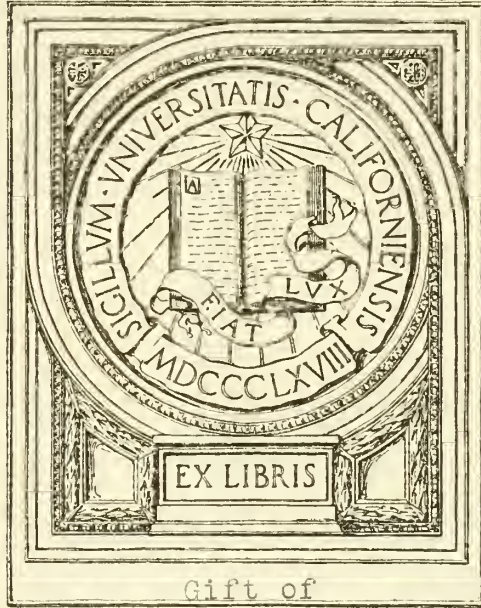




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## ORIGINAL ARTICLES

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### HEALTH RELATIONS OF LOUISIANA WITH THE SOUTH AMERICAN COUNTRIES.\*

By DR. OSCAR DOWLING, M. D.,  
New Orleans.

The 1923 tour of the American College of Surgeons was planned by Dr. Franklin Martin, Director-General, after two trips through South American countries which he made with Dr. William J. Mayo, former President, and Dr. Thomas J. Watkins, a Governor of the College. The itinerary included Havana, the Canal Zone, and the principal countries of South America.

A visit to this continent brings conviction that we have little to fear from the introduction of diseases peculiar to South America. It is true that some of the tropical diseases which do not prevail to any extent here, with increased trade relations might be brought to this country. This, however, is a remote contingency, and we feel we would be able to control the spread as they do in the countries where these diseases now have a foothold.

A hurried but comprehensive study of seventeen places, including the Port of Spain, Island of Trinidad, eight countries and twelve large cities, reveals a health situation very similar to our own. There was no Plague, no Cholera, and no Yellow Fever, except nine cases in two cities of Brazil, where active measures similar to those followed in New Orleans in 1905 had been put into effect, but about the same percentage of

Tuberculosis, Malaria (except on the dry west coast and in a few places which have been thoroughly drained), Typhoid, Smallpox, Hookworm (in some places), Syphilis and Gonorrhoea in all. Considerable Trachoma and Leprosy in a few places.

Similar quarantine and isolation regulations are in effect as with us, and if anything greater facilities for the protection of public health from persons having communicable diseases. In some instances regulations and enforcement are more effective than with us; the compulsory vaccination law with enforcement is an example. No one may enter Argentine, where they require certificate with finger prints, and other countries without a certificate satisfactory to the authorities. Request to the Consul of any of these countries for a passport must include a satisfactory statement from the health authorities of the State or City of recent vaccination or two unsuccessful attempts, before the tourist will be granted the passport. It is hoped in South America by the rigid enforcement of these laws that Smallpox may be entirely controlled and become as rare as Yellow Fever or Plague. International regulation for compulsory vaccination with enforcement would soon make Smallpox negligible. Incidentally, it may be of interest that in Rio de Janeiro they have had no Plague since 1910; no Yellow Fever since 1907; in Buenos Aires no Plague for five years; no Yellow Fever for thirty years.

It may be well to add a word about maritime quarantine. Although we

\*Read Before the Louisiana State Medical Society Meeting April 24-26, 1923.



have passed many milestones in the progress of control of disease, the drastic quarantine regulations of former years are still favored by many conscientious health officials. But as the countries of the world profit by the discoveries in medicine and the great ports are freed from Yellow Fever, Cholera, Plague and Typhus Fever, it seems only common sense to draft new quarantine laws for the convenience of the traveler and the commercial advancement of the countries. The cities which have built rat-proof wharfs at an enormous expense and put over costly campaigns for the control of contagious diseases should be accorded the commercial advantages to which they are entitled because of these improvements. In view of this progress a modification of the present quarantine regulations seems logical and it is the reason for the consideration now being given the subject by representatives of the various countries of the world.

Aside from the question of introduction of disease from these countries, there is one other point to be considered in a discussion of our health relations. It is only within recent years that we have come to appreciate interchange of ideas regarding medical methods. Even in the Middle Ages it was a common experience in Europe for students to travel from university to university assimilating the teaching and, above all, the viewpoints of the teachers in each one. The result is obvious. The custom has led to a broader vision, a deeper understanding and a keener sense of sympathy. That the interchange of students has been of international advantage is axiomatic because friction and often warfare are directly traceable to the clash of mental attitudes arising from a lack of understanding on the part of too different nationalities.

Regardless of race, human nature—meaning psychology, is virtually the same wherever we go; differences of opinion are largely due to different modes of thinking, to different customs and to an inability to put oneself in the other's position or to share his viewpoints. With no other countries is such an understanding of greater importance than with the Latin-Americans to the south of us. Commercial and social

relations would be enhanced and the medical standards of our own land improved by an interchange of men who would carry back with them ideals and methods of the countries visited.

The South American States offer unique advantages. The development of scientific medicine in the great laboratories of Buenos Aires, Rio de Janeiro and Sao Paulo are scarcely to be equaled by any others in the world. The study of diseases peculiar to these countries is another incentive to the student from the North American continent because of the close proximity and the possible need for this knowledge.

Then too, the methods of dealing with acute infectious diseases while in general similar, must of necessity vary according to the climatic conditions, the popular attitude and the regional configuration. All of these facts are important from the medical viewpoint, and the person equipped with the information obtainable by study in both the Latin and the North American countries may be compared with the individual who views an object from two perspectives.

New Orleans is the southern gateway of the North American continent. Commercial relations with all the world, and especially with the South American countries, are focused at this port. It is wise to foster and encourage these relations, both for the sake of international amity as well as for the less altruistic motive of business advantage. In what better way can this be accomplished than by an interchange of ideas? We have much that is good to learn from our southern neighbors. We can only engender the spirit of mutual cooperation by mutual understanding.

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#### VENEREAL DISEASE CONTROL.\*

By DR. A. T. McCORMACK,  
Louisville, Ky.

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Mr. President, Ladies and Gentlemen: To my mind there is no difference between the control of venereal disease and malaria, scarlet fever, measles, or other diseases, except in the difference in the treatment of any one of these things. They are all controlled by,

\*Read Before the Louisiana State Medical Society Meeting April 24-26, 1923.

first, education of the public; second, education of the profession, and third, organization by the public and the profession of an agency that will control these diseases with their aid and assistance.

It seems to me that the most important thing that confronts the medical profession today—and anything that confronts the medical profession of this country confronts the public—the most important problem for us to get clear in our minds is, whence we have come, where we are, and where we are going. I think it is important for us to analyze some of the conditions that exist in the practice of medicine in all lines, and then having analyzed them, help to so build up our organization that we can control them.

Recently the Kentucky State Medical Association has been making an investigation of medical practice. We have held tuberculosis clinics in eighteen countries. It is very interesting to know that as a result of those clinics we found that 56 per cent of those having tubercle bacilli in the sputum had not at any time consulted a physician for the tuberculosis which they had. We found that nearly 50 per cent of those who had consulted a physician had not been told they had tuberculosis and had been given no advice as to their own care nor any measures to prevent the spread of the disease to the children. That is a rather important matter. We had 100 of our physicians make an examination each of ten women who had borne children, and of that number we found that less than 3 per cent had had prenatal care in any of their pregnancies, and that none of them except in the three cities where there are specialists in obstetrics, had had regular supervisory care of their babies during their infancy. They had gone to the doctor when they were sick, in other words, and as a consequence they had not had proper care. That might be carried out in other lines. Take cases of hernia that go through life harnessed like a mule, that could have been relieved in early childhood by a simple, effective and complete operation. These instances might be multiplied almost indefinitely. Take diphtheria. In Kentucky we have made an investigation of every death from diphtheria. It is in-

teresting that there have only been two deaths in the State in five years in which a doctor was called within twenty-four hours. There has not been any death in which 25,000 units of antitoxin was used within twenty-four hours, and yet we have a high death rate from diphtheria.

What I am trying to get at is this; We have had the idea—and we have heard it said—that eventually, with all the work that is being done by the health officers and the doctors together, the time would come when there would not be any doctors, and those who were here would not make a living. That is a fallacy that should be exploded. The important thing for us to realize is that when we have begun to exercise real supervision over the health and lives of those who are dependent upon us, it will take more doctors to do it, and they will have to be more careful in their examinations and diagnosis when they deal with the tendency to disease than when they have definite pathological changes.

The future of medicine will largely be based upon the splendid essay presented to you by Doctor Leathers. The important thing for us to get before our people—most of us are too old to start over now—we cannot expect adults to carry out a whole new program, for the average adult is like a biscuit—it may be made of good material and well baked, but still not be good for food purposes, and should be thrown away. The only thing to do is to throw us away and start over. But the changes that take place must come through education. Back in the old days when you had yellow fever in New Orleans, when men's hearts were tried, and when heroes were developed in our profession, you did not have as many doctors as you have now, and yet you had more yellow fever. The same thing applies to typhoid fever, and to malaria, and all those other diseases—when they disappear it will take more doctors than you need now. Another thing, the profession will be better paid then, because we will only have the good sort of folks—the people who pay their bills, and we will get our money easier and get more of it than we do now. The thing to get before the people is the fact that health is purchasable.

Then, as Doctor Welch and Doctor Leathers have expressed it, the future



commercial value of the South, the commercial standing of any section of the United States, will be dependent upon its vital statistics reports, and just as soon as the Southern States expend the amount of money they need to expend in the control of the diseases that are causing unnecessary misery and death—just in proportion as we build up our public schools in which the vast majority of our people are educated; just in proportion as we make the curricula of our common schools sufficient to teach the people the value of life and how to live; just in proportion as we have in pre-school age corrected their defects, and during school age give them such physical education as makes them conscious of the value of good health so that if they do become victims of disease they will see to it that they are so protected that the disease cannot spread to others—just in that proportion will we be able to solve our health problems.

This applies to venereal disease the same as to tuberculosis. For a long time we whispered about venereal disease, we thought it was not to be talked about. We have hesitated to come before mixed audiences to talk about the diseases that are scattered by male and female prostitutes. But we need to talk about them—we doctors need to tell what we know about them, because we put them in the same class with all carriers of disease, except that the destruction from venereal disease is the greater. One-fourth of the people in our asylums are there due directly or indirectly to syphilis, and a tremendous percentage of the abdominal operations on women are due to gonorrhoea. We all know these things, and it is not fair for us not to talk to people about them, it is not fair not to talk to the young women of the State and make it plain to them that the male prostitute is just as dangerous as the female prostitute; that there is no difference and should be no difference between their isolation and their treatment. (Applause.) When that time has come—and thank God since the women have the vote it will come pretty quickly—the childhood of the country will be protected from these diseases. And just as soon as the men and women of this country know the situation and know that there is no other disease or no other combination of diseases that

all over this broad land, from east to west, from the north to the southernmost boundary, produces so much distress and is such a cause of delinquency, of defectiveness and of death, as venereal disease, then, and not until then, will we get anywhere in its control.

It cannot be done—and this is the important thing I want to talk to you about it—it cannot be done until every county medical organization is functioning correctly. In New Orleans, where you have a splendidly organized health department, where your city maintains strict health rules, your death rate is reduced, and thirty-five or forty years ago you had more deaths from utterly unknown causes than from all causes now, because you have become an intelligent people, and as rapidly as this can be carried to a logical conclusion throughout the State, the condition will be improved there. The doctors of the State realize as an organization the need for our health officers going to the families, and I want to submit to the doctors of Louisiana, as I have to the doctors of Kentucky, that they will have more influence in building roads, in building schools—they will have more influence with the legislators than any other element in the entire State, provided they do their job correctly, provided they go into the home and talk to the people about disease and how to keep them healthy. It is just in proportion as we teach the people that it is necessary to get rid of malaria, that community organization is necessary, that a health department is necessary so that the poor may be taken care of—just in proportion as we do this will we keep our people alive longer. The average age has been increased fifteen years in thirty years, and it can be increased that much more in thirty years, and think how many more people there will be—intelligent people. If every man and woman in this room could live fifteen years longer, having now arrived at the stage where you are useful—think what your community could afford to give if your life could be saved fifteen years longer. It can be done—it can be done.

