the patient but nauseated the patient on bending the head backward due to post-nasal drainage. All laboratory examinations were negative except for the confirmation of the rhinorrhoeic fluid. An exploratory craniotomy of the anterior fossa was done by Dr. Oeschner and with the exception of a tightly bound down dura, no pathology was found. The patient rapidly recovered from the operation with no recurrence of the cerebrospinal rhinorrhoea. In the extensive discussion which was opened by Dr. Oeschner, it was stated that on some days as much as 400c.c. of fluid was collected in 24 hours, and as much as 60c.c. in one hour. Dr. Granger pointed out on the roentgenray plate the fact that the ethmoid line corresponding to the upper line of the horizontal plate of the ethmoid bone was broken on the right side which suggests an erosion of the tegmen of the labyrinth. Dr. Wagner suggested a probable dehiscence of the roof of the ethmoid associated with increased intra-crainal pressure with rupture of the dura as a possible cause of the cerebrospinal rhinorrhoea.

Dr. Buffington presented a case of pemphigus of the eye which he had presented before this Society two years previously as one of those cases among the rare diseases of the conjunctiva and cornea, to substantiate the fact that the disease is progressive and of constitutional etiology. In the discussion a case was reported of pemphigus of the pharynx which recovered following radical pan-sinus surgery.

Dr. McNair's presentation consisted of four cases of proptosis of the eye.

CASE NO 1. A man 52 years in whom the proptosis followed an injury of the right side of the head, the same side as the affected eye in which a diagnosis of a ruptured ethmoiditis through lamina orbitalis was made. In the discussion attention was called to the opacity of the ethmoid on that side with haziness of the orbital plate. Wassermann was positive.

CASE No. 2. A colored woman, age 38, with proptosis of the right eye with a negative history. Roentgen-ray, opacity of right ethmoid. On palpation a hard mass somewhat nodulated was found in upper part of orbit near inner canthus. Diagnosis, neoplasm of ethmoid with rupture into orbit. In Dr. Granger's discussion he pointed out the break in the outer of the ethmoidial labyrinth wall on the plate.

CASE NO. 3. A traumatic orbital abscess in a boy 26 years who was struck over the eye one week prior to examination. In addition to the proptosis there was much edema of the orbit, lids

and conjunctiva. On puncturing of the orbit pus was obtained.

CASE NO. 4. One of probable gumma of right frontal sinus in a boy of 39 years with a history of gradual swelling and protrusion of right eye ball of several months duration in which the roentgen-ray showed an opaque right frontal sinus with inter-frontal septum pushed over to opposite side very suggestive of a tumor of the frontal sinus. Wassermann was four plus. In the discussion a mucocele of the frontal sinus was offered as a diagnosis, nevertheless, the patient considerably improved under antiluetic treatment.

Dr. Hume's case was one of a foreign body in the esophagus, a thin flat bone which was negative to the roentgen-ray. His purpose in presenting the case was to show the necessity of making several roentgen-rays in different planes as well as to do an exploratory esophagoscopy in the presence of a definite history of foreign body.

Dr. Wagner presented three cases of the excellent end results of dachryorhinostomy for dachryocystitis in which he illustrated the modifications of the Mosher-Totti which were responsible for the overcoming of the fallacies found in most of the other naso-lacrymal operations. He showed by making a low opening in the lacrimal sulcus by removing first the lacrymal crest of the nasal process of the superior maxilla it prevented recurrence of pus because of facilitating drainage downward, Secondly, stenosis was prevented by means of maintaining dilatation of the canaliculi by means of a silk thread and consequently no epiphora, and finally by leaving the upper part of the lacrimal sulcus and mesial wall of the sac at its fundus the passage of air through the canaliculi on blowing the nose was prevented and opening of the ethmoidal labyrinth was avoided. In the discussion details and technique of the operation were given as requested by Dr. Buffington.

Dr. Meyer presented two cases.

CASE I. An adult woman with sudden loss of vision in one eye due to macula edema with few deposites on posterior surface of cornea of unknown etiology in which the Wassermann was anti-complimentary, nose and sinuses negative. Physical examination negative. In discussing the case it was suggested as being hysterical but due to the evidence of pathology in the macular region it was concluded as being albuminuric retinitis.

CASE 2. One of transitory facial paralysis right side and hemiplegia of the opposite side in a child 10 years old with acute suppurative otitis media right ear in which the paralysis recovered in 24 hours and the roentgen-ray showed destruction of the right mastoid. Blood count total leukocytes, 17,600 with 72 per cent of polymorphoneuclears. Urine negative. In discussing the case it was thought that an extension into the posterior fossa had occured, although Dr. Anderson suggested a lesion in the pons of transitory type—that of arterial spasm associated with transitory edema.

WILLIAM A. WAGNER,
Secretary.

DR. EDOUARD MICHEL DUPAQUIER.

1858-1928.

It is with sorrow that the Journal is called to record the unexpected death of Dr. Edouard M. Dupaquier, which occurred at his home in this city on March 13 (1928). It adds no little to the poignancy of his loss that his life so valuable to his family, his friends and to his profession should have been brought to an untimely end by his own hand while laboring under a fit of despondancy caused by brooding over ill health.

Dr. Dupaquier was born in New Orleans on November 9, 1858, and was approaching his seventieth year when the tragedy occurred that brought his useful and honored career to a close.

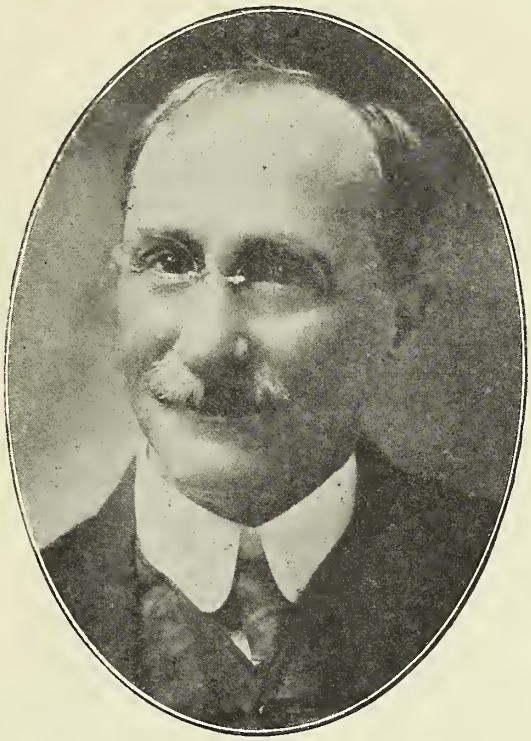
Though an American by birth and citizenship, Dr. Dupaquier was essentially French by heredity, education and temperament. His father, Dr. Dupaquier, Sr., was a graduate of the Faculty of Paris, who, with his wife, emigrated from Paris to New Orleans, at the time of the famous Coup d'Etat which brought about the fall of the second Republic and placed Louis Napoleon on the throne of France.

The elder Dupaquier who had embraced Homeopathy while in France, acquired a very large and lucrative clientèle soon after his arrival in New Orleans, where he continued to be a conspicuous medical and social figure in the old Carré up to the time of his death.

Edouard Dupaquier, the son, was sent to Paris for his academic and medical education when fourteen years of age and returned to New Orleans in 1885 after his father's death. While in France he pursued his studies assiduously and after a brilliant course of study was graduated Bachelor of Letters and Bachelor of Science, in the University of Paris. He promptly entered the medical school, and was graduated M. D. in the Ècole de Medecine after serving an externat in the hospitals of Paris. While engaged in his medical studies he enjoyed the comradeship and friendship of several of his classmates who attained great celebrity as teachers and investigators in the Faculté, and which continued in after

:e, among them the eminent surgeon Prof. Pierre elbet, to whom Dr. Dupaquier often referred ith affectionate remembrance.

When Dr. Dupaquier es-ıblished himself in New rleans, he did so as a eneral practitioner in he regular ranks of the rofession and was duly dmitted to membership a the Orleans Parish Medical Society and in he Louisiana State Med-:al Society in 1893. He ook a lively interest and ctive part in the pro-eedings of these Socie-ies and his valuable co-peration was recognized y his election to the Presidency of the Orleans Parish Medical Society in 1896. In 1900 he was elected Professor of Clin-ical Therapeutics in the Faculty of the New Orleans Polyclinic (now the Graduate School of Tulane University) and taught this branch until 1902, when the title of his chair changed at his own solicitation, to that of Professor of Clinical Therapeutics and Tropical Medicine. Coincidentally with his election to the Polyclinic he was appointed a member of the Visiting Staff of the Charity Hospital, and continued to teach in this dual capacity until 1913 when he resigned from the Polyclinic and the Hospital to attend to the demands of his large and increasing practice.



EDOUARD MICHEL DUPAQUIER, M. D.

By virtue of his title and his special competence as an authority in tropical diseases (which he taught in the wards of the Charity Hospital and in the Polyclinic, for over ten years) Dr. Dupaquier is justly credited as the founder and occupant of the first chair of tropical diseases officially devoted to tropical diseases in New Orleans and probably in the Southern States. In the many years of his teaching he contributed valuable papers and discussions to tropical diseases which displayed his thorough knowledge of the subject and largely reflected his training in the methods and researches of the French School. But his interests were not limited to tropical diseases. Every new discovery and advance in therapeutics and in the treatment of disease, claimed his interest and attention as shown by his many published papers in the transactions of the Orleans and State Societies, in this Journal and in his unpublished lectures in the post graduate school. He and Dr. de Roaldes were the first to apply Roux's and von Behring's antitoxic serum for diphtheria and he was the first to resort to the Widal sero-diagnostic test for typhoid fever which he did in collaboration with Dr. L. O. Pothier, then pathologist of the Charity Hospital. He was also the first to utilize the cacodylates by intravenous injection after their introduction by Gautheir in France, and later, he also introduced hectine as a substitute for salvarsan in the treatment of syphilis as suggested by the dermatologist, Hallopeau. In cardiology he was an ardent pupil of Hucahrd and in diagnosis and treatment of the viceroptoses he was among the first to draw attention to the importance of these visceral displacements, following closely in the lead of Franz Glenard whose researches were new and ill understood at that time in this country.

After the creation of the Louisiana State Board of Medical Examiners in 1894, he became the official interpreter of the Board in the examination of foreign candidates who applied for license from French, Spanish, Italian and Latin-American countries.

Dr. Dupaquier was a remarkable linguist. Besides his native English he spoke fluently French, Spanish and Italian and could translate all the Romance languages with a surprising ease and correctness. He excelled, however, in French which he spoke and wrote in a masterly style with all the grace, elegance and verve of the most accomplished Parisian intellectuals.

He was the last of a distinguished generation of native Louisianians who had been educated academically and in medicine in France; one of a group of men whose literary accomplishments and contributions to French literature in Louisiana gave a peculiar and unique disitinction to the medical profession of this city and state. There are many physicians in our city and in the Acadian parishes of the State who have inherited the language and the French tradition of the colonial and ante-bellum period and who delight in speaking the language of their ancestors.

But actually there are none left of that galaxy of medical men who flourished in the old Athenée Louisianais and who, though born in Louisiana, had been educated from their childhood in France and had brought back with them all the scholastic thoroughness of their European training; men who could entertain and delight a large cultivated French speaking audience with a purity, beauty and classic perfection of diction that would have been envied by the ablest conferenciers in France.

But apart from his literary and professional accomplishments, Dr. Dupaquier was a delightful colleague and friend. Of retiring and modest habits and a high strung and sensitive temperament, he shunned publicity, but in his intimate friendships with those who understood and appreciated his worth, he was expansive. In his conversations and correspondance he displayed a charming personality in which his brilliant qualities of mind, richly tinctured by the classic lore of the French Masters, were blended with a broad sympathy, understanding and loyalty of spirit, that made his friendship a precious possession.

In the last few years preceding his death he lived in comparative retirement, rarely attending society meetings or public occasions. While still responding to the calls of a limited number of faithful clients, he concentrated his affections upon his beloved family, his wife, his children and grandchildren who, with his favorite authors, gave him the greatest solace and comfort. He died leaving a sorrowing widow, two sons, St. Marc and John W., both married and engaged in business pursuits, and one daughter, Mrs. Hy. P. Dart, Jr., to mourn his loss. The Journal, gratefully remembering his long and faithful collaboration in earlier years, condoles with them in their great affliction. R. M.

EARLIER DIAGNOSIS OF MEASLES.—P. M. Stimson discusses the earlier diagnosis of measles. From exposure to the onset of the first symptom of the disease—usually fever—is the period of incubation. This averages fairly close to ten days, with only rare cases falling outside the seven to fourteen day or second week limit. The duration varies with the virulence of the organism and the resistance of the patient, the more severe cases usually showing the shorter incubation periods. The blood may early show a slight leukocytosis lasting to the middle of the period of incubation, and followed by a more definite lymphocytic leukopenia toward the end of this period. In general, the features of the period of invasion may be readily enumerated chronologically by associating them with the fingers of the outspread hand. Beginning with the little finger is the first symptom, fever. Twelve hours later comes the ring finger, or puffiness of the lower eyelid and perhaps the measles line, together with the first sign of the enanthem or rash on the fauces. Twelve hours later, or middle finger, come the evidences of catarrh, also known as the three C's; to-wit, conjunctivitis, coryza and cough. Twelve hours later, or the forefinger, are found Koplik's spots. Thirty-six hours later, or as far from the forefinger to the thumb as it is from the little finger to the forefinger, comes the rash or exanthem, and for the palm of the hand we have a certain amount of headache and a considerable malaise throughout this period. A fairly definite line of congestion across each lower lid, about at the margin of the tarsal cartilage and perhaps a third of the way from the lid margin to the fornix may accompany the puffiness of the lower eyelids. This so-called measles line must be quite marked to be suggestive. It is best seen for the first time in a child in whose case there is a history of a known exposure to the disease some ten days before the day of examination and who has that day or the day before shown the first slight elevation of temperature above normal. Its duration as a line is quite brief as a rule, the injection spreading in a day or so to involve the entire peripheral conjunctiva and later the palpebral conjunctiva also.

J. A. M. A., March 3, 1928.

HEART DISEASE AS SEEN IN SOUTHERN CLINIC.—Nine hundred and fifteen cases of heart disease were analyzed by Charles T. Stone and Frances R. Vanzant, Galveston, Texas. The patients were fully studied by means of the history, the physical examination, laboratory methods, and many by the roentgen ray and electrocardiograph; and 210 came to autopsy. Of these 915 patients, 436 were hypertensive; 177 were syphilitic; 125 were arteriosclerotic; sixty-seven were rheumatic; twenty-one had angina pectoris; fourteen showed subacute bacterial endocarditis; twelve were thyrotoxic; six had congenital heart disease; forty-five were impossible of classification, and twelve were grouped under the heading "miscellaneous." Here, as elsewhere, the majority of all cases of heart disease fall under one of the four main groups, viz., hypertensive, syphilitic, arteriosclerotic and rheumatic. The authors point out that heart disease, as a whole, is in the South a somewhat different problem from that seen in the East and North, the difference arising chiefly from two large factors: (1) relatively low incidence of acute rheumatic fever and chorea in the South, and (2) the proportionately larger negro population in the South. These two considerations cause a very low incidence of rheumatic heart disease, with a much higher incidence of syphilitic heart disease. Hypertensive heart disease also appears to occur more frequently in the locality from which this report is written than in other sections (Virginia and Massachusetts) where comparable studies have been carried out. This finding may be partly accounted for on the basis of differences in the social strata from which the different reports have been compiled. Also, the comparatively low incidence of rheumatic heart disease causes a relative increase in the percentage of hypertensive heart disease. Over and above these considerations there appears to be a slightly higher frequency of this type of heart disease in the present series, the result, most likely, of the large number of negroes included in the study, and in whom hypertensive heart disease is more frequent than in the white race.

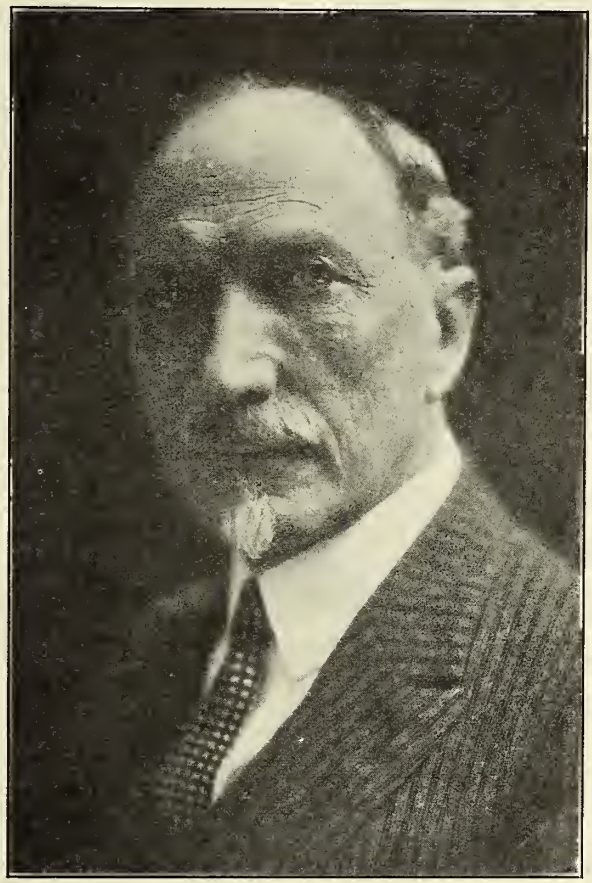
J. A. M. A., October 20, 1927.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

JOHN DARRINGTON, B. S., M. D., F. A. C. S., PRESIDENT, MISSISSIPPI STATE MEDICAL ASSOCIATION.

Dr. John Darrington of Yazoo City, Mississippi, is President of the Mississippi State Medical Association this year. For more than twenty-five years he has been an outstanding figure in the Association and has always been an earnest worker in the cause of organized medicine. He has always emphasized the importance of medical ethics and the need of honesty in the practice of medicine and surgery. He was fighting the fee-splitting evil long before the organization of the American College of Surgeons. His friends and patients know that his life has been an exemplification of the worth of friendship and service.



JOHN DARRINGTON, B. S., M. D., F. A. C. S.
President, Mississippi State Medical Association.

Dr. Darrington is the son of the late Dr. Robert Darrington and Leonora Molliman Darrington. Dr. Robert rington was born in the year 1937, in Clark County, Alabama. He was graduated from a New York Medical school and served as a civil war surgeon. He practiced all of his life in Wilkinson County, Mississippi, just south of the Homochitto River.

Dr. John Darrington was born in 1870. He was graduated from A. & M. College of Mississippi with the degree of B. S. in the year 1890, and from the School of Medicine of Tulane University of Louisiana in the year 1892. He served an internship at the Natchez Charity Hospital. He is also a graduate of the Post Graduate Medical School of New York in the year 1898. Dr. Darrington is still a student of medicine and yearly visits the important surgical clinics of the country. In 1898 he opened a private sanitarium in Yazoo City which has grown into the large, splendidly equipped Yazoo Hospital. From the year 1908 to the year 1916, Dr. Darrington was a member of the State Board of Health of Mississippi and did much to bring this body to its present high standard and state of efficiency.

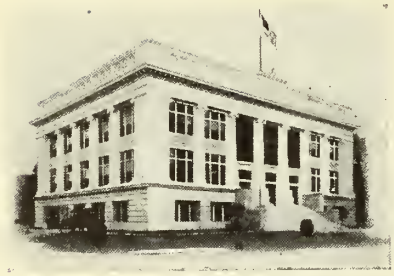
Dr. Darrington is a member of the Central Medical Society, the Tri-State Association of which he was President in the year 1916, the American Medical Association, the Southern Medical Association, Association of Surgeons of the Illinois Central System, and the American College of Surgeons. In addition to his professional activities, he has been prominent in the social, business and civic activities of his home city.

EDITOR CAUGHT.

The Secretary of the State Association in no uncertain terms has asked the editor of this column to note that in the April number of the Journal the question was asked, "Are you going to Meridian, May 10-12? The editor hereby makes due correction and wishes to call the attention of one and all that the Mississippi State Medical Association will meet in Meridian on Tuesday, Wednesday and Thursday, May 8-10, 1928.

It has been a long time since the Association met in Meridian and we have been promised a rousing and cordial welcome. The program as announced by the Secretary of the Association is given below. Dr. H. L. Rush, Secretary of the East Mississippi Medical Society, assures us that there will be ample hotel accommodations as may be seen from the following list:

Lamar Hotel, 200 rooms, rates $2 to $5.
Great Southern, 125 rooms, rates $1.50 to $4.00.
Meridian Hotel, 50 rooms, rates $1.50 to $3.50.
Union Hotel, 40 rooms, rates $1.50 to $4.00.



CITY HALL, MERIDIAN

The Delta Medical Society met in Belzoni, Mississippi, on April 11, 1928 with Dr. R. M. Donald of Moorhead in the chair, Dr. R. S. Finlay, Secretary. There were 150 members and guests present. The following program was presented:

"Recent Advances in the Study of Malaria"—Dr. Paul S. Carley, Greenville.

"Suggestions to the General Practitioner in Diseases of the Eye, Nose and Throat"—Dr. L. C. Davis, Greenville.

"Compound Fracture"—Dr. J. A. Crawford, Greenville.

"Principles of Medical Ethics"—Dr. W. C. Patterson, Rosedale.

"Infections of the Hand; Motion Picture Demonstration"—Dr. R. C. Finaly, Greenville.

Rosedale was selected as the place for the next semi-annual meeting.

GO TO MERIDIAN, MAY 8-10

The regular quarterly meeting of the Homochitto Valley Medical Society was held at Natchez, April 12, at which a motion picture demonstration on "How Biologicals Are Made" was given by Dr. Wilson of Parke Davis & Co. A paper on "Staphlococcic Bronchitis" was presented by Dr. J. S. Ullman, Natchez.

GO TO MERIDIAN, MAY 8-10

The Clarksdale and Six Counties Medical Society held its 52nd semi-annual session at Clarksdale on March 28. Its program was as follows:

"Gall Bladder Drainage, Lyon Technique, Report of Cases"—Furman H. Tyner, Clarksdale.

"The care of Acute and Chronic Laryngeal Stenosis, Diphtheritic and Non-Diphtheritic"—J. H. Lipsey, Memphis, Tenn.

"Treatment of Heart Failure in the Aged"—Newton S. Stern, Memphis, Tenn.

"Thyroidectomy"—John C. Culley, Oxford.

"Observations on Malaria"—Leon S. Lippincott, Vicksburg.

"Diphtheria"—Kinsey M. Buck, Memphis, Tenn.

"Urinary Obstruction"—J. L. Morgan, Memphis, Tenn.

"Pneumonia as a Complication of Syphilis in the Negro"—S. T. Wells, Duncan.

"Caesarean Sections in Motion Pictures"—J. C. Ayres, Memphis, Tenn.

The following delegates to the State Meeting were elected:

Bolivar County—L. B. Austin.

Coahoma County—T. G. Hughes.

Tallahatchie County—G. D. Hightower.

Tunica County—W. H. Williams.

Quitman County—G. C. Denson.

Alternate delegates:

Bolivar County—S. T. Wells.

Coahoma County—A. J. Brown.

Tallahatchie County—J. A. Harris.

Tunica County—R. T. Stapleton.

Quitman County—A. C. Covington.

GO TO MERIDIAN, MAY 8-10

The Issaquena-Sharkey-Warren Counties Medical Society held its regular monthly meeting on April 10, 1928, in Vicksburg. Their program was as follows:

"Jaundice," Preston Herring.

"Ethical Advertising," Edley H. Jones.

This Society has added the following name to its membership roster: R. J. Peterson, Vicksburg.

GO TO MERIDIAN, MAY 8-10

The Tri-County Medical Society held its regular meeting at McComb, Mississippi, March 13th. The program was as follows.

"Modern Treatment of Gonorrhea," Dr. Willoughby of New Orleans representing Dr. Walther.

The next meeting of the Society will be held at Monticello, Mississippi, June 12th.

GO TO MERIDIAN, MAY 8-10

GREAT SOUTHERN HOTEL, MERIDIAN

The program of the Staff meeting of the Vicksburg Sanitarium held Monday, April 9th, was:

"Carcinoma of the Vulva," A. Street.

"Intestinal Disturbance Resulting from Abscessed Teeth Stimulating Chronic Colitis," G. M. Street.

"Compound Fracture of the Femur," J. A. K. Birchett, Jr.

"A Personal Experience"—S. Myers.

The East Missisippi Medical Society met in Union, Mississippi, April 19. The following program was presented:

"Pneumonia"—F. E. Werkheiser, Philadelphia.

"Surgery of the Fallopian Tubes"—W. J. Anderson, Meridian.

"Pellagra"—W. J. Cavanaugh, Meridian.

"Removal of Nail from Right Bronchus with Bronchoscope"—A. C. Touchstone, Meridian.

GO TO MERIDIAN, MAY 8-10

THE DEDUCTIBILITY OF TRAVELING EXPENSES: A CRISIS.

Do you want for yourself and your fellow physicians the right similar to that accorded to other professional and business men to deduct in the computation of federal income taxes expenses incurred in attending meetings of medical organizations? The Robinson amendment to the Revenue Reduction Bill (H. R. I.) authorizes the deduction of such expenses. The Senate Committee on Finance will consider that amendment at an early date. A brief to be submitted in support of that amendment on behalf of the American Medical Association is printed on pages 88 to 95 of this issue. Read it, then telegraph or write to your Senator to support the amendment.

If the amendment is adopted and passed by the Senate, it will have to be passed by the House of Representatives before it becomes a law, so write to your Representative at the same time.

Unless you demand now that this unjust discrimination against the medical profession be discontinued, you will not be in a position to complain of its continuance.

(A. M. A. Bull., Vol. 23, No. 3.)

Dr. J. R. Johnson, graduate of the University of Mississippi and Tulane University of Louisiana, is now Resident Physician at the South Mississippi Charity Hospital at Laurel. Dr. Johnson served one year with Drs. Newell and Newell of Chattanooga, Tennessee, prior to going to Laurel.

The friends of Dr. J. R. Kittrell of Laurel will be pleased to know that his wife is convalescing from her recent operation for acute appendicitis.

Drs. W. E. Easterbrook and J. K. Oates have recently located in Laurel.

PROGRAM OF THE MISSISSIPPI STATE MEETING.

GENERAL MEETING—FIRST DAY.

Tuesday, May 8, 1928.

Session 9:30 A. M. to 12 M.; 1:30 P. M. to 6 P. M.
Elks Club.

OPENING EXERCISES.

1. Call to Order—President John Darrington, Yazoo City.
2. Invocation—Rev. Norman W. Cox, Meridian.
3. Report of Committee on Arrangements.

SECTION ON SURGERY.

J. W. Barksdale, M. D., Chairman,
Jackson.

1. Open Operation in Fracture of the Shaft of the Femur.
   By J. H. Rush, M. D.,
   Meridian.
   Discussion to be opened by J. S. Ullman, M. D., and T. G. Hughes, M. D.
2. Acute Osteomyelitis.
   By H. A. Gamble, M. D.,
   Greenville.
   Discussion to be opened by F. M. Sandifer, M. D., and W. F. Gill, M. D.
3. Direct Blood Transfusion.
   By E. H. Galloway, M. D.,
   Jackson.
   Discussion to be opened by S. H. McLain, M. D., and W. C. Brewer, M. D.

4. Duodenal Fistula Following Gastric Resection.
   By W. H. Parsons, M. D.,
   Vicksburg.
   Discussion to be opened by T. E. Ross, Jr., M. D., and Theo. Mitchell, M. D.

5. Some of the Problems of Industrial Surgery.
   By David Walley, M. D.,
   Lumberton.
   Discussion to be opened by L. B. Hudson, M. D., and J. S. Gatlin, M. D.

6. Acute Conditions Within the Abdomen.
   By J. M. Acker, Jr., M. D.,
   Aberdeen.
   Discussion to be opened by C. R. Berry, M. D., and C. A. Pender, M. D.

7. The New Era in General Surgery.
   By W. H. Anderson, M. D.,
   Booneville.
   Discussion to be opened by B. L. Crawford, M. D., and R. L. Silverstein, M. D.

8. The Use of Radium in the Treatment of Uterine Diseases.
   By W. W. Crawford, M. D.,
   Hattiesburg.
   Discussion to be opened by W. B. Dickens, M. D., and J. C. McNair, M. D.

9. Treatment of Lung Abscesses.
   By S. H. Hairston, M. D.,
   Meridian.
   Discussion to be opened by Paul Gamble, M. D., and L. C. Feemster, M. D.

10. Placenta Previa.
    By J. F. Lucas, M. D.,
    Greenville.
    Discussion to be opened by D. P. Street, M. D., and J. W. Bailey, M. D.

11. Conservation in Surgery.
    By J. F. Armstrong, M. D.,
    Jackson.
    Discussion to be opened by T. F. Elkin, M. D., and S. W. Johnston, M. D.

12. Spinal Anesthesia in Major Surgery.
    By J. K. Avent, M. D.,
    Grenada.
    Discussion to be opened by R. D. Sessions, M. D., and B. B. Martin, M. D.

EVENING SESSION—EIGHT O'CLOCK.
Tuesday, May 8, 1928.
City Hall (Auditorium).
To Which the Public Is Cordially Invited.

1. Invocation—Rev. A. F. Watkins, Meridian.
2. Addresses of Welcome: On behalf of the City of Meridian—Mayor W. H. Owen.
   On behalf of the East Mississippi Medical Society—T. A. Royals, M. D., Meridian.
3. Response to the Address of Welcome—J. P. Wall, M. D., Jackson.
4. President's Address—John Darrington, Yazoo City.
5. Annual Oration—J. A. Crosler, M. D., Memphis, Tenn.

GENERAL MEETING.
Second Day.
Wednesday, May 9, 1928.
Session 9:00 A. M. to 12:30 P. M.
Elks Club

SECTION ON HYGIENE AND PUBLIC HEALTH.
C. M. Shipp, M. D., Chairman,
Bay St. Louis.

1. Training Health Workers—How and Why.
   By M. C. Balfour, M. D.,
   Indianola.
   Discussions to be opened by F. J. Underwood, M. D., and D. J. Williams, M. D.

2. Some Essentials in a Dental Health Program.
   By Wm. R. Wright, D. D. S.,
   Jackson.
   Discussion to be opened by F. M. Smith, M. D., and W. D. Beacham, M. D.

3. Observation of Some Chronic Diseases Confronting Public Health Workers.
   By Wallace Sheely, M. D.,
   Gulfport.
   Discussion to be opened by I. W. Cooper, M. D., and E. D. Kemp, M. D.

4. Standard Milk Ordinance with a Plea for Uniformity in Procedure and Active Support of the Medical Profession.
   By L. S. Frank, M. D.,
   Montgomery, Ala.
   Discussion to be opened by W. E. Noblin, M. D., and D. V. Galloway.

5. Food Contamination.
   By D. G. Rafferty, M. D.,
   Pass Christian.
   Discussion to be opened by J. E. Green, M. D., and C. C. Buchanan, M. D.

6. The Control of Tuberculosis in Mississippi.
   By Henry Boswell, M. D.,
   Sanatorium.
   Discussion to be opened by L. B. Austin, M. D. and C. A. Sheely, M. D.

SECTION ON EYE, EAR, NOSE AND THROAT.

Geo. A. Adkins, M. D., Chairman,
Jackson.

Session 9:00 A. M. to 12:30 P. M.

1. Lateral Sinus Thrombosis: A Review of the Literature and Report of Cases.
By D. W. Hamrick, M. D.,
University.
Discussion to be opened by B. S. Guyton, M. D.
2. Bacteremia Complicating Acute Suppurative Otitis Media.
By D. C. Montgomery, M. D.,
Greenville.
Discussion to be opened by E. LeRoy Wilkins, M. D.
3. The More Serious Complications in Acute Mastoiditis.
By W. B. Dobson, M. D.,
Jackson.
Discussion to be opened by E. F. Howard, M. D.
4. The Value of Lipiodol in Otolaryngology.
By F. E. Lejune, M. D.,
New Orleans.
Discussion to be opened by C. A. McWilliams, M. D..
5. The Eye Picture, Briefly, In Relation to Intracranial Lesions: Report of Cases.
By Fern Champenois, M. D.,
Hattiesburg.
Discussion to be opened by W. A. Stevens, M. D.
6. The Early Treatment of Strabismus.
By H. L. Arnold, M. D.,
Meridian.
Discussion to be opened by E. L. Posey, M. D.
7. Contusions of the Eye-Ball.
By M. H. Bell, M. D.,
Vicksburg.
Discussion to be opened by W. S. Harper, M. D.

SECTION ON MEDICINE.

W. H. Frizell, M. D., Chairman,
Brookhaven.

Session 2:00 P. M. to 5:00 P. M.
Elks Club.

1. The Sugar Fed Child.
By Seale Harris, M. D.,
Birmingham, Ala.
Discussion to be opened by N. C. Womack, M. D., and Elise Rutledge, M. D.
2. Staphylococcic Bronchitis.
By J. S. Ullman, M. D.,
Natchez.
Discussion to be opened by L. S. Gaudet, M. D., and H. F. Garrison, M. D.
3. Influenza.
By S. E. Eason, M. D.,
New Albany.
Discussion to be opened by J. S. Donaldson, M. D., and S. Myers, M. D.
4. Tuberculosis.
By T. D. Bordeaux, M. D.,
Meridian.
Discussion to be opened by W. H. Anderson, M. D., and D. T. Langston, M. D.
5. The Status of Biological Preparations in Therapeutics.
By O. W. Bethea, M. D.,
New Orleans.
Discussion to be opened by M. W. Robertson, M. D., and M. H. Bell, M. D.
6. The Valves of the Heart in Action (Lantern Slides).
By G. W. F. Rembert, M. D.,
Jackson.
Discussion to be opened by J. H. Rush, M. D., and Geo. Baskerbill, M. D.

GENERAL MEETING.

Third Day.
Thursday, May 10, 1928.
Sesison 9:00 A. M. to 12:00 M.
Elks Club.

SECTION ON MEDICINE *(Continued)*

7. The Function of a Modern Hospital For Mental Diseases in Our Social Scheme.
By H. E. Austin, M. D.,
Meridian.
Discussion to be opened by S. E. Eason, M. D., and H. H. Ramsey, M. D.
8. Medical Sociology.
By O. N. Arrington, M. D.,
Brookhaven.
Discussion to be opened by G. S. Bryan, M. D., and J. P. Wall, M. D.
9. A Discussion of the Psychoneuroses—A Neglected Field in Medicine.
By W. A. Dearman, M. D.,
Gulfport.
Discussion to be opened by M. J. L. Hoye, M. D., and H. H. Ramsey, M. D.
10. The Problems of Uremia.
By J. H. Musser, M. D.,
New Orleans.
Discussion to be opened by W. A. Dearman, M. D., and W. W. Crawford, M. D.
11. The Treatment of Neuro-Syphilis with Special Reference to the Method of Inoculation with Malarial Blood.
By Isham Kimbell, M. D.,
Gulfport.
Discussion to be opened by J. H. Fox, M. D., and J. G. Gardner, M. D.

BOOK REVIEWS

X-ray and Radium in the Treatment of Diseases of the Skin: By George M. MacKee, M. D. 2nd ed., Philadelphia. Lea & Febiger, 1927. pp. 788.

All dermatologists, radiologists and many of the general profession have awaited the arrival of the 1927 or 2nd edition of Dr. MacKee's masterly work.

It is characterized by his scrupulous care in collection, correlation and presentation of material in which the author very wisely has drawn on the associate masters of the sciences to record only the genuine.

One can only be amazed to find in one text of 760 pages the history, physics, biology, chemistry, therapeutics, pathology and indications and contra-indications of the use of X-ray and radium.

Those of us who have had the good fortune to study with the master and his associates should be very proud of his accomplishment, a standard of modern radiotherapy in dermatology.

M. T. Van Studdiford, M. D.

Food Infections and Food Intoxications: By Samuel Reed Damon, A. M., Ph. D., Baltimore. The Williams & Wilkins Co., 1928. pp. 266.

This is an excellent little book on the subject treated. The presentation is clear and concise and the text is not burdened with a multitude of citations of doubtful value. The overworked diagnosis of "ptomaine poisoning" is no longer considered tenable, and every argument offered by investigation into the cause of food poisoning is advanced to abolish it.

There are nevertheless some features that do not seem consistent with the title, viz. the including of actinomycosis, which is not ordinarily transmitted to man through infected meat. And for the sake of completeness the failure to include both typhoid and dysentery in the spread of which food may play a conspicuous role is obvious. These, however, are minor details which in no way detract from the usefulness of the book.

L. C. Scott, M. D.

Max von Pettenkofer: By Edgar Erskine Hume, M.D., Dr. P.H., LL.D., Major, Medical Corps, U. S. Army, N. Y. Hoeber, 1927. pp. 142.

A very brief study of Max von Pettenkofer's life and work. The Chapter on Etiology of Cholera and other Intestinal Diseases should prove of interest to the reader.

I. L. Robbins, M. D.

Bedside Diagnosis: Edited by George Blumer, M. D. Vols.. I, II, and III, with Index. W. B. Saunders Company, Philadelphia and London. 1928. pp

Many large volume works have appeared on certain phases of medicine, but for the first time we have incorporated with sufficient authority and with a sufficient attention to detail a work which contains important features of diagnosis, of a diagnosis which has for its basis the determination of what is wrong with the patient when he is viewed by the physician from the side of the bed. A book such as this is a refreshing addition to medical literature in this day when highly technical works, great specialized volumes and laboratory tomes appear to discuss disease conditions. The editor of these three large well edited clearly published works has made as its fundamental purpose the most important factor in diagnosis, namely, the use of the five unaided senses. Laboratory methods are spoken of and their value is shown, but no effort has been made to recount or to describe any technical procedures. Most of the contributors have conformed in a remarkable way to the request of their editor, to stress history and physical examination, or perchance it may be that the editor has recast or edited the articles so that his preference has been expressed in the final form of the book.

The contributors to this work are for the most part men whose names are recognized throughout the English speaking world, and authorities in their particular line of endeavor. Articles by authors such as Lawrason Brown, Maud Abbott, Roger Morris, C. F. Hoover, Roger Lee, C. C. Bass, and Kenneth Blackfan suggest that the authors of this system have been selected wisely and well.

J. H. Musser, M. D.

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord: By Robert Bing. 3d ed. rev. and enl. St. Louis, C. V. Mosby Co. 1927. pp. 204.

Is well worth a place on the book shelf of the neurologists or any other physician. It is well arranged for quick reference and study of focal symptoms. Previous editions to this book are so well know that little comment is necessary as to the subject matter. There are a few changes in this last edition from the older ones, and it would seem to me that they are not all for the better. However, the book is well worthy of consideration.

E. McC. Connely, M. D.

Diseases of the Skin: By Henry H. Hazen, A. M., M.D., 3rd ed. St. Louis, C. V. Mosby Co. 1927. pp. 572.

The 1927 Edition (The Third Edition) of Dr. Hazen's useful treatise on the diagnosis and therapy of skin diseases has its place on the modern book shelf.

It is fully illustrated and carries many prints of common and rare diseases, so often encountered in temperate and semi-tropical practice. It also presents many prints characteristic to the colored race.

The book is very up-to-date in the dosage for Radium, X-ray, Alpine Lamp, and High-frequency Fulguration. Every paragraph clearly demonstrates the authors ability as one of the leading writers on subjects Dermatological. It will be a valuable text and source of reference for some time to come. One can highly recommend this edition.

M. T. VAN STUDDIFORD, M. D.

Clinical Researches in Acute Abdominal Disease: By Zachary, B. A., M. D., M. S. (Lond.), F. R. C. S., (Eng.). 2nd ed. London, Oxford University Press. 1927. pp. 214.

This second edition, as shown in the preface, contains a chapter on Extravasation of Bile, Ascending Enteritis and the subject of Shock. As in the first edition the chapters on Hyperesthesia, Phrenic Shoulder Pain and Subacute Perinephric Abscess are thoroughly dealt with. As one reads this book it can be readily seen that the author refers to diagnosis points that are generally overlooked in other texts. He gives five rules to show how clinical research can be made,—valuable, i. e. accurate observation of the facts if each case investigated, etc.

In Chapter 2, in discussing the function of the parietal peritoneum, for clinical purposes he divides the abdominal parietal lining into demonstrative and non-demonstrative areas. The remainder of the chapter deals with local and referred pain. The chapter which follows discusses muscular rigidity, cutaneous hyperesthesia and hyperalgesia, with reference to each disease.

Chapter 5 deals with the clinical study of Phrenic Shoulder Pain with special bearing on diagnosis of acute abdominal disease. This subject is also discussed with its relation to different abdominal conditions and thie manner in which the pain is referred.

The following chapters show the differential diagnosis between acute thoracic and acute abdominal lesions and are very well arranged, bringing out many helpful points.

Under the head of Genito-Urinary symptoms in Acute Appendicitis, these conditions are cited as occurring but their importance is in the minority. The explanation of the Femoral Test for Hypogsdtric Peritonitis is dealt with with case references.

The subject of Shock and Collapse, with special reference to Acute Abdominal Disease is treated thoroughly and brought up to date.

The manner in which the author presents his subjects with collateral cases, makes this book most interesting.

EMIL BLOCH, M. D.

Harvey Lectures, 1926-1827. Baltimore, Williams and Wilkins Company. 1928.

A somewhat smaller volume than usual from the Harvey Society of New York, containing such splendid essays that it looms larger scientifically than the usual number with many more pages.

J. H. MUSSER, M. D.

Collected Papers of the Mayo Clinic and the Mayo Foundation. Vol. 18, 1926. Philadelphia, W. B. Saunders Co. 1927. pp. 1329.

This volume represents 200 papers covering the work accomplished in the various fields of medicine and surgery by members of the Staff during 1926. The work is of chief interest to the general surgeon and diagnostician. Sufficient papers from the special fields have been included so as to make this volume worth while to every physician.

The papers dealing with duodenal and gastric ulcer, the medical and surgical management and the various complications associated with same are especially complete and worthy of detailed study.

There are a total of 23 papers dealing with the biliary apparatus. This includes a good report on the hepatic function tests. The experimental work of Mann and his associates on the physiology of the liver is brought up to date in this volume.

There are 1272 pages of interesting medical facts of interest to every physician.

SHIRLEY LYONS, M. D.

First Aid and Medical Service in Industry: New Brunswick, N. J., Johnson & Johnson. 1928. pp. 136.

A description of what should be found in first aid stations in various industries, issued by a prominent firm prepared to supply these needs.

J. H. MUSSER, M. D.

Tratado de Patologia y Clinica Circulatoria: By Dr. Duran Arrom. Libreria Sintes, Barcelona. 1927. pp. 719.

Apparently a very excellent description of pathology and the clinical manifestations of altered physiology of the circulatory system. Nicely printed with splendid illustrations and many beautiful colored plates.

J. H. MUSSER, M. D.

Neoplastic Diseases: A Treatise on Tumors: By James Ewing, M. D., Sc. D. 3rd ed. Philadelphia, W. B. Saunders Company. 1928. pp. 1127.

This is the third edition of this well known reference work, revised and enlarged, due to the steadily expanding knowledge of neoplastic diseases, which has required extensive changes. The discussion of bone tumors has been rewritten on the basis of recent information, gleaned almost entirely from the Codman Registry of Bone Sarcoma, and several new sub-varieties incorporated. The classification of mammary cancer has been simplified and brought into closer agreement with the clinical varieties.

The subject of brain tumors has been rewritten, including recent contributions in this field and the nomenclature changed with regard to the newly ascertained studies. About sixty new illustrations, gross, microscopic, and radiographic, have been added.

In all, there are forty-nine chapters; the first nine of which include General Oncology; setting forth in detail the historical facts, definitions, classification, and general pathology; malignancy and its effect on the organism; metastasis; the chemistry of tumors; their serology; theories of the nature of cancer; the special etiology of tumors, and experimental research.

The remaining forty chapters are given up to the discussion and description of special oncology and include fibroma, myxoma, lipoma, chondroma, osteoma, myoma, angioma, sarcoma (clinical types, sarcoma of bone and bone-marrow), endothelioma, lymphoma and lymphosarcoma, tumors of the brain, tumors of the nerve trunks, tumors of the spinal cord and meninges (membranes); the general pathology of epithelial tumors, and the epithelial tumors of the breast as well as other tumors of the breast; cancer of the uterus, vulva, vagina, chorio-epithelioma, cysts and tumors of the ovary (ovarian teratoma); carcinoma of the stomach and intestine; epithelial hyperplasia of the liver and tumors of the liver; tumors of pancreas; maxillary tumors of dental origin; epithelial tumors of the kidney and of the salivary glands; tumors of the adrenal, prostate, testis, lung, epidermoid carcinoma, melanoma, tumors of thyroid, the thymus, hypophysis, the pineal gland and its tumors, and teratology.

The bibliography has been verified, and many less important references dropped but due to the rapid increase of American and Canadian contributions, the most recent of these are not included. There is an excellent index.

The work is an attempt to present tumors as specific diseases. It is of unsurpassed value to the surgeon and clinician, and without doubt one of the best available reference books on tumors.

O. M. L. LARRIMORE, M.D.

Mongolism: By Kate Brousseau. Williams and Wilkins Company. Baltimore. 1928. pp. 210.

An excellent monograph on the etilogy, pathology and general characteristics of an interesting state of congenital mental deficiency.

J. H. MUSSER, M. D.

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Williams & Wilkins Company, Baltimore: Anthelmintics and Their Use, by R. C. Chopra, M.A., M. D.

J. B. Lippincott Company, Philadelphia and London: International Clinics, Vol. I, March, 1928.

Lea & Febiger, Philadelphia: The Use of Symptoms in the Diagnosis of Disease, by Hobart Amory Hare, B. Sc., M. D., LL. D. Otology, by Gorham Bacon, A. B., M. D., F. A. C. S.

C. V. Mosby Company, St. Louis: Physical Diagnosis, by W. D. Rose, M. D. Gynecology for Nurses, by Harry Sturgeon Crossen, M. D., F. A. C. P. Strabismus, by Oscar Wilkinson, A. M., M. D., D. Sc.

Paul B. Hoeber, Inc., New York: Special Cytology, Volumes I and II, edited by Edmund V. Cowdry. Lobar Pneumonia, by L. R. Sante, M. D., F. A. C. R., F. A. C. P. Clinical Aspects of the Electrocardiogram, by Harold E. B. Pardee, M. D. Cardiac Arrhythmias, by Irving R. Roth, M. D.

U. S. Government Printing Office, Washington, D. C.: The Medical Department of the United States Army in the World War, Volume XIII, Part 1, Physical Reconstruction and Vocational Education by Maj. A. G. Crane, S. C.; Part 2, The Army Nurse Corps, by Julia C. Stinson. Mortality Statistics, 1925, Part 1.

Miscellaneous: Mechanics and Chemistry of the Human Body, by O. Boto Schellberg, New York City. High Frequency Practice, by Burton Baker Grover, M. D. Reflections, a book of poems, by James T. Nix, M. D., LL. D., New Orleans.

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Urethral Pathology in Women, by Winfield Scott Pugh, B. S., M. D., New York, N. Y.

New Orleans Medical
and
Surgical Journal

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MEDICAL FACTS, FADS AND FANCIES.

ARTHUR A. HEROLD, M. D.,

Presidential Address, Delivered at Annual Meeting of Louisiana State Medical Society, Baton Rouge, April 10-12, 1928.

It is, indeed, a rare pleasure and an unusual opportunity to be permitted to address an audience in this, the capital of our state; especially so, because the legislature will soon assemble in its regular bi-annual meeting and it is with the hope that some of my points will ultimately reach our legislative solons that I choose the subject, so pregnant with ideas and ideals, the title of my remarks "Medical Facts, Fads and Fancies." I state "remarks" advisedly, for I fully realize that the good people of Baton Rouge are so accustomed to oratory that I lay no claims in that direction.

When P. T. Barnum said "The American people like to be humbugged," he uttered an altruism, but he might have made it broader and said that "Some people of all times liked humbuggery." We are thankful, however, that Abraham Lincoln spoke the truth when he declared that "you can't fool all the people all the time," and it is upon this fact that my theme is woven, for were this not true, you, my friends, instead of being here tonight, would be worshipping pagan idols, offering burnt offerings and sacrifices or probably—and more likely—be "Eddying" around a Tabernacle or having your bones popped by a chiropractor!

From time immemorial, medical fads and fancies have existed in some forms; whether it be in the ideas of ancient heathens, the beliefs in the middle ages in the incarnate devil, in astrological medicine, in witchcraft, in hoodooism or voodooism of today, in the modern pseudo-religious cults and the modern pseudo-scientific manipulators, it is all the same; "some of the people can be fooled all the time and all of them some of the time"! Although, in the past as at present, physicians were the first to oppose evil, it was also true then, as now, that they had little influence to remove bad laws from the statute books. So, it happened that not until almost the nineteenth century, under the influence of theologians and especially lawyers, were the laws against witches forever abolished. The belief in witchcraft is gone, but the gullible public must be appeased in its desire for something unusual or something mysterious; hence, the numerous cults, fads, quacks and irregular practitioners.

It is my purpose to devote some time to an explanation as to why these illogical schools—if they may be dignified by such a term—exist and flourish in this enlightened age. Outside of the public's curiosity to investigate the unusual innovations and, to use a slang expression, "try anything once," there is a reason wherein the regular medical profession has been much at fault and that is: in its desire to advance science and scientific research, it has, to a certain extent lost sight of the human element and the individual himself; now, however, that we have come to a realization of the error of our ways, we are attempting to take

the public into our confidence, throwing off any veil of mystery which may have hung around us and we see the necessity of PUBLICITY—not individual publicity, but collective publicity. We want you to know what we are doing and why we are doing it; we want you to know what is going on in the scientific research laboratories; we want you to know what diseases are curable and when they are curable; we want to prevent diseases when possible and, when impossible, we want your co-operation toward keeping them from advancing to such a stage that we are powerless. We want you to know that we plead guilty to be altruistic, to the extent that we would rather prevent disease than to treat it, that we are glad to curtail our practices to that extent and we advocate regular health examinations, not with a view of collecting the fee therefrom, but in order to detect defects early and thereby give directions for preventing serious illness. In many communities, free chest clinics are held and many cases of tuberculosis that would otherwise have progressed to an advanced stage are detected early and advice that will lead to arrest of the disease, if the advice is followed, is given gratuitously. In many states, publicity campaigns have been conducted by the medical organizations and the Louisiana State Medical Society is now formulating a program with this end in view.

It will not be amiss, at this point, to review, as briefly as possible, some of the modern progress in medicine—*i. e.*, in REGULAR medicine—and then to contrast it with what the FADS and FANCIES of today have not done. Modern progress in medicine might rightly be dated from the discovery of the microscope by Antonius van Leeuwenhoeck, who lived in Holland in the seventeenth century. The next pioneer, to whom we are under an everlasting debt of gratitude, was Edward Jenner, English physician, 1749-1823; he was a pupil and protege of the famous anatomist, John Hunter, from whom many trace the beginning of the awakening of surgery. Jenner's name is famous, as he was the first one to conduct a scientific investigation into the fact then well known in England, that dairy maids, who had accidentally acquired cow-pox, were immune to small-pox; his extensive experiments confirmed this and his treatise, published in 1798, caused vaccination to be introduced into St. Thomas' Hospital and, later, into the British Army and Navy and, subsequently, adopted by other countries. So, Jenner was the pioneer in vaccine therapy and, of course, in preventive medicine. The next shining light was Louis Pasteur, French chemist, 1822-1895, whose name is immortal, partly because he followed up the work already done by van Leeuwenhoeck and Jenner; he worked out the processes of fermentation, which he showed are due to the presence and growth of a micro-organism, which he termed a ferment and, on this account, he is known as the founder of bacteriology. He went further and perfected a plan for preventing the activity of these germs (ferments, as he called them), by heating, and this method is known today as "Pasteurization." Utilizing Jenner's discovery, he carried it further, concluding that, in the various maladies, the infection depended upon the presence of a specific microbe. He was the first to grow cultures of these microbes and learned that, after the germs had been transplanted several times, they become attenuated; he used these attenuated or weaker germs to prevent cholera in fowls and anthrax in cattle and sheep. Finally, he went a step further with this and applied it to rabies—so that, today, we have the Pasteur treatment for the prevention of hydrophobia throughout the world!

We referred to surgery before, but, previous to the nineteenth century, it could make little progress, as anesthetics were unknown. To Crawford of Georgia and to Morton of Massachusetts we owe the discovery of chloroform and ether, respectively. Humanity, therefore, is greatly indebted to these two Americans—one a physician and the other a dentist, but both

"regulars"—for, by their work unmeasurable pain has been saved and surgery has been given great impetus. It owes much of its progress to such men as Lord Lister and Sir Frederick Treves in England, who did much to help along the transformation from embryonic to well-developed modern technique; Moynihan in Scotland, the gall-bladder and liver expert; Kocher of goitre fame, in Switzerland; Keen of Philadelphia, who profiting by knowledge gained by vivisection, proved to the world that brain injuries may be successfully operated upon; Cushing in Boston, who has dared to remove brain tumors, formerly inoperable; Murphy, the Mayos and Crile, who have contributed volumes and, last but not least, our own Matas, whose work has proven him most versatile, but especially his pioneer methods in curing aneuryms (incomplete blood vessel ruptures) have assured him a place high among the benefactors of mankind.

In medicine, we should think of the Germans, von Behring, who gave us diphtheria antitoxin, whose lead has revolutionized the treatment, not only of this dreaded throat disease, but also many other diseases treated by sera, for which we are thankful today; Robert Koch, discoverer of the tubercle bacillus; Wassermann, who worked out a reliable and scientific diagnostic blood test for syphilis; Ehrlich, who explained much about immunity to disease and, later, gave to the world his great chemical compound, salvarsan, known as "606"; the Englishman, Sir Almoth Wright, originator of modern vaccine treatment; the Americans, Reed, Carroll, Lazear and Agramonte, who proved the transmissibility of yellow fever by the mosquito; the Canadians, Banting and Best, who gave the long sought insulin to the world, conferring thereby untold benefit to the millions of diabetics; the Dicks of Chicago and Dochez, of New York, who worked out the scarlet fever serum; Trudeau and other pioneers for showing the way for properly combatting the "great white plague"; Roentgen, who gave us the Roentgen-ray, and the Curies, who discovered radium, have earned our undying gratitude. Even with cancer, we are making progress and research work is being done all over the world, hoping to unravel some of its disputed points; for instance, Dr. Maud Slye of Chicago claims to have proven, beyond all doubt, that cancers in general are not contagious, but hereditary, she having experimented with mice and mouse tumors for nineteen years. You are all familiar, I am sure, of the warnings to have cancers diagnosed early—when they are curable; you are more or less familiar, too, with the modern preventive treatment of many baffling diseases (especially heart disease) by removing all foci of infection and I might add that, in spite of this, more are dying from heart disease today than from any other cause. A decade ago, tuberculosis led in the mortality table; but now, with our improved knowledge of handling this scourge, it carries off annually in the United States not more than one-third as many as go by the heart route.

But, why burden you, you may ask, with all these medical FACTS? It is to impress upon you this *one fact:* EVERY ADVANCE IN THE TREATMENT AND PREVENTION OF DISEASE HAS BEEN CONTRIBUTED BY MEMBERS OF THE REGULAR MEDICAL PROFESSION.

How many specific for disease have been given by homeopaths? How much investigative work with cancer has been done by the anti-vaccinationists? How many Kochs or Wassermanns do you find among the osteopaths? How many Matases in the ranks of the chiropractors? What have the Dowieites or the Christian Scientists done to prevent heart disease? NOTHING! Why? Because those capable of doing things for you and for me and for every one else belongs to the regular profession. As stated before, we strive to help you keep well; we believe in prevention and let me recall to you a few instances. Right here in Louisiana, we have seen the culmination of the fight against yellow fever, formerly the dreaded scourge of the South; the work of

regular doctors proved that if you keep the patient protected from mosquitoes, he cannot spread the disease, hence isolation of any suspicious case and the destruction of the particular species of mosquito will prevent an epidemic. Right here in Louisiana, we have seen that terrible "black plague" of the middle ages, bubonic plague, nipped in the bud, so to speak, because regular doctors proved that it is conveyed by rat fleas, and so if you isolate the case from rats and destroy all rats possible, there will be no rat fleas to spread the disease. Through the discovery of a specific serum, you have seen Asiatic cholera wiped out of the Western Hemisphere, and this serum is the result of the finding of the specific germ by regular doctors. Many of you are old enough to remember what killed most of our boys who died in the Spanish-American War; was it Spanish bullets? No; it was typhoid fever, because that was before the days that regular doctors had worked out a vaccine against typhoid. In the late World War, the death rate in the American Army from typhoid was practically nil, for compulsory anti-typhoid vaccination was enforced. Smallpox, formerly so common and so dreaded, has, by general vaccination, improved from the time of Dr. Jenner, become comparatively rare and of much less severity; if general compulsory vaccination against all these diseases could be obtained, these pests could soon be wiped off the face of the earth. Yet there is an organization, known as the "anti--vaccination league," which is still fighting us and you on these proven points; it seems that some people know not what to do with their time and energy—that is the most charitable explanation.

Then we have the Faddists, known as "Anti-vivisectionists"; I have never seen one of them, but am told that they are long-haired men and women. They tell us that we must not torture a brute animal, in the interest of science, as one life is as good as another. They do not seem to know or do not want to know that these animals are well cared for and anesthetized when operated upon; they do not seem to know or do not care to know that much of our present knowledge of diseases and injuries of the brain, as well as diseases of abdominal organs was learned by animal experimentation. It was not so many years ago when a New Orleans boy, then a midshipman in the U. S. Naval Academy at Annapolis, received a severe brain injury in a football game; he was unconscious and his life practically despaired of, but the venerable Dr. Keen of Philadelphia knew from his animal experimentation that there was a clot on the brain and could tell just where it was; he operated upon and cured this young man, Commander Aiken, U. S. Navy, who was saved to his country and later died a hero. I say to you that a life like that is worth more than a million curs, and I say to you that, had not dogs been sacrificed in laboratories in investigations on diabetes, we would not today have insulin, for which a million or more diabetics and their families are thankful. So, why *this* fad?

We are cognizant, I am sure, of the influence of mind over matter and the value, in many cases, of psychotherapy. There is a fad, though, in our land which pretends to prove that all disease is mental and not physical, but which, for some unknown reason, specifically exempts—so I have been told — surgery and dentistry; this is a mystery to me, for, you know, often common stomach-ache is mistaken for appendicitis; I presume, then, that the Christian Scientists must make a very fine diagnosis, often baffling to good physicians. However, be that as it may, I am reminded of the story of the little boy, whose mother was a devout follower of mental science; the two were crossing a field and when the lad saw a bull in the distance, he shielded himself behind his parent's skirt. "Why, I'm ashamed of you," she told him, "Don't you know there is no such thing as pain and that the bull can't hurt you?" "Yes," he admitted tim-

idly, "I know it and you know it, but the bull doesn't know it."

Sometime ago, the New York Medical Journal tersely stated that the real crime of the sect lies not in what they do, but rather in what they do not do. "Suppose a Christian Scientist's own child were playing in front of a fast speeding car and a man standing by did not even stretch out a hand to drag it away, not believing, forsooth, in material measures, but relying solely on the strength of Divine Mind; what would be the Christian Scientist's opinion of that inhuman creature? It is not because he believes in prayer that we condemn him, but because he will not make any effort whatsoever to attain that for which he prays." Can any sane person believe such things as the following from Mrs. Eddy's book, misnamed "Science and Health"? "If the case to be mentally treated is consumption, take up the leading points in this disease; show that it is not inherited and that inflammation, tubercle, hemorrhage and decomposition are beliefs, images of mortal thoughts superinduced upon the body; that they are not the truth of man; that they should be treated as error and put out of thought; then, these ills will disappear. If the lungs are disappearing, this is one of the beliefs of mortal mind . . . . What if the lungs are ulcerated? God is more to man than his lungs; and the less we acknowledge matter or its laws the more immortality we possess . . . . You will never fear again except to offend God and will never believe that lungs or any portion of the body can destroy you." Such rot, my friends, when we consider the great number of lives being destroyed by tuberculosis of the lungs, which has been lessened materially, in late years, not through Christian Science preaching, but through the efforts of Koch, Trudeau, Brown, Pottenger, Durel and others of the regular medical profession!

In other states, these people have been convicted of criminal negligence for their errors of omission; the way to handle them everywhere is to force them to confine their activities to inconsequential cases; why, what do they do, secretly, when they are really ill of body? They consult a physician and usually a regular; I have treated some of them and I know of brother practitioners who have, also. But they go to physicians, *for themselves*, probably "unbeknowingst," like the man, in old saloon days, who had taken the temperance pledge and went into a drink emporium (like they used to have) and called for a "lemon sour"; the bartender asked if he did not wish it spiked; he replied, in a whisper, "Put some whiskey in it, unbeknowingst to me!"

Along very much the same lines, but without the religious element, was a fad which started in France a few years ago and which spread to this country, but of which we hear nothing today; that was the Coué school—sort of a self-hypnotism; he taught that if one could convince himself, by mental suggestion, constantly, that he was getting better, he would, necessarily, eventually get better—a very pretty fancy, which we all wish were practical!

A fancy of some years ago, evidently started in good faith, but which was continued in bad faith—and this one was perpetrated on us by a physician, but fostered by laymen—was the revival of the old idea that a preparation of the turtle tubercle bacillus is a specific for the disease in man. A young German, named Friedman, journeyed to this country, apparently in the interest of science, but really for pecuniary gain, to "sell" this idea to Americans. Promptly, medical authorities in this country scoffed at it, but the gullable laity was attracted by it and he interested many prominent Americans, including the late Wm. J. Bryan, then Secretary of State. But Friedman and his turtle bacillus preparation were but, as our Scientist friends would express it, "beliefs of mortal mind" and have disappeared from view.

All of which shows us that the American people, although liking humbuggery, re-

quire in the long run, to be "shown," as illustrated in the story of the nurse who informed Tommy that the stork had just brought him a little brother, and inquired if he would not like to see the baby; to which Tommy promptly replied: "Naw, but I would like to see the stork!"

Sometime ago, the homeopaths flourished in this country on the ridiculous doctrines of Hahneman that "Similis similibus curantur," the minimized dose, the single remedy, etc.; but this narrow fad or fancy, call it what you will, is not a menace to your health today, for most of those originally homeopaths are now practicing regular medicine. This fact was admitted and deplored by the International Association, meeting in Milwaukee, as far back as 1880. This sect called us "allopaths," which means that we treat one disease or condition by influencing another one in the body. This is wrong, we are not allopaths, but as stated earlier, we are "regulars," taking what good there may be in any and all schools and adopting them for the benefit of our patients.

Every two years, here in Baton Rouge, a sect, a fad or a school, call it what you will, but known as "chiropractors," attempt to get the legislature of our state to pass a law authorizing a board to examine them, with a view of permitting them to practice what they call an art of healing here, as they do in many other states; every time they ask this, we oppose them, and why? The simplest answer is that they have such insufficient knowledge of the elementary branches of medicine that it is unsafe, as a public health measure, to permit people to entrust their lives and health to such faddists. Their fundamental theory that every disease is due to spinal mal-adjustment is unsound and dangerous; in more than one instance, the daily papers have reported fractures of spine due to their manipulations. Dr. George Dock, a fair-minded and broad-minded student of medicine, visited the largest chiropractor school, at Davenport, Ia., and published his impressions. Among his conclusions were: "So one must question whether, as stated in a court decision, chiropractic is an innocent business. No one can object if a healthy or a sick star, either of the opera, stage or screen, a banker, a novelist, or even a physician wishes to be adjusted. The case is different in a child with measles, diphtheria or meningitis, a pregnant woman, or a patient with a malignant tumor," etc. Two years ago, representatives of this school came before your legislative committee and denied that diphtheria, tuberculosis and other diseases are caused by the specific germs, which we all know do cause them; they contended that spinal mal-adjustments are the real cause and that, if these germs are found in the diseases, they are simply scavengers, coming after and not before; this testimony is on the records, ladies and gentlemen. With these few reasons stated, do you not agree with me that they are not harmless? Do you not agree with Dr. Dock when he states that the "case is different in a child with measles, diphtheria or meningitis, a pregnant woman or a patient with a malignant tumor"? Would you want one of these men or women to be licensed and then to get hold of your baby or your friend's baby, with diphtheritic sore-throat and then to manipulate its spine and have you find out that serum would have cured the child, but find this out too late? Or that the meningitis could have been cured with serum if given early, when these people were "adjusting" the spine? Can't you see—I am sure that you can—that it is in the interest of the public that we oppose such a cult? They may try it again this year and we want your active help and co-operation toward keeping them out. The following cheering item from the Pittsburg Medical Bulletin would indicate that these people are rapidly disintegrating, so that even the head of their largest school is willing and ready to quit. To quote: "In addressing a meeting of 500 chiropractors and sympathizers in Philadelphia, Feb. 26, Mr. B. J. Palmer, the

daddy of chiropractors, said: 'Fully 80 per cent of the chiropractors in Pennsylvania are practicing medicine, not chiropractic. This is a sorry fact, gentlemen—we are practicing medicine. During the last year I have been in every state in the Union and this condition exists throughout. My ideals concerning chiropractic were shattered; chiropractic is doomed. You have drifted so far from the basic principles of chiropractic that you have lost your identity and brought the basic science bill upon your heads. Twenty-eight chiropractic schools have closed recently and many others will follow. The supreme courts in seven states have handed down legal injunctions during the last eighteen months, whereby these states are lost forever to chiropractic. I warned Ohio not to compromise; they tried to pass a bill engrossing medical principles and practices; I predicted its failure; it lost by 250,000 votes. There has been $250,000 of chiropractic money spent in California in the last year. You cannot defeat the ends of science; the basic science bills are the buckshot which we deserve for trespassing. When chiropractors preach and practice and try to become physicians, then it is justifiable for medical men to educate the chiropractor. Now, beat that argument, if you can; that is why we are losing right along. This will probably be the last time you will see me as a chiropractor, as I do not propose to lose my good money in fighting against sound arguments.' Incidentally, it is said that the number of students at Mr. Palmer's million dollar school at Davenport has decreased from 3500 to about 300."

The "Basic Science Bill" referred to by Mr. Palmer is one advanced by the American Medical Association, requiring anyone desiring to practice "the healing art" to pass a satisfactory examination in basic sciences of medicines, including anatomy, physiology and chemistry.

A fancy, which is still being pursued in some places, but which has died out in most places, and which created quite a sensation a few years ago, is the Abrams' Electronic Reactions. A man, by the name of Albert Abrams, who had previously really made some worth-while contributions to scientific medicine, proposed to revolutionize medical diagnosis and treatment by some instruments and methods, peculiarly his own. It took with many gullible physicians, but more especially with osteopaths; the unscrupulous took it up for financial gain. Such ridiculous claims as being able to diagnose, not only the disease—and every disease existing—by one drop of blood, taken under certain conditions, with the patient many miles away from the diagnostic machine, but also being able, by this one drop of blood, to tell the color, sex, religion and color of hair of the patient. The instruments were leased, with instructions that they should not be opened by the lessee. The press of organized medicine immedidiately perceived the impossibility of the claims and condemned the whole business, going so far as to submit to disciples specimens of blood from healthy guinea pigs and other animals and receiving ridiculous diagnoses of many fatal illnesses in man. With Dr. Abrams' death, the delusion faded and now, although there are still some in use, no doubt, by charlatans, we hear very little about it.

Scarcely had the Abrams' noise faded away, however, before we, always eager for something sensational, were told of a new fancy—and this one came with more force than the other; it was not long in getting some of our best men interested and trying it, either as an experiment or as a result of having been "convinced" of its virtues by the originator. We are always eager and always hopeful that specifics for baffling conditions and diseases will be discovered and that is why when a man of scientific attainments, like Dr. Koch of Detroit, announced that he had perfected a cancer cure, which he would not give to the profession generally, until he had convinced himself of its merits, many physicians investigated. We all hoped, although the Journal of American Medical Association promptly

condemned it. Now, that it has failed to give results claimed, in the hands of so many and now that the promoters are spending thousands—and perhaps more—annually in trying to prove its merits, by circularizing every doctor in the country with pamphlets and, now that we note the name of at least one high in the councils of Koch who was also high in the councils of Abrams, we know into what category this once hopeful preparation belongs.

Ladies and gentlemen, I know that I have tired you; I have but skimmed my subject; I have but touched upon some of the fads and fancies in medicine that we have been or are cursed with today; I have attempted to show you that some of them have a place, but they are usually abused; I have attempted to contrast them with medical FACTS and I have tried to stress the point that every real discovery of practical value to the health of mankind has come from the regulars — not the irregulars.

Oliver Wendall Holmes said: "There is nothing men will not do, there is nothing they have not done, to recover their health and save their lives; they have submitted to be half drowned in water and half choked with gases, to be buried up to their chins in earth, to be seared with hot irons like galley slaves, to be crimped with knives like codfish, to swallow all sorts of abominations and to pay for all this, as if to be singed and scalded were a costly privilege; as if blisters were a blessing and leeches a luxury. What more can be asked to prove their sincerity?"

People have done this for ages past, do so today and will continue to do so in the future; but, there is a brighter future for us. In the last few years many problems have been solved, many remain to be solved, and among these are the cure of internal cancer and the prevention of the pandemics of influenza, which sweep over the world every thirty years or oftener.

But remember that although "the American people liked to be humbugged," still "You cannot fool all the people all the time," and as we ourselves become more and more enlightened, take the public into our confidence and educate them on health matters, then, and only then, will all of us be able to properly judge and evaluate new ideas and new remedies; then, and only then, will charlatanry prove unprofitable and we shall be able to say, in unison, "The truth is mighty and will prevail."

LEADERSHIP IN MEDICINE.*

W. C. RUCKER, M. D.,

NEW ORLEANS

I am deeply appreciative of the great honor and opportunity which you have given me today. Yours is a brotherhood which represents the highest and the best in the science of medicine. It is an organization whose ideals are the most lofty and the recipient of this golden key is thus marked as one who has already achieved prominence in the study of the healing art and who is believed to be possessed of potentialities for growth, and ultimate fruition in achievements which shall lessen human suffering, lengthen human life and increase security from disease. The older members of this sodality of science are men who have already gained pre-eminence in the fields which they have elected to grace with their talents. The novitiates are men who, by their scholastic ability, industry and continuity of purpose, have stood out above their fellow students. The older members are already leaders; those newly endowed with the golden key to the noble heritage of healing are potential leaders. It therefore seems appropriate that my remarks shall be addressed to the subject of leadership in medicine.

Admission into the Hippocratic guild carries with it the responsibility over the

*Read before Annual Initiation of Members, Alpha Omega Alpha.

issues of life and death but this does not endow us with omniscience. Absolute truth is unattainable and we are but humble seekers for fragments which, in the millenium, shall be fashioned into the whole body of verity. Therefore, we are servants, not masters in the sacred ministry to broken bodies and disordered minds, in which we will do well to remember always that ours is the duty of laying hands of healing upon sick, world-weary souls. We are the sons of Aesculapius and as such, brothers of the goddess Hygeia, hence upon us is placed the obligation of leading those committed to our care, treading the path to health and lighting it with the lamp of science that those who follow us may not stumble in the darkness of ignorance. Therefore, we ourselves must know the route which is to be followed, its pitfalls and hidden dangers and those bypaths which lead but to disaster. The teaching of medicine is the preparation for this holy guideship and life for us should be one long curriculum for the learning of the roads which reach from injury and sickness into the blessed realm of normalcy. In this we learn from Nature, rather than from books, striving at bedside and in laboratory to unravel the ways in which the mother of us all protects the human mechanism and builds it back to vigor. Thus we acquire knowledge and judgment, in the application of which we must exercise leadership.

The first necessity in leadership of any kind is self-discipline, that, with judgment, an objective shall be selected and the mind, the will and the strength focused upon its achievement. This implies a continuity of effort, a tenacity of purpose and an unswerving adherence to the chosen path. A great many of the failures of life result from an inability to work on doggedly until the goal is reached, to an unwillingness to adapt oneself to environment and to a lack of appreciation of the fact that he who will lead others must lead himself.

He who would scale achievement's height,
Must first surmount the meaner hill,
And from this victory o'er self take flight,
Upon the wings of his own will.

The prime requisite in this is faith—faith in self, faith in associates, faith in the work. Without faith there can be no success. It begets an equanimity of mind which is of incalculable worth in the approach to patients and creates that courage of certainty against which the buffetings of life are powerless. Best of all it brings patience in adversity, unwhimpering silence in pain and genuine modesty in success. Having faith, the will can force persistent industry, a quality without which one cannot gain leadership of self or others. It is the prophylactic of worry, that most profitless occupation of the human mind, the heartener in disaster and the lightener of life's burdens.

Faith without works is dead and usually it has been killed by intellectual laziness complicated by unreasoning optimism. Work, intellectual honesty and a healthy scepticism are the antidotes for self-deception, a malignant mental disease against which the physician must ever be on guard. We should at all times maintain the open mind, ready to accept the best from any source, once it is asured that it is the best, but this asurance must be doubly sure, lest we be led astray to worship at the false shrines of near-quackery. Panacea, a daughter of Aesculapius, is a deceitful goddess whose devotees are daily offered specious therapeutic charms and we do well to look askance at novelties in diagnosis and treatment until they are backed by indubitable scientific evidence. Of all the many things which shake the layman's confidence, nothing is more harmful than the running after fads which we are soon forced to abandon as impotent or harmful. In this regard, it is far better to err on the side of conservatism than to chase the *ignus fatus* of half-baked radicalism.

This connotes another valuable adjuvant to leadership, that most uncommon virtue, common sense. There is another homely word for this, gumption, which comes from a Saxon root meaning to take heed. At base, common sense is simply heeding and if the practitioner of medicine will simply heed, he will be spared many humiliating mistakes. The common sense thing to do is always the right thing to do and it is most appreciated by the laity. Its twin is simplicity in thought, manner and action. The great forces are all simple, and bombast, which, by the way, means padding, is simply a protective mimicry of greatness. Dignity, the quality of meriting, the physician must have, bearing in mind, however, Mark Twain's injunction, "Be dignified, be dignified, be dignified as an ass"!

One other attribute of self-leadership which is to be commended is the cultivation of the habit of culture. In the classical acceptance of the term, the pursuit of science is not culture, a word which contemplates those mental esthetics which our ancestors, with fine discrimination called, "the humanities." Devotion to the classics, to music, to art and the refinements of life is not utilitarian, but it is a great preventive of vegatism, an anti-scorbutic for materialism, and best of all, it keeps the work-driven doctor from selling his soul for the pottage of financial and professional success.

From the leadership of self comes the leadership of patients. In the great majority of cases men study medicine for the ultimate purpose of acquiring a living and though the sordid pecuniary affairs of life are distateful to many, it is probably best that most of us must earn the wherewithal to live in comfort, since hunger is the greatest of all stimuli to continued effort. Many of us imagine that if we were loosed from the painful need of self-support, we would be free and untrammeled to pursue the ideals of our art, but unfortunately, the average human being is entirely willing to follow a *dolce far niente* existence unless spurred by the ruthless heel of bitter necessity. We are therefore obliged to build up a practice or to engage in some salaried field in order that we may live. In this very act we must choose between starvation and the development of the art of leadership.

If this is to be gained, it must always be borne in mind that patients are human beings who are sick, or, and this amounts to the same thing, think they are. Too frequently, they are subconsciously classed as vehicles for a symptom-complex and perhaps we sometimes lose sight of the fact that they are more interested in cure than in diagnosis. Most of them rather dread us with our pryings into their minds and bodies; they resent our deferment of treatment until diagnosis has been reached; they are specially vexed at our habit of referring them to specialists. What they demand is the reasonable promise of cure or at least a gesture toward it, and if we are unable to do this, they seek relief at other hands, oft times less scrupulous and skillful. The quack is with us always and will be until we reach a thorough human understanding of the patient and his mental processes. Frequently, we feel that the patient is ungrateful and often he truly is, but it is a grievous error to expect much gratitude from your fellow man. If we expect it, it comes not at all; if we do not, it appears from unanticipated sources. The true physician must be above working for this reward; he must deal gently with the foibles and misdoings of mankind; ours not to criticise but cure, and when we are wronged, we can but pray with Stephen, "Lord, lay not this sin to their charge." Patience, gentleness and tact, that art of touching our fellows gently, are the means by which the leadership of patients is acquired.

Leadership in the medical profession itself is to be accomplished by a variety of qualities. Not all good physicians acquire such leadership and not always do the best men reach the so-called top in the profession, but the man of real worth can-

not be kept down. From the moment of graduation, every physician should cultivate the medical society habit, that sovereign remedy against slovenliness of thought and narrow anti-socialism. There, contacts are established with other minds, friendships are made which last until life's end, new thoughts are garnered, old ideals stimulated anew, and aspirations generated.

As a corollary, the physician must keep himself abreast of current medical literature lest deterioration set in; post-graduate courses must be taken frequently and every effort bent to the improvement of his mind to the end that he may be able to bring to his patients sound judgment and intelligent experience.

One other field of leadership remains for consideration, one which is too frequently neglected, that is, leadership in the community. Many physicians encloister themselves in their professional work to such an extent that they forget their duties as citizens. They take no interest in politics; they belong to none of the business clubs or civic organizations. As a result, they fail to render a service to which the public has a right. If we are to lead the people out of the dangerous and unproductive desert of preventable disease and lowered vitality and into the safe and comfortable fields of health, we cannot be aloof. More and more the public is looking to us for guidance in the maintenance of health, the promotion of longevity and the protection of the racial stock. The community in one way and another has contributed largely toward the cost of our education; it has a right to the best which we can give it in curative and preventive medicine, and if we are niggardly and grudging in discharging this bounden duty, we are ungrateful and unfaithful. Under our leadership, the public can be indoctrinated in health habits, it can be taught the necessity and practice of community health and thereby its peace, security and usefulness will be increased. There is no line of demarcation between curative medicine and preventive medicine; there never can be; always the twain must advance hand in hand. In this complementary relationship, they can and should be reciprocally helpful, and the public, whose servants we are, will thereby be benefitted.

There is a tendency toward early specialization which is a wrong approach to leadership in medicine. Before one can be a good specialist, he must have a sound knowledge and wide experience in dealing with the sick and only upon this solid foundation can legitimate and useful specialization be practiced. Then, and only then, can wise choice of a restricted field be made. In making this choice, there is but one rule to be followed. The physician must ardently desire to follow a certain line of endeavor; he must be willing to make any sacrifice for it, to curtail recreation anl pleasure, to postpone marriage and to consecrate himself to it utterly. The rewards of such a Spartan policy are great but not every man is possessed of the qualities of body, mind and character requisite to so arduous an endeavor. Such a course of action is to be undertaken only after careful self-evaluation, a full consideration of the pains and costs involved and a firm determination to choose the work solely for the work's own sake. Then will come the blessing of a busy, useful life, rich in accomplishment and fraught with enormous potentialities for human betterment. But this does not apply to the specialist alone. The world is full of opportunities for the faithful physician; at every turn there is a question to be answered, a problem to be solved, a discovery to be made, a pain to be relieved, a body to be mended or a sorrowing heart to be comforted. You chosen sons of Aesculapius, how glorious is your heritage, how bright your future in the battle for the sanctity of human minds and bodies! Yours are the keys of life and death. Yours is the mission of healing and protection, of solace and alleviation and through your art and science, the leadership of man into a better, saner, happier, more wholesome world!

RABIES AND ITS PREVENTATIVE TREATMENT*

GEORGE H. HAUSER, M. D.,

NEW ORLEANS.

The marked increase in the last few years in the incidence of animal rabies, and a like increase in the number of preventative antirabic treatments given to persons bitten or otherwise exposed to infection has prompted me to bring this important subject to your attention. From a study of the charts I and II taken from the records of the Laboratory of the Charity Hospital at New Orleans, and of the State Board of Health, covering the City of New Orleans and the State of Louisiana, this increase can readily be seen, and its seriousness noted. Comparing the years 1920-21 to 1923-24 the charts show an increase of over 100 per cent in the number of brains examined, with a steady increase yearly since then. There has also been a marked increase in the number of positive brains, it being noted that in 1924 over 50 per cent, and since then over 60 per cent of all brains examined in both institutions were reported positive. It is also called to your attention that the disease is present in other domestic animals, infection having been found in the cat, horse, cow, fox, calf, goat, and mule. The records of the number of patients given anti-rabic treatment at Charity Hospital show a marked and steady increase each year, beginning with 174 in 1920 to 495 in 1925 (receiving the treatment). In 1926, 474 were treated and the number this year to date exceeds previous years.

Rabies, also called lyssa, hydrophobia and la rage, is an acute infectious disease, transmitted by the bite of an infected animal, and characterized by a condition of increased nervous excitability, followed by paralysis.

Rabies in man results from the inoculation of the virus usually through the bite of rabid animals, especially the dog. The disease occurs among all warm blooded animals, but the dog and cat are most commonly affected. Even birds may contract the disease. Other animals that may become infected are cattle, sheep, goats, swine, wolves, coyotes, skunks, jackals, foxes, hyenas, horses, rats and mice. Epizootics among some of these animals have been reported.

Rabies exists practically all over the world, except in Australia. In England, except for a short time during the war, it has been exterminated due to strict enforcement of the muzzling and quarantine laws. It is very common in France, Belgium, Russia, and the United States.