How are we going to do it? Fifty per cent of tuberculous people have no medical care—little children grow up from babyhood and through school life with-



out medical supervision, without being taught how to care for themselves or those around them—they grow up to be Christian Scientists and become the victims of quacks and chiropractors because of neglect on the part of the interested public. Is that what we are after? That is why they are misled—because we have not exercised the responsibility that is ours, we have not carried on our shoulders the obligations put upon us when we became doctors—we have not taught the people the things they ought to know. We have been content to improve our profession tremendously, and to stay in our offices like spiders in their webs waiting for the people to come to us, but we have not put before the public in a way they can understand the things the public needs to know about the great temples which are their bodies, and we have not taught them to come to us for advice which we are the only ones to give.

I would like to talk about two weeks, for I like this audience, but I guess I had better stop. (Applause.)

#### DISCUSSION.

**Dr. L. C. Scott (New Orleans):** This is an extremely interesting subject, and I fully agree with the Doctor that the prevention of venereal disease must be attacked from the educational standpoint.

With regard to the manner in which these facts can be brought to the public—shall it be through propaganda, or shall it be through education in the public schools? Can we introduce the idea of sex hygiene into the public schools in such a manner that the young will profit by the instruction, so that when they reach adult life they may be able to avoid the pitfalls and dangers to which so many people, and especially the youth, are exposed? Or is it best to take it up with the adults themselves—through lectures and talks and through the newspapers? The difficulty so far as I can see is to decide just how to attack the problem.

Prostitution is not only a social and eugenic, but also a legal problem. The social aspect is taken care of very largely by the social workers and also by a great many societies that try to solve social problems in one way or another. The economic side is extremely important, because approximately 50 per cent of prostitutes come from the working class; from those who have comparatively little income.

The question of eugenics is in its infancy. A great many investigations along the line of psychology and psycho-neurotic lines seem to indicate that the majority of prostitutes actually belong to the feeble-minded. If that is the case, we are continually breeding recruits to the prostitute class, and, of course, from

the eugenic standpoint that is diametrically wrong. In fact, it is a dysgenic agency. We should take more care in the propagation of better children—for the benefit of the whole country.

And, of course, the legal question is very important. Can you legislate prostitution and venereal disease out of existence? In my opinion you cannot. Legislation—repressions of all sorts have been tried throughout the ages, but without much effect. Legislation restricts to a certain extent, but it does not prevent. True, the elimination of the red-light district has done a great deal towards the elimination of venereal disease. If I could put before you the charts which we have made in the past few years, which indicate what I should term a decline in the venereal rate in the State, I think you would be interested, but we do not know whether it is a real or only apparent decline. Assuming that they represent an apparent decline, it may be due to the fact that the doctors refuse to report their cases. I do not believe that is the case, because taken in conjunction with other communicable diseases, venereal disease seems actually to be on the decline, and relatively speaking the figures are correct. One noticeable feature of these statistics is that in 1920 the gonorrhoeal statistics were far ahead of the syphilitic cases; in 1921 the gonorrhoeal and syphilitic cases were exactly the same, and in 1922 the syphilitic were in excess of the gonorrhoeal. What does that mean? We cannot understand it. We cannot believe it is on account of lack of reporting by the physicians. We believe it is on account of propaganda and educational work done by the clinics. We believe it is due to the fact that the literature goes out to the clinics, and the clinic acts as a nucleus from which propaganda radiates—these people come to the clinics for treatment for some systematic infection, and they take this literature home and read it and tell others and interest others. The clinics are doing a great work, and they are increasing rapidly. The amount of salvarsan we used in 1922 was almost \$2,000 in excess of that used in 1921. That seems to indicate that more work is being done in the alleviation of syphilitic infection.

One other thing, and that is that we believe prostitution is a problem that can be more easily handled by the women than by men. If the women would only take an interest in this subject I think it would not be very long before there would be a beneficial effect that we could point to with pride. The men are difficult to move. Why, I do not presume to say, but it is a fact. We sent out during the past year approximately 10,000 letters we received about 34 replies. That indicates that there is not very much interest taken in venereal disease. If that is the case there is a reason for it—what it is we do not know. But we do know that there must be some way provided to get this information and instruction to the masses.

**Dr. M. H. Foster (Alexandria):** This subject must be considered from the social and the therapeutic standpoint, which we are

naturally at the present time interested in, and also from the economic. The latter is a very important consideration. If you take this matter of venereal disease prevention and control to these corporations you must show them that it pays to do the work, and you certainly can show them that it pays to have a man taken off the pension list and put on the payroll.

There is a difference in the prevalence of venereal disease, depending upon the amount of education given to a certain group of individuals. I was forcibly struck with that in the army. At one place there were two medical officers who had exactly opposite views on this subject. One took the attitude that some doctors still take—if a man gets caught it is hard luck, but his misfortune. We had numerous infections arising in the outfit under his supervision. The other one was keenly alive to the situation, interested in his boys, in their proper instruction, in prophylaxis, and used moving pictures and all other means available, and during the time this outfit was mobilized we had only two or three infections to occur.

Two things must be accepted. First, we must admit the presence of the problem, and having admitted that, then we must organize some means of prevention and control as we do with other preventable disease, as Doctor McCormack has suggested. I have always contended that venereal disease was no different from any other. We know we can prevent smallpox by vaccination, yellow fever by inoculation, etc. Venereal diseases can be prevented, but I do not believe it will be by legislation.

**Dr. A. T. McCormack (closing):** Before replying to the statements made by Dr. Scott and Dr. Foster I want to thank them for what they said, and I want to congratulate you, Mr. Chairman, on the character of this very unusual meeting. I have had the privilege of attending meetings in about two-thirds of the States in the Union, and there is a larger proportion present here tonight than has ever been present at any other medical meeting of this character that I have attended. This sort of thing does not simply happen. Those who come do not come simply because there is to be a meeting. It is a remarkable fact, and I want to suggest to the membership of this association that you owe a very deep debt of gratitude to your President, Secretary and officers for your effective organization—an organization that can demand an attendance like this at your closing session.

I have often wondered why any physician fails to report his venereal diseases. Some of them do. I have tried my best to find out from those who do not report. In Kentucky we refused to license some of them, because it is such a serious matter that a physician is considered *particeps criminis* in spreading the disease. In fact, he is guilty if he permits unreported cases to spread the disease, and he must take the consequences. How can any man persuade himself to do it? Every now and then you hear somebody say it is such a private matter. Is it? Is it a private matter for a man to get a disease that

can cause the probable disability of the woman he marries, certainly serious illness, and possibly death? Is it a private matter? Is it a thing he has a right to do? I want to submit to the medical profession of Louisiana, a profession that has led in many of the greatest campaigns for human welfare, that has had Congressional medals and honors conferred upon its leaders from time to time—men who have sacrificed their lives in doing their duty—I want to call upon this profession to rise as one man and one woman, and refute the slander put upon us. We cannot say anything worse about the chiropractor than he can say about us, when our men refuse to prevent venereal disease by failing to report their cases. We are untrue to ourselves, untrue to our oaths, untrue to society, if we fail to see that every case is reported and kept under treatment until it is no longer a menace. If a fellow wants to go to hell, let him go—but let him go alone, not put this curse on those who are still alive, and on the generations yet unborn.

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#### MALARIA CONTROL WORK IN ALABAMA.\*

By DR. S. W. WELCH.

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In 1917 Alabama had a malaria problem of considerable importance. Evidence of this is shown in a map prepared by the Engineering Division of the Alabama State Board of Health, and based upon records of the Bureau of Vital Statistics. Six countries had a rate of more than five deaths per ten thousand population from malaria in that year. This indicates a serious malaria problem; forty-two countries had a malaria death of from one to five per ten thousand population. Here we have a malaria problem of moderate proportion which covers somewhat more than half of the total area of the State; nineteen counties showed a malaria death rate in that year of less than one person per ten thousand and indicate either a very slight incidence of this disease or its absence as a public health problem.

A similar map for the year 1921 shows no counties which had a malaria death rate of more than five per ten thousand population. Only thirty-two counties showed a rate of from one to five deaths from malaria per ten thousand population, while thirty-five qualified for the group having a rate of less than one death from malaria for every ten thousand of the population. The

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area which is practically clear of malaria was almost doubled in the five-year period.

The malaria record of that five-year period is further shown in a chart which compares the malaria death rate per hundred thousand population in Alabama with the rate for the United States Registration Area during the same period. This shows that while the death rate from malaria in Alabama was more than cut in half during the period in question, the malaria death rate in the Registration Area was slightly increased, the rate in Alabama in 1921 was only three times as great as that in the Registration Area while in 1917 it had been seven times as great.

The accomplishments of five years were then:

1. Serious malaria problem no longer in evidence in any county in Alabama.
2. Number of counties having moderate problem reduced by one-third.
3. Number of counties free from malaria doubled.

How was it done? That I take it, is the question in which this group is interested.

Our first introduction to malaria control methods were the war time activities set in motion within the Army Cantonnments, of which there were three in Alabama. At the close of the war Government forces were withdrawn and all of this work discontinued; these war-time demonstrations in addition to protecting the health of soldiers and workers had a marked educational value.

First: They acquainted the general public in the vicinity of the camps with successful methods of malaria control.

Second: They led the public health officials to several important conclusions with regard to the feasibility of malaria control programs. Stated briefly these are:

1. It is useless to attempt malaria control without the support of a local governmental health agency to see that the work is made permanent.
2. In spite of the fact that towns are likely to make the earliest demand for malaria control activities, the malaria problem *per se* is a rural rather than an urban problem and necessitates the dispatching of engineers into the rural districts and the initiation of

malaria control measures on a country-wide basis.

Upon these fundamental policies established as a result of our observation of the earlier demonstrations, The Alabama State Board of Health shaped its program for malaria control.

Mosquito control has come to be identified with malaria control, main reliance being placed upon control of the insect vector *Anopheles quadrimaculatus*; defense measures such as quinine and screening being temporary in effect, are considered of secondary importance.

Elimination of these insect pests is a source of much satisfaction to the community affected regardless of its value as a public health measure.

Another consideration that has added the popularity of mosquito control work is the fact that during a recent epidemic of dengue fever localities which were practically free from mosquitoes were also free from this disease with the exception of a few imported cases.

Our problem has been to adapt this program to our plan of organization for county health work which covers twenty-two of our sixty-seven counties and serves 51 per cent of our population.

Malaria control on a county-wide basis has been supplemented in a number of instances by demonstrations in towns which are not served by county health organizations, these are undertaken upon request largely for the sake of their educational value.

Through the United States Public Health Service and the International Health Board, five engineers were made available to the State Board of Health. Each is assigned to a district which includes all of the several organized counties. The engineer's duty is to visit and consult county health officers with regard to the malaria problems of his county. The health officer and his inspector locate the problem, the engineer advises as to its solution, and the health officer and his force then undertake malaria control work under the supervision of the engineer. The methods of control include ditching, oiling and stocking bodies of water with gambusia and screening. In ditching and draining the agricultural value of the project has been emphasized and the interest of Farm Bureaus and Chambers of Commerce has been enlisted in an

effort to induce land owners to assume financial responsibility for these projects. Drainage and agriculture go hand in hand and a number of large drainage projects have been inaugurated as business enterprises in which we participate to the extent of furnishing the advisory service of an engineer.

Oiling and other methods of control of mosquito breeding in and around towns and household premises offer a wide field of co-operation in which the household and the school children may be interested and urged to participate.

It is the opinion of the writer that effective mosquito control by the use of gambusia offers large possibilities at less cost in destruction of larvae than any other one method of control of mosquito breeding.

The engineers are careful to point out that effective use of gambusia is subject to a number of conditions which are notably uncertain. For example:

Effective gambusia control in ponds depends on absence of game fish, aquatic vegetation and floatage, presence of suitable food for gambusia to insure propagation and presence of an abrupt shore line which eliminates the shallow marshy spots sometimes found bordering lakes and ponds and affording breeding grounds for mosquitoes which are inaccessible to top minnows. But taking all of these uncertainties into account, I believe that gambusia control is one of the best investments we can make in view of the results secured.

Commenting upon the present status of malaria control work in Alabama, I would say that we have our problem in hand. We know where it is and we know that it is confined to certain localities. There is a large area in the southeastern part of the State adjacent to the Chattahoochee River; the valleys of the Alabama and Tombigbee rivers constitute a central region which has a moderate malaria problem; the western section of the black belt also requires attention while in the lower Tennessee valley there is need of further malaria control measures. But Alabama has no bad endemic foci of the character such as are found in other sections of the South. Certain parts of the State are entirely free from malaria; each year adds additional free area.

The economic value of a decrease in

physical unfitness of a large proportion of the population is markedly apparent and is winning the increasing recognition of investors. Information properly disseminated throughout the north and west will attract farmers to our cut-over pine lands and will bring industrial projects to our waterways, increase our land values and reduce our tax rates.

The physical and intellectual energy which has formerly been wasted in chills and fever, together with the money which has been wasted on chill tonics and doctor's bills will be devoted to the education and upbuilding of the citizens of our State.

Malaria will be eliminated—How long will it take to do it? And how much will it cost? These questions do not call for a prophecy or for visionary results, they call for a careful estimate of budgets and an intelligent shaping of programs, the development and leadership of manpower and brains to do the job. Alabama has the advantage of a State-wide health organization which reaches into every county of the State. It has a plan for financing and extending its activities so as to cover the State in another five years. Success depends upon building organizations which will lower the sick incidence and death rate from malaria. This is the language the people can understand and they have been converted to this policy.

#### DISCUSSION.

**Dr. H. E. Miller (New Orleans):** It is a very great pleasure, ladies and gentlemen, to follow such a paper as has been presented to you by Dr. Welch, which is abounding in the evidences of practical work. We have been studying malaria a good while in the United States, especially in the Southern States, and have thought that we were getting somewhere with it. A great many different spectacular examples of malaria control have been carried on here and there, and yet almost without exception up to the present time these demonstrations have been confined to urban populations.

As Dr. Welch has so aptly pointed out in his paper, malaria is not an urban disease, but a rural disease. We have known that for some time, but have not come to acknowledge it, and I think the reason is pure cowardice. We know it is easy to control malaria in an urban population, but it is not an easy matter to control malaria in a rural population, and the problem has been so baffling that he have been afraid to tackle it.

The favorite trend of malaria work is to investigate and keep on investigating. In-



vestigation is very proper, but there has come a time when we must get down to work on malaria. We know enough about it now, enough about the habits of mosquitoes and their breeding places and methods of transmitting disease to give us pretty satisfactory ammunition against malaria, if we only use these facts we already know. There are many things yet to learn about malaria, but practical application of our present fund of knowledge will allow us to carry on that sort of work which contemplates rural malaria control as well as urban. And Dr. Welch has indicated the manner in which that should be carried out, namely, in connection with established, organized, and permanent local health organizations.

Another point which Dr. Welch brought out, which I think is well worth considering a second time, is the fact that malaria is not a disease which is equally distributed over any one State or parish. If you take the map of Louisiana—a contour map or a soil map—you might be led to believe that the whole southern end of Louisiana is the point of election for malaria. As a matter of fact, that is not true. The concentration of malaria is along the fresh water courses—the Mississippi Valley, the Red River, and other rivers of that nature. In individual parishes and communities, likewise, the distribution of malaria is as a rule not uniform. So that we do need some investigation to determine as to what our problem really is, where it is, and how extensive it is. But the methods which Dr. Welch has employed in Alabama are not necessarily of equal value in Louisiana.

**Dr. W. S. Leathers:** I feel that this paper should not pass without commenting upon one or two aspects mentioned.

In the first place, I want to refer to the fact that in doing public health work over the country, there are problems in each section peculiar to that particular territory. In certain sections of the United States there is marked congestion of population which presents certain health problems that are not applicable to the South, and in view of the fact that we have not infrequently been blamed in the South for having certain conditions that are against industrial development, I think the time has come when we ought to throw the challenge right back into the face of that section of the country that places the Southern States in the position of not dealing with its health problems in a scientific, intelligent, aggressive and progressive way.

I happened recently to look up some statistics in regard to the public health work in the United States and I found that during the past seven years the appropriations for public health work in eleven Southern States have increased 314 per cent, while in the remaining thirty-seven States of the Union, it has increased about 145 per cent, showing the remarkable progress in the South in making appropriations for public health work, from the standpoint of being provided with adequate funds.

The second thing is this: One of the best signs of progress in public health work is the improvement in local health organization.

The most important thing for this State or any other in health work is not to build up too great a central health organization, but to improve and emphasize the value of local health organizations and increasing their efficiency. What do we find in that respect in this country? In eleven Southern States 72 per cent of the all-time county departments of health are found; in the remaining thirty-seven States we find 28 per cent; showing the remarkable progress made in the South in this respect and that it has attained the position of constructive leadership in public health. Facts show this to be the case, and I think the time has come when we ought to indicate to the people of the United States that the South is handling its health problems in a scientific and intelligent way; that we are getting rid of malaria, hookworm and typhoid rapidly and improving general sanitation. Malaria has been reduced in the South in the past ten years 30 per cent. That means definite and gratifying progress. I think the index of the advancement of any section of the country is the intelligent effort which is being made to improve health standards and thereby place it upon a sound industrial basis. I believe the South presents a greater opportunity for development along industrial lines than any other section of this country. (Applause.)

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#### THE CONSERVATION OF CHILD HEALTH.\*

By DR. W. S. LEATHERS,  
Jackson, Miss.

Fifty years ago there was practically no attention being given to child health in this country. In fact, prior to 1872, the child had scarcely been discovered as a unit of society. The effort that was being made at that time in behalf of the child consisted chiefly in providing him with food and shelter, caring for him when sick, and visiting punishment upon him when he violated the law. For the child whose mother was obliged to work there were only six day nurseries provided preceding the year 1872, in the United States. Hospital facilities for children up to this time were utterly inadequate, and special children's hospitals were almost unknown. The first hospital for children was established in Philadelphia in 1855. Some two years later the Nursery and Child's Hospital was opened in New York City and small special hospitals for children were established in Chicago in 1865 and in Boston in 1896. In reviewing the development in child health work in the United States it is

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evident that it is essentially a growth of the twentieth century, and in looking over the progress of the past twenty years, the first important step was taken in giving emphasis to the modern movement in conservation of child health by the publication in 1906 by the Census Bureau of the mortality statistics for the five years 1900 to 1904, inclusive. There were records of vital statistics in restricted localities before this date, but no report up to this time gave much attention to child mortality. The next most important step was the establishment in the Department of Health of New York City in 1908 of the division of child hygiene. This was the first official recognition of the importance of child hygiene as a governmental problem requiring special attention at the hands of health authorities. Then in 1909 the conference on prevention of infant mortality was called by the American Academy of Medicine in New Haven, Connecticut, and for the first time an enormous amount of material was collected and presented emphasizing to the public the high mortality among infants and facts were also presented showing that it was largely preventable.

Following this conference, the American Association for the Study and Prevention of Infant Mortality was organized and its work has continued along most successful and practical lines. Another notable step was taken in 1912 in the conservation of child health in the establishment of the Federal Children's Bureau, and for the first time the Federal government expressed a definite interest in child health and made provision for a special organization for the study of child health problems. In turn, the New York State Department of Health established a division of child hygiene, which was the first State Department of Health creating a division of child hygiene by legislative enactment. The awakening of the public in child health was further stimulated by the creation of the birth registration area and the publication of birth statistics by the United States Census Bureau in 1915. For the first time, birth statistics became available for making a comparative study of infant mortality.

During recent years a number of

voluntary health agencies have been organized throughout the country and perhaps the most efficient of them is the National Child Health Council which was established in 1920.

These facts of historical interest in the promotion of child health in the United States are given to indicate and to emphasize the outstanding fact that the nation-wide movement in the conservation of child health is a very recent development. Health authorities and educators are just beginning to rightfully emphasize the health problems of the child as they are related to the promotion of the health of the nation, for it may be truly said that no health work can be successfully done unless it is focalized upon the child as the most potential unit of society.

The conservation of the health of children by a State department of health pre-supposes a definite program. The program that may be used would vary in different States and also in different localities of the same State, but there are certain essential features that should characterize any effective program for the protection of the health of the child. In the development of the fundamental principles involved in child health work, it would perhaps be of more interest and practical value to present the program which has been developed in my own State, and indicate the plan of operation.

The State Department of Health of Mississippi has a well-organized division of child hygiene with a director and competent staff. There are three divisions under the Bureau of Child Welfare, namely:

The Division of Nutrition,

The Division of Maternity and Infant Hygiene, and

The Division of Mouth Hygiene.

In addition to these three definite phases of work, there is being operated under the direction of the bureau what are designated as "county child welfare units," each of which consists of a physician and a nurse. The child welfare unit is under the immediate direction of the director of the bureau. The unit is assigned to counties upon the condition that the county board of supervisors will appropriate an amount of money equivalent to the amount that will be expended in the county by the



State Board of Health. In other words, the State Board of Health requires that all expenditures of the county child welfare unit be made upon a fifty-fifty basis between the county and the State, recognizing the principle that all health work should be done in such a way as to create a sense of responsibility not only on the part of the individual, but also on the part of the local government. The objective of the child welfare unit is to conduct a general educational campaign throughout the county by having conferences with the parents and working almost entirely through the schools. The condition upon which the appropriation is made by the county for such work is that all the children in the county in attendance on the schools shall receive a medical examination and that a record shall be made indicating the physical defects found among the children. It is also made clear that the proper follow-up will be done as far as it may be possible by the health unit while in the county, based on reports made to the parents of the physical findings indicating whether or not the child requires tonsil work, correction of eye defects, or whatever defect may be found. It requires from four to six months to make an adequate medical examination of the children of a county of average size, together with the educational and follow-up work that may be necessary to vitalize the campaign. The program of the child welfare unit which is followed in Mississippi consists of:

1. Physical examination of the school children.
2. Placing health and weight records in all schools.
3. Inspection of each school building and premises.
4. Examination of pre-school children and infants as special educative demonstrations.
5. Distribution of health literature.
6. Organization of a county child welfare committee.
7. Educational work.
  - (a) Health lectures.
  - (b) Moving pictures.
  - (c) Health plays.
  - (d) Newspaper service.
8. Follow-up work to secure correction of defects found.

It is the consensus of opinion of

health authorities, based on the analysis of the medical examination of some two million children, that only about 10 per cent have the physical defects corrected unless some plan is devised for intensive follow-up work. This means that following the medical examination of the child, that the consequences of not having the defects corrected must be so presented to the parent as to arouse intelligent interest resulting in co-operation with the health authorities in having the physical corrections made. Much corrective work is accomplished while the county child welfare unit is engaged in making the medical examination of the children, but the results that have been achieved in this way could not be regarded as of economic value based on the expenditure incurred. It has therefore, been our plan to place in the county, following the medical examination by the health unit, a competent nurse who works in co-operation with the medical profession, the parents, and the teachers in securing a much larger number of corrections than would otherwise be possible. It is the plan of the Board of Health not to attempt any corrective work except with the co-operation of and under the immediate supervision of the medical profession of the county. In this way, we have found it possible to bring closer together for the common good, the practicing physicians, the parents, and the people generally in developing a higher health standard for the children. An essential phase of the work in the county is the educational program which enlists the interest of the people generally in the promotion of public health work. One of the by-products of this work recently has been the organization and training of what are termed "classes in home nursing." These groups are given elementary instruction in the care of the sick in the home, including the preparation of food, simple principles necessary in the prevention of the spread of infection, and personal care of the patient. By means of the above plan of follow-up work the State Board of Health has been instrumental in having the physical defects of many thousands of children corrected during the past few years, and what is even more important, the work has stimulated a larger in-

terest on the part of the profession and broadened the vision of the public in assuming responsibility for the conservation of child health.

There is no phase of public health work which has been more neglected than that of nutrition. As a result of the systematic examination of school children and the findings that have been recorded showing that from 20 to 30 per cent of them are underweight and that the physical condition of these children in numerous instances shows a low state of vitality resulting in physical inefficiency and susceptibility to disease, the problems of malnutrition must be given the most careful consideration in the conservation of child health. In this connection, it may be stated that there is no phase of public health work which is more amenable to being made a fad among social workers and those who place improper emphasis upon the findings of medical examinations than is nutrition. Every pediatrician has reached the point of view that malnutrition is more of an individual than a group problem. When it is known that there are a number of causes for malnutrition, among them being physical defects, parasitic infection, bad economic conditions the environment of the child, undesirable health habits, it becomes a problem of considerable magnitude. In making a medical examination, therefore, of a group of children, it must be kept in mind that the child showing underweight frequently is not suffering from malnutrition because of insufficient food, but on the other hand, it may be due to some physical defect such as hyperthyroidism, cardiac disease, improper sleep, or lack of the proper kind of food or an improperly balanced ration, and many other causes that might be mentioned. Malnutrition, therefore, should not be looked upon as a disease, but merely a symptom indicating a condition that requires a careful physical examination. If the treatment of the mal-nourished child is attempted in large groups, it will inevitably lead to serious error in numbers of cases. While the propaganda which has been used in recent years for the improvement of under-nourished children and malnutrition has probably done a great deal of good by calling attention to the physical condition of the

child, still I think too much emphasis cannot be placed upon the point of view that malnutrition should not be regarded as a group problem, but rather a problem of the individual child, and not infrequently requiring medical attention.