The disease is perpetuated by the dog almost exclusively, and over 90 per cent of transmission to man is by this animal. Other animals transmit it to a small extent, and I have given anti-rabic treatment in one case following a human bite, and in several cases where the infected saliva came in contact with open wounds or abrasions.

The disease is transmitted through the saliva of the infected animal, usually by one or several bites, at other times by the rabid animal licking the skin and introducing the infection, occasionally following an attempt to force medicine or food down the animals throat when the disease is not recognized. A case of this kind but recently happened. Only slight abrasions are necessary, or the bites may be very superficial. The infection is not transmitted by meat or milk from infected animals or by coitus. The virus is harmless when ingested, and must be inoculated into the tissues to produce infection.

The saliva is infectious for as long as 3 to 5 days, and possibly 8 days (Roux and Nocard) before symptoms develop in the animal, a very important point to remember. It is, therefore, sufficient to observe a dog that has bitten a person

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*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

**From Pathological Dept., Charity Hospital, New Orleans, La.

or animal for ten days. If no symptoms of rabies appear during this time, there is no danger of conveying the disease and the Pasteur treatment is unnecessary.

The virus has been found in the adrenals, tear glands, pancreas, vitreous humor, spermatic fluid, urine, lymph, milk and all parts of the central and peripheral nervous sytem. Manouelian has found Negri bodies in the ganglion cells of the salivary glands. It has not been found in the liver, spleen or muscles. The virus enters the body through the broken skin and follows the nerve trunks from the seat of injury to the spinal cord and brain. Fourteen days must elapse from the time it reaches the brain before symptoms develop. This explains, to a great extent, the variable period of incubation; it being shorter in wounds of the face than in wounds of the body and extremities. It also explains the fact that the disease is more liable to occur when wounds are in parts of the body with a rich nerve supply.

The rabies virus belongs to a group of viruses which pass through bacterial filters and is called a "filterable virus." The virus is of two types, the "street virus" as it occurs in natural infection, and the "fixed virus" which is produced by the repeated inoculation of "street virus" through a series of rabbits by subdural injection, which results in the virulence becoming greatly increased, and a shortening of the incubation period, which finally becomes fixed, and the disease then constantly develops in 6 to 7 days. This is called "fixed virus" and cannot be changed back to "street virus," just as "smallpox vaccine virus" cannot be changed back to "smallpox virus." The advantage of "fixed virus" is that in suitable doses injected subcutaneous it is not infectious for man, and far less infectious for animals than "street virus," and when so injected produces immunity against "street virus." However, it is not innocuous and may produce "fixed virus paralysis" in man.

In the year 1903 Remlinger demonstrated that the virus was filterable and Negri discovered in the pyramidal cells of the nervous system the bodies that bear his name. Negri bodies are round or oval bodies, varying greatly in size from 0.5 to 27 microns in diameter. The number and size of the bodies vary in different cells; as many as 5 or 6 being present in some. They are found in the cytoplasm of the large ganglion cells throughout the central nervous system, especially in the Hippocampus (Ammons horn) and Purkinje and pyramidal cells in the cerebellum. These bodies are large in cases of "street virus" infection, and very much smaller and few present following inoculation of "fixed virus." Frosch has suggested the shortening of the incubation period as the cause of this.

Negri bodies are specific for rabies and are found only in animals infected with rabies. When stained they are found to consist of small granules surrounded by a capsular material. The question of what these bodies are has been, and still is, in dispute. Negri believed them to be protozoa, and considered the "inner bodies" to be granules of chromatin. Others believe the Negri bodies to be degenerative and that the virus is not seen. Goodpasture recently has studied the question extensively and comes to this conclusion. The most common view is that the "inner bodies" are the virus surrounded by a capsule or mass of ground substance produced by reaction from the infected cell.

Prowazek considers it in the class of "chlamydozoa"; and because of the evidence of its animal nature being quite convincing, Williams in 1906 gave them the name "neuroryctes hydrophobiae."

Many attempts have been made to cultivate the specific etiologic factor. In 1903 Nogouchi reported the successful cultivation of the organisms. However, his work has not been duplicated or substantiated by other workers, they having failed to get the same results after numerous attempts.

The virus of rabies in the spinal cord of rabbits dies in 5 days when dried at

20-22° C., if protected from light and putrefaction. It is quite resistant to putrefaction and has been reported as remaining alive in the brain of a dog buried 44 days. To be recovered from decomposed material it must be mixed with glycerin which destroys the contaminating bacteria and preserves the virus. It is destroyed by heat at 50° C. in one hour and at 60° C. in one-half hour. Extreme cold does not injure it. It is very resistant to ordinary germicides. Five per cent phenol requires 5-7 days to kill the virus and 0.5 per cent takes 20 days. Bichlorid of mercury 1-1000 kills the virus in one hour. Formalin has a very specific action on the virus and a 0.08 per cent solution kills it in 2 hours. This suggests its use for the treatment of dog bites, but experiments have shown nitric acid to be far superior.

Rabies virus produces a toxin which is partly bound to nerve tissue. Rabic material filtered through a Chamberland filter produced emaciation, paralysis and death in experimental animals, but the brain or cord is not infectious. Galtier found that rabies toxin would produce paralysis even after heating to 100-105° C.

Susceptibility to rabies varies considerably, and the fact that man is only slightly susceptible is one great reason we do not see much more human rabies. The susceptibility has been put as low as 5 per cent by some, and as high as 50 per cent by others. Children are more susceptible than adults. There is no difference in sex susceptibility. In lower animals susceptibility varies from 40 to 70 per cent. The danger of infection varies with the number and severity of the bites, and especially their location. Multiple and deeply lacerated bites are most likely to transmit the infection, and for this reason wolf bites are more dangerous. They also transmit a virulent type of infection, being very susceptible to the disease. Bites of herbivera and animals with blunt teeth are less dangerous than those with sharp or long teeth, which penetrate deeply.

Bites on exposed surfaces are more dangerous than through clothing, because more of the saliva is wiped from the teeth and little enters the wound. Bites upon the face, especially about the eyes and nose, are most liable to be followed by rabies.

Not every person bitten by a mad animal develops rabies, and the various figures given are hard to analize. According to most reliable data 16 per cent of human being bitten by rabid dogs and not

TABLE I.

Showing results of all brains examined, 1920 to 1927, at Charity Hospital.

	—1922—			—1923—			—1924—			—1925—			—1926—		
Total No.	138			268			285			233			286		
	P	N	U (4)	P	N	U	P	N	U	P	N	U	P	N (2)	U
Dog Brains	55	62	8	59	172	11	128	99	21	141	63	9	157	86	3
Cat Brains	2	7	4	4	15	2	8	18	3	9	3	3	15	13	1
Horse Brains	....	....	....	1	....	....	....	....	2	....	....	....	....	....	..
Calf Brains	....	....	....	1	....	....	1	....	2	2	1	....	1	1	..
Rat Brains	....	....	....	....	1	....	....	....	....	....	1	....	....	1	..
Hog Brains	....	....	....	....	1	....	....	1	....	....	....	....	1	....	..
Squirrel Brains	....	....	....	....	1	....	....	....	....	....	1	....	....	....	..
Rabbit Brains	....	....	....	....	....	....	....	1	....	....	....	....	1	....	..
Mule Brains	....	....	....	....	....	....	1	....	....	....	....	....	....	....	..
	57	69	12	65	190	13	138	119	28	152	69	12	175	105	6

Note: 4 not recorded.
2 living (remained well).
P—Positive—Negri Bodies in sections.
N—Negative—No Negri Bodies in sections.
U—Unfit—Brains decomposed or otherwise unfit for examination.
1920 and 1921 not recorded as to type of animals.
Total number of brains for 1920—119.
Total number of brains for 1921—116.

taking Pasteur treatment develop the disease.

While it is commonly supposed that the disease prevails most during the hot summer months, statistics show that the disease is just as common or more so during the winter months, and much more virulent. More dog bites occur from April to September than from October to March, because dogs run abroad more freely at that time. Of those bitten a much greater percentage require treatment during the winter months. A study of the figures by months from the Charity Hospital, New Orleans, La., during the years 1920 to 1927 confirms this. (Table V.) It also shows that each year the greatest number of persons are given treatment for injuries by proven rabid dogs during December, taking the totals for the years 1922 to 1927, and that this also holds true for the last quarter of each year as compared with the other quarters, the first quarter following, then the second quarter, and the third quarter being the least frequent.

Charts III and IV show the number of positive dog brains by months during the years 1920 to 1927.

The incubation period varies considerably and fortunately is quite long in most cases. It has been stated to vary from 14 days to 1 year or more, but the longer period seldom occurs. The usual period of incubation may be given as 14 to 100 days, with only a small percentage occurring after that time. The average period of time during which most cases occur is 5-8 weeks in natural infection. Hautner gives the incubation period as less than 2 months in 83 per cent, within the 3rd months 16 per cent, and over that time 1 per cent. The variation in the incubation period depends largely on the following factors:

(1) Site of the wound, being shortest in bites about the face.

(2) Relation to the large nerves.

(3) Amount and virulence of the virus.

(4) Severity and number of wounds.

(5) Age, children being much more susceptible.

(6) Weakened condition of the body due to alcoholism, syphilis and many infectious diseases.

Clinically rabies is of two types.

(1) Furious or excitable type.

(2) Dumb or paralytic type. However, many cases are mixed.

The clinical manifestations of the disease in man and animals are divided into three stages:

TABLE II.

Showing results of examination of all brains, 1920 to 1927. Examined at La. State Board of Health Laboratory.

	—1920—			—1921—			—1922—			—1923—			—1924—			—1925—			—1926—		
Total	16			21			49			102			147			164			125		
	P	N	U	P	N	U	P	N	U	P	N	U	P	N	U	P	N	U	P	N	U
Dog	7	7	..	2	17	..	8	34	..	40	50	..	66	58	..	90	51	..	65	36	..
Cat	0	1	..	0	1	..	0	4	..	4	7	..	5	10	..	5	8	..	6	13	..
Horse	..	..	..	0	1	..	..	....	..	....	....	..	....	....	..	0	1	..	2	0	..
Calf-Cow ..	..	..	..	..	....	..	2	0	..	1	0	..	3	3	..	4	2	..	....	....	..
Rat	..	..	..	..	....	..	..	....	..	..	....	..	....	....	..	....	....	..	0	1	..
Hog	0	1	..	..	....	..	0	1	..	....	....	..	....	....	..	....	....	..	....	....	..
Fox	..	..	..	..	....	..	..	....	..	....	....	..	....	....	..	....	....	..	1	0	..
Rabbit ..	..	..	..	..	....	..	..	....	..	....	....	..	0	2	..	....	....	..	....	....	..
Goat	..	..	..	..	....	..	..	....	..	....	....	..	....	....	..	....	....	..	1	0	..
Chicken..	..	..	..	..	....	..	..	....	..	....	....	..	....	....	..	0	1	..	....	....	..
Monkey..	..	..	..	..	....	..	..	....	..	....	....	..	....	....	..	0	1	..	....	....	..
Mule	..	..	..	..	....	..	..	....	..	....	....	..	....	....	..	1	0	..	....	....	..
Total.....	7	9	..	2	19	..	10	39	..	45	57	..	74	73	..	100	64	..	75	50	..

P—Positive Negri Bodies in Smears or Sections.
N—Negative Negri Bodies in Smears or Sections.
U—Unfit for examination (not noted).

(1) Prodromal or invasional.

(2) Paroxysmal.

(3) Paralytic.

In man the furious type is represented by the spasmodic form. Only a brief description of each will be given.

In dogs a change in disposition and an abnormal and perverted appetite are especially to be noted in the early or prodromal stage. Little food is eaten, but large amounts of sticks, stones, hair, leather and dirt. The excitable or mad stage follows and the dog tends to bite everything in sight at times; at others, and quite frequently, they leave home and run for miles until worn out, finally returning home, usually shaggy, filled with dirt or bloody and bitten from fighting other animals. They have been known to run as far as forty miles and frequently average 15 to 20 miles, often biting persons or animals along the way. They do not fear water as commonly thought, often running through it, and will drink freely until paralysis sets in. The lower animals never show "hydrophobia." A change in the bark is very characteristic of rabies, the bark changing to a coarse howl.

Usually after 2 to 4 days, weakness and paralysis set in usually in the hind legs and is ascending in type. This varies, however, with the site of the bite. After a few days paralysis becomes extensive and rabid animals become very emaciated and finally die. The entire course of the disease is 5 to 6 days, never more than 10 days.

In the dumb or paralytic type the prodromal and excitable stages are short and the paralysis comes on quickly. Often it occurs in the jaws first, causing drooping of the lower jaw. This frequently gives the appearance of a bone in the throat, and is often mistaken and treated for such. Rapid emaciation and death in a few days follow. Under natural conditions 80 to 85 per cent of dogs develop furious rabies, and 15 to 20 per cent develop paralytic rabies.

In man the prodromal symptoms are irritability at the site of the bite, especially itching and pain, with redness and edema. There are neuralgic pains throughout the body, headache, and loss of appetite. Various psychic symptoms occur. The patient is depressed, anxious, and there is marked insomnia and restlessness. The voice is often changed.

The spasmodic stage sets in suddenly, at times without prodromal symptoms. The characteristic symptom is spasm of the muscles of deglutition making it difficult or impossible to drink. This develops a fear of trying to drink, hence the name

TABLE III

Showing number of Positive and Negative dog brains by months, 1922 to April, 1927, inclusive. Examined at Charity Hospital. (Path. Dept.)

	—1922—			—1923—			—1924—			—1925—			—1926—		
	P	N	U	P	N	U	P	N	U	P	N	U	P	N	U
January	3	4	1	9	14	....	1	11	....	11	7	....	3	6	....
February	4	4	....	3	13	2	12	16	2	15	10	1	7	3	....
March	6	5	....	6	16	1	10	6	....	13	7	....	14	5	....
April	3	8	1	1	14	1	23	6	3	10	6	....	13	6	....
May	1	5	1	5	14	1	12	9	2	11	2	1	11	3	....
June	3	10	....	7	11	2	11	12	4	10	5	1	15	11	1
July	6	2	3	6	10	....	10	11	4	16	3	1	10	14	....
August	5	8	1	3	24	....	9	3	....	11	6	2	13	15	1
September	2	4	....	6	10	1	5	6	4	9	3	2	10	3	1
October	7	5	....	4	12	2	11	3	1	12	6	1	16	7	....
November	6	3	1	8	18	1	15	6	....	10	4	....	24	9	1
December	9	4	....	1	16	....	9	10	1	13	4	....	21	4	1
Total	55	62	8	59	172	11	128	99	21	141	63	9	157	88	5

4 not recorded

2 living.

P—Positive dog brains.
N—Negative dog brains.
U—Brains unfit for examination.

"hydrophobia," which is characteristic of human rabies. There also develops great excitability and irritability until any slight stimulus produces severe spasms of the muscles. The spasms involve the muscles of respiration early. The spasms come on in the form of attacks that last one-half to three-quarters of an hour and gradually get worse. Convulsions frequently occur and saliva is expressed from the lips, which are spastic, often with a peculiar hissing sound. The saliva is often frothy due to spasm of the jaw muscle. There is great anxiety increasing to mania with delusions and hallucinations. The patient may spring from the bed, rush for the door or about the room, often on all fours. Between attacks the patient is quiet, his mind clear but anxious. Allen and Horne report a case where a child with rabies bit her father on the hand. Last year I had occasion to give prophylactic treatment to a patient who was bitten while attempting to hold a patient with rabies during a spasm, and to six members of the family exposed to the saliva and having abrasions about the hands and face from restraining the rabid patient.

Fever during the attacks varies from 100° to 107° with high terminal temperature. Nausea and vomiting are common, often blood-stained.

The patient may die in convulsions, from asphyxia, or from gradual exhaustion; most commonly paralysis sets in and the spasms stop and are followed by coma and death. Often, however, the patient is conscious to the end and frequently knows the existing condition.

The average duration of the disease from the time the spasm of the throat sets in is 2 to 3 days.

Paralytic or dumb rabies has a very short prodromal and excitable stage and paralysis comes on very early.

The mortality in human rabies is 100 per cent, but it is possible to prevent its development in over 90 per cent of cases by prophylactic inoculation, especially if begun early.

The diagnosis of rabies in animals may be made in four ways:

(1) Clinical symptoms.

(2) Presence of Negri bodies in the central nervous system.

(3) Lesions in the peripheral ganglia.

(4) Animal inoculation.

1. The clinical diagnosis is sometimes very easy, but often impossible because of other conditions that simulate it. When the animal dies, the diagnosis should always be confirmed by the examination for Negri bodies in the central nervous system.

Important: Any animal suspected of being rabid or that has bitten an individual should never be killed, but should be caged and observed for ten days. If the animal remains well at the end of this time it may be considered as not rabid.

(2) Presence of Negri bodies in the central nervous system. If the animal dies or is killed, the head should be removed at the neck and immediately sent to the laboratory. Care should be taken not to crush the brain. If the head must be sent for some distance as from the country, it must be sent well packed in ice, using enough ice to last until it is delivered. If this is not practical, the brain should be removed and sent in acetone, 33 per cent glycerin,

TABLE IV.

Showing number of Positive dog brains by months, 1922 to 1927. Examined at La. State Board of Health Laboratory.

	1920	1921	1922	1923	1924	1925	1926
January	0	1	0	1	3	3	11
February	0	0	3	6	8	10	5
March	1	0	0	10	6	15	8
April	0	0	0	6	6	7	5
May	1	1	0	1	7	8	5
June	0	0	0	4	1	8	5
July	0	0	1	0	5	4	6
August	2	0	0	2	7	6	4
September	1	0	0	2	2	4	3
October	0	0	0	1	6	15	3
November	0	0	1	3	5	5	6
December	2	0	3	4	10	5	4
Total	7	2	8	40	66	90	65

10 per cent formalin, or may be packed in borax.

On receipt at the laboratory direct smears are made or sections rapidly run through. If smears are negative, sections are run through and occasionally may be found positive when no Negri bodies were found in the smears.

The Negri bodies are found in the large ganglion cells, and for this reason smears and sections are made from the regions where they are most numerous, i. e., cerebral cortex, hippocampus major (Ammons Horn) and cerebellum. The latter has been found to be a very favorable site as the cells are very large, easy to study in sections, and the Negri bodies numerous and well distributed.

Smears or impressions are fixed in methyl alcohol, then stained with either Van Geisen, Frothingham modification; Williams (which is very satisfactory) or some similar stain which can be rapidly performed. They are then washed, dried and examined with oil immersion lens.

At the Charity Hospital sections only are run through, a special method using rapid fixation, paraffin embedding and staining with Mallory's anilin blue connective tissue stain being used. Sections from the cerebellum and Ammons Horn are used and a report given in 18 to 24 hours. If necessary these can be rushed through and a diagnosis given in a few hours. Many other very satisfactory methods are available such as those of Mann, Lentz, Goodpasture, etc. The diagnosis of these sections are final, as after many years experience we have found animal inoculation unnecessary and too long for practical value, so that it is no longer performed.

(3) The lesions in the peripheral ganglia as described by Van Gehuchten and Nelis, while characteristic when present, are available for diagnosis only in a small percentage of cases that are well developed

TABLE V.

Showing by months: Number of patients applied for treatment. Number patients treated. Number treated injured by proven rabid animals. Years 1920 to 1926, inclusive.

	1920			1921			1922			1923		
	N	P	PT	N	P	PT	N	P	PT	N	P	PT
January	39	21	....	58	10	....	47	16	8	63	21	15
February	42	14	....	46	22	....	48	10	8	52	17	5
March	51	14	....	60	11	....	66	32	7	84	23	16
April	66	13	....	62	8	....	54	19	12	72	17	8
May	96	28	....	91	17	....	60	11	5	86	18	3
June	73	16	....	79	11	....	68	11	2	55	12	2
July	68	10	....	69	10	....	64	13	7	98	39	14
August	52	11	....	100	30	....	49	27	12	86	18	3
September	42	9	....	62	16	....	45	8	0	67	23	7
October	56	16	....	39	2	....	36	12	5	58	27	5
November	44	8	....	34	5	....	39	10	5	55	19	6
December	38	14	....	50	12	....	74	49	19	51	22	12

	1924			1925			1926			1920-1926		
	N	P	PT	N	P	PT	N	P	PT	N	P	PT
January	65	11	2	60	39	25	60	18	8	295	95	58
February	91	34	10	101	52	30	80	18	8	372	131	61
March	94	48	21	95	40	20	80	32	24	418	175	88
April	91	51	38	94	36	15	113	40	16	424	163	89
May	74	21	12	93	32	20	110	35	15	423	117	55
June	104	38	28	104	39	20	155	40	10	486	140	62
July	94	43	30	117	37	23	150	33	15	523	165	89
August	74	21	12	96	36	19	135	48	14	436	151	60
September	94	29	14	84	25	13	89	27	9	425	112	53
October	89	35	21	72	30	15	101	45	29	456	149	74
November	98	43	22	80	45	33	110	64	31	382	181	97
December	109	63	43	117	84	77	108	74	34	459	292	185

N—Number patients applied for treatment.
P—Number patients treated.
PT—Number treated injured by proven rabid animals.

being seldom seen in animals killed early in the disease.

(4) Animal inoculation is never of value to determine if prophylactic treatment should be given. It has also been found unnecessary, after a check of positive and negative brains over a period of several years. It may be used to confirm results of smears or sections or to obtain the virus for further use. However, during the long time it may take to develop the disease in the lower injected animal, if the patient has not taken prophylactic treatment, he may have succumbed to rabies.

The inoculation, if performed, is best made into rabbits or guinea pigs, especially the former. It is made subdurally, injecting a small portion of the medulla, pons or Ammons Horn, which is ground up and suspended in normal salt solution. Decomposed brains cannot be used, unless the contaminating organisms are first gotten rid of.

The diagnosis of the disease in man must be made from the history and clinical symptoms. Diseases to be kept in mind in the differential diagnosis are tetanus, delirium tremens, poliomyelitis, meningitis, and lyssophobia or hysterical hydrophobia, which must be guarded against. Symptoms of Landry's (ascending) paralysis always suggests rabies; and the paralysis of anti-rabic treatment is of this type.

TREATMENT.

I. Curative.

II. Prophylactic.

I. No kind of curative treatment to date has been of any value, although numerous drugs, serums, etc, have been used. The mortality rate is 100 per cent.

II. The prophylaxis of rabies comes under three heads

I. Treatment of the wound.

II. Anti-rabic (Pasteur) prophylactic treatment.

III. Control of the disease in dogs.

I. Treatment of the wound: This is important. All wounds should be treated as though the animal was rabid, unless it is proven otherwise. Early treatment is important. The wound should be opened freely, all detritis cleaned away and bleeding encouraged. It should then be thoroughly cauterized with fuming nitric acid, applied best with a glass rod. This seems to have a specific effect on the virus as shown by Cabot, who saved 91 per cent of infected guinea pigs by cauterizing with nitric acid at the end of 24 hours. Poor saved 45 per cent at the end of 22 hours. Formalin also has a marked specific action, or the actual cautery may be used. Pure carbolic acid is recommended by Semple as more humane, being practically painless because of its local anesthetic effects, but others doubt its value. In all cases early and thorough cauterization is imperative.

II. Anti-rabic treatment: Of great importance is the question, who shall receive treatment? This is at times hard to decide, but the rule should be in all doubtful cases to advise treatment. However, treatment causes a certain amount of personal inconvenience, aside from the slight danger of paralysis, and should not be given when unnecessary.

The indications for treatment are as follows:

Anti-rabic treatment should be carried out if:

(a) Animal is rabid.

(b) Persons having been exposed to infected saliva, i. e., through scratches or abrasions of skin or mucous membranes.

(c) If animals disappear while under observation.

(d) If animal is unknown.

If person is bitten and dog appears well, it is important that it should *not* be killed, but it should be observed for ten days. During this time it may show the followings:

I. Develop rabies; give anti-rabic treatment.

II. Die under suspicion, (a) if bites of head, face or neck, begin treatment, and examine brain of animal of rabies (Negri bodies); if positive complete treatment—if negative, treatment may be stopped; (b) if bites of extremities, examine brain of animal microscopically. If positive—treatment should be given. If negative—no treatment is necessary.

III. If sick, but lives ten days, not likely to be rabies, but observe further, and if animal develops rabies, treatment should be carried out

IV. Remains well at end of ten days—no treatment necessary.

V. If bites are about the head, face or neck, especially if severe, and incidence of animal infection is high, treatment is started because of the short incubation period in some of these cases If the animal subsequently proves negative, treatment is discontinued.

Anti-Rabic Treatment—This was one of the great achievements of the immortal Pasteur and was announced before the International Congress at Copenhagen in 1893, and the French Academy in 1894. Pasteur's method consists of the production of immunity by means of an attenuated virus. The virus is attenuated by drying. The method of procedure is essentially as follows: The cords of rabbits dead of fixed virus infection are removed under aseptic precautions, and suspended in bottles over potassium hydroxid. The bottles are kept at a temperature of 22° C. in the dark. Under these conditions the cord gradually dries and also loses virulence after the third day, so that at the end of 14 days it is no longer infectious. For this reason Pasteur began treatment with a 14 day cord. However, the virus dies long before the 14 day and 5 day old cords may fail to infect. Treatment usually consists of 1 cm. of dried cord mascerated in 3 cc. salt solution, and injected subcutaneous, on alternate side of the abdomen, treatment being given daily beginning usually with a 12 to 14 day cord, and scaling down through 12, 11, 10 day cords, etc., until 3 day cords are used at the end. The treatment lasts 18 to 21 days, depending whether mild or severe. It has many modifications, all of which are known as "dried cord" methods.

Various modification also have developed. Hogyes, holding that drying, diluted, instead of attenuating the virus, used undried cord, so diluted that the dose would not cause rabies, and using increasing doses in subsequent treatments. Others attenuated the virus by heat, gastric juice, phenol solution, or dialysis. Harris applied Schakells method of freezing and drying bacteria to the freezing and drying of rabies in vacuo and found that the virus, so dried and kept cold, retained its virulence for 6 months or more. By this method the dried powder can be standardized, the minimal lethal dose (M.L.D.) for rabbits being the unit, and accurate treatment by measured dosage given. Also the time of treatment is short, 11 days treatment being given for all except bites of the face, head and neck, when 15-day treatment is given. This method of treatment has been used at the Charity Hospital at New Orleans since 1910 with excellent results.

Since even dead virus will produce immunity, as shown by Harris and others, there is some tendency at present to the use of this method, especially where it must be sent a long distance in the country or where it cannot be kept at the proper temperature. Semple in India has used and recommended a treatment of this type, killed with phenol, and reports excellent results. Only 14 doses are necessary and all doses are alike.

Babes and many others have used antirabic serum simultaneously with the antirabic treatment with good results, but its value is hard to estimate and it is considered unnecessary.

Care During Treatment—No special care is necessary. The patient may go about his usual business and it is not necessary to go to bed. The patient should avoid fatigue, cold, trauma and alcohol.

Complications of treatment are: (1) Local reaction, (2) paralysis.

Local reactions at the site of the injections are usually trivial, and may not occur at all. Usually a red area appears at the site of injection about the 7 or 8 day which lasts about 24 hours. It may occur at all subsequent injections or just occasionally thereafter. The area is red, edematous, itches or may be quite tender. Occasionally, especially in fat individuals, it may be quite large, 10-12 cm. The reaction is a local foreign protein reaction due to hypersensitiveness to the foreign protein injected. Constitutional effects may be malaise, slight fever and loss of appetite. Occasionally paralysis may develop. It may be slight or severe. In all cases it develops with loss of appetite, mild fever, stiffness in the back and weakness of the legs. It is usually an ascending paralysis of the Landry type. Involvement of the sphincters may occur. The paralysis may also extend up to and involve the arms, face and may even show bulbar symptoms. There are marked sensory disturbances. The paralysis comes on usually 11 to 12 days after treatment is begun. The nature of the condition is doubtful and has been ascribed to:

I. Abortive cases of the paralytic form of rabies, resulting from the bite from which the person is being treated, which recovers under anti-rabic treatment.

II. Abortive cases of the paralytic form of rabies, due to the fixed virus inoculation.

III. The toxin of the rabies virus.

IV. The toxic action of the material injected, other than a virus toxin.

V. Hypersensitiveness.

Fixed virus has been found in the brain of some cases dead of paralysis, but not in others. Fieldner considers it a fixed virus infection.

Simon collected 100 cases of paralysis among 217,774 persons receiving treatment, or 0.048 per cent.

Paralysis depends to a great extent upon individual susceptibility and appears often in adults and rarely in children. It is very rare when the Hogyes dilution treatment is used, and also when the virus is killed by ether, phenol or dialysis. It is more frequent with intensive treatment. However, its incidence is so slight compared with the incidence of rabies when no anti-rabic treatment is given, and also as most cases of paralysis completely recover, whereas none recover from rabies—that it should cause no hesitation in the giving or recommending of anti-rabic treatment.

The small element of danger, nevertheless, should remind us that the treatment should not be given unnecessarily.

There are no contraindications to treatment, but it is stopped if rabies or paralysis occur. During pregnancy or other diseases the treatment may be continued.

Immunity following anti-rabic treatment lasts about 1 year to 18 months or more, varying with the individual. Cases of rabies that occur within 14 days after treatment are not included in statistics and are not considered as failure of treatment.

Statistics over a long period of time with the Pasteur treatment show a mortality of less than 5 per cent, and much less with some of the newer methods. When this is compared with the fact that conservatively 16 per cent develop rabies who are not treated, its great prophylactic value is evident.

General prophylaxis should be directed against the disease in lower animals, especially dogs. This should include strict muzzling laws, destruction of homeless and stray dogs, a high license fee, tags, legal responsibility to owners for damages

inflicted by dogs, education of the public, strict quarantine, and where wild animals, wolves, jackals, foxes, etc., play a part, their destruction should be attempted.

Anti-rabic vaccination of dogs anl cats, while apparently not very practical, may be attempted, very good results having been obtained in Japan by this method.

Finally, rabies is a preventable disease that should be wiped off the face of the earth. It has been done in Australia, and the application of the measures recommended would accomplish this over the world and eliminate this dreaded disease forever.

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DISCUSSION.

Dr. Maurice Couret (New Orleans): Dr. Hauser has covered the subject so thoroughly that there is hardly anything left for any of us to speak about. I would like to tell you some of my own observations with the virus of rabies and the antirabic treatment.

We are not sure at the present time just what the cause of rabies is. We know all about the disease; we don't know its cause. We can, however, make the diagnosis of the disease invariably by the presence or absence of Negri bodies in the brain of the suspected animal.

The method used at present at Charity Hospital consists in making sections of the hippocampus and cerebellum of the suspected animal and looking for the Negri bodies there. I remember about ten or twelve years ago I brought this method out before the meeting of the American Association of Pathologists and I was rather severely criticised by Park of New York, who thought that the method was dangerous and we ought to resort to animal innoculation to determine definitely whether an animal had rabies or not. We had been using this method for some 2000 cases before that time and since then we have continued to do so. There has never been a fatal consequence.

The virus of rabies has some peculiar characteristics. To my mind one is most striking. If you inject certain animals, e. g., the rabbit or guinea pig with the virus, the virulence is progressively increased. If, on the other hand, a dog or cat is infected its virulence is decreased and

finally lost if the virus is passed through the same species of animal. The virus in a cat received from Alexandria a few years ago, with very acute rabies, was lost after the ninth passage through the same species of animal (cats). The virus gradually lost its virulence and finally infection would not follow its injection.

Many of you are now protecting your patients against rabies with the virus now sold on the open market. Some of these methods employ dead virus. At the Charity Hospital we have been using the living virus as recommended by Harris of St. Louis. We have had most excellent results with this method—not a single case has developed rabies when the treatment was completed. The method has been in use now over 15 years. I cannot say as much for the old Pasteur method that used mostly dead virus for 21 to 30 days. The fatalities with this method was over a half of one per cent. For this reason I would certainly not recommend the use of dead virus to my patients until more evidence of its efficacy is definitely established.

The living virus as a method of protection has besides the advantage that a shorter treatment can be given with a more rapid immunity—a factor often wished for especially in cases of bites about the head. It is in these cases that I would fear most the use of dead virus, and until the evidence is conclusive that protection can be fully established in these cases I propose to hold on to a method that has proved its efficiency in these cases.

Dr. W. H. Seeman (New Orleans): Dr. Hauser's paper really covers the subject so thoroughly that, as Dr. Couret has remarked, there is very little left for any one to add to the facts brought out by him.

There is one thing I would like to emphasize, however, in regard to the caution he gave as to shipping dog heads into the laboratory for examination in the proper manner. We at the State Board of Health laboratory, and I presume Dr. Couret and Dr. Hauser have the same experience at Charity, very frequently receive dog heads that are absolutely putrid. Only last week, after writing a letter to a veterinarian about a previous similar occurrence, he sent in another head without any refrigeration or any preservative of any sort, and it was literally just teeming with hundreds of maggots. It was absolutely impossible to do anything with it. I doubt even with the most careful attempt at glycerinization we could ever have gotten any result from inoculation. That is one point I want to emphasize.

I am glad to have this opportunity to call attention to the fact that it is our experience that rabies is increasing enormously in the State of Louisiana, and I think over the entire South. Up to now we have done nothing in the way of legislation to attempt to curb this dreadful affliction.

To the remarks that Dr. Hauser made in regard to the treatment, I would like to add whatever emphasis I can and go further and say that whenever you are in doubt, give treatment. Don't worry about any effects from the treatment.

I am rather astonished at Dr. Couret's remarks in regard to the killed viruses that are now being so extensively used. My best information gives me the facts as follows: That throughout the world there have been at least from four to six hundred thousand preventative inoculations made with these dried vaccines, these killed vaccines. The simple vaccine killed with phenol and the Cummings, which is dialized and preserved with tricresol, have had very extensive use and it is a claim of the proponents of these methods that they have an advantage over the Hodges method or the Harris method or the old Pasteur method in that these paralysis that occur with those methods do not take place with these killed vaccines.

We have recently, from a matter of economy and also from a matter of safety, introduced in the State Board of Health distribution, these killed vaccines. We are using the Semple method, getting them from Mulford, and we have not had enough trial, of course, for our own statistics to lend any weight to the question. But I will say this much, that I looked up all available material before suggesting this change, which is a very economical one besides adding the factor of safety to the treatment, and I would hate to have the members of this society who will receive free of charge from the State Board of Health preparations of this character to carry away with them the thought that they are not getting any protection.

I don't know whether Dr. Couret intended his remarks to go just that far, but he certainly didn't give you any encouragement about using these methods. His experience has been greater than mine, I yield that freely, but I have not based my results of my analysis of the situation upon my own experience, but upon the experience of all the authority that I could get hold of in literature in regard to the establishment of this new method of treatment.

I certainly would have no hesitancy personally in depending on taking the treatment or giving it to any one over whom I had control or was held responsible for.

There is another thing that I would like to emphasize in regard to what Dr. Hauser has said, and that is in the treatment of the wounds. After all, that is the essential thing. There is a considerable amount of immunity that animals and

humans have in regard to rabies, and I believe, after Pasteur's treatment was instituted, that in an untreated group of cases only thirty per cent of those bitten developed rabies. Essentially, then, the important thing is to get rid of that poison—and that as early as possible.

I would like to add to what Dr. Hauser said by suggesting that where necessary an anesthetic either local or general be given so that a complete cleaning out of the wound and a thorough cauterization can be done.

Dr. C. C. DeGravelles (Morgan City): I want to thank Dr. Hauser for this extremely interesting paper. It strikes home with me. In 1925 I had an epidemic of twenty-two cases of hydrophobia; at least, I had twenty-two people bitten. Of these nineteen were bitten by three dogs and two by cats. The head of each animal was sent to the State Department and pronounced positive.

I believe that we have a definite work to do in the question of hydrophobia. The thing is getting to be a serious condition in the State. Every year we are getting more and more cases. This can be prevented. In Japan they have practically stopped hydrophobia by inoculating their dogs.

I believe that each and every man can accomplish a great deal of good by appearing before his police jury or his city council and advocate an ordinance that would make every owner of a dog inoculate his dog once a year. Those who refused to inoculate their animals should have them killed. We have adopted this method in my town and I hope we will be rid of hydrophobia.

It is a very pathetic thing. I saw one patient die who had bitten by a cat three years ago and saw him after he had the disease. When you have to take little children, as the majority of my cases were, little children five and six years old, and inflict this painful ordeal every day for twenty-one days, it amounts to something. Now why not get together and eliminate hydrophobia, which can be done if we will go at it in the right manner.

In regard to the living and the dead virus, I think my twenty-two cases were all treated with the dead virus which was sent to me by the State Board of Health. I think Mulford was the manufacturer and I must say that our results were 100 per cent.

Dr. D. W. Kelly (Winfield): I just want to report a case, the first case I have ever seen, and in the literature I have seen that the bad results we get are one in two thousand. We have in our town a dog trainer, Paul Otto. You people who are dog fanciers probably know Mr. Otto. He was bitten by a dog he claimed had hydrophobia. He took the serum and later I called to see him. I believed at first that Mr. Otto was developing hydrophobia until I got one of the extensive works on internal medicine and it described my case to a letter. At the end of a week he developed paralysis of the lower extremities. He had a fever and he was very nervous. I thought sure he was going to develop hydrophobia until I got hold of this work, a work Dr. Fitz had. I forget the name, but it described this case to a T. The symptoms blew over in a week or ten days. I am just laying stress on that for any fellow that is out in the woods and gets hold of one of these cases with paralysis following the serum. He is just up a tree unless he has got an extensive system of medicine, a good library to read up on it.

Dr. John Lanford (New Orleans): It is a little out of order, but if you wish Dr. Couret to reply, think he could do so.

Dr. Maurice Couret (New Orleans): It's just a question of opinion from actual experience with living and dead virus.

I admit that there is some danger with living virus as the Doctor mentioned. We have seen three or four cases of paralysis with the Harris and old Pasteur methods. Fortunately none were fatal—all recovered.

I want to call your attention to a few symptoms you will meet in cases of this kind. Symptoms by which you can differentiate street rabies from that following treatment and caused by the treatment. All patients taking the antirabic treatment will complain of mild headaches, or a little numbness here or there, some photophobia, but most common of all—dreaming. In rare instances there may be slight or extensive paralysis preceded by other symptoms of rabies. Hydrophobia is an early symptom of street rabies. Hydrophobia is never present in rabies occasioned by the treatment. The patient will drink and eat without trouble and is not at all disturbed by the sight of food or water. The paralysis may extend to the chest and upper extremities. It disappears as it has come—the parts first paralzed will be the last to return to the normal.

Dr. George Hauser (closing): I want to thank the members of the society for the discussion of my paper. I want again to emphasize that my reason for bringing this subject before you, is the great increase in the prevalence of rabies in animals throughout the State. When, day after day, in the examination of dog brains we find six, occasionally seven, of every ten brains examined positive, it brings before us the great increase of this disease within the last few years.

I want to emphasize the point mentioned by Dr. Seemann in regard to the care in sending in animal's brains from the country. So many of them are received absolutely unfit for examination. It is only by carefully sending these either in a preservative or better yet with sufficient ice that they can be properly examined. If they are received unfit for examination we have nothing to do but to recommend treatment to all those exposed to the infection.

In the cases of paralysis from treatment, I want to emphasize, as Dr. Couret said, that this can readily be differentiated from the street virus infection by having the patient attempt to drink. If it is a true case of rabies they will immediately show pharygial spasm, whereas if it is a case of fixed virus infection, they can drink very freely.

Of greatest importance and with greatest emphasis is the question of prevention. This disease is absolutely preventable by the use of proper methods, and especially going before your legislature or proper police powers throughout the different parts of the State and having the proper laws passed and enforced, so as to eliminate this disease entirely. In Australia it does not exist at all. In England it was eliminated until during the war, when the bars were let down and the disease again made its appearance. Since then the preventative measures have been applied and the disease is again extinct.

CARBUNCLE WITH ESPECIAL REFERENCE TO THAT OF THE UPPER LIP.*

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Maurice Kahn said:

"Off and on for the last fifty years articles have appeared, calling attention to the occasional, and always possible, seriousness of these infections, and still the profession is far from being unanimous in its treatment, and that in considering the treatment of carbuncle it is interesting to note that almost every imaginable procedure has been advocated, including constriction hyperocemia; hot, wet applications; puncture of center and application of phenol injection; crucial incision; crucial incision and injection of the patient's own blood or antitoxin; horse serum; vaccines; roentgen-ray; vaccines with citric acid to increase the clotting time of the blood; galvano-cautery or immediate excision with the knife or cautery."