With these facts in mind, it has been our plan to have one who is especially trained in charge of the division of nutrition under the Bureau of Child Welfare. This work is projected throughout the field health program of the State Board of Health and an effort is also made to utilize all voluntary agencies such as the American Red Cross, Parent-Teacher's Association, and Women's Clubs, in giving the mal-nourished child proper consideration. The program which has been arranged for Mississippi in this work is as follows:

- 1—A State supervisor to have charge generally of the nutrition activities of the Bureau of Child Hygiene.
- 2—To supervise nurses or others qualified in the formation and development of a nutrition program, following the physical examination of children, pre-school children and babies, in those counties having Child Welfare Units, Rural Sanitation Units, Full-time Health Officers, Active Nursing Service, and upon request other counties and communities as time permits. The general program is to embrace:
  - a. The regular weighing and recording on the weight record charts of all school children.
  - b. Advocating the milk drinking habit for all children—milk delivery at schools.
  - c. School lunches, improving those brought from home, and, if possible, providing hot lunches at school.
- 3—Organizing and conducting "Growth Classes" and "Mother-Child Conferences" for underweight children and babies.
- 4—Educational work, talks to parents, children, schools, clubs, and other organizations.

There is no phase of public health work which is justly receiving more emphasis at the present time than maternal and infant hygiene. About forty-five States have created bureaus or divisions of child hygiene and the majority of them are co-operating with Federal government under the provisions of the Sheppard-Towner bill.

The need for such work is evident, based on infant and material mortality rates. In 1915 the infant mortality rate



in the United States registration area for births showed one hundred deaths per thousand births and the maternal mortality rate was six and one-tenth per thousand. In 1920, the infant mortality rate had been decreased to eighty-five and eight-tenths, but the maternal death rate had increased to eight per thousand. The total number of maternal deaths in the registration area for deaths in 1920 was 16,776. Statistics show that the infant mortality rate has gradually declined during recent years, but the mortality rate during the early months of infancy including deaths caused by premature birth, congenital debility, and injuries at birth shows no substantial reduction.

The maternal death rate has shown no improvement since 1900. The dominant cause of maternal deaths is puerperal septicemia which is known to be largely preventable. This indicates that modern knowledge of the causes and prevention of infection as successfully applied to surgical practice has not been so effectively used in obstetric practice. The fact that approximately one hundred and forty thousand infants die annually in the United States before attaining three months of age, together with the failure to decrease the maternal mortality, further emphasizes the need for public health work in material and infant hygiene. This work must, of necessity, be based upon an educational program. The division of maternal and infant hygiene of my own State has been legalized by legislative enactment and the work has been organized upon an efficient basis. The program which has been arranged for this work is as follows:

1—To supervise and direct special nurses in the field, whose duties are to be as follows:

- (a) Investigate, instruct, issue permits and further supervise midwives with the co-operation of the County Health Officer.
- (b) Lectures and demonstrations to groups of mothers and other interested individuals.
- (c) Supervisory care of women during pre-natal, natal and lying-in period.
- (d) Instructions with reference to care and feeding of infants and pre-school children.
- (e) Organization of local committees.

2—What we hope to accomplish:

- (a) Decrease the number of cases of Ophthalmia neonatorum.  
Blindness,  
Material invalidism,  
Infant and maternal deaths due to ignorance, carelessness, and neglect before, during, and after child birth.
- (b) Raising the health standard of mothers in rearing and training children.
- (c) More complete birth registration.

One of the most serious problems with which we are confronted in protecting the lives of mothers and improving health standards for infants is the deplorable fact that a large percentage of mothers are attended during confinement by ignorant and careless midwives. In my own State there were 45,050 births during 1922, and of this number, 16,425 births of white children and 3,316 births of negro children—a total of 22,741 births were attended by physicians, while 16,777 births of negro children and 1,926 births of white children, a total of 21,703 were attended by midwives. It is interesting to note that 606 births are recorded as having been attended by neither midwives nor physicians. This shows that approximately 50 per cent of the births of this State were unattended by physicians, but on the contrary, the mother was given the necessary aid during the birth of her child by ignorant and in the main filthy midwives. It is, therefore, clear that one of the important problems in the reduction of maternal mortality and the decrease of infant mortality is the midwife problem.

The public welfare seems to demand the practice of midwifery at the present time, but it is most unfortunate that the ignorance of the present-day midwife makes the practice of midwifery a menace to the public health. A survey of the midwife problem shows in an unmistakable way the need for reform in the existing conditions in the practice of midwifery. When it is realized that more than 90 per cent of the midwives in a State can neither read nor write and in the majority of cases are uninformed in the simple principles of cleanliness, the midwife problem becomes one of grave import in the protection of the health of the mother and the reduction of infant mortality. In view of these facts, it is imperative that

midwives be permitted to practice only when they meet certain qualifications determined by careful supervision, instruction and examination upon essential information required in attending a normal child birth. In Mississippi the plan has been used during the past two years of having a State supervisor of midwives, a well educated and trained nurse who has visited each of the counties of the State and conducted a course of instruction during as much as two days for the midwives of the particular county. In giving this course of instruction they are advised relative to the simple principles of cleanliness, what to do and what not to do, in attending a case of child birth and are also required to provide certain equipment necessary in the practice of midwifery. If they measure up to the minimum requirements established by the Board of Health they are issued permits which are continued from year to year, provided the midwife complies with the regulations of the State Board of Health for the practice of midwifery. While we realize the extremely difficult problem of informing and properly instructing midwives who are in the main ignorant women, qualifications for the practice of midwifery in the future are being determined, and it is believed that progress is being made and that substantial results will be obtained over a period of years.

The program of maternal and infant hygiene should be so planned as to secure the intelligent interest and co-operation of the medical profession. In Mississippi the State is divided up into four districts and district nurses are placed in charge of each territory. The supervising nurses have a definite program which when completed during the year will be a means of making the work of State-wide interest and value. In turn, in a number of counties in these districts, there are nurses who are conducting an intensive campaign in maternal and infant hygiene. In this way, we hope to show the value of intensive work in certain counties in each district and it will be possible in this way to make a comparative study of the indirect value of the work in the respective counties upon the district at large. It will be seen that by this plan a general educational campaign is being con-

ducted throughout the entire State, which in certain counties an intensive campaign is being made with the intention of making a careful survey, the information from which will serve as a basis for correctly evaluating the methods used and the results obtained.

The analysis of the medical examination records of more than sixty thousand children in Mississippi during the past two years shows that about 75 per cent have defective teeth. This means that of the six thousand school children in the State, approximately four hundred and fifty thousand are in need of dental treatment. This data substantiates the condition which is claimed to be found the country over, namely, that of the twenty million school children in the United States about fifteen million show defects in mouth hygiene. Believing that oral hygiene presents one of the most far-reaching public health problems, it has been our privilege to organize a division of mouth hygiene in the Bureau of Child Welfare of the State Board of Health for the purpose of conducting in a systematic way a campaign for educating especially the children in mouth hygiene. This work is in charge of a State supervisor who travels from county to county paying special attention to the larger towns and agricultural high schools, the object being to use certain strategic points at the outset in demonstrating the importance and value of this work and in increasing interest in mouth hygiene in a State-wide way. This work is being done largely in co-operation with the dental profession, teachers, health officials, and the parent-teachers associations of the respective counties. Suitable and attractive literature is being prepared for use in the schools with a view of enlisting the interest of the children in promoting proper health habits in caring for the teeth. It is a source of gratification to state that during the past year as many as five white schools of considerable size have been successful in obtaining 100 per cent dental corrections among the children and in one of the towns this result was obtained in both white and negro schools. As a result of the campaign that is being conducted in this way, a State-wide interest is being created particularly among the children in this im-



portant phase of hygiene and there can be no question but that it will have a far-reaching effect in time upon the health ideals of the citizenship of the State. The program which has been arranged in the division of mouth hygiene is as follows:

- 1—To teach truths of mouth hygiene through newspaper, moving picture, and lectures.
- 2—To impress upon those who train children the importance of forming the habit of properly caring for the teeth in early childhood.
- 3—To acquaint parents and teachers with the general mouth conditions that exist in children.
- 4—To secure dental inspection of children, to furnish each parent with the results of such inspection, to keep a record of inspection in the school room.
- 5—To perfect a series of illustrated lessons on mouth hygiene suitable for each school grade. To strive to have these lessons properly taught and followed up in the school.
- 6—To have an endorsement of the State Dental Association in conducting educative demonstrations in such operative work as is thought beneficial.

In conclusion, the program for the conservation of child health should be based upon a well-planned system of education of the mothers, children, and the public at large. As a part of the plan there should be a well-devised system of physical education for school children, including supervised play and work.

The program of child health should be made known to the medical profession and their intelligent interest and co-operation secured; and more correlation and co-operation of activities should be effected between the health authorities and the leaders in education throughout the State. The quickening of the health consciences of the educational leaders throughout the State and the broadening of the vision of the general public by an effective program in the conservation of child health and through it the promotion of public health broadly speaking, should be a means of attaining the largest possible results in health education and in raising the health standard of the citizenship of the State.

#### DISCUSSION.

**Dr. F. J. Underwood (Jackson, Mississippi):** You have just heard outlined to you the program for Mississippi. It is to Dr. Leathers

that credit must be given for this program, and I am happy to be associated with him in this work. A number of years ago as health officer of Monroe County, Mississippi, I became interested in child hygiene, and I attempted to make a physical examination of all the children in that county. I had associated with me in the work several good dentists, and a good eye, ear, nose and throat man. I had been practicing general medicine for a number of years, but had not realized at all the wholesale neglect of Child life.

At the beginning just going into the school and examining the children and sending notice to the parents of the defect or defects of the children was all we could do, because we had no public health nurse to do follow-up work. We secured at best about 10 per cent correction of defects found. That was the best we could do then. But by-and-by a public health nurse was placed in the county, placed at our disposal, and with this competent, tactful, experienced woman going into the homes and getting up close to the parents, as only a good nurse can, we were able to secure in a few communities 50 to 75 per cent correction—quite a different story.

We know now that the biggest end of the proposition is the corrective end. We assume full responsibility for the examination of school children and pre-school children and infants, and the responsibility for the correction is placed, where it rightfully belongs, on the medical profession, and right well they have measured up in Mississippi to their responsibilities. Very few physicians have not come up to what was expected of them. I do recall one or two instances where there was some little embarrassment, but only one or two. In the main we had the support of all the physicians in our work. The past two years have witnessed a notable advance in our knowledge of the causes of malnutrition in school children and the extent to which it occurs. Very definite steps have been taken both in the way of proper education of the mothers and teachers along nutrition lines; and also in the actual setting up of nutrition classes in very large numbers in the public schools. Recently there has been much study for the prevention of tuberculosis in infancy and childhood.

Only recently has dental hygiene been properly emphasized. The needs for better care of children's teeth is stressed everywhere and communities here and there are taking steps to correct dental defects. The hindrance to progress in our state has been the lack of sufficient help to carry out even in early school life all the prophylactic and corrective work that is found necessary.

I have enjoyed very much being a guest of your Society and hope to see many of you at our state meeting at Vicksburg next month. I thank you.

**Dr. C. V. Unsworth (New Orleans):** I would like to ask Doctor Leathers if he will define what he means by physical examination. He speaks of the eye, ear, nose and throat. I would like to ask him if he makes a mental survey. In other words, if the cen-

tral nervous system is examined. I think if that is not done it should be done.