One needs only to visit some of the places where carbuncle is under discussion to find that there is no unanimity of opinion as to its treatment. It was my pleasure recently to be present at a meeting of one of our very selective Surgical Associations whose membership is so limited by reason of the very high requirements for standing of its members as to make it very exclusive, and at which carbuncle was under discussion, and I was amazed at the diversity of opinion as to its treatment.

This was true in spite of the fact that the pathology of carbuncle is alike, practically the same in all parts of the body. This is not as it should be—you, medical men, see most of these cases first, or the vast majority of them; and the outcome or the result, in a given case, is in a large measure due to your understanding and management of the underlying pathology, as well as that of the surgeon who is called to treat the occasional case.

So it seemed to me something might be gained by a review and discussion of this not very infrequent malady.

It is generally agreed that the staphylococcus aureus is the usual infective agent. This being true, there can be no controversy that the process starts in the skin, spreads by continuity and contiguity into the areolar fat and subcutaneous connective tissues, causing necrosis, and, I think it should be said, under pressure—skin pressure—aided by the strands of connective tissue columns underlying and stretched across the area involved, causing a necrosis—a necrosis which progresses until it either relieves itself (which is not scientific) or is stopped by the surgeon by adequate operation.

Carbuncle starts as a pimple—the vast majority never progress further than this stage and recover as such. If, however, they do not the necrotic process advances to

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adjacent tissue, then there is elevation of the center, with one or more punctuate openings and redness, but the surface elevation does not correspond to the area of necrosis which is going on in the deeper layers underneath, for it is just here, at the rim, where the pressure is greatest, and if operation is undertaken, must be so designed as to relieve the pressure at the rim, if the greatest relief is obtained and the arrest of the necrotic process is accomplished.

Not only should the skin be incised well out to and beyond this rim of pressure, but the strands or columns of connective tissue holding down the skin should be severed by undercutting, well out to the rim of the affected area.

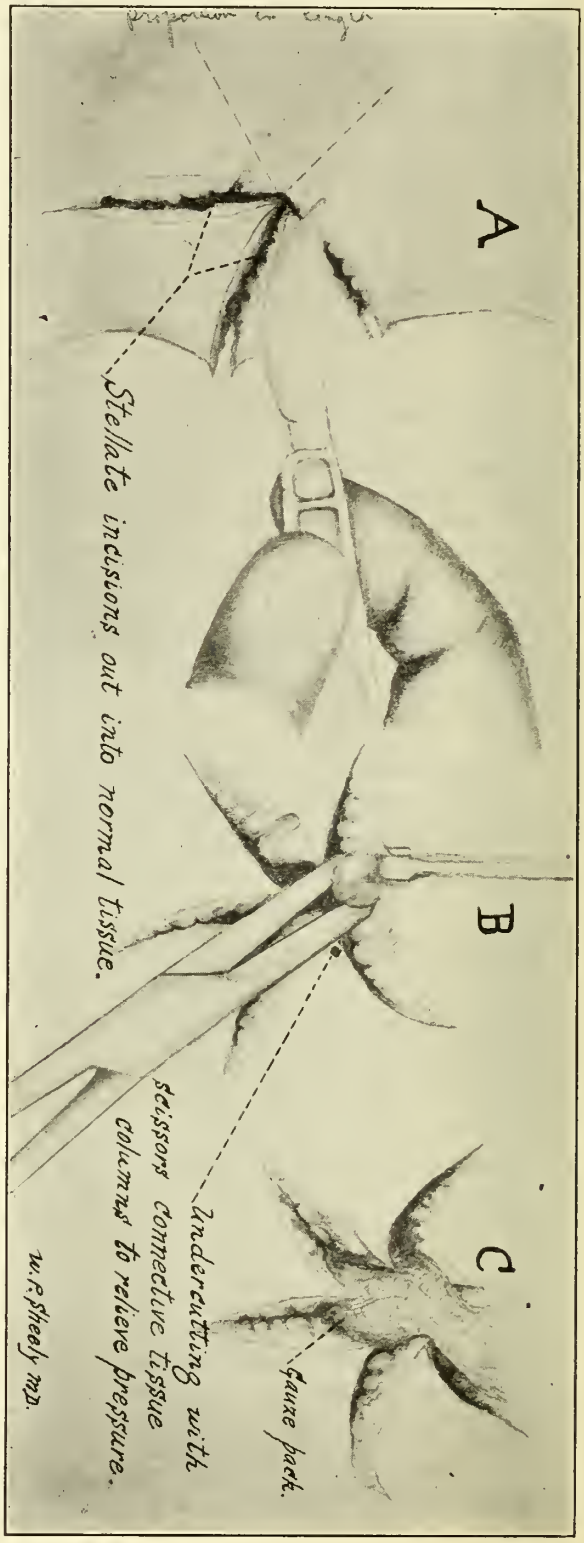
Now, when one has done this, there is almost instant cessation of pain, the temperature drops sharply, and almost invariably the necrosis spreads no further and recovery begins.

Very often the operator may just here with a sharp curette, remove most of the necrotic material, and loosely pack the cavity with some type of gauze.

If there is anything fortunate about carbuncle it may be said it develops most often in areas of the body where the blood vessels are not very large or numerous, that about the face being an exception, and, as it is a necrotic process, accounts for its very greatly increased mortality when it occurs in that region.

Operation, under local anesthesia, can be done as a rule, most thoroughly for carbuncle on all parts of the body except the face; here, it is not only strongly contra-indicated and positively dangerous, but inadequate. For operation for carbuncle of the face a general anesthetic is imperative, to be thorough.

Carbuncle of the face is not unlike carbuncle in other locations, except that the area is very vascular, the connective tissue spaces are large and loosely connected, as evidenced by the large swelling, the muscles are attached to the skin largely, the veins have no valves and anastomose freely with each other, forming regular plexuses so that infection once it gets into these



channels can reach the sinuses of the brain readily.

Being a necrotic process under pressure it is no respector of persons, places or things here, as elsewhere in the body, and this is the real cause of its greater danger when it occurs in the region of the upper lip; and this makes it all the more imperative that early adequate operation be done before the process of necrosis breaks through and thrombosis in the venous channels occur, and even though it has occurred, a careful adequate incision, with a sharp knife through the skin only, and thorough undercutting of the flaps, preferably with scissors, under general anesthesia, is the best and safest procedure; can do no harm, usually arrests, and may stay the further progress of even a thrombotic process, which, under any other course is inevitable, and so prevent it becoming general and widespread. Once there is a septice thrombophlebitis, or those in which there is septicemia with positive blood culture, there is no treatment of any avail; so far as I know.

CONCLUSIONS

(1) Carbuncle is caused by the staphylococcus aureus infection under pressure by the elastic skin, held down by the connective tissue strands, resulting in necrosis.

(2) The surface elevation does not correspond to the area of necrosis which is going on in the deeper parts, so that center injections, puncture with knife or cautery, and inadequate crucial incisions do not meet the indications of the pathology present.

(3) The area of greatest pressure is at the "rim," and treatment to be adequate must be so designed as to relieve this pressure.

(4) Carbuncle in its second stage is definitely surgical in all parts of the body, and adequate operation, in conformity with the pathology, is effective.

(5) Thrombophlebitis and wide spread septicaemia are not primary, but are the result of late or inadequate measures.

DISCUSSION

Dr. H. R. Shands (Jackson): It is my pleasure to be able to agree practically in toto with practically everything Dr. Sheely has said. He has presented the subject very clearly, and it is one of considerable importance. Many carbuncles have been neglected. I think many of us do not recognize the very great danger of carbuncles of face and especially of carbuncle of the upper lip. Fifty per cent of such cases die. I remember in the charity hospital when I was an interne seeing them excise the upper lip, take carbolic acid and cut it off, so much did they recognize the danger of extension to the sinuses of the brain. It is our custom to excise the carbuncle. It gives great relief, and usually we get prompt recovery. Of course, on the face that is impossible, because of the scar. The method Dr. Sheely uses is one that Dr. Naver(?) describes—a many-crossed incision, being sure to lift up flaps. It is surprising how the infection comes out, and the next morning you will see great improvement. I personally prefer to do that with a cautery knife. It does just as much good as complete excision.

IN WHAT WAY CAN THE INTERNIST OR GENERAL PRACTITIONER HELP IN THE CAMPAIGN AGAINST CANCER?*

JOSEPH COLT BLOODGOOD, M. D.,

BALTIMORE, MD.

Some five years ago, during a national cancer week and, as I recollect it, the first cancer week, I met a friend and colleague of mine who had been a general practitioner in Baltimore for a quarter of a century and more and had a very large practice among all types of people as well as a hospital service, one who had always been interested in his State Medical Society and one who had received from this society its highest gift, the presidency. He said to me: "Bloodgood, how is your cancer campaign getting along?" My answer was: "It is not my campaign, but yours," and I am repeating this statement to this Section on Medicine. The campaign against cancer, like any other problem in preventive medicine, or public health, or personal hygiene, belongs to no one

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specially, but is part of the responsibilities of every member of the medical profession.

Surgeons conceived and practiced the complete operation for malignant disease which, in the beginning, was and still is the only positive cure for cancer when it can be done. Billroth, in 1882, conceived and successfully performed the complete resection of the stomach for cancer. Ten years later Halsted of Johns Hopkins had perfected his complete operation for cancer of the breast. No matter where the cancer may be situated, the principles as outlined by these two pioneers remain the same, and the detailed technic of the radical operative procedure can not be improved upon.

In spite of anesthesia, wound technique, and the wonderfully executed complete operations for cancer, no matter where situated, cancer was rarely cured, and the failure to cure was not the failure of anesthesia, nor wound healing, nor the radical dissection which removed all the possible local disease. The failure was distinctly and entirely due to late intervention. Up to 1900 most surgery was employed as a last resort. Cancer can be rarely cured when its surgical treatment is a last resort.

The cure, therefore, of cancer belongs, first, to those who are responsible for the education of the people. When Jenner discovered the protection of vaccine against small pox, it was not his duty alone to see that the mass of the people were informed of this new protection.

It is and was the duty of surgeons to inform the general medical profession and the public of the fact that complete operations as a last resort for cancer in its late stages was rarely curative. By 1900 many surgeons throughout the world who were familiar with their five-year results, had begun to realize that earlier intervention was essential for the cure of cancer. By 1913, in this country, the American Society for the Control of Cancer had begun its educational campaign. By 1920 there was sufficient evidence of the value of this campaign. Yet, by 1927, the remark of my friend to me was still the rule. The large group of the medical profession said to the small group: "How is your cancer campaign getting along?"

Let me repeat here the evidence which points the way to the cure of cancer. Up to 1900, as recorded in all the great hospitals of the world, patients came into the surgical clinic with cancer in its clinical stage. By this I mean that it could be recognized by sight or touch, and often by cachexia. In this stage in more than one-half of the cases cancer was a hopeless disease. Complete operations could be performed in the remaining half. At the end of five years less than 20 per cent were living free from recurrence. With each succeeding year more and more died of cancer. Permanent cures of ten years or more were very rare. The best results were in cancer of the skin and lower lip, perhaps the worst results in cancer of the stomach. In 1913 my figures showed in cancer of the stomach but two per cent of cures at the end of five years, which was ten per cent of the cases in which the stomach could be resected. During this period in which cancer came for treatment in its clinical stage and in which one-half were hopeless, in each locality—mouth, breast, skin, stomach, colon, rectum, uterus—the relative frequency of benign to malignant lesions was eighty to twenty per cent.

I am confident that up to 1900 Billroth's resection of the stomach; Halsted's complete operation for cancer of the breast; Wertheim's radical operation for cancer of the cervix; the huge dissection of local lesions, glands and often with part of the jaw for cancer of the tongue, lip or cheek; laryngectomy with and without excision of the glands; Kraske's resection of the lower end of the rectum; the complete resection of portions or even one-half of the colon; and amputation of the extremities—I repeat, these operations from a technical

standpoint were as well done up to 1900 as they have ever been done since. I am willing to grant that we have lowered our operative mortality and this can be partly explained by improvements in anesthesia, more perfect healing of wounds (due to rubber gloves) and better preoperative and postoperative treatment. But we must admit that much of the lower operative mortality is not due so much to our art and science, but can be better explained by the fact that our patients, correctly informed, seek surgery before their general health is lowered by the influences of the malignant local disease.

Now you have in mind that, in spite of this wonderful surgery, the best chances of curing malignant disease, up to 1900, was 10 per cent. Bear this in mind. Between 1900 and 1920—twenty years, is the period of transition. Surgeons had found themselves. Their entire energy was not exhausted in their operative work. Their vision could now go to their five-year results. They could realize the wasted hours in the operating room. For example, one hundred operations for cancer of the breast—four hundred hours of the operating team, twenty five-year cures—three hundred and twenty hours wasted, eighty hours valuable. It was the surgeons, who, realizing the cause of these results, began to bring this correct information to the profession and the public. Then in 1913 began the tremendous help of the American Society for the Control of Cancer, largely financed by law women and men. The results of these years are well shown by the figures of 1920, and I will give the figures of the Surgical Pathological Laboratory of the Johns Hopkins Hospital in comparison with the figures already recorded here for the ten years up to 1900. Inoperability has fallen from more than 50 to less than 10 per cent; five-year cures have increased from less than twenty to more than fifty, which means a total of cures of more than sixty instead of less than ten. The proportion of cancer among the lesions in each locality has been reversed—where formerly it was eighty malignant to twenty benign, it is now almost eighty benign to twenty malignant. This is especially true of lesions of the breast, skin, oral cavity and benign connective-tissue tumors and sarcoma. One hundred breast operations for cancer now require about one hundred hours, where formerly they required four hundred hours, and of those one hundred hours less than forty are wasted, while formerly of the four hundred hours more than three hundred and twenty were wasted.

Another remarkable feature has taken place. Not until 1913 have I a record of an amputation for sarcoma of bone which lived five years or more, and when I reported the results of seventy sarcomas of the extremities in 1920, there were but two five-year cures. These patients are still living. Each year more patients are living and apparently well beyond the five-year period, we have just completed the figures for 1927. Among five hundred cases of sarcoma of bone the five-year cures are apparently reaching 20 per cent.

It is important for the medical profession and for the public to realize that this almost miraculous change has been due to the education of the public and the profession by a relatively very small group of individuals who have been tremendously helped by the daily public press. To journalism we must give due credit.

It is difficult to picture what the possibilities will be when the entire medical profession does its part in this campaign against cancer, and the campaign against cancer is only a part of the larger public health program. When all of the public press give the correct facts in the news columns, the general public will be protected by information which is as valuable for their protection against cancer as the antitoxin is protective in chilldren against diphtheria.

When this educational campaign against cancer is carried to its logical conclusion,

every child, in the primary school will be given a systematic graded course in personal hygiene, preventive medicine, and how to recognize the earliest symptoms of trouble, and how to report at once to their parents or teachers. With few exceptions, children under the high-school age can be taught most of the rules of health and rules of conduct. Correct information at this earlier age is doubly valuable, because all rules of health and rules of conduct accomplish their greatest good when they become habits—good habits just grow stronger with age. No matter how well we teach the children, there will always be new information due to new discoveries in the medical sciences, which must reach the adult population, if we wish them to have the greatest effect. The medium for broadcasting these messages from the medical sciences is the daily public press, the radio, and lectures to children who will carry the information to their parents; to social workers and nurses, who will carry it to those who are not reached by other means.

I trust I have convinced you that the campaign against cancer is your campaign —the campaign of the entire medical profession.

But every doctor has a personal part. His children, his family, his friends, and the larger group—his patients. Never before in the history of medicine can the good physician do more than today as an individual capable of giving correct information about personal and public health, preventive medicine, and the earlier recognition of disease. To your family and friends you must give correct information at every opportunity. It is a difficult art to acquire, to give this advice in such a way that it will be well received, accepted, understood and followed. There are added difficulties for the doctor—he must practice what he preaches. When your patients come to your office or send for you, you have a new responsibility—first, you must recognize and treat their present illness. But today your responsibility does not end there. Even if unnecessary for the recognition and successful treatment of the present illness, there should be a thorough examination for evidence for or against other possible latent trouble. But there must be more,—you now become responsible that this patient of yours is correctly informed, so that in the future he will consult you in time when threatened with illness. But today, there is still more than that, and perhaps the most difficult thing of all—the protective value of the periodic examination must be presented to this patient.

Never before has the ordinary practice of medicine been more difficult no matter what your patients consult you for—you must not forget the teeth,, even a roentgen ray film of the teeth, the nasopharynx and sinuses, hearing and sight, proper food, avoidance of constipation, proper exercise, appreciation of the value of fresh air and sunlight, instruction how to do work with the least worry and anxiety. Be vigilant for foot trouble, and, in young people, for faulty position and spinal curvature; the care of the scalp and the skin; the irritations of nipples not only in women who are nursing children, but also in those who are not. Never must you overlook overweight or underweight. Think of toxic goiter. You must recollect when certain laboratory examinations are essential—Wassermann, metabolism tests, blood chemistry, the proctoscope, roentgen-rays of mediastinum and stomach; a vigilant history, a physical examintion. In the past we have dwelt too much on the pulse, the coated tongue, the temperature, the stethoscope—all important, but only a part of examination, and—most important of all—in our education of children, in our education of the public, in our advice to family and friends, in our conversation with patients, whether they have sent for us because they are ill or for a periodic examination, we must bear in mind that all this must be done in such a way that

fear and anxiety is not introduced. Remember, Kipling's saying—"and fear crept in." In introducing education as a preventive measure in modern medicine, fear must be kept out and confidence put in.

I am placing this last, because I want you to remember this first, that the evidence which suggests the life-saving value of periodic examination is the actual results of cancer of the cervix today in spite of the tremendous value of radiation. If married women who have borne children desire the greatest protection against cancer, they must submit to periodic examinations after the birth of their children. To report at once after they noticed anything unusual in the menstrual period of its reappearance after the menopause is very helpful for protection against cancer of the cervix, but for the greatest protection there must be, in addition, periodic examinations.

The lowest infant and maternal mortality rests upon medical supervision of the expectant mother. This is settled.

Parents must be impressed that their children will receive the best protection and nursing care.

By medical supervision we mean when they are taken to their doctor at frequent intervals. Never wait for an illness.

All men should know that their first periodic examination should be before the age of fifty, and best before the age of forty, and at that periodic examination the prostate should be examined.

My studies now over a period of thirty-four years convince me that today the cure of cancer rests upon the education of children before the high-school age, getting correct information to the adult population, and bringing to the medical profession the newer methods of recognizing cancer in its earlier stages or the lesions that precede cancer, emphasizing again and again to surgeons the danger of incomplete operations in apparently innocent tumors, like moles, warts and nodules, and the necessity for introducing into every operating room the modern methods of tissue diagnosis by frozen section and the staining technique. When cancer becomes a curable disease, it is largely a microscopic disease and it must be recognized in the operating room, during the operation, and the indicated operation must be completed at once as soon as the microscopic examination of the frozen section of the stained living tissue is completed. As we educate the public we must educate ourselves and we must make the diagnosis of microscopic cancer as perfect as Billroth and Halsted and their group made the complete operation. Theirs was minor diagnosis and major surgery. Ours must be a major diagnosis and minor surgery. They made cancer and clinical cancer change from a hopeless disease to one in which the chances of a cure were ten per cent. By education we can make cancer a microscopic disease with the chance of a cure of seventy per cent or more.

DISCUSSION.

Dr. W. W. Crawford (Hattiesburg): We are indebted to Dr. Bloodgood for the very able presentation of this subject of cancer. We are indebted because of the fact that we have had the privilege of hearing one of the masters on this subject, a man known and recognized as an authority on the subject of cancer not only in this country but abroad as well. I say without fear of contradiction that no one other member of our profession in America has done quite so much toward educating the general public and the professional public in the fundamentals of this very important subject. He has today in a very graphic way called your attention to certain phases of this disease, appreciating, as he does, that the very important step in the correction of this great malady must begin in our profession. Therefore I think it is most timely that he should have been invited and acepted the invitation to come to Mississippi again. It was my pleasure to spend about a week with Dr. Bloodgood visiting some several of the most populous towns in Mississippi five or six years ago. The doctor presented his subject in the way that only he can present it, and as I think back over the years that have elapsed since that time I am conscious of the fact that he sowed seeds

then that are bearing fruit today. I say that because everywhere you go every clinic in Mississippi is being confronted with more and more cases of cancer. I may say that, fortunately, we are seeing more and more early cases.

Those of us who have practiced medicine in Mississippi for more than a quarter of a century know that in the early years of our practice it was a common thing to have people come to us who were in the throes of hopeless cancer, whether involving breast, stomach, or uterus, those being the three most frequent sites. But today, thanks to this scheme of education going on, a great many men and women come to us each year with these suspicious lesions in the breast that fortunately can be proven in a number of instances to be benign; a great many women are coming to us today, who formerly did not, with suspicious discharges, indicative of some abnormal menstruation, that formerly would have been neglected. Through the channel of public education along this line they have been made to recognize the importance of at least having an intelligent survey made of their cases. Much has been done along this line, but we all are conscious of the fact that much more must be done, when we think of cases such as the poor woman who came to see us a month ago, with a hemoglobin of perhaps 20 per cent., who had bled and bled from a tremendous cervical cancer until she was almost in extremis. She told me that she had not consulted a doctor because her neighbors had said that in all probability she was going through change in life and the bleeding to which she had been subject was inevitable and nothing could be done for it. So she suffered on in silence until fortunately she consulted a doctor who recognized the importance of her trouble and sent her in to see us. He was the first doctor she had consulted. The lesion was so far advanced, a great cauliflower mass filling the vagina, that before we could use roentgen-ray we had to use the actual cautery to burn away this mass of tissue. We still have too many cases of that type; we still have too many people coming in with stomachs almost occluded, having almost complete obstruction of the pylrous and unable to take even liquid food. We shall still have such cases until we individual doctors accept the responsibility in these cases coming to us. Last year in my paper on malignancy I called your attention to the fact that every man in every community who might make two or three talks during the year to groups of women, parent-teacher associations and other groups of women, would be astonished at the response he would get from such information. The people are hungry for it and are ready to follow the directions that we may give; and the doctors really are more alert, by great odds, than in former years. When people come to them they are recognizing the necessity for action, and if it is not in their province to handle the case they are referring them to institutions where they can have the proper treatment. But that is only a part of the story. It is not enough for us to sit supinely by and wait for the people to come to see us. Dr. Bloodgood has told you of the notable fact that in and around Baltimore they are seeing more early, precancerous conditions than ever before in history; they are seeing more there than in any other section of the country; and he has modestly told you why—because in and around Baltimore this education of the public has been carried on in a systematic manner and is being carried on by such men of the profession as Dr. Bloodgood, until the people are afraid to disregard these things but if the least irregularity comes up want to consult their doctor and find out what the trouble is. Now, you can do that. There is no man in his community who is more outstanding than is the doctor; it is simply a question of our exerting ourselves just a little day by day and taking advantage of the opportunity to present this message to the people, until the time will soon come when in Mississippi we can see the same thing that they see in Baltimore.

In looking up last year the statistics on cancer for Mississippi during the registration period, from 1913 to 1926, I was astonished to find that both the death rate and the incidence of cancer had increased tremendously in Mississippi; that cancer had increased in this state 46 per cent in that period of time, in spite of the fact that the profession is more alert today than in the past. You may say that perhaps a percentage of these cases are being recognized because the profession is alert, but the death rate has not been reduced to that irreductible minimum that will be possible when we recognize, particularly, precancerous conditions.

Again I want to congratulate this association upon the privilege of having had the opportunity to hear Dr. Bloodgood.

Dr. C. L. Barber (413 S. Washington St., Lansing, Mich.): I do not want to discuss this question after so able a man as Dr. Bloodgood, but I think I have learned more about various things in life by asking questions than in any other way. My mother said I was the worst boy that she ever saw about asking questions, and I have kept that up. I was in hopes Dr. Bloodgood would tell us what cancer is. Will you please tell us, Dr. Bloodgood, what cancer is, and will you tell us whether a cancer of the breast or uterus or any other organ of the body is the real disease or is it the local manifestation of a constitutional blood disease? I have read a great deal about cancer in the last few years, and I have heard a great

many men talk about cancer. I have heard one man who teaches that cancer is a blood disease and no matter how much you remove locally by radium or knife or roentgen-ray it does not cure the cancer. Whether he has not been able to get it in time, or not, I do not know. Another man teaches that cancer is caused by an imbalance between the chemical constituents of the body, too much salt and not enough potasium, etc., an imbalance between the different elements. Another man says he can diagnose cancer by analysis of the blood, as well as syphilis, tuberculosis, gonorrhea, and other diseases, claiming that blood is liquid tissue and no matter what you have in your body the blood contains it all—the good, bad, and indifferent. I should like very much to have Dr. Bloodgood enlighten me, as well as the rest of you, on that subject.

Dr. Bloodgood (closing the discussion): I should like to answer that question. You are from Michigan, I believe, Dr. Barber. Do you know Dr. Peterson? (Dr. Barber: Yes, he is a warm friend of mine.) You did not learn from him that cancer is a constitutional disease, did you? (Dr. Barber: No.) Who gave you that opinion? (Dr. Barber: Dr. Dougdeel(?) of Boston, Fields of New York, Coke of Chicago, and some other man in the West whose name I don't recall.) I can only conceive of learning of cancer from students of cancer, from men who have devoted their lives to the subject of cancer. There is always a difference of opinion, and it is quite possible we are all wrong. Remson, who wrote the chemistry I studied at the University of Wisconsin, wrote a book that my boy will not study because Remson's theories were wrong. I can only tell you what the great majority of students of cancer say about it. As a Yale professor said, "You can always tell Harvard students, but you can not tell them much." Now, I can tell you what I think about cancer, but not much. The majority of students think cancer is a local disease; it is a group of cells, just as we are a group of cells. We originate by the junction of male and female cells and a multiplication of those cells, the cells ultimately dividing into three groups, ectoderm, that forms the skin and endoderm, that forms the lining of our alimentary tract, and the tissue between. Those cells that form the skin and those cells that form the endoderm are cells that we call epithelial, and they line not only our skin and our mouth, but are also the cells that grow out and ultimately produce glands. So the epithelial cells and the cells lining the glands belong to one group of cells that we call epithelium. The nervous system is an epithelial cell; the crystalline lens, through which we look, is an epithelial cell. All the other cells are connective tissue cells. Now, in our body, when we are born, there are two groups of cells. There are those cells that are functioning, either epithelial or endothelial tissue; the cells that form the brain and the liver and every other organ of the body. We might speak of them as normal adult cells, living, receiving oxygen from the blood, and giving off their by-product. All are under some control, because we all grow, reach a certain size and shape, and die, and at autopsy a majority of our organs are normal. But in every individual born into this world there is a group of cells misplaced. In early embryonic life, when the cells are multiplying and the different cells taking on different functions, the cell that forms the skin, another that forms the crystalline lens, and another that forms the brain all are the same group of cells. But there are misplaced cells. When you are born you may have a nevus; that is too much blood in one part. You may have a pigmented mole; that is, pigment in a part where it does not belong. The cells in that mole are epithelial; but they will never form skin and will never form a crystalline lens; they are dormant. They are in our neck, in the bronchial cleft; they are in the back. There is passing down our vertebral column the notochord. There are two groups of cells, normal cells and misplaced cells. Either may form tumors. Take a case I shall show tonight, a person with a black pigmented mole on the arm which had been there all his life. Suddenly it begins to grow, and the epithelial surface desquamates and weeps and bleeds. If you take it out and look at it under a microscope, and take out another mole that is not growing and look at it under the microscope, you will find they are entirely different. At death there will be pigmented spots all over the body, and in each will be these cells. That is cancer from a congenital rest.

Take another case; take the man who smokes. When he was born his mouth was perfect; when his teeth came in they were perfect. He begins to smoke, and his teeth get rough; he pays no attention to his mouth. A white patch appears. If you cut that out and look at it you find the cells are different from those in the mucuous membrane. If you cut it out nothing happens, but take another case. The teeth get rough, and the man does nothing about it. The white patch becomes irritated. A piece drops off, and as the piece drops off the ceiling becomes ulcerated. You take out the patch, but the man comes back with glands in the neck. You take them out or give radium. What happens? The man with the patch is still your friend. the man with the ulcer is dead.

If you take a rabbit and put tar on its ear, the skin becomes irritated. After a while if you cut that out and look at it under the microscope the cells have the appearance of cancer; you can not

tell it from cancer. But if you stop irritating the ear it disappears. With the next set you keep on with that irritation longer, and when you take out the irritated skin the disease does not disappear; the animal dies with a recurrence.

That is as far as we can go. Cancer is a local disease. Cancer does not begin with cancer. (This man has a spot on his nose that is more dangerous than any other spot on his nose. It is not cancer; it may never develop into cancer. It is not scaling. If it should get red or scaly or cracked he ought to have something done for it.) Cancer does not begin as cancer. It may begin as a local disease of the skin. What is that? The cells get beyond normal limits; they migrate, just as after an operation or a wound there is granulation tissue. Now if these cells get into the blood vessels or the lymph vessels they will lodge somewhere else and produce another cancer; it does not matter whether it is sarcoma or carcinoma, or whether the cells are of embryonic origin or of acquired origin. Beyond that we do not know. We do not know why in two identical moles, one in Mr. Jones and one in Mr. Brown, the cells in one become malignant and in the other do not. We do know that the longer you live, the more likely it is to become cancer. A corn seldom becomes a cancer, yet a corn in the mouth does. We do not know whether, because your father and grandfather had cancer, you are more likely to have cancer. We do not know whether it is caused by a vegetable diet or a meat diet or faulty sugar metabolism. We do not know what causes cancer to become cancer. That is all we know; everything else is speculation; and it is on that that we hope to cure cancer, as far as we can today. The cure of cancer is for people to come to you for little things and for you to learn to recognize little things. Ultimately Paget's disease of the nipple will be cured with soap and water; ultimately the majority of cancers of the skin will be cured with soap and water, because the majority of cases of irritation of the skin will disappear with cleanliness and medicated alcohol, and a little vaselin to add to the natural oils. With a lump in the breast we have to explore; we have to explore in the case of a stomach with a filling defect. You have to take roentgen rays just as quickly in indigestion as in fracture. You don't wait six weeks after a fracture to have a roentgen made; yet you wait a year after indigestion to have one made. How long does a woman wait to have a vaginal examination after she begins to have a discharge? How long does she wait to have you examine the lump in her breast after she has felt it?

MENTAL DISORDERS AND SOCIETY*

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In speaking on this subject we must consider the following heads: (1) society; (2) individuals; (3) responsibility of society to its members; and (4) responsibility of members to society.

Society is composed of many individuals of different types, possessing individual reactions, held together by an imaginary bond or union which keeps mankind together, consisting in a certain degree of mutual weakness and dependence. It may be compared to a large organism made up of a multitude of minute organisms, the well being of the former depending to a large extent upon the proper co-ordination and actions of the latter.

Society has formed certain rules and regulations, laid down certain dicta which must be followed by its individuals. These restrictions are in utter opposition to man in his primitive state and hence certain of the normal instincts, wishes and desires of the component parts of society are rendered subservient to the wishes of the whole.

Under the caption of the prevention of serious consequences to society and to themselves we must consider: (1) the prevention of crimes by the insane; (2) the unjust punishment of the insane for crimes; (3) permanent segregation and confinement of the criminal insane, and (4) laws regarding investigation of criminals suspected of being insane.

It is the duty of society to watch over its individual members, to report and investigate any abnormal actions of individuals so that a diagnosis of insanity may be made before a crime has been committed. It is a common thing to be told by families of the peculiar actions on the part of a member for months or even years

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before consulting a physician. Every insane individual is a potential criminal and if society can be educated to this fact most of the crimes committed by this class can be prevented. Education of the public, cooperation by the health units and social workers can here work untold wonders. Education should begin in the schools.

In considering the unjust punishment of the insane, we are confronted with the responsibility of individual members of society to society. Any person or persons of sound mind should be held accountable for their actions. Our whole social structure progresses or retrogresses according to the actions of the individual units. On the other hand, just as insanity precludes anyone from enjoying the full privileges of mankind, decrees the subject incapable of exercising the proper judgment in the management of his affairs, it is but right and just that these subjects should be looked upon as incapable of deciding right from wrong. We should be broad enough, sober enough and intelligent enough to throw aside "The Call of the Wild," vengence in the case of the insane. It is absolute murder on the part of society to exact its pound of flesh from those not responsible. The late Dr. Frank D. Lydston, Professor of Criminology in the Medical Department, University of Illinois, in his wonderful book entitled "Diseases of Society," witnessed two hundred and twenty legal executions and in his work he very aptly says that he was present at two hundred and twenty *"legal murders."* He then goes on to say that future generations would see no more legal executions and that due to the progress of science, all criminals would be found mentally diseased, irresponsible, and placed in confinement which would be regulated according to the classifications of the medical board passing on them. I am of the same opinion as this noted author and teacher.

Under the heading of segregation, I mean not only confinement to insane asylums, confinement to state farms and state hospitals, but confinement to separate and distinct institutions for both males and females. By the association of the two sexes, that great driving force, the sex instinct, which would perhaps lie dormant in institutions for the different sexes, is kept active and comes to the surface, often aggravating these mental disorders. A subject once adjudged a criminal insane should never be released because it is impossible positively to state that these criminal tendencies may not again become active.

In considering necessary laws regarding the investigation of criminals suspected of being insane, it behooves society to prevent as far as possible the recurrence of such cases as the Thaw case and the Leopold and Loeb case. Each state should have laws making it incumbent upon every judge, if for any reason at all there is a question of sanity, to order an inquiry into this question by a lunacy commission. This commission should be composed of the heads of the state psychopathic hospitals and three other competent psychiatrists. There should be a fixed fee for this service and the decisions rendered by this body should be final. If the decision is insanity, the subject should be sent to a state institution for life; if the decision should be that the accused is sane, that should preclude any plea along these lines and the case tried on its merits.

Just as the individual has certain responsibilities to society, so has society to its individuals. It is the aim of every nation to speak of its manhood as being superior to that of another. It is the dream of all that some day the world will be peopled by a superior being, both physically and mentally, and toward that goal it is necessary that we strive.

If we but take stock of present day conditions and consider the number of dependents we have confined to our state institutions, and of the facts known to science, we are bound to hang our heads in shame and say, "It is through our fault."

These conditions, to a large extent, can be prevented, and if we wage but half the fight against mental disorders that we do against tuberculosis, it would be but a short time that a notable change for the better would take place. Insanity is to a large extent preventable, and right here is where society should be blamed for gross negligence.

By education the public can be made to understand the methods that we may use to better ourselves, the ultimate good to be gained and the amount of sorrow and suffering to be prevented, provided they avail themselves in a legitimate and intelligent way of the scientific advice and facts placed at their disposal.

Before marriage is considered the mental make-up of the contracting parties and their antecedents should be studied, the possibilities of developing insanity gone into, and if great, the marriage advised against. The history of social diseases should be investigated, and if present on either side, the diseased barred from marriage. Every syphilitic case is a potential case of insanity and no case should be discharged as cured unless a thorough neurological examination, including a study of the spinal fluid is made. Cases of gonorrheal infection should be considered more seriously, because, in my opinion, quite a number of mental disorders can be easily laid at the door of this disease. Many women are forced through this infection to sacrifice at the shrine of surgery glands of internal secretion which often bring about a mental upset.

Epilepsy which may be transmitted to the offspring and sufferers from which often develop true psychoses should be debarred from marriage or at least rendered sterile.

All cases belonging to the defective developmental group and all cases of insanity should be sterilized to prevent propagation, because in our present state of knowledge, it seems a clear cut fact that heredity plays an important role in populating our state institutions. Individuals who show evidence of an inferior mental make-up should be guarded against their own folly of striving for a goal beyond their ken.

The normal individual is the one who is able to adjust himself to these ever-changing conditions, who is able to satisfy his desires by accomplishing or attaining certain objects in a way not in conflict with social custom. Due to the fact that certain desires are unattainable, mankind is compelled to repress a great number of these and to force them to the subconscious—that region where unfulfilled desires are abandoned for something nobler and better as progress continues steadily upward.

From these facts it becomes plain that the adjustment of the individual to his surroundings is purely a mental function, which in a general way may be called mental life. The broader and more pliable the mind the more readily a proper adjustment is made, and, conversely, the poorer the mind the harder the adjustment. It must necessarily follow that those individuals with a mental disorder are very apt to be unable to adjust properly, and they are said to be in conflict with society.

Depending upon the limits of adjustability we have certain grades of mental disorders, and depending upon the type of reactions we are able to classify these as specific psychoses-understood by the laity when called insanity.

Insanity is a symptom complex resulting from a pathological brain, either congenital or acquired, characterized by abnormal acting, thinking and feeling, which becomes more or less fixed and renders the subject a danger to his fellowmen and incapable of normal adjustment.

In analyzing the above, the facts stare us in the face, that those suffering from certain types of mental disorders are not and can not be held responsible. Janet says the difference between a psychotic and a normal individual is that the former acts

without thinking while the latter acts only after thinking.

The ideas maintained regarding the causes of these abnormal psychic reactions are many, and we have: (1) the Lombrosian theory of heredity; (2) the Mott theory of Endocrinopathies; (3) the Freudian theory of inability to sublimate the sex libido; (4) Jung's theory, that as a result of present difficulties placed in the way of the individual and so preventing a sublimation of the libido there is set up a conflict which brings to the foreground primitive ways of using the libido; (5) Adler's theory that there is a conflict resulting from a desire to dominate but which is frustrated by an inferiority complex based upon some inherent organic inferiority; (6) Kempf's theory of a segmental stimulation resulting from conflicts; (7) the theory of the psychoses resulting from experiences along the pathway of life. Each and every one of these theories have some good in them and they all have their followers. I will not attempt to separate the wheat from the chaff.

The light in which mental disorders have been considered by the public has changed from time to time. One of the saddest chapters in human history is that describing the cruel and inhumane manner in which the insane were treated in times past. However, this custom was not common to all nations and all times, in fact, it had its origin in the ignorance and superstition of the dark ages of Christian Europe.

Whatever may have been the customs, of handling and ideas regarding insanity, with peoples before the ancient Greeks, there is evidence that the Egyptians were both enlightened and humane. It is certain that the Greeks had sound theories regarding its nature as a disease, to be treated by medical and moral means, as is shown in the medical doctrines of Hippocrates.

Beginning about the second century of the Christian Era a great backward step was taken by society. Theories that insanity was due to sorcery, witchcraft, the curse of God, and demoniacal possession were held and these unfortunates subjected to neglect, cruelty and torture. This attitude continued after the middle ages and it was not until the eighteenth century that any marked advance was made. Since then there has been a slow but steady improvement in our ideas both as to the cause and handling of these conditions.

Society should realize that these patients are sick both in body and soul. To the psychiatrist even today it is a common experience when going into the history of these patients to have the relatives conceal and evade the truth or throw up their hands in horror at the mention of a mental disease. What more right has the heart, stomach, kidneys or lungs to become diseased and function abnormally than the nervous system? None!

As we become more enlightened, understand better and appreciate more fully the utter incapability of these individuals to take care of themselves, meet their fellowmen on an equal footing and adjust themselves normally, it becomes incumbent upon society: (1) to aid these abnormals; (2) to prevent serious consequences to society and to themselves if possible; and (3) to use every means known to science and at our command to diminish and finally prevent these conditions. Under the first head comes the necessity of providing the proper number of institutions with adequate facilities for the handling and treatment of these cases by skilled scientists, so that as soon as possible those that respond to proper treatment can again be made useful citizens, an asset to the commonwealth and not a liability. Those that are unresponsive to treatment should be made comfortable and as happy in their surroundings as is feasible.

Most cases of mental disorders can and would be readily recognized if our great school system would only take one step upward in the right direction. Employ

for every parish a trained psychologist who would subject every child upon entering school to thorough scientific tests, rate their mental age and those found deficient sent to a psychiatrist for examination. Again at the age of puberty, due to the change that takes place within the system at that time, symptoms manifest themselves which were before dormant and hence another thorough examination should be done.

It is the opinion of the writer that ninety-five per cent of the potential criminals and mental disorders would be discovered at an early date if the above methods were followed.

We must turn about face and do all in our power to better condition, we can no longer say, "I am not my brother's keeper."

ANGINA PECTORIS AND CORONARY THROMBOSIS.*

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Angina pectoris, that dread disease, of which so many physicians speak with abated breath, has been known clinically for centuries, whereas coronary thrombosis and cardiac infarction have been recognized clinically only in the past two decades. That these latter conditions were recognized years ago at post mortem, is conclusively shown by the fact that, in 1778, Edward Jenner in writing to William Heberden, mentioned that he had found coronary sclerosis and thrombosis at post mortem examinations of the hearts of two patients who had suffered with angina pectoris. In reviewing the literature we find that many authors, such as Von Leyden, Krehl, Dock, Osler and Mackenzie have described, under the heading of angina pectoris, a condition which today we know to be coronary thrombosis. However, Herrick[1] first described the clinical features of sudden obstruction of the coronary arteries in 1912.

*Read before the Shreveport Medical Society, September 6, 1927.

There have been numerous theories advanced as to the cause of angina pectoris. Jenner associated it with disease of the coronaries, later Allbutt[2] advanced the idea that it was due to disease of the thoracic aorta. There is more evidence in favor of coronary and myocardial disease, particularly, since we know that coronary occlusion will produce intense pain. However, all patients who have coronary disease do not have angina pectoris, as only two hundred eighty-two of the seven hundred clinical cases of coronary sclerosis reported by Willius,[3] had angina pectoris. Likewise, all cases of angina pectoris do not show coronary distase at post mortem examination. Repeated attacks of angina predispose to coronary thrombosis. An embolus lodging in a coronary artery will produce a cardiac infarct.

The symptoms resulting from coronary occlusion depend upon the size of the vessel occluded. In this paper we will deal with an average case; neglecting both the large thrombosis which causes sudden death and those cases in which the coronaries are gradually occluded, as by syphilitic endarteritis, where the symptoms are mainly of myocardial failure.

Pain is a common and pronounced symptom in angina pectoris and cardiac infarction; rarely do we see a case of either in which it is negligible. In angina pectoris the pain is brought on by excessive exercise, excitement, or the digestion of a heavy meal; it is of short duration and intermittent and relieved immediately by nitrites and rest. In cardiac infarction the pain may come on at any time; it has been aptly described by Jones[4] as "constricting, pressing, boring, burning, sharp, dull, or cramp like, and it may or may not radiate to the back, neck, shoulders, or down one or both arms. Not uncommonly it has been described as status anginosus or status gastralgicus when epigastric in location, as is common. There is a sense of impending death, something entirely different from anything the patient has

ever experienced, though he may even have had angina pectoris. Rarely is the pain intermittent, but constant, lasting for hours, even days, unrelieved by nitrites or rest, and often even by massive doses of morphia."

The examination of a patient who suffers with angina pectoris frequently reveals nothing, even though the patient may be having an attack while the examination is being conducted. Thirty-eight, or 26 per cent of Whites[5] one hundred forty-eight cases of angina pectoris examined by the electrocardiograph, showed normal hearts by physical and electrocardiographic examinations and normal blood pressure. Other cases of angina pectoris show hypertension, arterio-sclerosis, syphilis, cardiac enlargement, valvular lesions and abnormal T waves in the electrocardiogram. In coronary thrombosis or cardiac infarction the picture is entirely different. The facial expression is pinched, the patient is shocked, the skin is cold and clammy. The blood pressure drops below 100 mm. systolic. The cardiac impulse is diffuse, the heart sounds are weak and very irregular, any form of arrythmia may appear. According to Pardee[6] there is a characteristic upward curve of the S-T interval in the electrocardiogram. As the heart fails any degree of congestive failure, as dyspnoea, pulmonary edema, congestion of liver and general edema may appear. A few hours after the accident the temperature may go to 102 degrees with a leukocytosis of 12,000 to 14,000; these are the result of the infarction. Also a pericardial friction rub may or may not be heard, its presence aids in the diagnosis, but its absence does not mean that there is no cardiac infarct. Longcope[7] heard none in his sixteen cases.

The diagnosis of a typical case of angina pectoris is comparatively easy, but there are certain border line cases which cause considerable difficulty in diagnosing. These are the cases which we are tempted to classify as "cardiac neuroses." If this is done without considerable study, we are apt to hear later that the patient died a sudden or cardiac death. Coronary thrombosis frequently presents the symptoms of cholelithiasis or perforated gastric ulcer. In differentiating these the physician's diagnostic acumen is put to a severe test. Time will not permit of a thorough discussion at this point, but we will suffice it by stressing the importance of a correct diagnosis as the treatment is necessarily different.

The prognosis in angina pectoris is indeed a problem, not necessarily as grave as some think, but each case should be studied carefully, as regards the age of onset, sex, habits, occupation, temperament, and severity of attacks, before an opinion is rendered. Sudden death may occur at any time, and is frequently attributed to "acute indigestion." The highly nervous individuals who are under high pressure constantly, when removed from the daily strain and taught to lead a normal life, usually offer a good prognosis, especially so when there are no abnormal conditions found by physical or electrocardiographic examinations. In White's[8] series of two hundred cases, one hundred thirty-four were living and sixty-six dead at the time of the report, the average duration of life from the onset of the angina pectoris was 4.2 years. In coronary thrombosis the prognosis depends upon the size of the infarct. If this is not too large and the patient has the necessary treatment with a prolonged rest, recovery may be complete and the patient may lead a very active and useful life. Of White's[9] sixty-two cases, thirty-two died, the average duration of life being fifteen and one-half months.

Briefly the treatment of angina pectoris consists of rest and nitrites. It is very important to place the patients under the proper living conditions; they should avoid excessive exercise, excitement, extreme weather, and dietary indiscretions. Also any organic disease should receive the proper attention. In the last few years much has been said for and against sympathectomy; this procedure undoubtedly

has given relief in selected cases but it does not give an assurance against a future coronary thrombosis. Therefore, before advising this procedure the case should be carefully analyzed. In coronary thrombosis and cardiac infarction the treatment consists of prolonged rest, even by morphia in the early stages. There are authors who advise digitalis medication in all cases and others who are as strongly opposed. Therefore it is not likely that one will go wrong which ever procedure is followed.

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EARLY NEUROLOGY IN UNITED STATES.

C. L. Dana believes and hopes in a dominance in personal and community life of the functional activity of the master-tissue of the body—a dominance which he thinks with all conviction and sincerity is the dominance of the human soul. There are good reasons for believing that nervous diseases are increasing in the United States; and whether so or not there are special reasons for trying to prevent and lessen these disorders as they exist. It is well established by Dr. Pollock and others that mental diseases in the United States are increasing, except perhaps in Massachusetts. The relative increase in urban population and the general ambition of Americans to seek brain work rather than muscle work are natural factors in causing an increase of nervous disease. We are told that one American out of every twenty-five is in an institution for treatment at some period of his life, and that one out of 300 is in a hospital for mental diseases. The implication from these facts as to the prevalence of nervous disease is rather compelling. But whatever the implication or the fact it seems that preventive neurology is a phase of work that is of high importance and one that has been greatly neglected.—J. A. M. A., May 5, 1928.

THE ETIOLOGY OF ESSENTIAL HYPERTENSION.*

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Between 1900 and 1923 the mortality from organic heart disease in the United States increased from 132.1 to 175.3 per 100,000. This represents a total increase of approximately 33 per cent. No doubt one important explanation for this is the fact that during this period the average longevity has been greatly increased with the result that a much larger group now reach that age when organic heart disease is most common.

Chief among the immediate causes of organic heart disease is hypertension. More than fifty per cent of patients suffering from hypertension die of cardiac insufficiency. Majors[1] estimates that there are not less than five million people in this country suffering from high blood pressure. Certainly, then, this is one of the most serious problems facing our profession today.

During the last twenty-five years considerable progress has been made in the study of high blood pressure. Perhaps one of the most important single advances in clarifying this subject was the development of the kidney function tests which assist greatly in differentiating between renal and arterial hypertension. In a brief discussion of this kind it will not be possible to review or even to mention all the valuable contributions which have been made on the subject. Suffice it to say, that, with all the work that has been done, as yet, no altogether satisfactory explanation of the causation of hypertension has been offered.

Clinically increased blood pressure is met with in a variety of conditions. In this paper we will discuss only idiopathic arterial hypertension, commonly known as essential or benign hypertension.

*Read before the Mississippi State Medical Association, Jackson, May 10-12, 1927.

Since a large majority of cases examined clinically as well as at the autopsy table have a readily demonstrable arteriosclerosis either local or general there has been much debate as to the relation of arteriosclerosis to hypertension. Wherever a large group of apparently healthy young individuals have been examined a considerable number have been found to have an increased blood pressure without any clinical evidence of arteriosclerosis. This tends to support the generally accepted view that essential hypertension is primarily a disturbance of function. Adherents to the theory that arteriosclerosis precedes hypertension have not yet offered a satisfactory explanation for the increased pressure when the process is localized as in the kidney.

In the light of the evidence that has been adduced the immediate cause of the increased blood pressure is a contraction of the arterioles. Although an enormous amount of work has been done, both clinical and experimental, the direct cause of such contraction has not been found. In other words, just how blood pressure is regulated, whether centrally or peripherally, chemically or reflexly, is still undetermined. The result of the investigations which have been carried out would indicate that there are several factors involved no one of which is necessarily present in all cases.

Newburgh and Clarkson[2] in a recent review of the literature on essential hypertension, group the possible causes under one of three headings: chemical, neurogenical and anatomical.

Until comparatively recently the majority of observers have regarded hypertension as evidence of an intoxication by some substance having a vasoconstricting action and have assumed that an excretion, destruction or neutralization of this substance would bring about a cure, provided secondary anatomic changes were not too advanced. Allen,[3] for instance, believes that chlorides play an important role in the etiology of hypertension and urges their rigid restriction. He does not attempt to explain how chlorides increase blood pressure but apparently bases his conclusions on clinical experience. On the other hand, the majority who have tried the low chloride diet agree with O'Hare and Walker[4] that salt plays little part in the cause of vascular hypertension.

The protein intoxication theory was for years the dominant one in both American and French literature. But when this theory was finally subjected to accurate clinical and experimental tests it was found that there was no constant relation between the blood pressure level and the protein intake except in the presence of renal insufficiency. Thus the traditional plan of restricting protein in arterial hypertension was proven to be useless. However, it should be stated that whereever experiments have been carried out with diets containing an excessive amount of protein definite evidence of renal irritation was produced as shown by the presence of albumen and casts in the urine and an elevation of non-protein and urea nitrogen in the blood.[6] Arteriosclerosis has also been produced in animals by feeding a high protein diet.

An explanation for the variable results obtained from protein restriction is offered by Sansum, Blatherwick and Smith[5] in their work on basic diets. These observers noted that diets rich in animal proteins such as chicken, fish, oysters and lean meats as well as certain carbohydrates, as wheat bread, rice and oatmeal, greatly increase the hydrogen ion concentration in the urine; while, on the other hand, the majority of vegetables and fruits are strongly alkali producing. They also noted a striking reduction in blood pressure in those patients who were kept on such basic diets.

Hypertension has been attributed to the retention of certain products of metabolism. Major and Stephenson,[6] and Howard and Rabinowitch[7] have reported experiments with guanidine compounds which produced a definite but inconstant eleva-

tion of blood pressure. Major then prepared a liver extract which will neutralize the pressor effect of methyl guanidine. The lowering of blood pressure obtained by Addison and Clark[8] from the administration of calcium and potassium chloride may be due to the increased excretion of guanidine.

Because the injection of extracts from certain of the ductless glands, notably the adrenals,, pituitary and thyroid, will cause an increase in blood pressure, essential hypertension has been attributed to a hyperfunction of one or more of these glands. There is as yet no reliable evidence that such is the case. The frequent occurrence of hypertension around the menopause has been referred to as indicating an endocrine disturbance.

In many cases an over-responsive vasomotor nervous system is more important than these metabolic disturbances. Just as in effort syndrome we have a faulty constitutional make-up, so in many of these hypertensive patients we have an unstable vasoconstrictor mechanism which responds excessively to mild physical or psychical stimulation. The rest pressure in many of these is usually above normal. Most of them seem to live in a state of constant stress. Hurry and worry are almost universal characteristics. Some one has said that their higher centers are too intimate with their vasomotor centers.

Kylin[9] interprets essential hypertension as primarily a neurosis and refers to its liability as a characteristic favoring a neurogenic basis. He compares it to bronchial asthma. Here the spasm of the bronchi is superinduced by a hyper-irritable vegetative nervous system. Likewise in essential hypertension the vasoconstrictor mechanism is supersensitive and the blood pressure is elevated by stimuli which would not effect normal individuals.

Referring again to the relation of arteriosclerosis to increased blood pressure, it is interesting to note the observations of Bordley and Baker[10]. These authors studied the medulla of a small series of cases who were known to have hypertension and as controls a series whose blood pressure was known to be normal. In the hypertension group they were able to demonstrate a definite arteriosclerosis in all cases while in the controls they found no arterial change. They suggest that their findings tend to support the physiological law established by Anrep and Starling[11], namely, that a reduction of the amount of blood reaching the brain (presumably the vasomotor center) causes a compensatory rise in the systemic pressure. While this is an interesting finding a great deal more work will be necessary before any final conclusions can be drawn.

Although the immediate cause of the contraction of the arterioles, and therefore of hypertension, has not been determined, there are several important predisposing factors about which all are agreed:

Age: While the majority of cases of essential hypertension are encountered after mid-life, evidence is increasing which indicates that the disease has its inception at a much earlier period. At present relatively few cases are discovered until the patient develops some symptom referable directly or indirectly to his increased blood pressure. Therefore, it is only by an examination of a large number of apparently healthy individuals that we will be able to determine the average age incidence. Among 485 cases of essential hypertension examined in our clinic the average age was 54.5 years.

Sex: Men are said to be more often affected than women for the reason that they are subjected to more physical and mental strain. In our series, however, 61 per cent were women and 39 per cent men. We have already referred to the frequency of hypertension in women around the menopause. Alvarez[12] has called attention to the association of increased blood pressure and pelvic pathology.

Occupation: Hypertension was formerly believed to be a disease peculiar to business and professional men, or among those who were subjected to an excess of nervous and mental strain. Our experience based upon both private and hospital practice leads us to believe that it is equally as common among those who do manual labor.

Race: There are no available statistics showing the comparative incidence of hypertension in the white and negro races. Based on fifteen years' experience in a large general hospital (Memphis General Hospital), we believe that the condition is quite as common among negroes as whites.

Habits: The use of alcohol, tobacco, tea and coffee are usually mentioned as etiological factors. We know of no definite clinical or experimental evidence to support this view. Nevertheless, hypertensive patients are usually given to excesses of various kinds, and any of these stimulants used excessively will probably increase a pressure that is already above normal. Overwork and overeating play more important roles than either alcohol or tobacco.

Heredity: The influence of heredity, we believe, has not been sufficiently emphasized. O'Hare and his associates[13] in a study of 300 cases of hypertension found a definite family history of cardiovascular disease in 68 per cent and urged the importance of safe guarding the children of these hypertensive patients against an excess of nervous and physical strain. Janeway[14] spoke of hypertensive cardiovascular disease as "the type in which heredity plays the largest role." It is safe to say that heredity is as important in hypertension as in cancer.

Obesity: Closely related to heredity is obesity, the danger of which cannot be stressed too much. Not only is it well established that hypertension is more common among those who are overweight but they are much more prone to develop prematurely such complications as apoplexy and myocardial insufficiency. Furthermore, it has been shown that obesity is often associated with hyperglycemia which in turn tends to increase blood pressure.

Focal Infection: As in most diseases of obscure origin focal infection has been credited with an important role. In the evaluation of the various etiological factors are we not inclined to give too much emphasis to focal infection? Certainly we see a large number of hypertensive patients in whom no chronic infection can be demonstrated. In our series of 485 cases we were able to demonstrate focal infection in only 158 or 32.5 per cent. Nevertheless, we would not be understood as discounting the importance of chronic infection; on the contrary the management of every case should include the removal of all definite foci. But in cleaning up these infections we should not expect and certainly we should not promise any great reduction in blood pressure. Furthermore, in eradicating these foci extreme caution must be exercised not to stir up too much infection at one time.

Finally in searching for the cause of hypertension we would urge a careful and comprehensive study of the individual. Although all clinicians are familiar with the increase in blood pressure caused by such emotional disturbances as fear, grief, worry and anger, very little clinical research has been done to try to determine the exact part these psychic factors play.

CONCLUSIONS

1. The immediate cause of increased blood presure in essential hypertension is a functional contraction of the arterioles.

2. There are probably several factors involved in this contraction no one of which can be said to predominate in all cases.

3. There is need for further research, both clinical and laboratory, into the various condtions, psychical as well as physical, influencing the vasomotor system.

4. Until the condition is better understood the successful management of the disease depends largely on an early recognition. This can be done only through periodic examinations of apparently healthy individuals. Since cardiovascular disease is the leading cause of death among physicians is it not time we were beginning to practice as well as preach the gospel of periodic health examination?

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PROGNOSIS IN KIDNEY DISEASE.*

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At this time when we hear so much and every physician and surgeon has to be interested in the diseases of so-called "high-pressure living," much attention is being given to nephritis. Nephritis, in one form or another, is a very common disease. In fact, it is almost the rule to find some indication of kidney derangement in persons over fifty years of age, if we base our judgment on urinary findings. However, since the advent of blood chemical procedures into rather general use, our ideas as to the diagnosis of nephritis have had to undergo considerable re-checking. Formerly the severity of a given case was judged in large part by the amount of albumin and the number and kinds of casts and cells found in the urine. By blood chemical tests, we have found that, as a matter of fact, the severity of a case of nephritis depends on the amount of retention of waste products in the body and blood—in other words, on how much of its normal work of excretion the kidney is failing to do. By these methods we have found that much albumin and many casts and so-called "renal cells" may be found in the urine from kidneys that are actually working in a nearly normal manner; and, vice versa, the slightest possible traces of albumin and rare or no casts from kidneys that are ready to give up "for keeps."

The substances normally excreted by the kidneys, which are of perhaps the most significance when retained, are uric acid, urea nitrogen, and creatinine. In beginning kidney disease it has generally been supposed that uric acid was the first of these products to be retained; urea nitrogen coming next as the lesion progressed; and creatinine, the easiest to excrete, being the last to show retention, and, therefore, of most serious import. We are having to

*Read before the Issaquena-Sharkey-Warren County Medical Society, July 12, 1927.

admit some doubt as to the significance of the uric acid, for while it seems to be the first retained, it does not seem to keep its precedence when the lesion becomes serious enough for urea nitrogen retention. It would be natural to suppose that as urea appeared and increased, the uric acid would keep pace, but this does not always seem to be the case. However, as regards urea nitrogen and creatinine, their retention is of real diagnostic and prognostic value, and as an indicator of a fatal outcome, the retention of creatinine is of especial value. In fact, while with marked retention of uric acid and urea nitrogen, the patient may recover and the kidneys again become apparently normal, with retention of creatinine above five milligrams per 100 cc. of blood, recovery is the rare exception, and with such findings, the physician is justified in predicting a fatal termination.

In a series of 85 cases with creatinine retention of over five milligrams followed by Myers formerly of the New York Post Graduate Medical School and Hospital, only two recovered. The others all died in from two days to three years, 61 or 72 per cent dying within two months.

There has been much discussion and research on the origin of creatinine. It is probable that it is formed in the muscle tissue, is then poured into the blood stream, and by it carried to the kidneys for excretion. It is apparently of strictly endogenous origin and on a meat-free diet is quite independent of the food intake. In this respect it is a better indicator of kidney sufficiency than either uric acid or urea nitrogen. The normal findings for 100 cc. of blood are: Uric acid, 1 to 3 mg.; urea nitrogen, 12 to 15 mg.; and creatinine, 1 to 2.5 mg.

In our work we have found creatinine over five milligrams per 100 cc. of blood seven times in the last three years. A few points from these cases will illustrate the significance of creatinine retention.

Case 1. Colored female, Age 32 years, referred for laboratory diagnosis. *Urine* (two specimens on successive days)—Slightly pale to normal color; cloudy; alkaline; specific gravity, 1.005 and 1.006; albumin, 3 per cent and 4 per cent (by volume); slight sediment with triple phosphate crystals and amorphous phosphates; many pus cells; many fresh red blood cells; no casts found. *Blood*—Not remarkable except polymorphonuclear neutrophil percentage was 78; no malaria; Wassermann test negative. *Blood Chemistry*—Uric Acid, 16.6 mg.; urea nitrogen, 33.6 mg.; creatinine, 24 mg. Patient died in 15 days.

While there was considerable albumin in the urine, no casts were found in two examinations and the albumin could well have been due to the many pus cells and much blood of a cystitis or pyelitis.

Case 2. Colored male, age 49 years. Began to have shortness of breath and headache one year ago. Two weeks ago, feet began to swell. Teeth extracted one week ago and in bed since. Appetite good, but unable to eat on account of sore gums. Bowel movements regular and no urinary history of importance.

Urine—Pale; slightly acid; specific gravity, 1.004; large trace of albumin; sediment slight with rare brown granular cast, some pus cells, no blood. Five days later albumin was 1 per cent. (by volume); no casts found. Wassermann test was negative. *Blood Chemistry*—Uric acid 12.5 mg.; Urea nitrogen, 238 mg.; Creatinine, 9 mg. Died in four weeks.

There was nothing in the urinalysis in this case to indicate a rapidly fatal outcome.

Case 3. Colored male, age 45 years. Three weeks ago began to have loose bowel movements that his physician said were due to "flu." Passed blood and mucus and had fever. Apparently recovered. Then was exposed to cold and wet and feet and face began to swell; had severe pain in stomach, was nauseated, and bowels again became loose. Has had headache and pain in left side. Physical examination showed abdomen distended and containing fluid; tenderness in left costovertebral angle. *Urine*—Pale; cloudy; alkaline; specific gravity, 1.008; albumin, 15 per cent. (by volume); sediment slight with some triple phosphate crystals; numerous leukocytes; many fresh red blood cells; many motile bacilli. *Blood* showed polymorphonuclear neutrophils 80 per cent, otherwise, not remarkable. No malaria found. Wassermann test positive with three antigens. *Blood Chemistry*—Uric acid, 12.5 mg.; Urea nitrogen, 197.4 mg.; Creatinine, 24 mg. Died in four weeks.

While impending uremia was rather evident in this case, no casts were found in the urine, and it is not rare for patients with similar findings but without similar blood chemistry to recover.

Case 4. Colored male, age 34 years. Complained of general aching, weakness, and fever. *Urine*—Normal color; cloudy; acid; specific gravity, 1.015; albumin, 4 per cent. (by volume); sediment 0.5 per cent., with few finely and coarsely granular casts, many pus cells, few motile bacilli. Four days later, albumin had dropped to 2 per cent with rarely hyaline cast and less pus. In 18 days after the first examination, albumin was a large trace, with rare hyaline cast, few leukocytes, and rare abnormal red blood globule. *Blood*—Not remarkable; no malaria; Wassermann test negative. *Blood Chemistry* (16 days after patient came under observation)—Uric acid, 11.1 mg.; urea nitrogen, 22.75 mg.; creatinine, 5 mg. Patient died 25 days after coming under observation; nine days after increased creatinine was found.

In this case the high creatinine was found when the urinary findings had much improved and the blood chemical examinations were the only indications of a fatal termination.

Case 5. White male, age 41 years. History of having had albumin in the urine for 15 years, frequently with no casts. When seen first in present illness was up and dressed and compained only of feeling weak and tired. Respiration was 28. *Urine*—Pale; cloudy; slightly acid; specific gravity, 1.006; albumin, 2 per cent (by volume); sediment slight, with numerous abnormal red blood globules; no casts. *Blood*—Polymorphonuclear neutrophils, 88 per cent; otherwise, not remarkable; no malaria. Wassermann reaction was doubtful (+). *Blood Chemistry*—Uric acid, 5 mg.; urea nitrogen, 32.9; creatinine, 6.4 mg. Died on third day.

This is another case in which the blood chemical findings were the only indicator of early death.

Case 6. Colored male, age 69 years. Complained of inability to pass urine. Had been getting up six to eight times to pass urine each night. Lately unable to pass urine except in small dribbles after much straining. For past 24 hours had been having headache, and muscular twitching. Temperature 101° F.; pulse, 120; respiration, 20; blood pressure, 160/90. Tumor in suprapubic region, probably distended bladder; prostate enlarged and hard. Catheter drained 1500 cc. of dark, foul-smelling urine, with some blood. *Blood*—Leukocytes, 15,200; polymorphonuclear neutrophils, 86 per cent. No malaria was found. Wassermann test, negative. *Blood Chemistry*—Uric acid, 10 mg.; urea nitrogen, 46.9 mg.; creatinine, 12 mg. Died one week after first seen.

The blood chemistry in this case indicated the severe nitrogenous retention and the bad prognosis. Old prostate cases are likely to give the other findings, and without creatinine retention, often recover under appropriate treatment.

Case 7. White female, age 54 years. Complained of headache and slight loss of vision. Blood pressure, 205/100; pulse, 80. *Urine*—Normal color; cloudy; slightly acid; specific gravity, 1.005; albumin 4 per cent (by volume); sediment slight, with some pus cells and many motile bacilli; no casts. Three days later, catheter specimen showed urine: Pale; slightly cloudy; slightly acid; specific gravity, 1.009; albumin, 2 per cent; slight sediment with a few fresh red blood cells; no casts. *Blood*—Not remarkable; no malaria; Wassermann test, negative. *Blood Chemistry*—Urea nitrogen, 56 mg.; creatinine, 6.9 mg. This patient is still under observation, having been first seen on June 29th of this year, and is apparently improving. The prognosis, based on the creatinine retention, is bad.

SUMMARY

1. Blood chemical tests give a far more accurate indication of kidney insufficiency than do urinary examinations.

2. Of the waste products retained in kidney disease, uric acid, urea nitrogen and creatinine are the substances of most general diagnostic and prognostic significance.

3. Of these substances, the retention of creatinine in amounts above five milligrams per 100 cc. of blood, is the surest indicator we have of a fatal outcome.

4. The records of six cases of creatinine retention with fatal termination and one case with creatinine retention and still under observation are presented.

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MIRROR TRANSPOSITION OF THE VISCERA ASSOCIATED WITH ACUTE APPENDICTIIS.

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Situs inversus viscerum totalis, complete heterotaxy or complete transposition of the viscera is no longer of interest as the rare anatomical or pathological curiosity. It is now of utmost importance to the clinician for the correct interpretation of physical signs, and for the guidance of the abdominal or thoracic surgeon.

The first records of the condition were written by Aristotle, who described two cases of situs inversus in the dog. The next records we find in the sixteenth century where Riselanus, Serius and Marie de Medici, Queen of France, described the condition in human beings. Only in the last century was the first case reported in the living. But with the increased interest in the condition that has arisen in the last several years there has been an ever-increasing percentage of these cases reported in the literature. In 1912 Karashima found that 200 had been reported and at the end of 1926 Herrmann found that 315 cases had apeared in the literature, to which number he has added four more cases.

Frequency: From the extremely wide variations of the different observations the frequency of the condition can hardly be approximated. One observer, according to LeWald, estimated the frequency of complete transposition as being one in 3,000 cases. Ten cases were indexed at the Mayo Clinic since 1910 in a series approximating 347,000 cases. LeWald reports one case observed in 35,000 routine army examinations, 5 cases in 5,000 autopsies, and 28 cases of situs inversus totalis recognized in 40,000 roentgenographic examinations. From the dissecting rooms of the College of Physicians and Surgeons of Columbia University Cleveland reports the first and only instance of situs inversus observed. In our own experience, since 1915 in appromixately 5,000 cases which came to laparotomy only one case has been observed.

Causation: Much experimental work has been done and many theories advanced, but as yet no definite conclusions can be drawn. The various theories are taken thoroughly into consideration by LeWald[1] and Herrmann[2]. Suffice us to say here that there is a growth disturbance at some critical time in the developmental period which interferes with normal rotation. As Hirschfelder ascribes it, it is very likely to the changed position of the primary cardiac tube in early embryonal life with the resulting reversed direction of the blood current from alteration of the usual relationship of embryo to primitive chorion, so that the right side is placed nearest its blood supply instead of the left side.

Diagnosis: Killinger classifies the possibly existing conditions as follows:

(1) In which all the organs are transposed.

(2) The heart alone is transposed, dextrocardia.

(3) In which all the organs are transposed except the heart; and

(4) In which there is complete or incomplete transposition of the viscera with or without cardiac involvement, associated with various congenital lesions of the heart and great vessels.

In recent years careful physical examinations, radiography and electrocardiography have revealed in life what was formerly found only at necropsy. The attention is usually first attracted to the condition by the presence of dextrocardia. Congenital transposition of the heart alone is

1. J. A. M. A., 84:261, 1925.
2. Warthin Memorial Volume, 1927.

rare, and although lesions of the respiratory tract may mechanically influence the position of the heart, total transposition of the viscera should be considered. One of the most frequent causes for overlooking the condition is the fixing of the examiner's attention too directly on some major abdominal symptom. When situs inversus is suspected the abdominal examination should be directed toward outlining the position of the liver and spleen, and a roentgenographic examination with the barium meal made of the stomach and intestines. The left sided liver may be taken for splenic enlargement and in a woman an acutely inflamed, transposed appendix may simulate tubo-ovarian disease, twisted pedicle cyst of the ovary, or even left tubal gestation.

Discussion: Transposition does not, as was previously supposed, include only the abdominal viscera, but every structure in the body in a mirror-like reversal. The condition is found most frequently in males, but when present in females has no effect on parturition, some of the women in whom it has been observed being unusually fruitful. The patient usually knows nothing of the peculiar structure of his body until examined by his physician for some ail common to his fellow-mortals, when he is found to be an individual of ordinary intelligence, right-handed, imbued with talents common to his brothers, and suffering no handicap from the transposition. They usually enjoy life over their normal span of years and many live to an old age. Out of 79 cases collected by Gruber, 19 were females, and of that number 5 lived to an age between 70 and 84.

We feel that our case is of interest because the patient entered the hospital with symptoms leading to a clear- cut diagnosis of right-sided appendicitis, but at laparotomy was found to have an acute appendicitis of the left side with but a partial rotation of the colon. The importance of routine physical examinations before abdominal and thoracic operations cannot be too strongly stressed, and should transposition be suspected and time permit, roentgenographic studies of the gastro-intestinal tract should be made in order that the surgeon might enter the abdomen through the most favorable incision for that particular case.

Although the operator may be very easily misled by right-sided symptoms and physical signs of an acute lesion of a left-sided appendix, it must also be borne in mind the possibility of non-rotation of the colon, which if associated with transposition of the abdominal viscera, will still give us a right-sided appendix. LeWald in his own experience has seen two such cases and mentions the fact that in such an individual with a high stomach there is apt to be, in a radiographic examination, an absence of the usual cap-like formation about the first part of the duodenum leading to the supposition of a duodenal ulcer or periduodenal adhesions. And in a patient with a low stomach of the fish hook variety the cap-like formation may be present. Other disturbances of the normal rotation of the colon are: (a) partial rotation in which the cecum may be high or in the median line, and (b) cecum mobile, or excessive descent and lack of fixation of the cecum, in which case the removal of an appendix for the symptoms of chronic appendicitis will be of no avail without the fixation of the cecum.

A case similar to ours was reported by Summers in 1923.

Summer's Case: Woman aged 21 years, the mother of one child 18 months old, complained of pain over the lower right quadrant of the abdomen, which began in attacks six years previously. Several attacks gave generalized pain over the abdomen with nausea and vomiting. Pressure over McBurney's brought a characteristic right rectus reflex and drawing up of the right thigh.

Diagnosis: Subacute recurrent appendicitis.

Operation: Disclosed transposition of the sigmoid flexure of the colon with appendix and cecum on the left side of the abdomen; the pelvic organs normal; transposition of the liver, and the direction of the stomach was from right to left. The

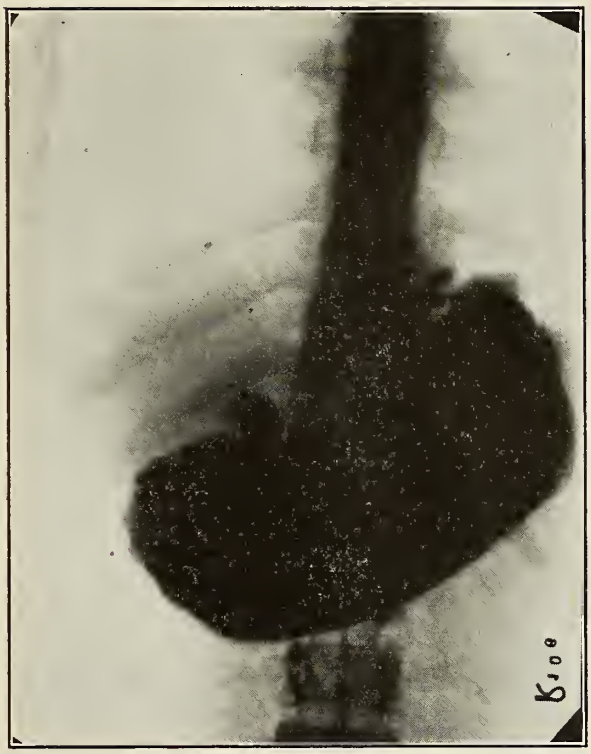

Fig. 1. Case 1, showing the stomach immediately upon being filled with barum. Mirror-like reversal.

spleen was transposed. Appendix removed. Pathological report confirmed the diagnosis. The heart was on the right side.

REPORT OF AUTHORS' CASE

P. C. D., colored male, aged 18 years, referred by Dr. W. E. Allen, of Ward, Ala., entered Rush's Infirmary with a diagnosis of acute appendicitis.

His present illness began 24 hours previously with generalized abdominal pain, nausea and vomiting. The pain was cramp-like and in a few hours radiated to the right lower quadrant and there persisted. Vomiting ceased, but the nausea persisted. The temperature was normal at the onset of the attack, but had risen to 101° F. at the time of his admittance into the hospital. He had suffered previous attacks of lower, right abdominal pain sometimes associated with nausea and vomiting, and at times complained of indigestion following the taking of food. This burning sensation in the epigastrium was relieved by the taking of "Black Draught." He has suffered some from constipation, and aside from a marked susceptibility to colds and frequent headaches there was nothing else of interest in his story.

He is one of 17 children, only 5 of which are living. The mother gave birth to two sets of twins, both of which were born dead; and suffered two miscarriages several years previously, each occurring at about the sixth month.

The physical examination revealed a well-developed and well-nourished individual, lying upon his back with the right leg drawn up. The pulse was fast, regular and of good volume. Respiration was 24 per minute. The lungs were negative and the heart showed only the abnormality of location, occupying its normal position except that the outline of the dullness was to the right instead of the left of the sternum. The area of liver dull ness was normal but located on the left side. The abdomen was markedly rigid. The liver and spleen could not be palpated, but the area of gastric tympany was largely on the left side. Pressure over McBurney's gave rise to marked pain and the characteristic flexion of the right thigh upon the abdomen. The right testicle was lower than the left.

The boy was conscious of the fact that his heart beat was on the right side. He was ambidextrous and has suffered no handicap from the transposition. No other members of his family were found to be transposed.

Laboratory report:

Total leukocyte count 12,500.

Differential: Neutrophils 88 per cent, large lymphocytes 4, small lymphocytes 7, eosinophils 1.

Urinalysis negative.

Wassermann negative.

Operation: The colon was found to be partly non-rotated with a high cecum on the left side. The liver and gall bladder were on the left side, with the appendix retrocecal, acutely inflamed and wrapped in adhesions. The spleen was on the right side, the direction of the stomach was from right to left, and the right kidney was found to be higher than the left. Appendix removed and the wound (right rectus incision) was closed in layers without drain.

Roentgenographic report by Dr. J. E. McDill, made six weeks after the operation, was as follows:

Fluoroscopic Examination: The heart and aorta are normal in size. The aortic arch is to the right of the sternum. The apex of the heart is also on the right, being in the fifth interspace 8 cms, to the right of the midsternal line.

The barium meal enters the stomach on the right under the apex of the heart where the normal gas bubble is seen. The stomach is large, steer-horn shaped and lies obliquely across the abdomen from right to left. It contains some food which gives it irregular mottling.

X-ray plates confirm the above.

Conclusions: Transposition of the heart and stomach. The patient refuses to stay for further study.

Fig. 2. Case 2. The colon has been filled by barium clysma. Both the ascending and descending portions are on the left side.

A second case of situs inversus has come under our observation; this, however, involved only the abdominal viscera. In this case the condition was not suspected until the abdomen was opened.

Case No. 2: I. H., male, aged 22 years, referred by Dr. Dryden Walker, entered the Infirmary with a diagnosis of acute appendicitis.

Seven hours previously he had been taken suddenly ill with severe cramp-like pain in the epigastrium. The pain soon became continuous and persisted for about three hours when he was taken with nausea and vomiting, the pain then radiating to the lower abdomen where it persisted in the right and left iliac regions, being so severe as to cause him to bend forward. The temperature three hours after the onset of the attack was 100° F., rising to 101° F. at the time of admittance to the hospital. Five weeks ago he suffered pain in the right iliac region which persisted for several hours. He did not know if there was fever, but nausea and vomiting were not present.

Physical examination revealed a well-developed, well-nourished individual, lying in bed upon the left side with both thighs flexed upon the abdomen, acutely ill and apparently in great pain. Temperature 100° F., pulse 92, respiration 22. The pulse was regular and of the waterhammer type. Blood pressure 110 systolic and 10 diastolic. A systolic shock and diastolic murmur could be elicited over the femorals. Examination of the head and neck revealed nothing of importance and the lungs were clear. The apex beat was forceful and heaving, being distinctly visible in the 6th interspace 3 centimeters to the left of the nipple line. The area of cardiac dullness was found to be enlarged downward and to the left. At the apex and at the ensiform cartilage loud systolic and faint diastolic, and over the pulmonic and aortic regions faint systolic and loud diastolic murmurs were heard. These murmurs were transmitted to the left axilla and to the back. There was marked rigidity over the abdomen in its entirety, with severe pain on pressure over the lower abdomen, being no more marked on one side than the other. The genitalia and extremities were negative.

Laboratory Reports Total leukocyte count 14-, 300. Differential count: small mononuclears 4, large mononuclears 4, neutrophils 88, eosinophils 3, transitionals 1. Urinalysis negative.

Diagnosis: Acute appendicitis. Aortic regurgitation.

Operation: McBurney incision. Peritoneal cavity found to contain yellowish-red tinged fluid. The peritoneum was inflamed with injected vessels and of a purplish-red color. No cecum nor ascending colon was present on the right side. Liver found to be transposed. Cecum, acutely inflamed appendix and the ascending colon present on left side of the abdomen. Appendix removed. No further exploration was made because of the condition of the patient. Tube put into place to remain for 48 hours. Wound closed in layers.

Post-operative examination revealed the area of liver dullness on the left side, and the greatest area of gastric tympany on the right. The left testicle was the lower. The patient was right-handed and had never been conscious of the transposition. There was no history of twinning in the family.

Roentgenographic Report (eleven days after operation): Chest; the bony framework is normal. The heart and aorta are increased in size, the shadow of the heart being mainly to the left of the midsternal line. The diaphragm is smooth and even, the right side being higher than the left. There is no evidence of pathology in the lungs.

The stomach fills through the esophagus from the right of the midline. The fundus and greater curvature are to the right of the midline. No evi-

dence of pathology is seen in the stomach or duodenal cap. Twenty-four-hour plate shows the colon to be entirely on the left side and the cecum and ascending colon to be smaller than normal. The transverse colon is about two inches long. The descending colon fills normally and a small amount of barium has passed into the sigmoid. A barium clysma given 48 hours later filled the sigmoid, descending and ascending colons, showing no evidence of pathology.

Conclusions: Transposition of the abdominal viscera, with cecum, ascending, transverse and descending colons on the left side.

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HIDEYO NOGUCHI.—The announcement of the death of Noguchi from yellow fever adds but another name to the long list of eminent medical scientists who have contributed, not only their knowledge but their very lives to the stamping out of disease. Yellow fever seems to be the grimest reaper of all the infectious disease. To the name of Lazear, as well as to the cryptonyms of a host of heroes of medicine who have fought the disease and died, unknown and unsung, is added that of Noguchi. It seems the irony of fate that the glory of the virtually accomplished conquest of yellow fever should be marred by the death of the one man who as an individual has done more than any other to make this victory an accomplished fact.

THE TREATMENT OF CERTAIN TYPES OF EPIDERMOPHYTOSIS BY MEANS OF A CARBOL-FUCHSIN PAINT.*

ALDO CASTELLANI, M. D.,

NEW ORLEANS.

After a fairly large number of experiments I have introduced two fuchsin paints in the treatment of epidermophytosis.

Paint No. 1 has the following formula: Saturated alcoholic solution of basic-fuchsin, 10 c.c.; 5 per cent aqueous carbolic acid solution, 100 c.c. Filter and add boric acid 1 gram. After two hours add 5 c. c of acetone. The paint should be kept in a dark coloured bottle with glass stopper.

The paint is the ordinary carbol-fuchsin used in bacteriological laboratories for staining tubercle bacilli to which 1 per cent boric acid and 5 per cent acetone has been added. As a matter of fact simple carbol-fuchsin alone gives good results, but the addition of the boric acid and the acetone seems to enhance its action and make it more penetrating. It is applied to the affected parts with a small wad of cottonwool or a small sponge every day, in some cases several times a day, or every other day or twice a week; if eczematoid symptoms are present and are very acute it may be diluted with the same amount of water, but usually it may be safely applied undiluted even to most acute eczematoid conditions provided they are of true epidermophytic origin.