**Dr. W. S. Leathers (closing):** We do not make an examination of children which is exhaustive or exhausting. We find if we make an examination which is too tedious it defeats the object of the work, and therefore the examination is directed so as to get the largest possible result consistent with this idea. It is well known that 95 per cent of the physical defects of children are above the shoulders—eye, ear, nose, throat, teeth, and, therefore, that part of the body should be carefully looked over. The general nutrition of the child is observed. If it is suspected of having hookworm disease, malaria, or some of the other diseases which are responsible for malnutrition, that is looked into. We do not emphasize chest examination as a uniform procedure because it takes a great deal of time and the findings would not be satisfactory in proportion to the expenditure of time and money. If we think a child has heart trouble, of course the heart is examined; also the lungs. So we try to make the examination thoroughly practical and productive of good, but not exhaustive as far as the child is concerned. Incidentally, mental hygiene is not given a great deal of attention at present.

In concluding this discussion I want to express a keen appreciation for the opportunity and privilege of being on the program. I have never had the pleasure of attending the Louisiana State Medical Society. I have a very high esteem for Dr. Dowling, your health officer, having known him for years, and those who know him feel he has done a great work for Louisiana and he has also been instrumental in promoting health work throughout the country, and I am especially glad to be associated with him. I thank you. (Applause.)

### HEALTH EDUCATION.\*

By ROBERT T. LUCAS, M. D.,  
Shreveport, La.

In the medical profession there is more inertia than there should be towards education of the laity in health problems. We are rather negligent as individuals and as medical organizations in our duty as leaders in directing public thought and moulding public opinion. Most medical information reaches the public through newspapers and magazines and especially through patent medicine advertisements. It is needless to call your attention to the vast amount of misinformation the latter disseminates.

Health education should have its part on the programs of the churches, Sunday schools, civic bodies, Boy Scouts

and Girl Scouts, industrial organizations, and the schools, not to mention the medical organizations. Such education is a part of the programs of some of these bodies. An advanced Boy Scout knows more about health and disease than three-fourths of the adult population. As parts of these various bodies it is our duty to see that they do their share in the advancement of health education.

Considerable progress has been made in health education and health control in Louisiana and elsewhere. Physiology is being taught in the public schools. The welfare of our school children is being watched over by school physicians and nurses, and in some cases by physical directors. In many places this teaching of health problems and health supervision of the school children is efficiently done. Is such the case in your particular community?

The greatest progress in the next decade will be made in the field of preventive medicine. The two great means at our disposal to accomplish this progress are education and prevention. With proper education prevention largely follows as a natural sequence. With knowledge of personal and public health matters the laity will observe and support measures which are for the public welfare. On the other hand, only limited and ineffectual prevention can be carried out without such understanding and support on the part of the public.

Only a small percentage of our population understands the simplest facts about tuberculosis, malaria, typhoid fever, and the other common diseases. It is in our power to make practically the entire population a few years hence understand the elementary facts about disease and health. With such knowledge almost universal you would expect nothing less than active co-operation in such measures as are necessary for the public welfare. Smallpox, typhoid fever, and diphtheria can be practically eliminated and the incidence of other diseases markedly reduced. The degree of progress is proportional to the amount of health education possessed by the public. The instruments for such education must be you and I working through the medical societies, churches, schools, civic bodies, in our offices, on

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the street, and in our homes. The times when we fail to take advantage of the opportunity to impart proper health information and to correct misinformation we are shirking our duty.

Louisiana should have a State law making vaccination a requirement for admission to the public schools. If we are not ready for such a law this is all the more reason for an active campaign of education to prepare for what we so obviously need. The smallpox incidence in our State is nothing of which to be proud. Last year one hundred and thirty-eight cases of smallpox were reported in children of school age, six to eighteen years. I am ashamed to admit it but my parish, Caddo, headed the list with the largest number. Following an epidemic of smallpox in New Orleans a few years ago vaccination is being strictly enforced as a requirement for admission to the public schools. If we result, Dr. Dowling informs me that he does not know of a single case of smallpox developing last year. We can only speculate as to how many cases might have been prevented from developing had these one hundred and thirty-eight school children been protected by vaccination, and therefore the one hundred and thirty-eight foci of infection not existed.

I shall quote the conclusions the United States Public Health Service arrived at by analysis of smallpox and vaccination data from twenty States, including Louisiana, for a period of five years:

"It is evident that smallpox in this country is dependent on the popular vote. In general the people obey laws which they have made. If popular sentiment in a State is behind a strong centralized compulsory vaccination act, smallpox is negligible in that State. If local authorities are given discretionary powers in the matter of vaccination enforcement the rate tends to rise, even in the most favored sections of the country, whereas in the absence of compulsory features in the law, or where there is no law at all, smallpox reaches a high rate."

Let us educate the laity to the possibilities of immunization against diphtheria and typhoid fever as well as against smallpox, and at least make it easily available by school and board of

health physicians for the school children to be immunized against diphtheria and typhoid fever.

In order to make most progress the measures of health education and health supervision must be carried on by the highest type and best trained men and women who, in most cases, devote their entire time to such work. These positions will rarely attract the best ability unless ample remuneration is allowed and the positions are dependent on ability rather than on politics.

I have purposely emphasized smallpox control by vaccination because it is the first step and the simplest as well as the most urgent. However it is only one step and with education in health matters progressing I dare not predict how important this field of endeavor will become.

If I have succeeded in directing your attention to our individual responsibility and to the possibilities in this field my paper will have been worth while.

#### DISCUSSION.

**Dr. Edmund Moss (New Orleans):** I am interested because I am in charge of health conditions in public schools of New Orleans. Everything he has said is absolutely true, and if we are going to get anywhere it is a matter of education. But there is one thing he proposed that I would like to mention. He said that a law should be enacted making vaccination compulsory upon entrance into the public schools. But how about the private schools? There is where the great trouble comes in. For twelve or thirteen years we have compulsory vaccination upon entrance into the public schools, and again at the end of seven years. But anyone has the privilege to leave the public schools and go to the private schools without vaccination. There is the trouble. That law should be enforced in all schools. You do not have to have State legislation to do that. I think you can work under the Board of Health laws.

**Dr. J. Birney Guthrie (New Orleans):** I am surprised to hear a man like Dr. Dowling, who knows whereof he speaks, get up here and say what he has.

The question of the private school—and the private school in Louisiana is largely the parochial school—is the crux of the matter of the compulsory vaccination of school children. And this is a hard question, because we know where the control of the largest number of private schools lies. The trouble is we are afraid to get up here and speak the truth, the health officers are afraid to speak the truth, they say the question must be handled "diplomatically." The trouble with the whole system is the matter of the necessity for diplomacy. We realize that diplomacy is

necessary in the absence of universal demand.

Doctor Lucas' paper is very timely in that regard. We know we have had in this community upon several occasions, notably at the time of the outbreak of yellow fever in 1905 when we had to deal with sanitation along an entirely new plane, following out the new idea in sanitation. We were able in a short time to educate the whole community, or at least sufficient numbers to sway public opinion. This is the only way we can do anything with sanitation. Education is fundamental to it. The reason worse conditions exist in the private than in the public schools is that the public does not demand that the private schools come up to the mark and submit their pupils to compulsory vaccination and other necessary supervision. I believe without consulting legal advice we could write such a law, and with the proper amount of courage back of it we could enforce such a law; but there is a certain amount of cowardice connected with the demanding of that law. If the health officers would forget for a moment their politics, I believe they could swing public opinion in a comparatively short time. I was amazed and astounded to hear Doctor Dowling get up here and say that a community should be privileged to enjoy smallpox if they so chose. I know he was trying to say something funny, but from my standpoint the statement was anything but funny. It was an unfortunate statement. I do not agree with him in that respect at all. I do not feel that any individual has the right to enjoy any kind of infectious disease because he chooses so to do.

**Dr. J. S. Stulb (New Orleans:** When I was connected with the Board of Health the safest way to get vaccination in the parochial school was to go in and quarantine the school. That was what we did on Josephine street. We made them be vaccinated or be tied up, just the same as we tied up the Charity Hospital, and now we have compulsory vaccination in the Charity Hospital. Everybody who enters the Charity Hospital must be vaccinated, regardless of what is the matter with him. He cannot be placed in a ward unless he is vaccinated. That is the reason you do not have any cases of smallpox in the Charity Hospital. We went into conference with the Bishop and he finally consented to exact that all children must be vaccinated before entering any of the parochial schools.

#### SWIMMING POOLS AND INFECTION.\*

By W. H. SEEMANN, M. D.,  
Department of Hygiene, Tulane School of Medicine.

The recrudescence of the elaborate municipal baths has been most marked during the last score of years, especially in America. In ancient times the baths were of elaborate construction and much magnitude. The Romans, espe-

cially, excelled in the ingenuity which created means of conducting and heating water as an integral part of very magnificent architecture. Gradually, due to contaminating influences which developed around the baths they lapsed into decay.

There can be no argument about the value, to the health and pleasure of a community, of well constructed and managed swimming pools; besides, safe, easily available places where swimming can be practiced are a great boon.

Locke wrote in "Some Thoughts Concerning Education," "I shall not need here to mention swimming, when he is of an age able to learn, and has any one to teach him. 'Tis that saves many a man's life; and the Romans thought it so necessary that they ranked it with letters; and it was the common phrase to mark one ill educated and good for nothing, that he had neither learned to read nor swim. *Nec literas didicit nec natare*. But, besides the gaining a skill which may serve him at need, the advantages to health by often bathing in cold water during the heat of summer, are so many, that I think nothing need be said to encourage it."

There is no exercise which, done with moderation, can equal, especially in summer time, swimming, as a benefit and a pleasure. The public swimming pools provide a means to this enjoyment and are patronized, principally, by young people and every safeguard, moral and physical, should attend their conduct.

Our interest, as medical men, lies chiefly in disease prevention and with regard to swimming pools much responsibility is our lot. They have been implicated in disease spread on occasions, sometimes, justly and, more often, in our own experience, unjustly.

Diseases of the eye, ear, nose and throat are more frequently attributed to infection, acquired in swimming. Skin diseases are frequently traced to bathing, and occasionally, more serious infections, by the gastro-intestinal route, have had their origin in polluted bath water. Cases of furunculosis of the external auditory canal and *otitis media* have frequently been the results of swimming pool infection.

In our own experience, occasional infections of the ear have come to our

\*Read Before the Louisiana State Medical Society Meeting April 24-26, 1923.



knowledge, which have been apparently traceable to swimming pools. No doubt, the macerating effect of the exposure to the water on the mucous membranes and skin renders them more liable to immediate or later infection. This is especially true when the water contains excessive amounts of sediment, which act as excoriants and irritants, producing itching and a desire to rub and pick at the parts. In this connection it must be remembered that, due to the lowered resistance of the parts, infection may occur from bacteria already harbored by the individual, as well as, from those freshly acquired.

It is our duty to maintain a watchfulness over these swimming pools that the opportunity for bacterial infection or the irrigation from foreign matter may be reduced to a minimum.

No universally accepted standards are available, by the use of which one can, so to speak, by rule of thumb, classify readily a swimming pool or bath house. It becomes necessary to adapt as best we can such practical truths as have been demonstrated to local possibilities.

Good light, ventilation, ample shower bath facilities, good drainage, proper toilets, careful supervision of the bathers and their suits, and an ample supply of water, of drinking quality standard, are the necessary requirements that are needed to initiate a first-class swimming pool; to maintain one, is a more difficult problem.

Many persons do not realize that the swimming pools are not supposed to fulfill the functions of bath tubs, but are intended as media in which clean bodies may be afforded pleasurable exercise. Even with conscientious scrubbing with soap and water and the copious use of showers some parts in the folds of the body will retain minute amounts of excreta which are, later, by the effect of the maceration and attrition due to swimming yielded up to add to the contamination of the water. In persons of careless or unclean habits, pollution, obviously, in greater and more certain amounts, is thrown off.

The inevitable washing out from the noses and mouths of the swimmers of mucus, which, on account of its inclosed air, floats for some time, offers another source of contamination to the water

and infection to the swimmer. No doubt some of the cases of sore throat and "pink eyes" are due to such conditions.

One fertile source of bacterial contamination, certainly important in increasing the numerical content, is furnished by the bathing suits and towels. Investigations have shown, in some reports, as many as 1,000,000 bacteria per square inch of used bathing suit, and the average is 150,000. In most bathing pools little, if any, attention is given to bathing suits and towels. Generally, they are squeezed out and bundled up, until the next day, sometimes hung up to dry and occasionally rinsed out. Towels, which are even heavier carriers of pollution, are frequently used promiscuously by several persons, and receive even less attention.