Paint No. 2 is paint No. 1 to which 10 per cent resorcinol has been added two hours after the addition of acetone. It is applied in the same manner as Tr. No. 1. It is the paint I now generally use as it appears to be more efficacious.

Types of Epidermophytosis Treated.—I have used the paint principally in the following conditions:

1. *Chronic cases of epidermophytosis interdigitalis pedum.*—The result is gener-

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*(From the Department of Tropical Medicine, Tulane University.)

ally satisfactory, especially in cases with secondary pyogenic infection. In the past when the associated pyogenic infection was very heavy and there was present diffuse redness with pustules and abrasions I used, at first, keeping the parts moist with a saturated boric lotion or a boric resorcin lotion, for two or three days before starting the fuchsin paint. Now, however, in practically every case, I use the fuchsin treatment immediately with good results.

2. *Cases of pruritus ani and pruritus vulvae of mycotic origin.*—As I have stated in other publications a fairly large number of cases of pruritus ani and pruritus vulvae are of mycotic origin; very often we are dealing with a latent epidermophytosis with superadded saccharomycetic, cryptococcus, monilial, and bacterial infections. In a number of these cases the paint acts well.

Illustrative Case.—Mrs. B. (London) complained for several weeks of unbearable vaginal and anal pruritus. On examination an eczematoid condition of the labia majora and of the perianal region was present; the patient complained of pruritus also in the labia minora and in the clitoris. The paint (Paint No. 1) was applied freely not only to the external surface of the labia majora but also to the internal surface, and also to the labia minora and clitoris; at first diluted with equal part of water, then neat as it caused no smarting. The application was done at first every other day, then twice a week, then once a week. Within three weeks the condition was completely cured.

From this case, before starting the treatment, an epidermophyton *(E. rubrum)* was grown and in addition a monilia and various bacteria, also a most peculiar organism which I was uncertain at first how to classify as certain forms of it resembled a cryptococcus, others a thick bacillus. I have described it elsewhere under the name *Bacillus multiformis**.

3. *Cases of epidermophytosis inguinalis and corporis not answering satisfactorily to the usual routine method of treatment by anti-mycotic salves.*—While most cases of tinea cruris answer well to the usual routine treatment by salicylic-benzoic acid ointment (Whitfield's ointment) consisting of salicylic acid gr. xxx, benzoic acid gr. xxx and vaseline 1 ounce, or my salicylic-sulphur ointment (Ac. salicyl gr xxx, Sulphur. praec. gr. xxx, Vaseline 1 ounce, in a certain percentage of cases the result is unsatisfactory; in some of these cases I have found the paint useful.

4. *Cases of epidermophytosis simulating moist eczema.*—In these cases the paint seems to be very successful, especially when the lesions are on the hands and feet.

Epidermophytic pompholyx—The deep tense vescicles should be opened with a sterlie needle or pin and then the paint applied frequently and freely all over the affected region, usually the fingers and palms of the hands. In this type of epidermophytosis the paint does not answer so well as in the eczematous type. In certain cases it is useful—provided there are no moist eczematoid lesions—to apply frequently for two days before starting the fuchsin treatment a lotion containing Menthol or Thymol grii-v, Ac. Salicylici gr. xxx-zi, Resorcin gr. xv-xxx, Spir. rect. zii-iv, Ac. Dest. adz. vi.

5. *Post-epidermophytosis pruritus.*—In previous publications I have called attention to the occurrence of the post-epidermophytosis pruritus, viz., cases in which after the usual routine treatment all the objective symptoms of epidermophytosis disappear but the pruritus remains for weeks and months. The pruritus may be of different

*Pro. Soc. Exper. Biol. and Med., (to be published). (See also Gehrman Lectures delivered before the Univ. of Illinois and published in the Archives of Dermatology, 1927-1928.)

origin; (a) although the clinical signs have disappeared the mycotic infection is still present; (b) overtreatment and mild hypersensitivity to the various antimycotic ointments, (c) nervous origin; in some highly strung individuals the pruritus remains long after the infection has disappeared.

In the first group of cases the use of the carbol-fuchsin paint will be found useful.

Conclusion.—A paint consisting of carbol fuchsin 100cc, acetone 50cc and boric acid grm 1 to which 10 per cent resorcinol is added is useful in the treatment of certain cases of epidermophytosis in which the ordinary routine treatment with the usual antimycotic ointments at times fails; especially cases of epidermophytic pruritus interdigitalis of epidermophytic pruritus ani, epidermophytosis with superadded piogenic infections.

A disadvantage of using the paint is the deep red colouring of the skin, but patients who have had epidermophytosis for years and have tried all sorts of treatment do not object to it. So far I have not come across —among over a hundred patients—a single case of hypersensitiveness to the paint, but no doubt if this method of treatment should become generalized such hypersensitive individuals will be found, and, therefore, in cases in which large areas of the skin are involved, it will be advisable at first to apply the paint to only a limited portion.

REVIEWS

PHYSIOLOGY OF THE RETICULO-ENDOTHELIAL SYSTEM.*

HENRY LAURENS, Ph. D.,

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In 1913, Aschoff grouped together a system of cells under the designation of the "reticulo-endothelial metabolic apparatus," sometimes called the "macrophage system," the study of which has extended into almost every field of medical inquiry. The name "reticulo-endothelial system" is a convenient one to employ when describing the activities of a system of cells widely scattered throughout the body but having a more highly specialized function in some situations. Some such term is necessary to describe what is really, in a way, an organ of the body, although distributed almost as widely as the lymphoid tissues.

From reactions of various cells to vital dyes it is apparent that some react more vigorously than others. It is these more vigorously reacting cells which are grouped together as the "reticulo-endothelial system." Aschoff distinguishes two groups in this system, one stationary and one free. The stationary group includes the reticulum cells of the splenic pulp, lymphatic tissues and bone marrow, and the endothelial cells of the capillaries of the liver, bone marrow, adrenal cortex and hypophysis and of the sinuses of the lymph nodes and spleen. The wandering elements include the tissue and blood histiocytes, and the splenocytes. Especially important parts of the system are the so-called endothelial cells which form the incomplete lining of the sinusoids of the liver and spleen. In the liver the cells are known as the Kupffer or stellate cells; they lie in direct contact with the blood on the one hand and the liver cells on the other. In the spleen, the cells in question are also to be found lining the sinusoids and forming, in addition, the branched reticulum cells of the spleen

*This is the first of three papers from a symposium on the Reticulo-Endothelial System, presented at a meeting of the Orleans Parish Medical Society, March 26, 1928, reviewing the physiology, the clinical manifestations of disease, and surgery of this important system. The other papers and the discussion of the whole symposium will appear in subsequent numbers of the Journal.

pulp. This system excludes all those cells which do not react to vital dyes, such as the cells of the blood, except the large mononuclears, the general vascular and lymphatic endothelium; also systems which react but feebly, such as the serosal cells of the coelomic cavities, the fibroblasts, plasma cells and lymphocytes. The exclusion of fibroblasts is debatable in view of evidence brought forward by Maximow that these cells can be transformed into macrophages.

Some colored substances and colloidal metals are pre-eminently taken up by the cells of the reticulo-endothelial system. All the substances specifically taken up in this way are in reality suspensions, and the mechanism of their ingestion is a kind of phagocytosis. This property of the reticulo-endothelial cells has proved of great service in defining and studying the cells belonging to this system.

Even relatively coarsely particulate material is ingested by these cells. Thus if India ink or carmine is injected intravenously, granules of the pigment are to be found shortly afterwards in the Kupffer cells, and in the similar cells of the spleen and marrow, as well as in the monocytes of the blood stream. Drinker and co-workers (1921) found, when a fine suspension of Manganese dioxide in gum saline solution is injected intravenously into a cat, that 1 hour later 40 per cent can be recovered from the liver, 47 per cent from the lungs and 4 per cent from the spleen. After an interval of 12 hours most of the material is found to have been transferred to the liver. In other animals (dog, rabbit, rat, guinea pig) the primary site of deposition is the spleen rather than the liver. A short time after the introduction of large amounts of such foreign particles into the blood, large numbers of histiocytes, laden with the particles, are found to have entered the blood stream, and can be discovered in the blood of the right heart, though not to any extent in that of the left. It is inferred that the laden cells are temporarily filtered off from the blood stream in the lungs, and only slowly carried thence to be deposited in other situations such as the liver. Gye and Purdy (1922, 1924) demonstrated that when several injections of colloidal silicic acid are given to rabbits, at intervals of a day or so, the fixed histiocyte cells of the liver, spleen and marrow become greatly enlarged and are soon detached in large numbers to enter the circulation.

This phagocytic property of the endothelial cells is not restricted to the ingestion of inorganic particles. Bacteria are taken from the circulating blood, and also effete red cells, or their fragments, which are on their way to destruction. Many of the colloidal substances find their way, in a colloidal state, into the bile, without apparently having ever been brought into contact with the liver lobule cells themselves. This is also true of bacteria.

Maximow derives all the elements of the blood and connective tissues from a common mesenchymatous ancestor. Sabin regards the various cells of the blood and connective tissue as having an independent origin. Sabin and her co-workers further derive blood cells from two types of fixed cell. The fixed endothelial cell of the specific endothelium is the source of all red blood cells as well as the clasmatocyte, the macrophage of the tissues. The white cells, including the monocytes, are derived from a second fixed cell of the mesenchyme, the reticular cell, and are formed extravascularly. As a result of their work with vital staining, they believe that there are four types of leucocytes in normal blood: polymorphonuclears, lymphocytes, monocytes, and clasmatocytes.

Recent evidence has been given by Clark and Clark (1927) showing that the origin of free macrophages from specialized endothelium, even in the specialized regions in which phagocytosis is so conspicuous, can not be considered as proved. In numerous observations of living capillaries and wan-

dering cells in the transparent tails of amphibian larvae, where the individual cells with their nuclei can be seen with the greatest clearness and watched for hours and days in the living animal and in their normal environment, Clark and Clark have seen no evidence for the formation of wandering cells or of leucocytes from the vessel endothelium. They, therefore, disagree with the view of Mallory and others that mononuclear phagocytes of the tissues and blood stream are constantly being formed from the endothelium.

Some recent observers, on the basis of the difference between the reaction to dyes of the endothelium of the splenic sinuses and that of the reticular cells of the pulp, conclude that there is no such thing as "reticulo-endothelium," at least in the spleen, but these newer studies do not invalidate the conception of the functional unity of the reticulo-endothelial system. Nearly everyone is agreed on the propriety of grouping together the endothelial cells of the venous sinuses of the spleen, the reticulo-endothelial cells of the bone marrow and lymph nodes, the Kupffer cells of the liver and the entire group of tissue mononuclear phagocytes (histiocytes). Even though the exact relationship between the reticulum and endothelial cells of the spleen and some of the other organs is not settled, there can be no doubt that these cells exercise similar functions. The term "hemolyto-poietic," introduced by Krumbhaar, is a useful one to indicate the organs subserving hematopoietic and hemolytic functions, *i. e.*, bone marrow, spleen, lymph nodes, and liver. These are the organs which are richest in sessile reticulo-endothelial cells.

The rôle of the reticulo-endothelial system in specific and in ordinary infections and in local inflammation and repair, I shall leave to others to discuss and content myself with calling attention to its relation to blood destruction. That the reticulo-endothelial system participates actively in blood destruction is now well established. The simplest manner in which this occurs is in the phagocytosis of dying erythrocytes. It is now generally accepted that phagocytosis alone will not explain normal blood destruction and this process proceeds for the most part by fragmentation of the erythrocytes with subsequent removal of the hemoglobin containing particles by the spleen and bone marrow. There is a continual destruction of red cells in the normal body. The clearest evidence is that of the close chemical relationship between the pigments of the bile and hemoglobin. It is well known that in the body hemoglobin can be converted into hematoidin, a pigment which is identical with the bilirubin of bile; this conversion is effected in old blood clots and contusions, which shows that the change can be carried out in the tissues generally; and the succession of skin tints associated with recovery from what is familiar under the name of a "black eye" is further evidence of the occurrence in a definite sequence of chemical changes of this nature.

In normal mammals the spleen appears to be the chief site of erythrocyte destruction. When the spleen is removed, the reticulo-endothelial cells of the rest of the hemolyto-poietic organs (liver, lymph nodes, bone marrow) rapidly compensate for the loss of this organ. Krumbhaar and Musser (1923) demonstrated that splenectomy in monkeys is followed by changes in the lymph nodes, bone marrow and Kupffer cells of the liver, indicating that these structures take over the spleen's share of disposing of effete erythrocytes and their disintegration products.

The present view regarding the origin of bile pigment, supplanting the older teaching of formation in the liver cells, is that bilirubin is manufactured throughout what we call the reticulo-endothelial system. These cells, wherever situated, break down red cells, remove the iron from the hemoglobin and form bilirubin, which they pass into the general circulation. The liver has no part in bile pigment formation except

by virtue of the Kupffer cells it contains. Bile pigment reaches the liver in the blood, and the hepatic cells merely secrete it from the blood into the bile. An experiment by Krumbhaar and his colleagues show the collaboration of spleen and liver in the work of blood destruction in the mammal. They rendered dogs anemic by the use of hemolytic agents, such as immune sera or toluylene diamine, and jaundice resulted. But if the splenic blood was diverted from the liver, or if the spleen was removed, the anemia and jaundice were both diminished.

That the liver in mammals is by no means the sole seat of bile pigment formation is shown also by the results of experiments by Whipple, Mann and their colleagues. Mann devised a method by which the animal remains alive for a couple of days or so following complete removal of the liver. Ten hours or less after this is done definite icterus has developed, and the urine, blood plasma and adipose tissue are stained with bilirubin. The same happens if both the liver and spleen are removed and also if liver and intestinal tract are excised or when the circulation is confined to the head, neck and thorax (Whipple). The joundice is increased if hemolysed blood is injected. These observations provide a confirmation of earlier, but less decisive, investigations of similar nature and may be taken as unequivocal evidence that bile pigment can be formed in bone marrow and other tissues. By spectrophotometric methods, Mann, Sheard and others have found in liverless animals, that there is much more bile pigment in the blood coming from the tibia and in that coming from the spleen than in the respective arterial blood. They consider that about one-half of all the bile pigment of an intact animal is produced in the liver and one-half elsewhere in the body.

That the spleen is largely involved in the process of red cell destruction in man is further evidenced by the fact that it becomes enlarged in diseases associated with rapid blood destruction. When the spleen is removed it has been found that the erythrocytes become more resistant which would seem to indicate that their ability to withstand destruction by the phagocytic cells is lessened by this organ. There can be no doubt that splenectomized animals are less liable than normal animals to develop icterus as a result of the action of blood poisons such as AsH_3 and acetyl phenylhydrazin, but this does not necessarily indicate a greater resistance of their erythrocytes, since it may rather be dependent upon the fact that the precursors of bilirubin, coming now from the bone marrow, are carried to the liver in less concentrated form, so that they are more efficiently excreted through the Kupffer cells.

The spleen forms the greater part of the reticulo-endothelial system, and so plays an important part in blood destruction. The cells of the pulp ingest and break down red blood corpuscles, remove the iron from the hemoglobin molecule and elaborate an iron free substance closely allied to bilirubin. This pigment is then discharged into the blood, possibly by the cells containing it entering the blood vessels to disintegrate there and liberate the contained pigment. After extirpation of the spleen, these functions are carried out vicariously by other representatives of the reticulo-endothelial system, such as the Kupffer cells of the liver or the reticulum cells of the lymph glands and bone marrow. When such a process occurs under normal conditions, it is quite probable that the liver acts merely as an excretory organ for the pigments in the same way as the kidney does for urea. Possessed of endothelial cells the liver itself also produces some of the pigments but no more than other organs with a similar number of those cells.

It appears that the cells of the reticulo-endothelial system behave in two distinct ways in the destruction of red cells: in the first place they ingest the cells, or fragments of them, and have often been called

hematophages on that account; secondly, they take up and convert into bilirubin any free hemoglobin with which they may come in contact. Hemolysis followed by liberation of hemoglobin into the plasma is not a normal method of blood destruction. Free hemoglobin in the blood of the splenic vein has not been detected but there is distinctly more bilirubin there than in the arterial blood. Such attack as is made on the red cells in the spleen seems, therefore, to be carried to completion, the liberated bilirubin probably being collected from the splenic venous blood as it passes the liver.

If it seems certain that hemolysis is not a normal method of blood destruction, it appears equally certain that it is often a cause of loss of red cells under pathological conditions; this is especially well seen in paroxysmal hemoglobinuria, pernicious anemia, and some varieties of hemolytic jaundice.

The theory of jaundice developed as a result of recent investigations has at its base the view that the polygonal glandular cells of the liver are not essentially concerned with the manufacture of bile pigment, but have chiefly to do with its transference from the vascular capillaries into the bile capillaries. It seems probable, if this view be correct, that in passing through the polygonal cells, bilirubin is modified in some way and this is the explanation offered at present to account for the two varieties of bilirubin made evident by the van den Bergh test. It is the cells of the reticulo-endothelial system, either those in the spleen or the Kupffer cells of the liver, which deal with the breaking down of hemoglobin and the elaboration of bile pigment. This conception is based almost entirely on animal experiments in which, during blood destruction, bile pigment, hemosiderin, and fragmented red corpuscles have been seen together in the endothelial cells of the liver. No one has ever seen hemoglobin being changed into bile pigment within the glandular cells of the liver, nor indeed has any one ever seen bile pigment in the polygonal cells at all in healthy human or animal livers. The chief difficulty lies at present in the impossibility of correlating what happens under definitely pathological circumstances with what might happen in health.

Further discussion of the reticulo-endothelial system, *e. g.*, in its relation to antibody formation and to clinical conditions, is out of my province, and I shall close with a general resumé. The reticulo-endothelial system, the cells of which are grouped together because of common phagocytic properties and reaction to vital dyes, consists of the reticular and endothelial cells of the spleen, liver, bone marrow, lymph nodes (and lymphoid tissue generally), and the histiocytes of the general connective tissue. These cells in the past have paraded under many aliases and there is still no unanimity of opinion concerning their nomenclature, origin and interrelationships. Recent investigations indicate that two types of histiocytes can be differentiated, the monocyte and the clasmatocyte, the former derived from a primitive reticular cell and the latter from endothelium. The transformations which the large mononuclear cells undergo in tissue culture give rise to the impression that transitions between these cells are best regarded as two distinct functional types (Sabin). The demonstration that the monocytes are derived from the same primitive reticular cell as the polymorphonuclear leucocytes and lymphocytes and that the erythrocytes arise from the same endothelial cell in the bone marrow as the clasmatocytes would establish, if confirmed, a close relationship between the reticulo-endothelial system and the hematopoietic system.

Reticulo-endothelial cells of the hemolytopoietic organs (spleen, liver, bone marrow, lymph nodes) may gain entry to the blood, in which they may be found constantly as monocytes as well as clasmatocytes. The potentialities of the large mononuclear cells of the blood are remarkable for their mul-

tiplicity and diversity, as illustrated by their power of transformation into macrophages capable of phagocyting blood cells, bacteria, pigment and other substances, their capacity to change hemoglobin into bilirubin, their ability to form fibroblasts, epithelioid cells and giant cells, and their faculty of metamorphosis into sarcoma-like tumor cells.

The reticulo-endothelial system plays a predominant rôle in the specific infections, tuberculosis, typhoid fever, etc. In local inflammatory processes, these cells act as phagocytes of bacteria and scavengers to remove debris and play an important rôle in the formation of granulation tissue. Evidence indicates that anti-bodies are formed in these cells.

An important function of the reticulo-endothelial cells is the destruction of erythrocytes. There is constant fragmentation of red blood cells in the circulation normally, and the fate of the fragments is to be taken up by endothelial cells both in the blood and in the hemolyto-poietic organs, especially the spleen. Under certain pathological conditions, *e. g.*, hemolytic anemias, infections, etc., this rôle is greatly increased and the reticulo-endothelial cells are found laden with the products of hemoglobin disintegration. When the spleen is removed, the reticulo-endothelial cells of the other hemololyto-poietic organs quickly take over the spleen's share of blood destruction. Bilirubin is formed in significant amount in dehepatized dogs, proving that the liver epithelial cells are not essential for bile pigment production and, on the other hand, it has been demonstrated that organs rich in reticulo-endothelial cells, the spleen, the bone marrow as well as the liver, produce bilirubin from hemoglobin.

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ACUTE INTESTINAL OBSTRUCTION.—Despite the tremendous advances in abdominal surgery, intestinal obstructions constitute the greatest surgical tragedies. Haggard says that the trouble is due to harmful and murderous purgation and to failure to recognize obstruction early. For example, operations in the first stage, say the first twenty-four hours, are extremely satisfactory. Unfortunately, two, three and often four days are allowed to elapse before operation. Even when there is severe vomiting and toxemia, the patient can still be saved. In the third stage, the general condition is so forbidding with rapid pulse, incessant vomiting, enormous abdominal distention, motionless abdomen, and leaky skin from toxic aborption that operation is futile. No improvements in operative procedures or in preoperative or postoperative treatment will ever make good the harm done by a few hours' delay in the early management. The most dangerous treatment in any acute abdominal condition, and particularly in intestinal obstruction, is purgation. It not only accomplishes nothing but adds greatly to the edema and teases the beginning necrotic bowel almost to bursting. It compounds the felony of delay. Enemas are prone to be deceptive because any action may delude one into the false hope of a so-called through-and- through action and prevent the recognition of the real condition. After the first enema, however, the use of not more than two turpentine enemas without results is an indication for operation. The most dependable symptoms are vomiting, colicky or cramplike pains, visible, palpable or audible peristalsis, inability to expel gas and feces, and absence of fever. —J. A. M. A., 90:1457, 1928.

THE B. C. G. VACCINE

The discussion of the paper of Calmette on prevention vaccination of the new born against tuberculosis, translated by Dr. J. Birney Guthrie and published in the April issue of the Journal, was temporarily delayed on account of lack of space. We are now printing below the various opinions expressed by the discussors regarding the value of B. C. G. vaccine and the advisability of attempting to employ it among the tuberculous children of New Orleans.

DISCUSSION

Dr. W. H. Robin (New Orleans): I want to inform you gentlemen that very recently I as Health Officer of New Orleans, addressed a telegram to Dr. William A. Park of New York City at the Laboratory requesting some vaccine so that I could have it to offer you tonight. I am very sorry that we have been unable to obtain it, but my application has been referred to Washington and we hope to receive some at an early date. The City Board of Health has been following this matter very closely.

About a month ago I had a visit from Dr. Matas who was seeking some data relative to our statistics on tuberculosis, in order to assist the Anti-Tuberculosis League. I made mention that the condition was such that there was no necessity to experiment with this preparation as scientists have demonstrated sufficiently for us no longer to hesitate in taking steps to procure this vaccine. The question is not so much in furnishing the vaccine as the absolute necessity of obtaining the requisite data subsequent to its use for the purpose of following closely valuable information in the course of years.

Dr. Petit only very recently was delegated by the Pasteur Institute to demonstrate in Montreal. I do not know that he has visited the United States—I have seen nothing in print to that effect. We know that the French Government is very much taken up by its success and it is being used in their foreign Clinics.

Dr. Matas has fully demonstrated the incidence of tuberculosis in our center. It is imperative that we take action without delay. I feel that it will meet a great deal of co-operation from the physicians of New Orleans. This treatment is so easy, the administration of that vaccine as recommended by Calmette, to be given by mouth within a certain time after birth, in three doses, at 48 hour intervals. Your Chairman, in the article which he has so well translated, shows the results that are obtained.

What are the highest death rates from tuberculosis? I think we stand just second to Denver in our mortality. This is not a Mecca. We have a population that unquestionably contributes much to this heavy mortality and morbidity and we ought to be most vitally interested in anything that offers a solution to this problem.

Dr. W. H. Seemann (New Orleans): We are all very much interested in anything that gives promise of hope in settling the tuberculosis problem. This matter of the B. C. G. vaccine is no new thing; it is frequently mentioned in the literature and English papers have several times referred to it. Calmette, in a paper of eight or ten pages read before the National Tuberculosis Association, goes very thoroughly into the subject and describes the method as Dr. Matas has just given it to us. Cultures are made of the tuberculosis bacilli, using a specially prepared artificial media, the culture is transferred to new media and this transplanting is continued: after a time of transplanting the bacilli seem to lose their virulence, but retain their immunization power. It is used so much in France and Montreal, and that it had not been used in the United States was a matter of surprise. I took the matter up with the National Tuberculosis Association, as president of the Tuberculosis and Public Health Association of Louisiana, which represents the National Association in this State. I was informed by one of their officials, a very reliable and conscientious man, that the statistics which formed the basis of the estimate of the value of B. C. G. vaccine were examined by the statisticians of the Association and found very misleading, if not unreliable. They are of the opinion that this vaccine may be the beginning of something that will give real and lasting benefit, but up to now the benefit has not been sufficiently demonstrated to make people on this side use it. Now, I am not opposing it, but this material is not a new thing, and in this country many men have very thoroughly considered the matter. I know of no city in the United States that is at present contemplating the use of this vaccine.

I went several years ago on behalf of the Louisiana State Board of Health to investigate a vaccine which created a greater furore than this. Congressmen, and what not, sought to influence the State of Louisiana to conduct an experiment with Friedman's vaccine (the turtle tuberculosis bacilli). Investigation proved that these bacilli had no immunization or curative properties, so we were saved considerable time and self-respect by not rushing into the matter.

Calmette is a man we all honor and revere. He needs no recommendation and I am satisfied that he is sincere in anything he utters by word

of mouth or through the literature. But I do believe we are going to have difficulty in getting people to let us use this vaccine on their children unless we can guarantee, first, that it is harmless, and, secondly, that it is going to give results. Of course we are not going to be the last, nor do we want to be the first, to advocate its use.

I was surprised to hear in Dr. Guthrie's paper that Calmette advised giving a second dose at three years of age, this dose to be given subcutaneously. One of the great points stressed in regard to this vaccine is that it can be given by mouth, at a time in early infancy, before the mucous membrane of the alimentary tract is fully developed, and at which time absorption through it readily takes place.

This certainly does not exist after the third year, and Calmette specifically warns against the use of this vaccine by needle, as he says it forms cold abscesses. If this is true, what is the use of giving it in the third year? This is one point Dr. Guthrie did not bring out in his lucid explanation of the subject.

I am for anything that will help solve this tuberculosis problem. I can say for the Association that I represent that we are willing to push it forward in any way. I am anxious to see this commission appointed—I am not opposing it—but we do not want to be over-enthusiastic. I do not believe a sufficient time has elapsed for us to judge of the merits of B. C. G. vaccine. These children on whom the experiment has been made have been under careful surveillance, well fed, given plenty of fresh air, measures that would greatly lessen the tendency to tuberculosis without the vaccine. Years ago Bang, a Scandinavian connected with the Department of Agriculture, showed that if the most badly infested cow bore a calf and that calf was removed from the mother, that calf would develop into a perfectly normal animal. If this is applicable to the animal kingdom, we have also seen its application many times with humans where the child has been taken away from the tuberculous mother and kept in healthy surroundings. Calmette's mortality figures are ever so much lower among those in which the vaccine has been used, but I am impressed with the information that I have received, that after analysis, unfortunately, the statistics are not reliable.

I hope we will go carefully and not too enthusiastically, but be sure of our ground.

Dr. W. J. Durel (New Orleans): No matter how great we are, we often make mistakes. Everything Calmette has given to the medical world did not turn out always to be right.

I remember that at a meeting of the International Congress of Tuberculosis, a seance was adjourned when Prof. Calmette and Prof. Koch had entered a lengthy and heated debate upon the route of infection in tuberculosis. Koch insisted that infection in tuberculosis only occurred through the pulmonary route, and Calmette insisted it occurred exclusively through the intestinal tract. We know they were both wrong, and that the chief source of infection is through the pulmonary route.

Now, I looked into the matter of Calmette's vaccine, and would have used it a long time ago, but for the fact that, looking over the opinions of the big men in the country in this line of work, I decided to wait a while before trying to procure the vaccine. In the last report of the International Union against Tuberculosis, I find the opinions of the biggest men in the country varying, and certainly these men are not so enthusiastic as we are here tonight.

No doubt no one claims that the B. C. G. vaccine has no immunizing properties; but remember, in a recent article by Petroff, one of our own men, it is shown there by statistics—that dead tubercle bacilli have produced immunizing effects in animals—the same as that obtained with attenuated tubercle bacilli vaccines of the order of the B. C. G. vaccine.

Calmette's vaccine has not been proven free of danger. Of course the advantage of an attenuated vaccine is that it can produce a longer immunity than the vaccine acquired from dead bacilli. With an attenuated vaccine the bacilli are not dead, and you have a constant liberation of toxin. That is why Calmette, with his attenuated tubercle bacilli, has been able to acquire a longer immunity. But, as for results, the observations with Calmette's vaccine date back many years, and since the vaccine has been put into use, many things have taken place. You know the changes in the hygienic conditions of the French people since the war, and especially since 1924.

Do you know that France, before that time, was taking absolutely no care of her milk supply? Yet they have made more progress than we have, and have better hygienic methods today than we have, after we had educated them. All this has certainly had a great effect upon the mortality of children suffering with tuberculosis.

A clear description of this is given by Couvelaire of the Baudelocque clinic. Dr. Duval has heard of this: that there is a filtrable virus liberated from the tubercle bacillus, which can pass through the placenta to the fetus, and thus cause very toxic symptoms in the fetus, and if the tissues of such a fetus are closely examined, no

lesions are to be found, but tubercle bacilli fragments can be determined. This, Calmette said, was the cause that contributed to the high mortality in children in the first three months of life.

The mortality at first was 33 per cent when Couvelaire, who is quite an internist, looked into the clinical side of the matter and found that this high mortality was not due to a filtrable virus as contended by Calmette, but was due to the separation of the new-born child from its mother, and the absolute lack of proper mother's milk. After this defect in the nourishment of these newly-born, who were separated from their parent on account of hygienic and precautionary measures, was remedied, the mortality fell in the third series to 7.2 per cent.

Let us go slowly. I have no objection to any commission being appointed at the proper tme, but we are not prepared for such research work at present.

In looking over my statistics, I find that out of about 800 and some odd patients who had children when they were "open cases" of tuberculosis, approximately not three per cent of the children developed active cases of tuberculosis in the past twenty-five years. Of course this includes only those that I was able to communicate with.

Some attribute this to a coincidence, but, nevertheless, it is so. Why? Because we have taught these people how to care for their children and thus avoid the danger of infecting them.

Calmette's B. C. G. vaccine is not a dead tubercle bacillus product, but that it is an attenuated live tubercule baccili preparation. Remember that we do know that there is a danger of such attenuated bacilli becoming virulent later on in life, if conditions in the tissues' resistance change to a favorable soil.

That is the reason why the National Tuberculosis Association has not seen fit and ready to take this matter up yet. Raw of England gives the same results with another vaccine that he thinks is immunizing and free from danger. It is also an attenuated vaccine in the thirteenth year of experimentation.

What will develop after three or five years after use of the Calmette B. C. G. vaccine, remains to be seen. Calmette keeps up his observations with his vaccine, and no doubt the children thus vaccinated are not permitted by such men as Calmette and his assistants to remain in an environment of infection. Therefore, we must consider all these factors before entering this delicate matter too radically. Suppose we wait until our next meeting before taking decisive action. Let us wait, and if we see good reasons for taking this matter up, then I heartily favor such action. But as for the radical measure we propose to undertake, Calmette himself would not be willing to have such a thing as we suggest tonight; because, as I repeat, we are not prepared for such an undertaking.

Dr. Charles W. Duval (New Orleans): It is with a great deal of hesitency that I arise to say anything derogatory of this particular work of Professor Calmette. Dr. Durel has said "great men make mistakes," and Calmette is no exception. From my knowledge of tuberculosis I would say that the giving of a living culture of tubercle bacilli, no matter how much attenuated in virulence, is likely to be frought with danger. I think this society should go slow in undertaking the vaccination of infants with the Calmette vaccine because, though attenuated, it may regain a part or all of its original virulence over a period of years while sojourning in the host. In this connection I would like to call to your attention a few facts regarding tuberculosis in children. It is thought by many authorities that at birth, even from tuberculous mothers, infants are not prone to develop tuberculosis during the first year of life. As a rule tuberculosis is contracted by children between the ages of 3 and 8 years of life, and the lesion is nearly always primary in the lymph nodes. Again it should be remembered that tuberculosis contracted at this period of life does not commonly show itself clinically until puberty or early adolescence. In these cases the tubercle bacilli have remained more or less dormant in lymph nodes for a period of years.

Dr. Seeman has already called our attention to the Friedman's vaccine which was advocated as a possible cure for tuberculosis. Friedman's vaccine was at least harmless even though composed of living tubercle bacilli, because the bacilli were pathogenic for the cold-blooded animal and saprophytic for man.

I in every way concur in the views expressed by Dr. Seemann and Durel, namely that we should go very slowly indeed with the administration of Calmette's vaccine, and that it would be far better for this society to consult and get the opinion on this subject from well known authorities in the United States on tuberculosis.

Dr. Isidore Cohn (New Orleans): A pathologist has just apologized for voicing an opinion on this subject so I, as a surgeon, am apologizing for doing likewise. However, I am not going to talk about the treatment of tuberculosis.

The lack of enthusiasm displayed at the proposal to have a commission inquire into and report on the work of Calmette on vaccination against tuberculosis with the B. C. G. is in keeping with

the reception accorded other great innovations in the history of medicine. The use of this vaccine as a safeguard against tuberculosis is endorsed by the Pasteur Institute, named after the great Louis Pasteur, whose researches in chemistry and pathology led to the discoveries which were looked upon with such skepticism for a while. Speaking of Lister's antiseptic system of surgery, Prof. T. G. Richardson, a surgeon, commented on the fact that twenty years after not a single surgeon in his State was following the Listerian plan.

Now Dr. Matas is not asking us to use this vaccine, but merely requesting that we open our eyes and investigate. Therefore, let us not throw it aside, nor hesitate until we are among the last to take some decisive action in the matter.

Dr. John Signorelli (New Orleans): The subject brought out by Dr. Guthrie certainly calls for more than a mere academic discussion. As Dr. Cohn tells us, it would be wrong for us to refuse to investigate a work so great as this portends to be.

As far as the statistics given by Dr. Guthrie, I do not think anyone can place too much reliance on them; the fact that clinical tuberculosis is not seen in children so young is not mentioned by the authors in their statistics—therefore the statistics give us nothing. From the bacteriological view, however, I am firmly convinced that if we can add anything in the clearing up as to whether this work is based on a solid foundation, we should be setting ourselves a record for which we cannot be reproached. I see no harm that can result from investigation. A commission can be made not only to investigate the work in Paris, but we can carry on experimental work here in New Orleans. We have men fully capable of carrying on this work in our clinics and laboratories and a continuance of these observations and experiments will help us to determine whether there is value in this work. If this is the beginning of something that is going to give us protection from tuberculosis, we will be doing merely what society demands of us as doctors.

Dr. J. Birney Guthrie (closing): It would seem that the necessity exists for looking further into this subject. We do not know of any immunity in children that protects them against the infected individuals with whom they must live in close contact. During early infancy these children are particularly susceptible to inoculation. Now, as regards the virulence of the culture, we are going to get the culture and place it in the hands of those who are capable of working with it to determine virulence. Dr. Calmette has tried to make the bacilli avirulent for thirteen years and it remains an attenuated organism retaining its immunizing property.

Dr. Duval: What was the source of that culture?

Dr. Guthrie: Bovine.

This vaccine has been used in thousands of cases, even in Indo--China, showing how much faith the French have in the idea. It seems unnecessary for me to suggest that we wait ten years. Here is something that has been given out by the Pasteur Institute, and Dr. Duval tells us to wait ten years. We appreciate the words of caution and are going to be cautious about the thing; but we certainly do not want to remain idle and await for further developments without doing our share.

Dr. Duval: I merely made the suggestion because I recognized quite an element of danger in an attenuated culture. If it was a killed culture it would be different.

Dr. Guthrie: We have a culture that has been given us by the Pasteur Institute. There is not a laboratory man who does not go to work on any culture of acid-fast organisms, whether it is virulent or whether it is not virulent by making the test on a guinea pig. When somebody puts into the hands of Dr. Duval a culture and tells him that after inoculation it will give protection against the most virulent culture in an ordinarily lethal dose, he tests it on a guinea pig or a rabbit first. We know Calmette's vaccine is an attenuated culture and that it can produce immunity in susceptible animals. If the guinea pig can be protected, the child can be protected. I appreciate that we should proceed cautiously, but we have statistics showing the results in 52,772 infants inoculated at birth, the mortality rate 3.1 per cent when inoculated, against 8.5 per cent when not vaccinated. As to the statistical analysis Dr. Duval mentions, these have been commended by statisticians, not doctors—pure statisticians, men who make the study of statistics the main object of life. These men have analyzed these statistics and found them properly estimated.

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TWO NEW PRESIDENTS.

The Lousiana State Medical Society at its Annual Meeting in Baton Rouge, and the Mississippi State Medical Association at its meeting in Meridian, elected presidents and other officers for the coming year. Dr. Leon J. Menville, the new President of the Louisiana Society has had a most distinguished career in medicine in this State. For some years he has been President of the Louisiana State Board of Medical Examiners, is a Counselor of the Radiological Society of North American, and the past President of the Louisiana State Radiological Society, as well as a former Vice-President of the Radiological Society of North America. Dr. Menville is well known to the graduates of Tulane University, where for many years he has been an active teacher of the young doctors-to-be. Dr. Menville has had many honors conferred upon him, honors which reflect the capability of the man, as well as his charming and delightful personality.

Dr. William Henry Frizell has been a practitioner of medicine in the State of Mississippi for many years. During this time he has been closely associated with the affairs of the Mississippi State Medical Association. His sincerity, his kindliness and his agreeable manner have all endeared him to members of the Association. His election to the presidency is a well deserved honor, bestowed upon a man who is appreciated by his fellow physicians.

SYNTHALIN

In 1926 Frank, working in Minkowski's Clinic, brought out a synthetic compound of deca-methyl-diguanidine, which he called synthalin. This preparation, he showed, is able to reduce the blood sugar in experimental animals, and if given in sufficiently large doses, will produce the usual symptoms of hypoglycemia. The product has been put upon the markets and has been used extensively on the Continent for the treatment of the relatively mild diabetic. Twenty-seven articles concerning this drug appeared in foreign journals last year. Papers are now beginning to appear in American literature. One of these is a very careful study of the use of the preparation in four patients who represented mild and moderately severe cases of diabetes. As a result of this study and other studies it becomes plain that in synthalin a valuable remedy has been offered to the medical profession for the treatment of the mild and relatively severe diabetic. The introduction of a drug which taken by mouth relieves ketonuria, helps clear up glycosuria and hyperglycemia, alleviates the symptoms of diabetes and improves the patient's general condition, is a tremendous step in the advancement of diabetic therapy.

A word of warning should be uttered, however, against too general employment of this preparation. It is not as exact in its dosage as is insulin, it can not cause a disappearance of glucose in the urine in the more severe cases, nor does it lower the blood sugar as does insulin.(1) It often causes nausea and gastric discomfort when given in large doses, and lastly its action is very slow, days instead of minutes being required to get a noticeable effect, precluding its use in diabetic coma or in any of the emergencies of diabetes.

THE FIFE BROTHERS AGAIN

The medical profession of the City of New Orleans read with great surprise of the acquittal, in the District Court, of the notorious chiropractors, the Fife brothers, recently pardoned and brought to trial again for the repetition of offenses apparently similar to those which they were formerly convicted. They were acquitted largely, according to the newspaper reports, upon such technicalities as for example that the presumably normal individuals for whom they prescribed were not shown to be free from disease by expert examination and testimony.

The acquital of these men possibly may do great harm to the civilian population of Louisiana, opening the flood gates to a multitude of unqualified practitioners. The laity seem to think that the medical practice act is for the protection of the medical guild. On the contrary such as far from the case. This act is solely for the purpose of protecting the ignorant and the thoughtless person who is unfamiliar with medicine. The medical profession invariably has to conduct the fight, strange as it may seem, for the protection of people against unqualified practitioners, and at considerable expense. Their fight is entirely an altruistic one, just as has been their struggles for the introduction of public health projects, community hygiene, life extension, child welfare, and a host of similar measures, each one of which takes from their pockets much more than possibly could be done by the Fife Brothers. It makes no difference to physicians that the Fife Brothers may take a few paltry dollars from their pockets, a concept held by many people as to the reason the profession of medicine endeavors to stop the activities of these men. On the contrary, it is because they dread and loathe the idea of any individual, unless thoroughly trained, being responsible for the very life of the sick.

Apparently the sympathy of the jury and the judge was with the Fife Brothers, who they felt were being persecuted by the Board of Medical Examiners. The only comment that can be made upon this is to ask if they would care to have the Fife Brothers in charge of the health conditions in New Orleans during a yellow fever panic? Would they have them take care of their child ill with diphtheria, or would they purposefully have them attend a difficult and dangerous labor of some one near and dear to them? If they would be willing to have these cult leaders do this, then we have no fault to find, but if they would not, then certainly we are in a position to criticise the verdict, because there are other people who may not have the ability or the mentability to contrast the merits of men who have spent years in learning medicine, with those who have spent but a few months.

The Fife Brothers were not persecuted as individuals. They represent an aggressive, militant organization, which is striving desperately to break down the medical practice laws which have been made so wisely by the Legislature for the protection of Louisianians.

(1) Ringer, A. I., Biloon, S., Harris, M. M. and Landy, A.: Synthalin—Its Use in the Treatment of Diabetes. Arch. Int. Med. 41:453, 1928.

THE VICKSBURG SANITARIUM.

The regular monthly meeting of the Staff was held May 12, 1928. The following series of interesting case reports were presented:

1. *Abscess of the Lung.* Presented by Dr. G. M. Street. A white female, aged 30, was admitted to hospital April 29, 1928. Began four weeks ago to have aching and fever with great prostration; very little cough. Fever continued daily, reaching 101° to 104° F. for a week; family physician could find no physical signs in lung. Blood culture taken on advice of consultant was reported to show staphylococci. Three doses of mercurochrome were given followed by reaction each time. After first dose temperature came to normal for two days; after second dose for one day; worse after third dose. No urinary or pelvic symptoms; no abdominal symptoms. Good appetite and good digestion.

Physical examination: On admission, temperature, 99.4°F; pulse, 80, regular; blood pressure, 130/80; respiration, 17, regular. Rather obese; nose and throat negative; neck negative; lung showed few fine rales over right apex, no dullness. Heart, abdomen, pelvis, and reflexes not remarkable.

Working diagnosis: Lung abscess or unresolved pneumonia.

Blood: Hb., 77 per cent; erythrocytes, 3,832,000; color index, 0.90; leukocytes, 13,8000; differential leukocyte count, small monon., 11, large monon., 7, polymorph. neutrophils, 82 per cent; no malaria; Wassermann test negative.

Urine: Slightest possible trace of albumin and large trace of indican; otherwise not remarkable.

Sputum: Muco-purulent; some streptococci; some fusiform bacilli and spirilla (Vincent's organisms); some small bacilli consistent in appearance with influenza bacilli; no tubercle bacilli found. Repeated examinations of sputum showed similar findings. Some blood was found at times.

Blood culture and Widal tests were negative.

Roentgen-ray of chest showed area of dense opacity in right apex.

Treatment: Pneumothorax (four times) to gradually collapse lung and abscess. Expectoration was free at first with considerable pus, less now. Temperature gradually coming down—now normal to 99° F. Patient is more comfortable; less cough; roentgen-ray shows abscess shadow less dense.

2. *Carcinoma of the Stomach. Resection, Polya Operation.* Presented by Dr. A. Street. Male, aged 50, white; clerk in a store. Chief complaint is digestive disorder, present for more than 10 years. At present has some epigastric pain, beginning shortly after eating, partially relieved by alkalies. Vomits very frequently, usually shortly after eating; no coffee ground type of vomiting but has vomited blood streaked material. Bowels very constipated. For last six months symptoms have been worse, frequently confining him to bed; rapid loss of weight.

Physical examination: Patient is thin and weak; skin only slightly pale; scaly eruption on dorsal surfaces of hands suggestive of pellagra. Blood pressure 130/80. General examination otherwise not remarkable except for abdomen which is flat; no rigidity; no definite tenderness. There is a sausage shaped mass, made out with difficulty, just above umbilicus, movable.

Urine showed nothing remarkable except for slight trace of albumin.

Blood: Hb., 75; erythrocytes, 4,064,000; leukocytes, 9,100; polymorphs, 60 per cent; Wassermann test, negative; sedimentation rate of erythrocytes sharply accelerated; volume index 0.43; icterus index, 1.7.

Gastric analysis: Total acid, 31; free HCl, 16; combined, 7; occult blood (+).

Radiographic and fluoroscopic examination showed an immobile, cylindrical area of stomach just proximal to pylorus; lumen apparently not especially narrowed. Duodenal cap small and irregular.

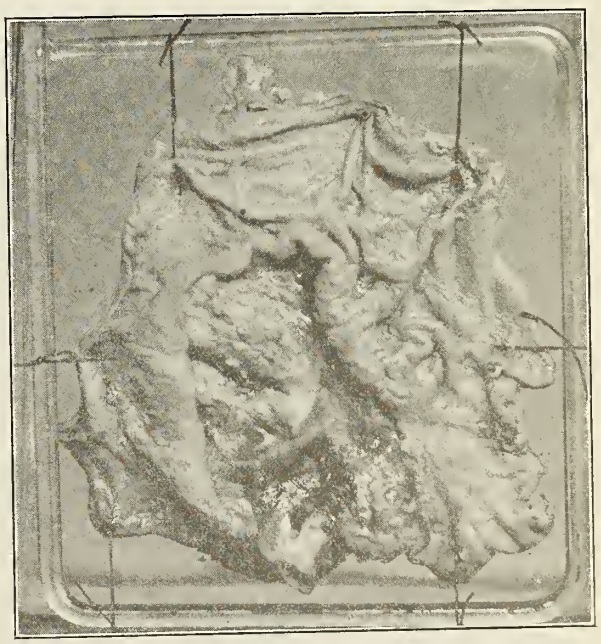

Fig. 1. Specimen of cancer of stomach

Operation, April 27. High right rectus incision. There was large growth in pyloric end of stomach, about 3 x 2 inches; not fixed to surrounding structures; glands about size of beans in both greater and lesser omentum. The tumor bearing area of stomach with ample margin beyond growth was easily resected; stump of duodenum inverted; and entire length of divided end of stomach anastamosed to side of jejunum, retrocolic method. The margin of the opening in the meso-colon was anchored to the stomach just above the anastomosis. The stump of the gastric artery was anchored to the falciform ligament of the liver. Transfusion of 500 c.c. of blood was done a few hours after operation. Stomach was kept empty by means of Jutte tube and 1000 c.c. of 5 per cent glucose in 1 per cent salt solution was slowly given intravenously each day for three days.

Convalescence has been quite uneventful. Patient is taking adequate nourishment, is rapidly gaining in strength, and is free of symptoms. Tissue pathology reported by Dr. Lippincott: Stomach, adeno-carcinoma (10 per cent differentiation); numerous mitotic figures; ulceration; acute inflammatory; granular necrosis. Growth extends to and invades circular muscle. Marked chronic, some acute inflammatory throughout. Lymph nodes, marked chronic inflammatory; passive congestion. Some fat adherent with active congestion and chronic inflammatory.

Diagnosis: Carcinoma of pyloric end of stomach; lymphadenitis, chronic. For illustration of gross appearance, see Fig. 1.

Discussed by Drs. G. M. Street and Parsons.

3. *Acute Pleurisy, Relieved by Diathermy.* Reported by Dr. L. J. Clark. White, male, aged 26, was seen at home at 11 P. M., with pain in anterior chest wall, lateral to heart, most marked on inspiration; some friction; temperature normal; little cough. Morphin administered. Pain continued to grow worse; patient was grunting so as to be heard from the street and was blue from holding the breath. Morphin repeated; brought no relief. Finally condition so bad that chloroform was administered, but pain returned as soon as patient allowed to come from under its influence. Next morning pain still continuing, patient was admitted to hospital and given diathermy treatment. Pain completely relieved in 30 minutes. Similar case 8 months ago with involvement of diaphragmatic pleura was similarly relieved.

Discussed by Dr. G. M. Street. External heat does not relieve these patients. It may be that diathermy produces a slight exudate which separates the surface of the pleura and thus relieves friction.

4. Value of Ultra Violet Radiations Following Sinus Operations. A presentation by Dr. E. H. Jones.

Special reports: The meeting of the Mississippi State Medical Association at Meridian. Dr. L. S. Lippincott, Dr. G. M. Street.

THE SOUTHERN BAPTIST HOSPITAL.

Dr. Waldemar R. Metz presented a case which was a most unusual one, presenting some very interesting features both as to the condition itself and the complications which followed its correction. It should be of interest to the general surgeon, the neurologist and particularly to the genito-urinary specialist.

This boy was admitted to the U. S. Marine Hospital in June, 1923, practically five years ago, complaining of a mass in the left side of the abdomen. According to his statements, this mass was of some five months duration and had gradually become larger. The mass was apparent to inspection and palpation revealed it to be about the size of a small water melon. It was not painful and manipulation showed it to be rather fixed.

The mass was finally thought to be kidney. Cystoscopy showed both ureters to be situated high up and the left side was impervious to catheterization. The function on the right side was normal. The Wassermann reaction was positive.

Having previously operated upon emergency cases whose blood later showed a positive Wassermann, Dr. Metz was not prepared for the sequellae which were to follow operative intervention in this case.

The patient came for operation and, through an Albarran incision, the mass was exposed. Evacuation of its contents showed old pus and urine to the amount of about 1200 c.c. Had the mass been solid it would have been manifestly impossible to have removed it extra-peritoneally. There was nothing left of the renal parenchyma, and this large pyonephrotic kidney had apparently not functioned in many months. The ureter was a solid band, about the size of a pipe stem, and was dissected almost to its bladder insertion, and removed. Sections from the kidney and ureter made by Dr. Lanford showed the condition to be probably tuberculous.

Following operation within twenty-four hours, patient developed paralysis of both legs from the waist down, together with paralysis of the bladder and rectum. Large blebs appeared on the soles and dorsum of both feet, and in the next two days gangrene of the great toe of the left foot and beginning gangrene of the small toes was noted. A large slough was present on the outer portion of the right foot, exposing the metatarsal bone. The dorsalis pedis and tibial ves-

sels were not palpable, and a diagnosis of endarteritis obliterans was made. This had apparently been precipitated by the luetic infection and had occurred too rapidly to have been trophic in origin.

On a carefully planned anti-leutic treatment, the paralysis cleared up and although the great toe on the left foot had to be amputated, together with two of the small toes, the patient made a very satisfactory recovery, and, as can be seen, is to all intents and purposes all right after five years observation.

It might be well to mention that the patella reflexes were absent and the pupils fixed to light.

Discussion: Dr. Charles S. Holbrook said that it certainly must have been a cord lesion, as the man was paralyzed from the waist down, but this would not account for his gangrenous condition, which apparently was a result of the vascular lesion.

He was unable to explain how the patient's complete recovery had taken place. From the history it looked as though it must have been a myelitic disturbance. It was certainly a most unusual case.

Case of Osteomyelitis: Dr. Frank Gallo presented a very interesting case of osteomyelitis.

History: On Wednesday, February 29, this boy was in school and a fire drill took place. He jumped up at once and struck his leg about two inches below knee proper. He kept on going, however, never stopping at all. The next day he went back to school. There was some pain, but the boy did not complain. He went to school again on Friday. There was more pain, but still he did not complain. On Saturday he had some fever, stayed in bed the whole day until Sunday night, March 4, when Dr. Gallo was called in. The boy had temperature. Having osteomyelitis in mind, Dr. Callo thought it best to operate. He operated on the boy at 11:00 o'clock Sunday night, making an incision on anterior aspect of tibia, exposing the tibia. He drilled three holes on median aspect and found nothing of note, then drilled three more holes on lateral side and met with necrosed bone matter in form of first stages of osteomyelitis. He chipped out small portion of bone, left wound open and put in one pack of iodoform gauze, then applied posterior splint, then put boy back to bed. The boy's temperature was normal in forty-eight hours.

A secondary infection set in about a week after. The boy was kept in the hospital about three weeks. The wound was almost well, until the other day, when playing, the boy slipped on sidewalk and fell, hurting the same knee again.

Discussion: Dr. Carroll W. Allen said he thought this case presented by Dr. Gallo was very interesting. It brought to mind the fact that osteomyelitis is always an emergency in its acute stage, as much so as an acute appendicitis or ruptured tube. The more familiar we are with these cases, the more competent we are to deal with them.

Pernicious Anemia: Dr. Shirley C. Lyons presented a very interesting case in a well advanced condition of pernicious anemia, which has responded rapidly to liver therapy.

Mr. H. J. P. White male, age 65. Admitted to the hospital on March 29, 1928. Chief complaint: "Peculiar feeling in chest, shortness of breath, progressive loss of weight and strength." He has been gradually failing in health for the past seven years. For past two years disability has progressed rapidly, until, for the past three months, patient has been confined to bed, due to general weakness: intermittent diarrhea and constipation. For several months he has suffered from sore mouth and tongue. Almost any kind of food disagrees with him. He has no desire for food. There has been marked puffiness of hands and feet for past four or five weeks. There is no history of previous illness.

Patient has been a moderate user of alcohol. Chews tobacco most of the time.

Examination revealed a well-developed, poorly nourished male with evidence of marked anemia. The skin is dry and inelastic, and of a greyish yellow tint. The tongue is red and furrowed. Systolic mumur present (hemic). Examination otherwise was negative.

Blood picture on admission—Red blood cells 1,115,000. Blood platelets 45,000. Hemoglobin percentage 30. Blood chemistry—normal limits. White blood cells 5,000. Red blood cells—4/2/28—520,000. Small mononuclears 46 per cent; neutrophils, 25 per cent; eosinophils, 29 per cent. Many reticulated red blood cells; anisocytosis, poikilocytosis, and polychromatophilia, marked.

On April 4, 500 c.c. of citrated blood was given. This was repeated on April 7. Following the second transfusion, patient showed marked improvement.

On April 3, patient was placed on liver extract, ampoules two, four times daily. He was ordered full tray with liver once daily. This was continued until April 14, 1928, when patient was discharged. At this time patient stated that he felt better than he had for six or seven years, and he was able to be up for four or five hours without tiring. Red blood cell count, April 14, 1928, was 2,875,000. Hemoglobin percentage, this same date, was 60.

Patient was sent home on the above routine.

He returned today, May 8, to the hospital, which is less than one month since discharge, for a check-up examination. He has been attending to his usual business and states that he "feels as well as ever before in his life". Red blood cell count, 3,800,000. Hemoglobin percentage, 60.

Patient was advised to continue the liver extract, one ampoule three times daily, indefinitely.

Discussion: Dr. Carroll W. Allen said he had the pleasure of seeing this patient with Dr. Lyons in consultation. He would not have known him now, as he was so pale and white before, and is now so much better.

Essential Hematuria: Dr. R. M. Willoughby presented a case of very unusual hematuria, presenting practically no pathological findings. The patient repeatedly bled from the right kidney. Nephrectomy was contemplated, but a subsequent cystoscopy proved hemorrhage to be as great from the left kidney, with no bleeding now from the right side. Transfusion was done, giving the patient 500 c.c. of whole blood by the direct method of Head, with complete recovery in four days. Patient has been watched for three months with no recurrence of the hemorrhage.

Discussion: Dr. W. A. Reed said the case was extremely interesting. It duplicated exactly the findings in a similar case of a doctor's wife that he saw several years ago. The picture was identical, except that she had several attacks of hematuria. At one time the right kidney would bleed, at another time the left one would bleed, and at times both would bleed. Practically all the usual forms of treatment were done, with the exception of blood transfusion. He was never able to make a diagnosis, although he finally concluded that he was dealing with a hemorrhagic nephritis. One interesting point was that during the time that bleeding occurred from one kidney, the phthalein excretion from the bleeding kidney would practically stop. Just as soon as the hemorrhage stopped, the function would immediately return. It was astounding to see how rapidly the function would restore itself. He saw this patient last week and she seems to be absolutely free of all symptoms, and her urine is at present normal, with the exception of a few hyaline casts, which, of course, one would expect in an individual sixty-two years of age. His diagnosis still is nephritis. He is led to believe that there is always a cause for essential hematuria, although it is extremely difficult, and at times impossible, to find it.

Dr. H. W. Lindner said the case was very interesting. As Dr. Willoughby brought out the value of blood transfusion, it brings to the urologist the fact that we should not be too hasty in doing nephrectomies in hematurias for which we cannot find any definite cause. A few cases like this would teach us a lesson and cause us to be more conservative in cases of this kind.

Dr. J. A. Lewis said that this case was very interesting to him, as he had seen a number of these unidentified hematurias. It is particularly known in the Red River district of Louisiana and parts of Arkansas. It seems to predominate in young individuals, more particularly in boys than in girls, from fifteen to twenty-five years of age. He has known of as many as eight or ten deaths in a local community in one week. It is supposed to be associated with malaria. The blood, in most instances, is found to be perfectly normal, though quantities of blood have been passed from the genito-urinary tract. It is said to be associated with malaria, and not associated with quinin medication.

Dr. H. W. E. Walther said that we recall that, a few years ago, we were very much criticized for adhering to this "essential hematuria." He was very much gratified, a few months ago, to read in the Journal of the American Medical Association a review of this subject by Dr. Bumpus, in which he said that we cannot get away from the term "essential hematuria." So little hematuria is observed among nephritics. Yet, in an effort to explain the cause of so many hematurias, we have been leaning on the shoulders of nephritis. We will have to get away from that theory—it does not seem to hold.

In a great many cases of hematuria, we are dealing with some kind of blood dyscrasia. We are dealing with a borderline condition of some sort that has a relation to hemophyliac-like conditions. What the true cause is, we do not know. But this case taught him a very definite lesson and, he believes, that in the future he is going to use transfusion early in the case instead of letting the case bleed on for several weeks. There are arguments against stopping these hematurias for for fear of masking some malignant growth. Of course, the urologist, when called in to see a case, is going to make every effort to rule out cancer first.

Dr. Carroll W. Allen said that the case presented some very interesting features. It seems that blood transfusion is coming into a wider range of usefulness, as it has demonstrated its efficiency in a great variety of conditions.

Dr. R. M. Willoughby, in answer to several questions, stated that this patient is a resident of New Orleans.

On the day he found the left kidney to be bleeding a phthalein test was done, and it was found that the right kidney was excreting 15 per cent in fifteen minutes. He neglected to put down the urinalysis in this case. A urinalysis was done daily for two weeks and no casts were found during this time. He first thought of a renal papillitis, nephritis having been ruled out, but the kidney did not respond to silver nitrate instillations.

Dr. Bumpus and one of his co-workers reviewed thirty casese of so-called "essential hematuria", and they found no other pathological findings than that the platelets in these cases ran about 150,000, or one-half normal.

Dr. Willoughby thinks the case that Dr. Lewis referred to is hemoglobinuria. A continued injection of quinin lowers the permeability of red blood cells with the result that they crenate much more rapidly, allowing the hemoglobin to filter through the kidney tubules.

Hydronephrosis: Dr. H. W. E. Walther made a clinical report upon twenty-three cases of hydronephrosis treated conservatively in the urological division of the hospital during the year 1927. He stressed the fact that in a large number of instances hydronephrosis (like polycystic kidney) is a bilateral condition. Surgical intervention in hydronephrosis should be reserved for those cases that fail to respond to non-operative procedures. He stated that in the series reported he had had a number of patients who, prior to admission to hospital, had had one kidney removed for a similar condition.

By means of cystoscopy and the introduction of a Garceau 11 F catheter into the hydronephritic sac and permitting this catheter to remain in place over a period of from twelve to twenty-four hours, a very appreciable degree of relief was experienced by the patient. The hydronephrosis can be easily reduced by this indwelling catheter method of treatment, is painless, and requires a minimum time of hospitalization of patient.

Twenty slides were shown, illustrating different types of hydronephrosis that respond to conservative management.

Discussion: Dr. H. W. Lindner said that he felt that Dr. Walther was to be highly commended for stressing conservatism in treating hydronephrosis. Of course, as we all know, the prime object in the treatment of hydronephrosis is, first, to determine the cause and to remove it. In such cases as stricture of the ureter, or ureteral calculi, we can get wonderful results, and, in many cases (where it has not gone too long) cures by carefully dilating the stricture, and, in other cases, dilating the ureter, allowing passing of stone. He thought that if many of these late cases of hydronephrosis in which the pyelogram picture shows hydronephrosis of various grades were referred for a thorough urological examination when the patient first has symptoms of pain in the lumbar region, or in the upper quadrant of the abdomen, that many of these cases could be checked before any real damage is done to the kidney. He has had occasion in the recent past to see a number of these cases in which patients had come in with lumbar pain, but yet showed no real definite pathology on the pyelograms. In many of these cases there would not be a definite stricture of the ureter, but you could sense a tightness where it would be necessary to pass a number four catheter. In this type of case, showing no pathology, the patient will gradually improve, so far as the symptoms for which he had come to the doctor are concerned.

Dr. W. A. Reed said it was certainly a treat to him to hear this excellent paper and to see these unusually beautiful pyelograms. They certainly demonstrate the fact that the method Dr. Walther has advocated and is pursuing is the ideal method.

He believes that the indwelling catheter serves two purposes. It not only provides the immediate drainage that is necessary for the improvement of the case, but it also dilates the stricture that one usually, not always, finds in the ureter.

He has not been using the Garceau catheter as frequently as Dr. Walther has. There is no question that it works and works well, as Dr. Walther's pictures and paper prove. He stated that he has left a No. 8 F catheter in the ureter as long as 17 days without removing it, so that an indwelling catheter can stay even that length of time without producing any serious damage. Incidentally, this particular patient was pregnant, and at no time did she show any signs of colic, cramps, or uterine disturbance.

Dr. Carroll W. Allen said that he thought Dr. Walther's paper had been very instructive to all. Like many of the things he does and says, we always get much instruction and good ideas from him. He thought the suggestion of inviting the co-workers of other hospitals to participate in discussions in which they are interested is an excellent one.

CHARITY HOSPITAL MEETING.

(Medical Section)

The regular monthly meeting of the medical section of the Charity Hospital Staff was held on Tuesday, May 15, 1928, at 8 p. m. in the Interne Library.

Dr. Fossier discussed and outlined briefly some work on the production of experimental extra systoles in man. The subject of the experiments was an individual with a congenital defect of the chest wall, allowing of ready manipulations through the small amount of skin and superficial tissue present. The case was not shown. Dr. Guthrie discussed the subject matter briefly.

Dr. Storck presented two case reports. The first was that of a case of argyria in an adult following the use of a 20 per cent solution of silver nitrate as a local application to the tonsils and pharynx over a period of time. The second case report was that of a case of molluscum fibrosum, the differential diagnosis being considered. Neither case was shown.

An unusual case of pneumonia in a 6-year-old male child was shown by Dr. R. de la Houssaye. The interesting feature of the case was the presence, during the acute stage, of all the neurological signs of a meningitis. Spinal fluid examinations had been negative except for an increased pressure. A discussion followed as to the diagnosis of meningismus or true meningitis. The fact that there had been an absence of physical signs of pneumonia in the first 48 hours also occasioned discussion. Drs. Jamison, Fenno, Lyons and Guthrie spoke briefly.

A motion was introduced by Dr. Robbins, and carried, to appoint a committee to investigate the possibilities for revising the existing antiquated nomenclature of diseases now in use in the hospital. Drs. Robbins, Jamison and Musser were appointed to this duty.

WILLARD R. WIRTH, M.D.

THE SONIAT MERCY HOSPITAL.

Drs. Scott and Chapman were appointed as residents for the year beginning July, 1928.

A new urology room with moderen up to date equipment, including a Young's table and portable roentgen-ray has been installed in the institution.

The scientific program was taken up by Drs. Dicks and Leckert. Dr. Dicks reported a case of bilateral streptococcal salpingitis, the pre-operative diagnosis being appendicitis and the immediate post-operative diagnosis being obscure as far as etiology was concerned until the bacteriological examination was made. The patient made an uneventful recovery even though no drainage tubes were resorted to. Dr. Dicks also called the attention of the staff to an interesting case of subcutaneous emphysema occurring in an obstetrical case during labor. The rupture had occurred either in the lower trachea or near its bifurcation. Discussion by Drs. Ficklin and Irwin.

Dr. F. L. Leckert presented a case of primary carcinoma of the appendix occurring in a child. He gave a review of the literature with the age incidence and prognosis. The pre-operative diagnosis was sub-acute appendicitis. Discussion by Drs. Ward, Hauser and Ficklin.

MAURICE CAMPAGNA, M.D.,
Secretary.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the past month, besides the regular meeting of the Board of Directors and one regular scientific meeting, the Society has celebrated its Fiftieth Anniversary at a special meeting, and there has been a joint meeting with the Louisiana Dermatological Society.

At the regular Scientific Meeting the following program was presented:

Demonstration showing comparative results with the Wassermann and Precipitation Tests.
By.....Dr. H. W. Butler

The Butler Slide Test.
By.....Dr. B. G. Efron and Dr. C. A. Weiss

Moving picture film, "The Doctor Decides," through the courtesy of Dr. W. H. Seemann, President of the Tuberculosis and Public Health Association of Louisiana.

At the special meeting commemorating the Fiftieth Anniversary of the Society, which was probably the best attended meeting in the past many years, the program was as follows:

a. Musetta-Valse .....La Boheme

b. Fairy Roses.....Colridge Taylor
Miss May Mares.

The Evolution of Medical Teaching in New Orleans, by Dr. Ernest S. Lewis.

a. Tone Picture.....Ferrata
b. Prelude C minor.....Rachmaninof
Miss Marie Elise Dupuy.

The Early History of the Orleans Parish Medical Society, by Dr. Albert E. Fossier.

a. Ave Maria.....Schubert
b. Spanish Dance.....Sarasate
Adrien Freiche.

An address by Dr. G. Farrar Patton.

a. Les Deux Serenades.....Leoncavello
b. Carme .....Danza
c. Flirtation .....Meyer-Helmund

Paul Jacobs.

The Relation of the Physician to the Public, by Honorable T. Semmes Walmsley.

Violin obligato.....Adrien Freiche
Accompanists: Mrs. Mayer Prince, Dr. Homer Dupuy.

Refreshments.

The complete transactions and speeches will be published in a later issue of this Journal.

At the joint meeting with the Louisiana Dermatological Society the following program was presented:

Treatment of Epidermomycosis of the Palms and Souls.
By.....Dr. A. L. Glaze of Birmingham, Ala.

Diagnosis of Leprosy, illustrated by lantern slides in natural colors.
By.....Dr. O. Denney of Carville, La.

This meeting was also exceptionally well attended.

This office wishes to call attention of the membership that a special private line telephone has been installed in a private booth for use by the membership.

We are in receipt of the following telegram from Senator E. S. Broussard, which is self-explanatory:

"Senate this afternoon defeated proposed increase in Narcotic Tax."

The third quarter premium of the group insurance is due June 5th. Please send in your check immediately.

Dr. Herbert C. Cannon has been elected to Interne Membership.

TREASURER'S REPORT.

Actual Book Balance, 3/29/28	$3,304.60
Receipts during April	$ 895.02
	$4,199.62
Expenditures	$3,078.47
Actual Book Balance	$1,121.15

LIBRARIAN'S REPORT.

Ninety-six books have been added to the library during April. Of these 63 were received by binding, 8 by purchase, 11 by gift and 14 from the New Orleans Medical and Surgical Journal. Note of new titles of recent date is made in the list, herewith appended.

The reference work has been heavy during April. In addition to the numerous room calls for quick reference material, 2 lists have been prepared and added to the files on subjects as follows:

Episiotomy.
Emphysema in Labor.

Gifts have been received from the following persons and agencies:

Dr. Haidee Weeks.

Dr. Emile Bloch.

Tulane University School of Medicine.

The increased assistance in the library has enabled us to begin again on the work of cataloging and filing our collection of pamphlets and reprints, which had to be discontinued a year ago for want of time. Two hundred and twenty-five pamphlets and reprints have been cataloged and filed during April, and we hope to bring this work to completion as rapidly as possible.

New Books—April

Ewing—Neoplastic diseases. 1928.

Solis-Cohen—Pharmacotherapeutics. 1928.

MacKee—X-rays and Radium. 1927.

Hazen—Diseases of the Skin. 1927.

Hewlett—Pathological Physiology. 1928.

Damon—Food Infections and Food Intoxications. 1928.

Cope—Clinical Researches in Acute Abdominal Disease. 1927.

Cushing—Tumors of the Nervous Acusticus. 1927.

Fracaster—Syphilis. 1911.

Wenyon—Protozoology. 2 v. 1926.

Gay—Typhoid fever. 1918.

Watson—Hernia. 1924.

American Laryngological, Rhinologocal and Otological Society Transactions, 1927.

Mississippi Year Book. 1928.

Annual Report of Institute of Medical Research of the Federated Maylay States. v. 12-13. 1913-14.

New Orleans—Council of Social Agencies—Hospitals and Clinics of New Orleans. 1928.

American Laryngological Association. Transactions. 1927.

Mitchell—Castile Soap. 1927.

Moynihan—American Addresses. 1917.

Royster—Appendicitis. 1927.

Hare—Practical Therapeutics. 1927.

Harvey Lectures—1926-27, 1928.

Redway—Springtime of Physick. 1928.

Barrington-Ward—Abdominal Surgery of Children. 1928.

Riviere—Pneumothorax and Surgical Treatment of Tuberculosis. 1927.

H. Theodore Simon, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

ST. TAMMANY PARISH MEDICAL SOCIETY

At last monthly meeting of the St. Tammany Parish Medical Society was held in Covington at the courthouse on Friday, May 11, at 8 p. m.

Dr. F. F. Young, president, in the chair; Dr. L. R. Young, secretary, at his post. We had a fair attendance of regular members and were honored in having with us Drs. Lafferty, Slaughter and Berwick of Bogalusa, La., Dr. Edward McCormac of New Orleans and Dr. Herrin of Bush, La., who by the way, has applied for membership in our society.

Dr. Edward McCormac gave us a splendid paper on the prostate and seminal vesicles, supplementing it with lantern slides. The doctor, while concise, had a way of making everything clear for everyone.

Dr. J. F. Bouqui, presented an interesting clinical case in a little girl of about nine years, who had had empyema of the left side, in whom the apex beat of the heart still remained on the right side after recovery.

The president appointed a committee consisting of Drs. Gautreaux, Bouqui and Bulloch to confer with the Police Jury and School Board, relative to devising a means of examining the school children. Here Dr. Slaughter stated that by such a course, they were getting good results for the children in Washington Parish. The president appointed a committee consisting of Drs. Bulloch and Roland Young to confer with the State Representative Heintz, relative to the repeal of the State Narcotic Act and relative to opposing any chiropractic legislation.

Telegrams were announced by the president in answer to those sent by him from U. S. Senators Broussard and Ransdell and U. S. Representatives Kemp and Martin, saying they would do all they could to defeat the bill increasing the narcotic license fees and to defeat the bill requiring physicians to put in their income tax traveling expenses for scientific and research work.

Everyone was delighted to see among us our old "War-horse", Dr. A. G. Maylie, who was just up from a severe case of pneumonia and though yet very weak, he "sneaked" down to the meeting and gave a splendid account of his stewardship as delegate from the society. We all feel proud of his elevation to the position of councillor of the Sixth District in the State Medical Society and we all know him so well that we feel certain he will dispatch his duties with credit and thoroughness.

L. ROLAND YOUNG, M.D.,
Secretary.

NEW ORLEANS OPTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY.

THIRD SCIENTIFIC MEETING HELD AT THE EYE, EAR, NOSE & THROAT HOSPITAL, THURSDAY, APRIL 19, 1928.

The meeting was called to order by Dr. Hume, forty-three being present. Due to the presence of our distinguished guest, Dr. Castellani, and to a large number of interesting cases the chair was immediately turned over to the chairman of the scientific meeting, Dr. C. Cox.

Dr. Castellani gave a most interesting talk on mycotic infections of the throat, entering into a general classification of mycoses. Among the many mycotic infections is tonsillomycoses, which he classified into three groups as follows: (1) Tonsillomoneliasis, (2) Tonsillohemisporosis, (3) Tonsillomycosis-spiculata. A detailed description of each clinically, symptomatologically as well as their individual microscopic morphology was given. The course and prognosis was extensively discussed, also treatment. Borax in glycerine or tincture of iodine as local applications with large doses of potassium iodide or lipoiodine internally was recommended as specific. The following formula was recommended: Sol. carbol fuchin (as used in acid fast stain) 100 c.c., boric acid gm. 1: this is boiled two hours after which 5 c.c. acetone is added and thoroughly mixed and to this is added resorcin 10 gm.

In the discussion Dr. Dimitry asked the question as to whether this affection was found in the eyes and Dr. Castellani in a long dissertation informed the society that although seldom found in this country, it is frequently seen involving the eyes of those living in the tropics, especially in Ceylon.

Dr. Blum gave a history and description of a case in which there were whiteish patches of the lids with a large cast of the upper lid involving the puncta and canaliculi apparently due to a fungus which was very persistent to treatment.

Dr. Castellani closed his paper by an elaborate demonstration of several slides showing the metamorphosis of fungi as well as the different types during rest and during proliferation and clinical pictures of lesions of the different mycoses of the tonsils. In closing Dr. Cox on behalf of the society expressed our most grateful appreciation to Dr. Castellani for giving us this most excellent and instructive talk.

Dr. Metz presented three cases of plastic surgery of the nose by means of cartilage, bone and osseo-cartilagenous grafts for deformities of

the nose. Lantern slides of the patients, before and after operation, were shown, also two of the patients. Case No. 1—That of a man who was struck across the bridge of the nose by an ice pick two years ago in which a cartilagenous graft of the ninth rib was done under local anesthesia. Case No. 2—A fracture of the nasal bones and septum from an injury produced by being struck on the nose with an 8-pound weight. A submucous was done to correct the deviation of the nose externally followed by a bone graft from the ninth rib. Case 3—An injury of the base of the nose followed by infection with osteomyelitis of the nasal bones. After the infection was controlled, an osseo-cartilagenous graft was done with excellent result. In the discussion mention was made of the excellent result obtained in the case of osteomyelitis, and Dr. Weil congratulated him on the splendid results obtained and stated that the cases showed a little lack of correction rather than over correction.

Dr. Dimitry's presentation consisted of two cases. Case 1—That of a trifacial neuralgia in which a sphenoidectomy and radical antrum was done with improvement but later followed by recurrence of the neuralgia. Injections of maxillary and ophthalmic divisions 3 months ago were followed by no improvement of the intensity of the pain although the attacks were less frequent with pain radiating to the angle of jaw. The inferior dental nerve was injected with complete recovery. In the discussion Dr. Bahn stated that although changes of the cornea took place, changes in lacrimation also took place because the nerves of lacrimation were from the second division of the trigeminal. Dr. Dimitry doubted this, stating that they were from the facial nerve, and to prove his contention he sighted the example of the disappearance of epiphora after removing the sac in chronic dachryocystitis in which the irritation of the trigeminal nerve is removed, the indirect reflex to the facial is abolished and consequently no excessive tearing because most of the tears disappear by evaporation. Dr. E. Brown reported a case of trigeminal nerve injection in which the second division was injected with no results and a subsequent injection of the ganglion with loss of the eye. He also mentioned two other cases of tic in which a hyperplastic sphenoiditis existed on the same side. Case 2—One of definite sphenoiditis with mucous membrane and bony changes associated with a definite choked disc with macula changes and blindness and confirmed by roentgen-ray in which a sphenoidectomy was done followed by disappearance of the choked disc and improvement of vision. In discussing the case Dr. Bahn stated the macula changes in such a case are due to hyaloid or degenerative products of the neuritis. In closing the discussion Dr. Dimitry mentioned the possibility of the neuritis not being toxic but due to bony changes about the optic foramen since bony changes existed in the walls of the sphenoid and suggested that a roentgen-ray of the optic foramen would be of interest. Dr. McLauren of Dallas sighted a most interesting case of iritis improved by polypoidectomy of the sphenoid in a patient with atrophic rhinitis who had previously had a radical antrum and intra-nasal ethmoidectomy with no results.

Dr. Hume presented the following case of osteoma of the nose: F. L., female, white, age 3½, was admitted to the clinic April 3, 1928. The present complaint elicited from the mother was "Complete blocking of the left nostril." This trouble was first noticed by the mother when the child was one year of age. A foul secretion accumulating in the left nostril became so troublesome that she was taken to a physician, who removed an adenoid and at the same time a polypus from the left nostril. According to the history there was but little bleeding at this operation. Five weeks later the doctor saw the patient and informed the parents that the polyp was returning. At present the child is very restless at night which the mother believes is due to mouth breathing. Her appetite is fair and she is exceptionally fond of sweets. The bowels are regular, has no cough, weight 34 pounds at present, 37 pounds three months ago. Physical examination reveals hypertrophied tonsils with mouth breathing, and a growth apparently polypoid in character presenting itself in the vestibule of the left nostril. On April 5, tonsils and adenoids were removed by Dr. Stanley in which the adenoids were found high in the pharyngeal vault. After shrinking the nose with adrenalin, two masses were removed from the left nostril for examination. They were oval in shape and approximately ¾ inch in length and ¼ inch in thickness. They were attached by small pedicles in the anterior region of the ethmoid. On exploration, the entire middle fossa of this nostril seemed filled with a hard mass covered with an apparently normal mucosa. A small space was left below that permitted the passage of a small probe into the epipharynx. Upon examining the epipharynx with the finger a hard mass was palpated, which practically closed the chonae. The operation was discontinued at this time until further study could be made of the condition. The adenoid removed with the mass from the left nostril was sent to the laboratory for microscopic study. After the patient had reacted from the operative procedure, antero-posterior, lateral and vertex-mental exposures were made. These plates and microscopic slides are here for study. Report of laboratory by Dr. Seamenn: Blood—Red cell count, 4,125,000; total white, 10,750; neutro-

phils, 45 per cent; small lymphocytes, 52 per cent; large lymphocytes 1 per cent; transitional, 1 per cent; eosinophiles 1 per cent. Microscopic slides: "There is no special pathology; the polyp is cystic, there is chronic inflammation present with normal bone tissue present within the polyp." Roentgen-ray report, by Drs. Smauels and Bowie: "Tumor of soft parts in the region of posterior nares." In the discussion Dr. Stanley quoted the case of Dr. H. B. Lemere of Omaha which was reported in the Transactions of the Omaha Society of Otolaryngology, 1927, which so closely resembles this one. The patient was an adult in whom the bony tumor of the nose involved the antrum, postnares and protruded into the orbit. It was removed by a two-stage operation under general anesthesia and found to be a dense or ivoryoid like type of tumor (not of normal bone), but of an osteoitic type. Dr. Lynch saw the case with Dr. Hume and in the discussion called attention to the tumor being in the naso-pharynx growing out of the sphenoid sinus arising from the spheno-maxillary fossa where such osteomata and fibromata occur and not from the antrum. As to treatment, surgical extirpation would necessitate complete removal of the body of the sphenoid and greater wing as well as thorough cleansing of the sphenomaxillary fossa which is impossible. As to prognosis, most probably death will occur from involvement of the Vagus Nerve.

Dr. Fuchs presented a case for diagnosis: A white man 61 years, an engineer in a sulphur factory, with sore throat of 1 year duration with tumor-like mass right tonsil and base of tongue with many leukoplakia spots of soft palate and pharynx and enlarged cervical glands. Luetic myocarditis. Lungs normal. Wasserman negative. Blood pressure subnormal. Mixed treatment as well as other anti-luetic treatment with no improvement. Diagnosis as possibilities: (1) Tuberculosis, (2) Malignancy, (3) Syphilis, (4) Phemphigus. In the discussion Dr. Lynch made a diagnosis of baso-cellulae carcinoma of slow growth with metasteses or direct extension into the cervical glands in which the lymphatics have become blocked followed by secondary edema and passive congestion with secondary necrosis simulating mucous patches, although with the characteristic hard round ring with central necrosis or softening of the tumor. He suggested microscopic examination of the tumor for confirmation.

Dr. Dunn presented a case of sympathetic ophthalmia following extraction of a pathological (traumatic) cataract confirmed by Dr. Dimitry in which a most extensive variety of therapeutics were used with improvement. The patient received vigorous treatment of soduim salicylate, gr. 120 by mouth, and some intravenously; twelve doses of Neo-salvarsan. Tonsils were removed. Then mercury and iodides as mixed treatment, injections of foreign proteid (two doses of typhoid vaccine). Several teeth removed, antrum washed several times (pus each time), and finally on giving large doses of iodides patient improved. In the discussion the cause of improvement was attributed to the treatment of the focal infection by first removing the foci of infection by surgical treatment of tonsils, teeth, and washing the antrum, and secondly by the antiseptic treatment of the blood by the above mentioned drugs.

WILLIAM A. WAGNER,
(Sect'y-Treas.)

LAFOURCHE VALLEY MEDICAL SOCIETY.