In determining the satisfactory sanitary condition of a pool, methods similar to those used for the sanitary analysis of water are employed. A search is made for the presence and amount, if present, of contamination with the colon group of bacteria, showing the presence or absence of contamination with excreta from the bathers. After the observation made above, it must be obvious, that this method is varying in its results, and at best uncertain. The colon content will increase directly with the numbers of the bathers, unless a constant overflow of water is maintained or continuous disinfection is practiced.

On account of the scarcity, or high cost of production, it is not always feasible to provide a sufficient amount of potable water, to make adequate replacement to meet the desired dilution. Under these circumstances, chemical disinfection must be resorted to. Calcium Hypochlorite, Chlorine gas, Ultra Violet Rays or Ozone with a recirculating system are the means usually employed. The New York City Health Department workers seem agreed that Ozone is the most efficient. Our own experience has shown that chlorine gas, or even calcium chloride, if carefully used are satisfactory.

Where standards have been established the limits of colon contamination considered safe range from 10 per c. c. in one case to as much as 35 per c. c. in another.

It seems that, until we have had more informaton, this method of judging should be supplemented by a careful common sense survey of local possibilities and their effects. Adequate preliminary bathing (shower,) facilities should be provided and their thorough use insisted on. Bathing suits and towels should be individual, if possible, and in any event should be adequately sterilized after use. Good ventilation and light tend to promote physical and moral ideals and discourage filth.

A careful check of the bathers and prompt study of any diseases reported among them should be made, and any danger signal should bring prompt response in the shape of inauguration of or increasing of disinfection and, if need be, a discontinuance of the use of an implicated pool.

No arbitrary or untenable rules must hinder the full enjoyment of healthful sports and, on the other hand, apparent security must not deter the obligation for constant watchfulness.

The intention and limits of this paper do not permit any further addition to the general discussion I have made. If I have aroused interest in the subject I will be gratified.

#### DISCUSSION.

**Dr. W. T. Patton (New Orleans):** At the Southern Medical Association last year we had a paper read by Doctor Taylor of Florida on this same subject, and I was put on a committee of three to report back on conditions at the meeting in Washington.

You may have the "old swimmin' hole" in bayous of Louisiana, or the creeks of Mississippi, or the Missouri river, or the swimming tanks of the city, but you will have infection in all of them. The Doctor spoke particularly about bacterial infection. To my mind it is not so much a matter of bacterial infection as of the constructon of the ear. The ear canal is divided into the external canal, the drum, and the middle ear. The sebaceous glands do not react well to water, no matter whether it is sterile or dirty. Soak the external ear in water for two and a half or three hours, and the skin becomes macerated, and a little scratch may start external otitis, that spreads to diffuse external otitis, and we have a swollen ear. The drum is seldom affected by water. You can put in a protection if you want to, but the only injury to the drum is by concussion. If you dive you need something to prevent concussion. For protection of the ear canal against maceration and drum against concussion I do not think anything answers as well as pledgets of wool greased with vaseline. It

keeps the ear dry and does not soak up the water.

A tank is dirty in three ways. First, natural filth; second bacteria, and third gas, which I believe is an important thing in infection. Practically everyone coming out of water tries to blow water out, he blows it into the Eustachian tube, it is stopped up and the water acts as an irritant, the ear drum becomes inflamed, and then you have a middle ear trouble.

The Doctor spoke of bathing suits. At the Y. M. G. C. we have discarded bathing suits for three years. I cannot dive without getting an infection in my nose, and I know the action of the gases has something to do with that.

**Dr. A. I. Weil (New Orleans):** Doctor Seemann asked me to discuss this not only from the viewpoint of the ear, nose and throat man; but also as chairman of the Health and Sanitation Committee of the Chamber of Commerce. From that standpoint it is not necessary to say much except that from time to time we have made an effort to inspect the various bathing places. Of course we know that in the tanks there is more danger of infection of the ear and other portions of the body. Infections from swimming pools can affect any part of the body, they can cause typhoid fever and other diseases, but the most important place of infection is the ear and nose. It is rather interesting to note how, as soon as the warm months come on, we have so many more cases of ear infections. During the winter we see an occasional case, but about this time of year they come in two or three each day, and then six or eight each day, with diffuse external otitis, and you do not ask them if they have been in swimming, but where.

It is rather curious, as Doctor Patton has mentioned, that clean water will affect the external ear as much as dirty water. We notice a good deal of difference in infections of the nose from clean water or dirty, but infections of the ear seem to be about equally divided. The explanaton I think is that the skin of the middle ear becomes macerated, as Dr. Patton has said, and the slightest bruise, of course, will cause infection.

There is one important point, and that is education of the people as to the dangers of the swimming pool. This has gone on to a certain extent so that some mothers are aware of this danger and they consult us as to whether or not it is safe for the child to go to this pool or that one. I believe the question is not so much the pool they go into, as it is the condition of the nasal mucosa. If you examine a child and find the mucous membrane inflamed, an old, chronic purulent rhinitis, then it is not safe for that child to go into any pool, because he may get an infection. But if the mucous membrane is normal I think it would be quite safe for the child to go into any reasonably clean pool. Of course the dirty pools are not safe at any time.

It is rather hard to protect the nose against infection by the use of cotton or wool, as you can the ear, but you can protect the ear by



certain precautions. We all know the tendency when we get our nose full of water, especially when we dive, to blow. That is the very worst thing because it forces the materials into the ear, and so we get an acute otitis or mastoid, a serious thing.

I cannot agree that 90 per cent of ear troubles are in the middle ear. On the contrary, I would say that at least 90 per cent are external otitis or furuncles. It is rather uncommon in my experience to find a purulent otitis that can be traced to swimming pool infection, but the infections of the nose are not uncommon. I remember two years ago we had quite an epidemic of nasal infections from a dirty pool, so much so that when a child came to me I asked if it had been swimming in a certain tank, and always the answer was Yes.

**Dr. Clarence Pierson (Alexandria):** Doctor Seemann says that in every test made bacteriologically the ear and nose were infected. From a practical standpoint I do not think this will apply universally to bathing and swimming pools. I think much depends upon an analysis of the water and the time you remain in the pool; and also the sanitation of your swimming pool and surroundings. For instance, a swimming pool with water that comes from as much as 3,000 feet beyond the sea level, absolutely free from bacterial organisms, has been demonstrated rather a benefit than a detriment to these ear and nose conditions. The osmotic influence of the salines is beneficial.

We realize that the "old swimmin' hole" must be done away with, and the foundation as laid by the bacteriologist is the best piece of work that has been done in this line. But let us not become sway-backed in the application of this to every swimming pool.

I would like to know Doctor Seemann's experience in the use of water at a certain temperature, and whether it should be renewed at certain intervals, or what. I am asking this from a practical standpoint, because in addition to my work I conduct a large swimming pool which is a great joy and benefit to many people who are not able to take the baths.

**Dr. L. C. Scott (New Orleans):** Was there any distinction made between sea water and fresh water for bathing? Are diseases more prevalent among those bathing in the open sea than in tanks containing sea water?

**Dr. W. H. Seemann (closing):** In regard to Dr. Patton's remarks about the loss of immunity that occurs in the cells of the external ear, this lies in the Eustachian tube, in the presence of water there for a prolonged time. I think it is accepted that it does occur, but we must remember that even after it does occur, infection could not take place unless the infecting organisms are present, and that brings up the question which seems most important, and that is inspection of people before going into the pool—for their own protection. The mucus that is expectorated floats on the surface of the water in bubbles, and the next fellow that comes in swims into a bunch of these bubbles, they are taken in, and if there is lowered resistance infection takes place.

Replying to Doctor Pierson, I hoped to make myself plain that I wish to do everything possible to promote the use of swimming pools. We know that the very name of "bath," especially to a man in Doctor Pierson's line, who has to treat so many neurological patients, suggests something that it would be a sacrilege to get rid of. We know there is nothing more refreshing than a good bath; but I am of the opinion that everything that is used in the form of a disinfectant, such as chlorine, chloride of lime, the ultra violet ray, etc., is done as a substitute for the better plan of a large volume of ever-changing water with proper drain on top.

With regard to Doctor Scott's question, I cannot answer as to the source of these infections. But this is what I am pleading for—more attention to this on the part of the specialists who can give me these statistics. In my own personal experience these sand boils were usually acquired on the Gulf Coast where the water is of moderate salinity, but it contains some sand and silt, and this going into an ear which is already macerated, causes irritation, and if the subject attempts to remove it he actually inoculates himself with the germs that are in the tank.

#### HEADACHE: A STUDY.\*

By DR. GEO. H. UPTON.

In the embryo and in the normally developing child, and in the young adult, this bone process is responsible for the hollowing out and shaping of the various accessory cavities of the nose (Drs. Smith and Sluder)—and in early uterine life we have chronic inflammation of the bony processes of nose and orbit as well.

- a. Osteoblasts depositing bone salts.
- b. Transition stage.
- c. Osteoblasts absorbing bone salts.

a. Represents an edge of bone lined with ovoid cells or osteoblasts which are depositing lime salts in the formation of the bone structure. Much of the finer structure of all these sections has been destroyed by a decalcifying process. In the b. section a locality has been chosen where the ovoid cells or osteoblasts are being grouped together; but they have not as yet lost the outlines of their limiting individual cell membranes. They are grouped together so that their peripheries, or external cell membranes are touching one another. Subsequently, over the area of the surfaces which touch one another these limiting membranes disappear, the cell bodies are thrown into one; and out of

\*Read Before the Orleans Parish Medical Society, March 12, 1923.



several mononuclear osteoblasts we have one large multinuclear giant cell or osteoblast, shown in c.

When in the walls of the sphenoidal or ethmoidal sinus there is an involvement of the optic nerve, in so far as it depends on bone pressure, blindness, partial or complete atrophy is pretty sure to occur. When, however, the alarming symptoms of optic involvement are recent and slight, the trouble may not be due to a bony pressure, but to a pressure of the soft parts, or to an extension of their inflammation, or of their vascular congestion. These latter conditions may be relieved by giving free drainage and ventilation to an occluded sinus; but in an inaccessible region if there is pressure of a bony surface, such as a swelling upon the sensitive or an optic nerve, it is difficult to see how the symptoms are to be relieved. Fortunately, there is a good reason to believe that in the nature of things, the encroachment of the field of engorgement and soft hyperplasia upon the nerve structures gives a timely warning so that surgical interference is possible before an irreparable condition results.

Headache, whether it be seldom or frequently recurrent and bears the names "Migraine, Bilious Headache," or "Blind" or "Sick-headache," or "Hemicrania, like all other pain, according to present thought, must be a symptom of a lesion of some kind, whether a pathological-histological change or a toxemia be (at present) recognized as its cause. Weak eyes (asthenopia) must be a symptom of a lesion, whether its nature be known now or not, and optic neuritis and atrophy and retinitis and choroiditis must have causes underlying them. Hysteria, neurasthenia, syphilis and the cases left in the categories of migraine, asthenopia and idiopathic optic neuritis, and idiopathic atrophy become smaller as our knowledge of deeper facts become known to us.

Recurrent headache when at all severe (or even slight) in the course of time becomes a matter of serious moment for the individual; and with the higher grades, is the cause of so much disaster both in his affairs and the general welfare of the family, that from the

earliest times to the present hour it has had the serious efforts of some of the best minds bestowed upon the solution of its causes and treatment.

Headache of any grade is a symptom in many diseases that are at once, or easily recognizable. Self limiting by either recovery or death in a period of time that represents proportionately a short span in life of the individual. But headache is also a symptom of another class of morbid conditions which present no signs, of which the headache may be the only symptom; and which are not self limiting by recovery or death but persist throughout the life of the individual from childhood to age.

*Frontal Headaches.* A low grade unending headache is established by closure of frontal sinus, without more symptoms and made worse by use of the eyes. The air is partly absorbed in the sinus and the negative pressure makes the wall sensitive (P. McBride, 1891). The floor of the sinus is its thinnest wall and has attached to it the pulley of the superior oblique. The closure of the sinus is not an accident of anatomy. The mechanism by which closure is produced is a combination of unfavorable anatomical settings such as narrow noses, plus hyperplastic changes in the soft parts and the bone (Dr. Wright).