The quarterly meeting of the Lafourche Valley Medical Society was held at Thibodaux on Wednesday, May 9, at the Court House. Several physicians of New Orleans and a few of the Third District Medical Society helped to swell the number in attendance.

The reading of scientific papers seemed to have aroused a bit of interest in the membership as evidenced by the spirited discussions indulged in.

The next meeting will be held on the second Wednesday in August at Donaldsonville, La.

At the annual meeting of the Louisiana Dermatological Society, held at Baton Rouge, April 9, 1928, Dr. Ralph Hopkins of New Orleans was elected President of the Society, Dr. O. E. Denny of Carville Vice-President, and Dr. T. A. Maxwell of New Orleans Secretary-Treasurer.

Dr. H. W. E. Walther, of New Orleans, was an attendant at the fifty-third annual session of the Arkansas Medical Society last month, held in El Dorado. He read a paper on the "Conservative Management of Hydronephrosis."

Dr. Robert H. Blackman announced the removal of his offices to the Medical Arts Building, Shreveport, Louisiana.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

MERIDIAN MEETING.

The sixty-first annual meeting of the Mississippi State Medical Association, held at Meridian, May 8-10, was in many respects one of the best meetings in many years. The attendance—over three hundred—was much larger than is usually the case when the Association meets away from Jackson. The scientific papers presented were of an unusually high standard and out of the thirty-four listed in the program, only three were not presented. Two of these were read by title, as follows: Some of the Problems of Industrial Surgery, by Dr. David Walley, Lumberton, and Influenza, by Dr. S. E. Eason, New Albany. The paper of Dr. Isham Kimbell, formerly of Gulfport, on The Treatment of Neuro Syphilis with Special Reference to the Method of Inoculation with Malarial Blood, was not read because the author, a member of the United States Public Health Service, was ordered to another post recently.

The following is a list of papers and of those who discussed them: .

Section on Surgery.

1. Sinus Disease in Its Relation to General Surgery, by G. M. Street, and discussed by Drs. Gaudet, Crawford and Street (closing).

2. Open Operation in Fracture of the Shaft of the Femur, by Dr. J. H. Rush, and discussed by Drs. Ullman, Cohn, Cully, Ewing, and Rush (closing).

3. Body Chemistry in Its Relation to Surgery, by Dr. T. P. Sparks, and discussed by Drs. Parsons, Bryan, Lippincott, Culley, and Sparks (closing).

4. Acute Osteomyelitis, by Dr. H. A. Gamble, and discussed by Drs. Gessner and Gamble (closing).

5. Direct Blood Transfusion, by Dr. E. H. Galloway, and discussed by Drs. Street, Cohn and Galloway (closing).

6. Duodenal Fistula Following Gastric Resection, by Dr. W. H. Parsons, and discussed by Dr. Ewing.

7. Acute Conditions within the Abdomen, by Dr. J. M. Acker, and discussed by Drs. Crisler, Philphot, Frizell, Hightower, Caldwell and Acker (closing).

8. Ectopic Pregnancy, by Dr. E. C. Parker, and discussed by Drs. Foster, Philpot, and Parker (closing).

9. The New Era in General Surgery, by Dr. W. H. Anderson.

10. The Use of Radium in the Treatment of Uterine Diseases, by Dr. W. W. Crawford.

11. The Use of Radium in Malignancies and Certain Gynecological Conditions, by Dr. T. W. Holmes, and the two papers jointly discussed by Drs. Sparks and Barksdale.

12. Treatment of Lung Abscesses, by Dr. S. H. Hairston, and discussed by Dr. Ewing.

13. Placenta Previa, by Dr. J. F. Lucas, and discussed by Drs. Patterson and Lucas (closing).

14. Conservation in Surgery, by Dr. J. F. Armstrong, and discussed by Drs. Johnston and Crisler.

15. Spinal Anesthesia in Major Surgery, by Dr. J. K. Avent, and discussed by Drs. Johnston, Gamble and Avent (closing).

Section on Hygiene and Public Health.

1. Training Health Workers, by M. C. Balfour, and discussed by Drs. Underwood, D. J. Williams and Balfour (closing).

2. Some Essentials in a Dental Health Program, by Dr. Wm. R. Wright, and discussed by Drs. F. M. Smith, Beacham, Brunson, Tippin, Underwood, D. J. Williams and Wright (closing).

3. Observations of Some Chronic Diseases Confronting Public Health Workers, by Dr. Wallace Sheely.

4. Standard Milk Ordinance with a Plea for Uniformity in Procedure and Active Support of the Medical Profession, by Dr. L. S. Frank, and discussed by Drs. Noblin, Galloway, Brandon, F. M. Smith and Frank (closing).

5. Food Contamination, by Dr. D. G. Rafferty, and discussed by Drs. Galloway, F. M. Smith and Rafferty (closing).

6. The Control of Tuberculosis in Mississippi, by Dr. Henry Boswell, and discussed by Drs. Anderson, Ely and Boswell (closing).

Section on Medicine.

1. The Sugar Fed Child, by Dr. Seale Harris, and discussed by Drs. Dearman and Harris (closing).

2. Staphylococcic Tracheo Bronchitis following Tonsilitis, by Dr. J. S. Ullman, and discussed by Dr. Gaudet.

3. Tuberculosis, by Dr. T. D. Bordeaux, and discussed by Drs. Anderson and Wyman.

4. The Status of Biological Preparations in Therapeutics, by Dr. O. W. Bethea, and discussed by Drs. Musser, Harris and Bethea (closing).

5. The Valves of the Heart in Action (lantern slides), by Dr. G. W. F. Rembert.

6. The Function of a Modern Hospital for Mental Diseases in Our Social Scheme, by Dr. H. E. Austin.

7. Medical Sociology, by Dr. O. N. Arrington, and discussed by Drs. Bryan and Arrington (closing).

8. A Discussion of the Psychoneuroses: A Neglected Field in Medicine, by Dr. W. A. Dearman, and discussed by Dr. Little.

9. The Problems of Uremia, by Dr. J. H. Musser, and discussed by Drs. Dearman, Crawford, Lippincott and Musser (closing).

The special sections on Radiology and Eye, Ear, Nose and Throat, while not run as a part of the regular program, were well attended and maintained a standard quite as high as that of the regular program.

The East Mississippi Medical Society proved itself to be an excellent and attentive host both in the matter of providing facilities for the work of the convention and in the matter of entertaining the delegates to the convention.

The Fraternal Delegate from Louisiana, Dr. S. M. Blackshear, brought an invitation from the Louisiana State Society to the Mississippi State Medical Association to meet jointly and simultaneously with the former in New Orleans next year at which time it will celebrate its fiftieth anniversary. Because of the fact that it would be necessary to make a change in the By-Laws to arrange for this change in date it was decided that it would be better to forego the pleasure that would be afforded by the meeting in New Orleans.

MISSISSIPPI STATE MEDICAL ASSOCIATION.

TRANSACTIONS OF THE 1928 HOUSE OF DELEGATES.

The twenty-fifth annual session of the House of Delegates of the Mississippi State Medical Association met in the Elks Club, Meridian, May 8, 1928, at 8:05 a. m., with President John Darrington of Yazoo City in the chair. Roll call showed twenty-one members present.

Albert Hand of Shubuta was selected a member of the Committee on Budget and Finance to succeed Geo. E. Adkins, whose term had expired.

At this point a recess of five minutes was had to permit the Councillor Districts to select members of the Nominating Committee, the selctions resulting as follows:

First District—J. W. Lucas, Moorhead.
Second District—S. E. Eason, New Albany.
Third District—V. B. Philpot, Houston.
Fourth District—No selection.
Fifth District—L. S. Lippincott.
Sixth District—I. W. Cooper, Meridian.
Seventh District—Henry Boswell, Sanatorium.
Eighth District—J. W. D. Dicks, Natchez.
Ninth District—W. A. Dearman, Gulfport.

The Secretary made the following report, which was adopted:

To the House of Delegates, Mississippi State Medical Association,

Meridian, Miss.

Gentlemen:

It is with a deep sense of personal and associational loss that I report to you the death of our Treasurer, ex-President J. M. Buchanan of Meridian, on August 5th, 1927. Dr. Buchanan served the Association for many years as Treasurer and without salary. A suitable floral design was sent in the name of the Association.

President John Darrington appointed Dr. I. W. Cooper of Meridian as Acting Treasurer pending the meeting of the House of Delegates. Dr. Cooper immediately made bond in the sum of ten thousand dollars, the accounts of Treasurer Buchanan were audited by the Budget and Finance Committee, and the funds of the Association turned over to the new Treasurer.

Acting upon the authorization of the Council and the House of Delegates in 1927 the counties of Issaquena, Sharkey and Warren asked for a charter under the hyphenated name of the Issaquena-Sharkey-Warren County Medical Society. Charters wre authorized for several other groups of counties but this was the only one asking that a charter be issued.

Respectfully submittted,

T. M. Dye, Secretary.

May 10, 1928.

Acting Treasurer I. W. Cooper read his financial report, which was automatically referred to the Committee on Budget and Finance.

The Committee on Arrangements made a detailed report of the plans and arrangements for the entertainment of the Association for the three days.

The Committee on Necrology made its report after the reading of which the members of the House stood in silence with bowed heads for one minute out of respect to our honored dead.

A proposition submitted by the New Orleans Medical and Surgical Journal proposing to furnish the Association with subscriptions at ninety cents a year for two years was accepted.

On motion adjournment was had until 8:30 Wednesday morning.

Pursuant to adjournment the House of Delegates reconvened at 8:30 Wednesday morning, May 9th, President Darrington presiding. Roll call showed thirty-four present.

Mrs. D. J. Williams of the Woman's Auxiliary made a detailed report of the expenditure of the money given the Auxiliary by the Association for flood relief. To this report was attached a check for $120.36, being the amount of the contribution that was unused. The House accepted the report of the Auxiliary but returned the check with the request that it be used in whatever way the Auxiliary saw fit.

E. F. Howard, who was a committee of one appointed a year ago to distribute a thousand dollars of the Association's funds among the medical flood sufferers, made an exhaustive report of his work. For obvious reasons this report detailing names will not be published, but it was clear to the House of Delegates that the funds had been used in a most intelligent and humanitarian way, and Dr. Howard was thanked for this great work of love.

The Committee on Public Policy and Legislation made a report which was adopted; whereupon the House adjourned to meet immediately upon adjournment of the final session of the Scientific Session.

The House met in final session at 10:15 Thursday morning, May 10, President John Darrington presiding. Roll call showed fifty-eight present.

The Committee on Budget and Finance made its report through E. F. Howard, as follows:

We, your Committee on Budget and Finance, have examined the report of the Treasurer, the financial report of the Secretary, and the report of the Committees on Flood Relief, and find same correct and expenditures duly attested by proper vouchers.

We recommend the attached estimate of $2,200.00 as the budget for 1928-29:

President's expense	$100.00
Reportorial	250.00
Council	100.00
Secretary's salary and expense	600.00
N. O. M. & S. Journal	1,000.00
Transactions	100.00
Incidentals	50.00
Total	$2,200.00

We recommend that the following bills be allowed:

Commission on Public Policy and Legislation	$498.36
Councillor Frizell	4.50
Councillor Jones	16.25

We call your attention to the fact that the expenses of the Association are greater than its income. There is at presence a comfortable balance in both the General and the Medico-Legal Funds. This latter will probably be maintained satisfactorily, but that of the General Fund is steadily growing less. In order that this may be checked before we are faced by an empty treasury, we recommend increasing the dues to five dollars: one dollar to be applied to the Defense Fund and four dollars to the General Fund. This is a small tax as compared to most State Associations, but will furnish sufficient funds to enable the Association to operate much more efficiently than it has done in the past.

Respectfully submitted,

E. F. Howard,
W. L. Little,
For the Committee.

On motion of W. A. Dearman, the House expressed a vote of thanks to the East Mississippi Medical Society, host of the Association, and to the City of Meridian, for their splendid hospitality and entertainment.

D. W. Jones and D. J. Williams introduced the following proposed change to the By-Laws:

"Change Section 1, Chapter X of the By-Laws to read in part as follows:

'Section 1. An assessment of four dollars ($4.00) per capita on the membership of the component societies is hereby made the annual dues of this Association, one dollar of which shall be set aside and used exclusively as a Medico-Legal Fund.'"

The Council through its Secretary made the following report which was adopted:

The Council met in special called session at 7:00 p. m., May 7th, in room 400 Lamar Hotel, Meridian. Present: Chairman Williams, Secretary Jones, Councillors Frizell, Lucas, Holmes, and Robertson. Messages were received from Councillors Gill and Donaldson explaining their abscences.

The Council proceeded to act upon applications for aid in law suits against the following members: G. S. Bryan, Amory; P. R. Graves, Jackson; T. E. Hewitt, Summit; L. D. Dickerson, McComb (two cases); W. W. McRae, Corinth; S. H. Hairston, Meridian.

These members all being in good standing in the Association at the time the suits were filed, and the Executive Committee having approved the defense in each case, the Council as a whole endorsed the arrangements, and ordered checks issued to all except McRae and Hairston, whose cases are yet unfinished. The cases of the first

four were prosecuted to a finish with complete vindication of each of the doctors, the plaintiffs being taxed with the costs of court in each case.

Reports of the Councillors from the several districts were received and filed, with their expense accounts. Conditions were satisfactory in general.

In the matter of organization it is again suggested that Claiborne County be urged to get into some live organization, preferably the Issaquena-Sharkey-Warren County Society. Hancock County was given permission to come into the Harrison-Stone Society. The following societies were ordered to get new charters immediately: Central, South Mississippi, East Mississippi, Tri-County, and Northeast Mississippi Thirteen.

The Nominating Committee reported the following nominees:

For President: W. H. Frizell, Brookhaven; W. H. Anderson, Booneville; H. A. Gamble, Greenville.

For Vice-Presidents: J. H. Rush, Meridian; T. W. Reagan, Union; T. E. Ross, Jr., Hattiesburg.

Secretary: T. M. Dye, Clarksdale.

Treasurer: I. W. Cooper, Meridian.

Councillor, Eighth District: J. W. D. Dicks, Natchez.

Councillor, Ninth District: Daniel J. Williams, Gulfport.

Delegate A. M. A.: John Darrington, Yazoo City.

Fraternal Delegate to the Arkansas State Medical Society: C. W. Patterson, Rosedale; Tennessee: A. J. Ware, Greenville; Alabama: J. W. Lipscomb, Columbus; Louisiana: John C. Cully, Oxford.

The balloting for President resulted in the election of W. H. Frizell of Brookhaven, and President Darrington declared him elected On motion the President cast the vote of the House for the remaining nominees.

D. J. Williams placed Gulfport in nomination as the meeting place for 1929, and it was selected by acclamation, whereupon the House adjourned to meet in Gulfport May 14, 1929.

(Signed) T. M. Dye, Secretary.

The May meeting of the Vicksburg Sanitarium was held on the 12th and the following cases were discussed:

1. Abscess of the Lung, Dr. G. M. Street.

2. Carcinoma of the Stomach — Resection, Polya Operation," Dr. A. Street.

3. Acute Pleurisy, Relived by Diathermy, Dr. L. J. Clark.

4. Value of Ultra Violet Radiations Following Sinus Operations," Dr. E. H. Jones.

Dr. J. A. Rayburn, Ecru, Mississippi, has been appointed by Governor Bilbo to succeed Dr. J. C. McNair as Superintendent of the Natchez Hospital, and Dr. A. J. Podesta has been appointed by the Governor to succeed Dr. Sidney Johnston as Superintendent of the State Charity Hospital in Vicksburg.

NEGRO QUACKS.

A bill has been introduced in the Lower House by Representative L. O. Murphy of Perry County, which, we believe, will absolutely eliminate such quackery from the state as is being practiced by the negro quack, Redmond, and others of his type who are now imposing upon the credulity of the uninformed. We feel that it is a reflection upon the citizenship of any community to permit practices of the character carried out by the negro Redmond in Covington County to exist.

He is doing about the same thing that the Indian medicine man did two hundred years ago. The poor Indians could do no better, it was the ignorant medicine man or nothing for them. It is inconceivable that in this day of enlightenment and progress that hundreds of people would daily visit the hut of an ignorant, cornfield, southern "nigger," who dispenses concoctions declared by the State Chemist of Mississippi to be of no medical value whatever and found upon examination in the Hygienic Laboratory of the State Board of Health to be dangerous in that they contain colon bacillus. The situation is intolerable to all right-thinking people. The old humbug, Isaiah, of New Orleans levee fame, in his best days had nothing on this Louisiana negro. It is believed that the condition would have been promptly corrected but for the fact that certain white people working with the negro were profiting financially in the deal.

EXAMINATION FOR LICENSE.

The Mississippi State Board of Health will hold its regular annual examination for license to practice June 21, and 22. This examination will be held in the New Capitol at Jackson, Mississippi. The applicants must make application be-

fore the first day of the examination, and must either send or bring their diplomas or certificates for verification.

Dr. C. D. Barkley and Dr. Wm. F. Hand announce the recent opening of an infirmary at State Line, Mississippi. This infirmary has a twenty-five bed capacity to care for medical and surgical cases.

Dr. J. A. Tabor of Pascagoula, Mississippi, died at the Piedmont Hospital in Atlanta, Georgia, on March 7, 1928. Dr. Tabor was a graduate of Tulane Medical School. He was fifty-eight years old and had practiced for thirty years in Pascagoula.

THE PRESIDENT OF THE STATE ASSOCIATION.

Dr. W. H. Frizell is the son of the late Dr. W. H. Frizell and Mary Hardwick Horton, daughter of Dr. Stephen Horton, of Georgia. The senior Dr. Frizell was a graduate of the New Orleans School of Medicine, now Tulane. He served as Lieutenant and Surgeon in the 12th Mississippi Regiment, C. S. A., and was one of the immortal six hundred who were confined in Charleston, South Carolina, prison in 1865. After the war he practiced for forty-two years at Poplar Creek, Mississippi, where the subject of this sketch was born in July, 1872.

Dr. Frizell received his schooling in the Academy of his native village under the tutelage of the late Dr. J. W. Armstrong. His medical education was had at the University of Nashville. He was graduated from that old institution in March, 1897. In 1901 he received a certificate from the New York Polyclinic in Medicine and Surgery. He practiced at his home village, Poplar Creek, Mississippi, until 1901, when he located in Brookhaven, where he has since lived. He has been County Health Officer of Lincoln County for the greater part of the past twenty years. He served for many years as Secretary of the Tri-County Medical Society, and later as President of that Society.

For several years he has represented the Eighth District in the Council. He is a member of the Southern Medical and American Medical Associations. He has been a member of the medical and surgical staff of the Kings Daughters' Hospital in Brookhaven since its organization.

The Association is fortunate in having another strong man and good organizer for its leader.

The "Journal" offers Dr. Frizell its good wishes and stands ready to aid his administration in any way possible.

A LETTER FROM THE PRESIDENT

To the Medical Profession of Mississippi:

I wish to express to you my heartfelt appreciation for the honor conferred upon me at the Meridian meeting, when you saw fit to make me the standard bearer for our profession during the ensuing year.

Your choosing me over two of our most prominent and popular men in the profession makes me doubly grateful to you for this unsolicited honor.

I have had no time yet to outline the policies of this administration, but may I add that I shall at all times use all my energies to uphold the traditions of the profession and the work and usefulness of the State Board of Health?

It will be my purpose to lend what help I can toward the fostering of our small, as well as larger, hospitals in the State. By this means we may confer the greatest good on the greatest number of our unfortunate citizens who are worthy of institutional treatment.

May I have your undivided assistance in keeping up the good work of my predecessors to the end that I may merit the honor and confidence reposed in me by you?

Fraternally,

(Signed) W. H. FRIZELL.

BOOK REVIEWS

Pathological Physiology of Internal Diseases: By Albion Walter Hewlett, M. D., B. S. New York and London, D. Appleton and Company. 1928. pp. 787.

Nine of the colleagues of the late Dr. Hewlett have revised this splendid book of his from their own collections and from the notes which Dr. Hewlett left for changes that he wished to have made in a new edition. The result has been the bringing up to date of a book which is one of the outstanding contributions by an American to medical literature, and which has for some years now been one of the standbys for students and instructors who have been interested in seeking for knowledge of the why and the wherefore. For ready reference the book is valuable, for more deeper study leads are given by very excellent bibliographies at the end of each chapter.

One of the interesting features of pathological physiology is the amount of knowledge that has been obtained concerning the heart, and this may be shown by consulting the number of pages given to the several systems. Over 129 pages are devoted to the circulation, 67 pages to digestion, almost 50 to metabolism, to the kidney 48 pages, to the other systems varying pages have been assigned by the original author and his subsequent collaborators, but to none of the chapters is there devoted as many pages as those given to the heart and circulation.

The death of Dr. Hewlett was a blow to American medicine, one of our outstanding teachers and investigators he did much to advance our knowledge of disturbed physiology. Fortunately his great work is to be kept alive. The unselfish devotion to his memory by his colleagues is a wonderful tribute to the man, a tribute which the rest of the profession can well join.

J. H. Musser, M. D.

Local Anesthesia: By Geza de Takets, M. D., M. S., with a foreword by Allen B. Kanavel, A. B., M. D. D. Sc. Phil., W. B. Saunders Co. 1928. pp. 221.

This book shows in its preface that the majority of the data was acquired from standard books on local analgesia. These have been abstracted to the extent that a handy and quick reference is the result. The author has omitted the use of proper names prefixed to methods of procedure which in itself diminishes much discussion. The text is splendid to teach undergraduates the fundamentals of local analgesia.

Emile Bloch, M. D.

Pharmacotherapeutics, Materia Medica and Drug Action: By Solomon Solis Cohen, M. D. and Thomas Stotesbury Guthrie, M. D. New York, D. Appleton & Co. 1928. pp. 2009.

This book of 1900 pages written by men experts, one on research and the other on practice—is worthy of the age in which it is produced. Here are gathered therapeutic agents of all kinds not only those whose effects have been well established by experiments but those whose claims are empirical. Vaccines, bacterines, serums, antiseptics, vitamins, endocrines and radioactive agents are included.

The reviewer is conscious of the fact that he cannot do full justice to a work of this kind after a short study but he hopes to interest others by giving the vivid impression left from its perusal. The work is suited to student and graduate alike—it is clear, thorough and well presented. Drugs of the U. S. P., Br. P., N. F., N. & N. O. R. are well described.

The book is not a collection of facts only, but throughout it all the *Philosophy, the why and wherefore*, binds it all into a very assimilable whole. The reader is impressed with the fact that "experience is the chart but the doctor must be the pilot". He must work with nature and study what nature does. The wide knowledge of the authors invites practical applications by giving the reader a clear insight as to just what a drug will do, The characteristic feature of the study not of anatomical pathology so much, as the functional pathology, and attention is drawn to the effect of drugs in health and disease. Physiology, pathology and physiochemistry must be combined to complete our studies.

Besides this complete study to guide us " to do good and do no harm" the reader's attention is called to the following additional feature: a comfortable index; table of percentage solutions; the measure of a drop of different drugs; and incompatibles clearly set out.

Narcisse Thiberge, M. D.

A Text Book of Practical Therapeutics: By Hobart Amory Hare, B. Sc., M. D. Illus. 20th ed. Philadelphia, Sea and Felinger, 1927. pp. 1094.

This is a 20th edition of an old standard text book. It has been completely rewritten and revised. It is a comprehensive treatment of a most important branch of medicine and should certainly serve as an excellent and reliable reference on this subject. Most of the most modern treatments and methods are discussed.

I. L. Robbins, M. D.

High Frequency Practice: By Burton Baker Grover, M. D. Fifth Edition. Kansas City Election Press. 1928. pp. 632.

The fifth edition of High Frequency Practice, by Burton Baker Grover, M. D., is a most complete treatise on this subject. The author, although he gives his own observations and experiences, is frankly honest in his opinions. Where his experience is lacking, he quotes from those who have had the opportunity of observing a series of cases in a specialty of the art. The book is one that must be read through to be appreciated, yet no one unless he were vitally interested in physical therapy would attempt to do so. Any one studying this branch of medicine is necessarily interested in high frequency electrical treatments and their application. One is struck with a monotony in the description of the treatments, if he neglects to avail himself of the authors interpretation of the physiology and pathology back of the conditions being treated. On pages 132 and 133 he aptly states the position of the science when he says that there are still many unexplained results which follow the use of currents of different frequencies, yet these findings are being observed with a most critical eye and with instruments of precision. There has been much already done and more can be looked for in the near future. And again he states that among other things, one of the greatest difficulties is in focusing heat in a body, not homogeneous in character. The entire work when analyzed awakens one to the realization that many of us do not know physical therapy; that there is more to the application of the electrodes than in a rule-of-thumb manner, with the necessary turning on of a switch and letting the technician watch the case thereafter; to the necessity of not having the case treated in the identical manner, daily or twice weekly, as is now too prevalent a practice. He stresses the fact that milder and fewer treatments often are rapidly effective, and that one must be on the alert to note the changing conditions, an indication of the alteration of the treatment. In his chapters on "Blood Pressure", and "Diseases of the Cardiovascular System" he most emphatically impresses one with the possibility of there being a different conception of the physiology and even the pathology of dysfunctions. These chapters are especially well worth the reading, to learn from a pioneer his conception of the significance of blood pressure and his interpretation of the findings. This is a record of the result of a wealth of clinical observation, gleaned without the influence of orthodox therapy, yet stated fearlessly from the viewpoint of one whose results appear better than the vast majority of present day therapists, what he thinks is wrong, and how it can be best treated by the high frequency electric current. No one can read these chapters without having a better knowledge of blood pressure, its normal limits and normal range of variations, and the significance of such pathological deviations as are noted. Grover is however like Galvini, that early worker in the application of electricity, who was scorned and derisively termed "The Frog's Dancing Master", and like Bessemer of the steel industry. Those who should be the most interested are not. In Bessemer's case, his paper dealing with a new process of steel making, when read at a convention was voted stricken from the records because the assembly though they would be ridiculed for even having listened to such advice and such a paper. There are a majority today in the medical profession who look upon this work of Grover's as did those of the steel industry in the recent past, but the Bessemer steel process is an established thing today. When high frequency electric current applications will be understood as Grover understands them, they too will become an established therapeutic agent, not in the hands of everyone, but in those of the trained specialist.

WILLIAM A. LURIE, M. D.

Safeguarded Thyroidectomy and Thyroid Surgery: By C. C. Miller, M. D. Philadelphia, F. A. Davis Co. 1928. pp. 261.

As the author rightly says, many good books are available upon the thyroid; unfortunately, this book does not fall in this category.

The many operations advocated for the cure of exopthalmos have long been discarded as unsatisfactory. Also, the various tests recommended to confirm the diagnosis of hyperthyroidism have been discarded as unnecessary and probably harmful to the patient.

The chapter on focal infection is timely; however, the treatment of diseased tonsils and teeth should be done by those specially prepared and not by the general surgeon.

A few misleading and illogical statements are found; for instance, "adequately informed any surgeon who is fairly experienced in general surgery can do his first goiter operation just as safely as he can do his five-hundreth".

This work cannot be conscientiously referred to the student as a text or to the young surgeon as a practical guide as throughout the author tries to convey the impression that the "surgery of goiter is very easy and very safe where the operator is adequately informed". Any surgeon who has had any experience with thyroid surgery knows that at best, the entire procedure is fraught with many difficulties and dangers and is anything but safe and easy, even though all the precautionary measures of "Safeguarded Thyroidectomy" have been employed.

PAUL G. LACROIX, M. D.

Abdominal Surgery of Children: By L. E. Barrington-Ward. London, Oxford Univ. Press. 1928. pp. 283.

This book written to cover abdominal surgery in children, has a worthy place in medical literature. As the author has said, "Adults may be treated safely as a child but the converse can lead to disaster." Though the subject matter is not new it is well presented. The opening chapter dealing with general principles suggests that the surgeon should understand temperament and must be able to interpret physical signs and be aware that conditions in adults may occur in the child as well as specific diseases of childhood. The general principles of operation are the same as found in any modern text, though the subject of ketosis (acidosis) is dealt with pre- and post-operatively, differentiating from the cyclic vomiting and volvulus of the small intestine, the conditions of the abdominal wall including affections about the umbilicus; all types of herniae, imperfectly descended testes are described at length. No mention is made of the inguinal route of operation for femoral hernia. The peritoneum is discussed at length as to peritonitis, cause, port of entrance, signs and symptoms.

Pneumococcal and gonococcal peritonitis are treated by the author with laparotomy and drainage which seems rather drastic. Chapter five deals with abdominal tuberculosis with subdivision into peritonitis, adenitis and enteritis with regard to diagnosis, treatment, and in the peritoneal type, complications.

The subject of congenital pyloric stenosis is gone into thoroughly from the surgical aspect. Stomach and duodenal ulcers in children are more frequent than commonly expected. The latter, more frequent in the acute form, is met with by the onset of serious hemorrhage. Chronic ulcers are overlooked as the diagnostician is not alert. The conclusion of the chapter is on congenital obstruction of the duodenum, varieties as to cause, clinical features, differential diagnosis and treatment.

The subject of the vermiform appendix is treated as in any other surgical text as to clinical features, diagnosis and treatment, prognosis and complications.

Chapter eight deals with the gall bladder and pancreas briefly and the subject of the spleen at length in a very systematic manner. Intestinal obstruction of the small bowel with its division of congenital and acquired (as from adhesive bands) internal herniation, etc., are gone into at length. Intussusception mostly a condition of the large intestine is taken up in like manner. Intestinal neoplasms are discussed in brief at the end of this chapter. Meckel's diverticulum is preceded by the embryology of the intestine, which subject is briefly stated, to the point and well grouped. The former subject with its peculiarities is discussed at length. The concluding chapters deal with Hirschsprung's disease, tumors and cysts of mesentery and retroperitoneum. As previously stated the book is well written with splendid references and should be an adjunct to pediatrician as well as surgeon.

EMILE BLOCH, M. D.

Physical Diagnosis: Charles Phillips Emerson, A. B., M. D. Philadelphia and London, J. B. Lippincott Company, 1928. pp. 553.

Various publications that have to do with physical diagnosis vary widely in the manner of presentation of this extremely important subject. Of all the text books of medicine devoted to various phases under the broad term of medicine, applied as well to the ancillary sciences, there is probably a greater amount of difference in those that are written for the students who are learning physical diagnosis than any other type of text book. In this present volume Dr. Emerson has a book which presents the subject in still another way than its predecessors. Emerson devotes the greater part of the present volume to information derived by and based upon inspection. It naturally follows that because of the relatively few visible conditions which can be accurately described or illustrated, resource must be had to a description of a large number of skin lesions. The first impression one gets is that there is a tremendous disproportion between the number of pages and the number of illustrations devoted to skin disorders, as contrasted to the amount of space that is given to the examination of the nervous system, for example. This does not imply that the description of skin lesions is out of place, but it does seem as if more space should be given to the explanation of the physical conditions responsible for physical signs rather than devoting so much of the allotted space to a work which would be more fittingly incorporated in a dermatological manual. However, this section of the book seems to be the most valuable. Some of the material in the sections devoted to disorders of the thorax offer grounds for controversy and with which the reviewer is by no means fully in accord.

The book is magnificently illustrated, the illustrations for the most part coming from the Indiana University Department of Illustrations. Of course typical and exaggerated examples are picked out to serve as illustrations. Some of these are so exaggerated that they might well give the student a totally distorted conception of what they intend to illustrate.

The above remarks may seem like carping criticism. The good points of the book have not been accentuated. Suffice it to say that these are so many that it would be impossible to enumerate them all.

J. H. MUSSER, M. D.

Appendicitis: By H. A. Royster, A. B., M. D. New York, D. Appleton & Co. 1927. (Surgical monographs.) pp. 370.

The author has presented this subject very ably and admirably. His volume is practically a modern classic on this disease. The book is replete with very interesting case histories and observations from wonderful personal experiences. Each phase of the subject is exhaustively and profoundly discussed in a most interesting manner. Instructive and authoritative quotations are liberally presented. In presenting this volume to the profession the author has delved very deeply into the literature of the subject from its incipiency up to the present. It appears that there is scarcely an article written on the disease which he has failed to consider.

The author's style and simplicity in presentation and expressions makes the book inviting and easy to read. In addition to discussing appendicitis in general he devotes an entire chapter to the disease as found in children. The very interesting phase in this chapter, perhaps, is the matter of differential diagnosis. It is not an easy matter to make a diagnosis of this disease. The several interesting points given to make the diagnosis in children easier are apparently practical.

FRANK L. LORIA, M. D.

Diseases of the Eye: By Charles H. May, M. D. New York, William Wood & Co. 1927. pp. 445.

Very few persons have the ability to separate the important from the unimportant, and still fewer can simplify a difficult subject. That is why this book has been read and purchased by more persons than any other text book on ophthalmology ever written. For the specialist it does not contain sufficient detail, but for the general practitioner and the medical student it contains a wonderful fund of useful information, with few or no technical errors, and above all is very readable.

These of course have been made possible in the course of many revisions and additions by the author who has made this practical simple volume one of his life's ideals.

The first section tells about the examination of the eye. Although the sequence of the author is not that which is best adapted to my personal needs, this is no reflection on either of us. The illustrations do not contain the most modern equipment, which change would be more in keeping with the rest of the volume. Unless my memory serves me wrong, the argant burner which is pictured was relagated to the dim and distant past some twenty years ago, as was the model of ophthalmometer illustrated.

In the chapter devoted to conjunctiva one is impressed by the rather frequent use of the copper sulphate stick and by the absence of foreign protein therapy in the treatment of gonorrheal conjunctivitis. Following the removal of foreign bodies in the cornea I believe it is better practice to cover the eye than to use frequent boric acid irrigations as recommended by the author. Apparently the end result is the same with either method of treatment.

In a small volume on diseases of the eye written essentially for the medical student and general practitioner one does not find any discussion or even mention of the newer and experimental methods of treatment such as physiotherapy and others; this is hardly to be expected because the methods mentioned in such a volume must have been generally accepted for some years.

I congratulate Dr. May upon this very excellent, understandable book, which it is to be hoped will go through many more editions.

CHAS. A. BAHN, M. D.

Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis: By Clive Riviere, M. D., Lond. F. R. C. P. 2d ed. London, Oxford University Press. 1927. pp. 311.

The monograph, which is excellently written, deals largely with the pneumothorax treatment in pulmonary tuberculosis. The work is clearly and concisely written, giving first a brief but excellent historical resumé of the surgical treatment of pulmonary tuberculosis. Definite indications for the employment of pneumothorax therapy are given, as well as an accurate description of the technic employed. The author prefers to employ small amounts of gas, following which larger amounts are injected, so that relatively high positive pressures are obtained. An outline of the general treatment of the patient, during the employment of a pneumothorax therapy, is given. The accidents and complications occurring either immediately after, during, or, sometimes, later are discussed in detail. Of the more radical surgical procedures operations on the phrenic nerve, extrapleural pneumolysis, and thoracoplasties are considered rather briefly. The work is illustrated by means of characteristic roentgenograms. It is an excellent resumé of the pneumothorax therapy in pulmonary tuberculosis, as well as a brief resumé of the more radical surgical procedures.

ALTON OCHSNER, M. D.

The Peaks of Medical History: By Charles L. Dana, A. M., M. D., LL. D. New York, Paul B. Hoeber. 1928. pp. 105.

The second edition of a splendidly written series of historical essays, one might almost say historical novellettes, so aptly drawn are the characters and so thrilling are the plots.

J. H. MUSSER, M. D.

Gynecology for Nurses: By Harry Sturgeon Crossen, M. D., F. A. C. S. St. Louis, C. V. Mosby Co. 1927. Pl. illus. pp. 281.

The contents in Gynecology for Nurses of Dr. Crossen is well outlined in the preface of this book.

It begins with a general brief survey of the anatomy and physiology of gynecologic diseases and of methods employed in gynecologic examination, diagnosis and treatment, operative and unoperative.

The second part deals in detail with gynecologic nursing, methods of preparation for examination, preparation of supplies for operation, duties and position of nurses in assisting and handling supplies during operation for abdominal and vaginal work, pre-operative and post-operative nursing and care.

The book is excellently illustrated.

ADOLPH JACOBS, M. D.

Aluminum Compounds in Food: By Ernest Ellsworth Smith, Ph. D., M. D. New York, Paul B. Hoeber, Inc. 1928. pp. 378.

A compilation of all that has been written up to the present time on aluminum in relation to diet, applied obviously for the most part to a study of baking powder.

J. H. MUSSER, M. D.

PUBLICATIONS RECEIVED.

Williams & Wilkins Company, Baltimore: Filterable Viruses, by various authors, edited by Thomas M. Rivers.

F. A. Davis Company, Philadelphia: Ultra-Violet Rays, by Arnold Lorand, M. D. Studies in the Psychology of Sex, Volume VII, by Havelock Ellis.

W. B. Saunders Company, Philadelphia and London: Gonococcal Urethritis in the Male, by P. S. Pelouze, M. D. The Principles and Practice of Obstetrics, by Joseph B. DeLee, A. M., M. D., fifth edition. A Text-Book of General Bacteriology, by Edwin O. Jordan, Ph. D.

Oxford University Press, New York: The Mind of the Growing Child, edited by Viscountess Erleigh.

U. S. Government Printing Office, Washington: The Medical Department of the United States Army in the World War, Volume IX, Communicable and other Diseases.

Miscellaneous: Certified Milk, Proceedings of A. A. M. M. C., C. M. P. A. A., C. M. M. C. & M. M. M. P., 1927. The Healers, by B. Liber.

Paul B. Hoeber, New York: New York Academy of Medicine Lectures.

REPRINTS.

Uretheral Calculus, by Winfield Scott Pugh, New York. Concerning Two Options in Dilution Egg Counting: Small Drop and Displacement, by Norman R. Stoll, Sc. D. and Walter C. Hausheer, M. D., Accuracy in the Dilution Egg Counting Method, by Norman R. Stoll, Sc. D., and Walter C. Hausheer, M. D. Evaluation of the Methods of Stoll and Lane in Light Hookworm Infections, and Accuracy in Diagnosis of the Willis Floatation Method, by W. C. Hausheer, M. D., and C. A. Herrick, Sc. D., and A. S. Pearse, Ph. D. Comparison of Stoll and Lane Egg-Count Methods for the Estimation of Hookworm Infestation, by Fred L. Soper, M. D. Studies on the Rate of Development and Viability of the Eggs of Ascaris lumbricoides and Trichuris trichiura Under Field Conditions, by Harold W. Brown. Are Ascaris Lumbricoides and Ascaris Suilla Identical? by Fred C. Caldwell and Elfreda L. Caldwell. An Experimental Study of the Development of Ancylostoma Caninum in Normal and Abnormal Hosts by J. Allen Scott, D. Sc. The Effect of Carbon Tetrachloride and Alcohol on the Acid-Base Balance of the Blood, by Paul D. Lamson and Raymond Wing. A Quantitative Study of Infections with Ancylostoma Caninum in Dogs, by C. A. Herrick. Vital Capacity of Negro Race, by W. G. Smillie, M. D. and D. L. Augustine, Sc. D. The Prevention and Treatment of Carbon Tetrachloride Intoxication, by P. D. Lamson, M. D.; A. S. Minot, Ph. D. and B. H. Robbins, M. S. The Effect of Sea-Water on the Development of Hookworm Ova and Larvae, by Fred C. Caldwell and Elfreda L. Caldwell. Hookworm Infestation in an Unsanitated District, after an Intensive Treatment Campaign, by Rolla B. Hill. A Study of the Regularity of Egg-Production of Ascaris Lumbricoides, Necator Americanus and Trichuris Trichiura, by H. W. Brown. A Dilution-Flotation Technic for Counting Hookworm Ova in Field Surveys, by Fred C. Caldwell, M. D. and Elfreda L. Caldwell, S. B. The Relation of the Type of Soils of Alabama to the Distribution of Hookworm Disease, by Donald L. Augustine, Sc. D. and Wilson G. Smillie, M. D. Hookworm Infestation and Reinfestation in Ceylon, A Study of High Incidence with a Moderate Degree of Infestation, by J. Frank Docherty, M. D. The Place of the Smear in Hookworm Diagnosis, by W. C. Hausheer, M. D. and C. A. Herrick, Sc. D. Early Cirrhosis of the Liver Produced in Dogs by Carbon Tetrachloride, by Paul D. Lamson and Raymond Wing. The Estimation of the Number of Hookworms Harbored, by the Use of the Dilution Egg Count Method, by Rolla B. Hill, M. D. Hookworm Reinfestation for Three Years after Treatment in a Sanitated Area in Porto Rico, and its Bearing on Permanent Hookworm Control in the Group Studied, by Rolla B. Hill, M. D. Blood Fibrin and Levulose Tolerance in Acute and Chronic Carbon Tetrachloride Intoxication, by Paul D. Lamson and Raymond Wing.