Dr. Weber of Philadelphia described the mechanism of ocular headaches to wit: "The ciliary muscle in its effort to secure for its possessor the best possible vision under unfavorable circumstances or conditions, provokes an irregular discharge of nerve energy along the oculo-motor nerve to its nucleus upon which it depends for its proper government. This irritates the neighboring fifth nerve nucleus with its termination on the forehead. With this ache there comes a deep dull pain proceeding from the centers themselves and from the cortex through the sympathetic to the dura mater. Soon the whole front of the head aches and a typical eye strain picture is produced."

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Dr. J. A. Kearney, *N. Y. Medical Journal*, November 16th, 1921.

In the study of headache the site, the character of the pain or distress, the time of day of its occurrence and greatest severity, the character and amount of

employment of the eyes, and the state of the general health are the important determinations for the Ophthalmologist at a time when a patient is much reduced in health, or is convalescent from a long standing or febrile disease or major surgical operation, asthenopia (Eyestrain) symptoms of other remote distresses, the result of errors of refraction, are apt to become manifest. In good general health the effort necessary to overcome an existing error of refraction or extrinsic muscular imbalance may give no reflex headaches nor other distress, but when the eye musculature consisting of the ciliary muscles of accommodation and extrinsic muscles, weakened through constitutional disturbances that tend to lower vitality, the same use of the eyes, which when in health produce no untoward symptoms, at this time is attended by the reflex headaches that are characteristic of eye strain. Examination at this time under a mydriatic is advisable, and when there is found an error of refraction or extrinsic muscular imbalance, relief is usually experienced when they are corrected. However, if he has been wearing glasses, the original symptoms may recur which his lenses were prescribed to correct. An examination under a mydriatic and glasses containing the present correction will nearly always clear up the complaints when they are found to be due to errors of refraction.

Because the patient is wearing glasses is no evidence that the correction is what it should be at the time he seeks relief. By questioning, one will frequently find that the glasses he is now wearing were ordered without a mydriatic and sometimes he is wearing a correction although it has now been changed by time or by lowered state of health. Given a patient suffering from headache, that has every semblance of eyestrain with no external evidence of inflammation and upon examination and tests has no refractive error present, in a number of cases by turning the lids and carefully scrutinizing the conjunctiva, it may disclose changes from that of luster to decided disease. In this type of cases the complaint most generally heard in addition to headaches, is drowsiness that comes

many that have applied for relief of in the afternoon as a matter of fact headaches had thought they required glasses, but on close examination determined the cause to be conjunctival disease. In this vicinity conjunctival affection producing headache is quite prevalent. The symptoms disappear as a rule as soon as the conjunctiva has responded to a course of treatment. Headaches due to glaucoma, iritis, keratitis, conjunctivitis and other diseases that attack the eye structures and adnexa are readily recognized as presumably positive by the affection when found.

A careful ophthalmoscopic examination of the fundi of the eyes is imperative in every patient who complains of headaches that are persistent and uncontrollable. By such examination many of the brain tumor cases admitted to our hospitals disclosing choked discs are disproved as such for the first time. An ophthalmoscopic survey of the fundi of the eye often discloses changes in the structure that suggest anemias, arteriosclerosis, toxemia and other dyscrasias which might be held accountable for headaches.

Patient consults us for relief, and if we cannot find any trouble either in error of refraction, or eye growths, or anything appertaining to the eye field we should not hesitate but immediately call in one or more of our colleagues so we can by the process of elimination, find the cause, for according to the law of cause and effect if we can remove the cause we can relieve the effect produced by said cause and the finale will be amelioration or cure, for when we analyse the case it comes to us for relief and hence produce the cure.

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Dr. Brelmer, *Southwestern Medicine*,  
March 1922.

Headaches are associated with other symptoms which make the diagnosis and which call for attention at the hands of the ophthalmologist. What type then can the oculist relieve? Briefly stated,—and this is to the general practitioner—whenever you have tried and failed to cure any form of migraine send that patient to an oculist. In all probability whenever you meet that patient again he will be wearing glasses and will tell you he is free from headaches at last.



Do not be afraid to refer him, you will not lose the case and you will make a friend. Often a patient after being refracted will come back and report a cure and incidentally boast that his family Doctor made a fine diagnosis, when he sent him to have his eyes examined. It far too frequently happens however, that the family Doctor either because he fears to lose the case or through ignorance of the real situation tries this remedy and that always hoping to hit on the right one and finally loses the patient who goes to another Doctor who in turn sends him to have his eyes looked over. The patient being relieved, thinks highly of the diagnostic ability of the second physician and tells his friends how much he has paid out to the first Doctor for finding out nothing. This first type of Doctor, fortunately is on the decline. The up to date Doctor makes use of all the means in his power to find out the cause and the oculist is not the least of his aids. The largest clinics in the country and probably in the world thrive just because of this coordination of departments.

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W. H. Wilde, *Illinois Medical Journal*, August, 1921, p. 104.

How can eyestrain bring about the symptoms of headache?

Why is it that one person will suffer from headache from eyestrain and another straining his eyes much more, as the examination shows, will have no trace of such symptoms? What is headache? Why is headache? What changes take place in the nervous structure when headache develops?

One of the hypotheses advanced for the explanation of migraine may be applicable also to headache of ocular origin. A vaso-motor spasm occasioned reflexly, followed by vaso-motor dilatation may lead to hyperemia of the cerebral circulation and irritation of the nervous tissue. Some toxic influence operating through the circulation or a reflex acting through the sympathetic and sensory nerves may irritate the brain cortex. Spitzner advances the hypothesis for migraine that there is a relative stenosis of the foramen of Monro (an opening back of the anterior pillars of the fornix, forming a passage be-

tween the third and the lateral ventricle of the brain.

An acute or passive hyperemia of the brain, however, caused would then result in hyperemia of the choroid plexus with an increased pressure in both ventricles. Recently Dunn (*Arch. of Ophth.* March 1918) has advanced the theory that headaches inclusive of those due to injury and to tumors are the manifestation of increased intracranial tension. This is controlled by the secretion from the posterior lobe of the hypophysis which promotes the permeability of the brain fluids. He maintains that the disturbances of the pressure exerted on the ganglion cells of the retina because of the over exertion of the ciliary muscle (with consequent increase of intraocular fluid) causes reflexly a disturbance of the secreting activities of the posterior lobe of the hypophysis. If this continues long enough, reflex temporary exhaustion of the posterior lobe activities sets in and with it higher than normal intracranial, with a clinical symptom, headache.

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#### THE CHARITY HOSPITAL OF LOUISIANA.

By ALBERT E. FOSSIER, A. M., M. D.

(Continued from last issue.)

This, the first Legislative Act referring to the Charity Hospital, passed in the first Legislative Assembly of the Territory of Louisiana and approved by the Governor, March 8th, 1808, is of historical interest not only because it was the initial step taken by the Territory of Louisiana to control that Institution, but also because it gives an interesting aspect of the condition and management of the Hospital at that time.\*

"Whereas since the change of government in this territory, the administration of the Hospital of Charity established in New Orleans, has fallen into the hands of persons who have no right to it, and the superintendence of the said administration which be-

\*The author is not responsible for phraseology of quotations, as they are taken verbatim from text.



longed formerly to the Governor of Louisiana and to the Bishop of the Diocese, was not continued by the subsequent constituted authorities, owing to the want of positive information, touching the nature of that Institution, and the rights resulting from its charter in their favor.

Considering that the abandonment to which that establishment is reduced is in direct opposition with the intention of the founder, (Almonester), who has given it property to a considerable amount, the revenue whereof, if well employed, would be more than sufficient for the relief of the indigent sick, while it is notorious that the said Hospital is now a place of wretchedness, where the sick languish in a total want of the necessities of life, notwithstanding the pecuniary retribution which is required of the most part of those who are admitted there.

"1. Be it declared, etc. That the constituted authorities which have succeeded to the governor of Louisiana, and to the bishop of the diocese, in the superintendence of the hospital of Charity of New Orleans, and the governor of the territory of Orleans and the persons exercising the functions of Chief of the Catholic Church in the said territory: that consequently, it shall be the duty of the said authorities to cause an account to be given to them of the administration of the hospital of Charity of New Orleans, since the taking possession of Louisiana by the United States, by all persons who have intermeddled with the said administration, and to collect all sums of money and balance due by such persons.

"3. And Be it Further enacted and declared, That during the minority of the heir of the founder and patron of the said hospital of Charity, and until her majority or her marriage, the Senior Colonel of the Militia of New Orleans is the person who, agreeably to the spirit of the Charter of the said hospital, ought to exercise *protempore* the functions of patron of that hospital.

Thomas Urquart,  
Speaker of the House of Representatives  
J. Poydras,  
Pres. of the Legislative Council.  
William C. C. Claiborne,  
Governor of the territory of Louisiana.

It is doubtful whether the provisions of this act were ever enforced; a few months after promulgation the Saint Carlos Hospital was burnt to the ground. This act, however, was premonitory to the fact that existing conditions in the direction of the Hospital could not endure and that the administration of same would perforce soon become invested in the Territorial Government. Succeeding this incident by a few years, Micaela Almonester's daughter became the Marquise of Pontalba, and March 9th, 1811, made a relinquishment of all her rights and privileges of

patroness to the City Corporation of New Orleans. But a subsequent enactment of the Legislature following three years after passage of the Original Act, can be considered the Charter of the Charity Hospital from the State of Louisiana. Quoting from the same act, we have:—

"Be it enacted, etc., That the administration of the Charity Hospital of New Orleans shall be trusted to a Council of Administration composed of the nine members who shall be appointed in the manner hereafter provided for, and shall be vested with the full power to direct, administer and manage the said Hospital and the property of the same of what nature soever present and future, in the manner and form most advantageous to the public."

Section 2.—And be it further enacted, That it shall be the duty of the Governor of The Territory and of the City Council of New Orleans, each according to the powers conferred upon them respectively by this Act, to appoint immediately after its passing, the Governor shall appoint six citizen freeholders and heads of a family, and the City Council shall appoint three of its members, and those nine persons so appointed shall compose the Council of Administration of the Charity Hospital, and under this title they shall have power and it shall be their duty to manage the property of the same in the manner hereafter prescribed.

Section 5, and be it further enacted,—That immediately after the appointment of the nine managers of said Hospital, it shall be their duty, and they are empowered by this Act to claim from the Mayor and the City Council of New Orleans, the delivery of the real and personal property, monies, papers, effects and documents belonging to said Hospital, by virtue of the Act to which this is a supplement, there shall be drawn a process verbal of said delivery at the foot of the inventory, which shall be signed by the respective parties to be afterwards deposited with the Archives of the Hospital.

A second time the destruction of the Hospital resulted in intense suffering and hardship to the indigent sick. The rescued patients were quartered by Mayor James Mather for but a day in the upper gallery of the Cabildo, the then City Hall. Then temporary quarters were provided on the Jourdan Plantation, on the site of the present Industrial Canal. This location was abandoned after six months of suffering and discomfort to the patients.

Castellanos tells us that—"Meanwhile, patients formerly housed in the Jourdan's Plantation, and hence transferred to the La Vergne residence, were almost reduced to starvation, so much

so, that on one occasion the Hospital's employees, poor though they were, had been compelled to contribute from their own scanty means for the weekly sustenance of the neglected patients. They were made to sleep upon the bare ground, the wooden floors being decayed and no longer offering protection. The nursing of the sick was so indifferently ministered that, using Mather's own expressions in one of his messages, "No one, however wretched and poor, will now consent to be committed to that Hospital." Let it also be borne in mind that during these years of hardship and destitution, to the unfortunate inmates of the Hospital, epidemics of the Yellow Fever swept over the City, carrying havoc and panic in their dismal path. Never in the Annals of the City's history had the demands for a well organized Hospital grown more urgent."

For five years not a suitable place for the care of the sick, was available, nor was it until the year 1814 that the square bounded by Canal, Common, Phillipa (now Dryades) and Baronne was sold by the city to the Administrators of the Charity Hospital for the construction of a building.

The new hospital was ordered constructed by the Legislature in a bill promulgated April 25th, 1811.

The Board was composed of three members of the City Council of this City and of six others to be appointed by the Governor. This Council of Administrators was empowered by this Act to claim from the Mayor and City Council the delivery of real and personal property, effects and documents belonging to said Hospital, yet they were in no case authorized to sell, alienate the property or any part of said property without an express authorization of the Legislature. The Act also ordered that the funds proceeding from the sale made by the Mayor and the City Council of the portion of the property of the Charity Hospital, composing the ground floor of the part of the house once occupied by Mrs. Castillon, widow of Almonester, which was redeemed by her, shall, without delay, be employed by the said Council of Administration in building a new hospital.

The governor's appointees were Messrs. Felix Arnaud, Dow, Joseph

Montegut, Butler, Bellechasse and M. Fortier, and on November 6th, of the year 1811, Messrs. Robelot, Castenado and S. Henderson, members of the City Council, were elected administrators of the Charity Hospital in compliance with the law.

These gentlemen constituted the first Board of Administrators of the Charity Hospital.

The corner stone of the building was laid in 1815. Doctor McConnell was then the House Surgeon. In the year 1823 he was succeeded by Doctor John Rollins.

The following description of the Hospital in 1823 is taken from the City Directory of that year:—"The Charity Hospital, situated No. 147 Canal Street, consists of two large buildings, containing one surgical hall, two large fever wards, one dysentery ward, one ward for chronic cases, one for females, one for convalescents, one bathing room, one apothecary store, and a number of other apartments for the families of the residents, officers, etc. The Hospital has lately undergone a complete repair and reform, and is at this time as clean, wholesome and well conducted as any institution of the kind in the Union. During the last year, about 1,700 sick persons were admitted, 1,200 of whom were discharged well, and the remainder died, one-half of which, of Yellow Fever. The lot on which these buildings stand embraces the whole square between Canal, Common, Baronne and Philippa (now University Place) Sts., and is laid off in a garden, poultry yard, etc. The whole appearance of this humane establishment, at present indicates that the physicians and officers are very attentive to their duty. Any person who doubts the correctness of the above remarks need only visit the Hospital to be convinced. Dr. John Rollins is the House Surgeon and Apothecary at this time, who is assisted by physicians of the City, who visit in turn. Sick persons who wish admission must apply to the Mayor of the City or any one of the Administrators. The Hospital is likewise an asylum for lost children who will be taken the best care of until reclaimed.

About 1,300 males and females were admitted during the year 1821, and as



many as 130 persons received attention at one time."

From the above it may be seen the rapid strides made by the Hospital. In a few years it had grown from a 24 to a 120 bed hospital. This institution in equipment and management was second to no other in the country. There were bathing facilities, an apothecary, and fever patients were segregated from surgical cases.

That year the City Treasury munificently contributed \$336.00 to the support of the Hospital. An Act passed in the second Session of the Fourth Legislature in the year 1820, provided for the care of the insane in the following clause: "It shall be the duty of the Administrators to cause a separate building to be erected as an appertenance of said establishment in order to receive and attend such persons as may have fallen into a state of insanity."

Dr. McConnell was the first House Surgeon and in the year 1823 he was succeeded by Dr. John Rollins. In 1831 Dr. William Picton was elected to that position. Dr. David C. Ker, a British Army Surgeon, and a veteran of the Battle of New Orleans, after a crushing defeat of General Pakenham, true to the noblest tradition of his profession, permitted himself to be captured that he might administer to his wounded soldiers. This gallantry gained for him the admiration and respect of his former enemies. He made this City his home and in the year 1827 was appointed visiting physician to the Charity Hospital.

The history of the Charity Hospital, were it to be confined only to the bare facts concerning that Institution, would be shorn of much that is interesting. The most intimate relation of physicians of this City to the Hospital since its earliest days, the scope of their work, their destinies, their failures and their successes, demand consideration along with it. A study of the times, frequent reference to the growth of New Orleans, the distress and hardships borne by our forefathers and their laudable achievements, must be alluded to and extolled, for the more important part of this naturally involves the establishment, progress and evolution of the Charity Hospital as it now exists.

In the early eighteen twenties there were two separate and distinct medical organizations extant: the Medical Society and the Physico-Medico Society. The curious reason for the existence of two societies for comparatively so few doctors is explained by a survey of the membership list of these bodies which reveals that in the Medical Society the names are either French or Spanish, whilst in the Physico-Medico Society, Anglo Saxon names predominate. This divorcing of the medical profession into two separate and distinct organizations was made necessary by the fact that many physicians were foreign born and that the prevailing tongue was French, even during the Spanish domination and the publishing of medical journals in the French Language persisted to a much later date. Even the early Legislative transactions of the Territory of Louisiana and also of the State of Louisiana were recorded in the same archives, both in French and English. The rivalry existing between the members of these two medical associations must have been acute, for it appears that on every board of a medical character the appointees were divided nearly equally between the membership of those rival societies.

Of interest to the physicians of this City is the following Act of Legislature, approved by the governor, February 24th, 1819:—

Sec. I. "Be it enacted, etc., That the Medical Society of New Orleans, is hereby authorized to raise by Lottery a sum not exceeding fifteen thousand dollars, for the purpose of purchasing a library, philosophical apparatus, etc., and defraying other incidental expenses of the institution. The said Lottery to be set on foot as soon as the said Medical Society shall find it convenient after the passing of this Act, and that the said Medical Society shall appoint five discreet persons to be Managers of said Lottery, each of whom shall give security to be approved of by the said Medical Society, in such sum as they shall direct, conditioned for the faithful discharge of the duties required of such schemes as to them may seem proper, to sell the tickets and to superintend the drawing of the said lottery, and the payment of the prizes—And it shall be the duty of the said managers to pay into the hands of the Treasurer of the said Medical Society, the proceed of the said lottery, in order to be laid out according to the purpose of this Act.

Sec. 2.—And be it further enacted, That the Managers of the aforesaid lottery shall have power to divide the same into three



classes, provided, however, all of said classes shall be drawn in four years after the passing of the Act."

Whether the Medical Society took advantage of these prerogatives cannot be determined today. There are no remnants of that Medical Society's library that could enlighten us on this question. This singular act of the Legislature may occasion surprise today, but up to nearly the year 1840, the same procedure of lottery was employed in the raising of moneys for the founding of schools, public buildings, churches, the construction of bridges, good roads, in fact for any public or charitable purposes, and even a few individuals were granted the privilege of the lottery to dispose of their realty holdings.

The great prevalence of dysentery which wrought such distress and death among these pioneers of our City is explained by the inadequacy and the corruption of the water supply. For washing and bathing purposes wells were dug to a depth of from ten to fifteen feet. Drinking water and that used for cooking was taken from the river, carried through the City for sale, in hogsheads on carts, and sold at the rate of four buckets for 6 1-4 cents or 50 cents per hogshead. The water for drinking was either filtered through a porous stone, or kept in a large earthenware jar, the sediment allowed to settle, or alum used to hasten the process of sedimentation. This water was considered wholesome. It is interesting reading that the first water work system was started in 1813, but was not completed until several years later. The water mains were hollow cypress logs. In a contemporary directory is found the following interesting comments on the insanitary condition of that water supply:—"It is thought by most persons that the water ought to be introduced from the river into the City from above the eddy and point, as it is certainly more pure than that opposite the City, where it becomes impregnated with all kinds of filth, the very thought of which is sufficient to turn the stomach of a person of delicate constitution." The drainage of the City is recorded by Paxton in his directory of 1822 thus:—"The site on which New Orleans stands is a plain with a descent of about 7 1-2 feet from the river, terminating in a swamp

in the rear of the buildings, to which all water from the gutters of the City finds its way."

The first hundred years of the History of New Orleans is a recital of all the hardships that humanity can possibly endure and a narrative of the highest exemplification of fortitude, tenacity and grim determination which can scarcely be appreciated in this time, and it is really in fact an epic of the noblest type of manhood. In no other location nor at any other time has the maxim of the survival of the fittest been better exemplified than in the case of these founders of our City and of our State. Their sufferings were acute, due to want, privation and exposure. New Orleans was built on and surrounded by a swamp, infested with insects, with only inadequate protection from these pests. Pestilences were rampant, their records write a dark page in the history of human suffering. The great prevalence of preventable diseases was due to the unsanitary conditions,—none but the stoutest hearts could resist these continual calamities and persist in their determination to build up their City. Yet in spite of sickness and pestilence with their extreme death rate, these pioneers never faltered, but with abounding faith in the future greatness of New Orleans, labored, suffered and died to accomplish their purpose. Despite all, the growth of New Orleans preceding the Louisiana purchase was phenomenal. In 1788 the city had 1,100 houses and the census of 1821 gave a total of 8,705 houses. The total population of that year was 29,000 inhabitants, of which 13,642 were negroes, either free or slaves. An interesting feature of that census is that with the whites there were nearly twice the amount of males compared to the females, and with the negroes the reverse held true. A contemporary directory records the following: "The population is fast increasing by accession from all the States in the Union, and from almost every Kingdom in Europe."

The monetary status of the hospital was then as it has been to the present day one of inadequate finances. As there was no specific appropriation from the State, its revenues were derived from the levying of special taxes,

on amusements, gambling, and the fines and penalties assessed in criminal cases, also from forfeited bonds, and a passenger tax of \$1.00 on foreign cabin passengers, \$2.00 on steerage passengers, and, on United States passengers beyond Louisiana, fifty cents. James Burns in his "Historical Sketch of the Charity Hospital of New Orleans" wrote: "The managers (of theatres) at one time were required to give periodical 'benefit performances' for the hospital, but not only did these never benefit the Hospital, but on at least one occasion the manager brought the Hospital into debt for his benefit" There was even resistance to the passenger tax, for in one year eighty-three boats defiantly refused to pay it, and one hundred and seventy-three landed their passengers in Lafayette to evade its just impost This was changed in 1838, each theatre was taxed \$500.00, each circus \$150.00, each menagerie \$50.00, each show \$25.00, as Hospital assessment. These taxes together with an occasional donation provided for its maintenance. This institution because of the lack of any asylum in the city served the dual purpose of Hospital and place of refuge for paupers and lost children.

In 1832 the cost of maintenance is given as \$31,295.00.

There were many legislative acts providing ways and means for procuring sufficient moneys for its upkeep. The revenues derived from certain taxes were applied to that purpose, the most bizarre of which is an act of the Legislature of the State of Louisiana promulgated one hundred years ago which is of interest not only because it provided funds for the Hospital, but also because it expressed the sentiments of the time concerning gambling:

"Whereas the object contemplated by the act entitled "An act to prevent gambling" has not been attained, the only effect thereof, in form of good morals being indeed nugatory, inasmuch as the vice which the said act intended to eradicate has been practiced not less than formerly, but with a greater degree of caution and clandestinity, from whence has resulted, first, that excesses and disorders, if any, have taken place, could not be repressed, the eye of the municipal police being almost

unable to get access in the places wherein they were committed, and secondly, that the Charity Hospital whose resources, from motives of humanity and sound policy, ought rather to be increased than diminished, has been deprived of the greater part of the revenue it already had, and which was indispensably necessary to its existence; and whereas in order to provide for the expenses of the said institution, the administration thereof has been obliged to dispose of a part of its capital, and that unless remedies as prompt, as efficacious be adopted, the unavoidable ruin of the said institution will soon take place:

Section 3. Be it further enacted; that the number of gaming houses to which license be granted shall not exceed six for the city of New Orleans and its suburbs incorporated, and that the keepers of houses wherein gaming shall take place in virtue of the licenses granted in compliance with the present act, shall be obliged to keep their gaming table in rooms or halls not exposed to the view of the public, etc."

A tax of \$5,000.00 was levied on each gaming house, three-quarters of this fund to revert to the Charity Hospital and the other quarter to be applied to the benefit of the College of Orleans. This act went into effect March 27, 1823, and was amended on April 2, 1832, increasing the number of gaming houses and raising the tax to \$7,500.00. This amount was to be apportioned as follows: three-quarters to the Charity Hospital and the other quarter to be equally divided between the New Orleans primary schools and the College of Louisiana. The Legislature authorizing the selling of the Hospital building on Canal street in an act approved by Acting Governor Jacques Dupres, March 15th, 1830, Section 2, reads as follows: "That said administrators are hereby authorized, if they deem it expedient to sell the buildings and the lots on which said Hospital is situated, and on such terms as they may deem most advantageous to the said institution; provided, however, that the possession of the Charity Hospital shall not be delivered until another suitable building be provided for the reception of the sick and afflicted, and that the proceeds of the sale of the present house and lots be appropriated for procuring the necessary comforts to sick persons; and that



the residue, if any, be applied by the administrators for the best advantage of the same."

The great increase in population rendered a larger and more commodious institution necessary, and the Canal street site and buildings were sold to the State for \$125,000.00. The main building was used and afterwards known as the State House and later became University Block or Place. The Common street side of the square, on which is now situated the stores and the theatres was the site of the Medical College previous to the building of the Richardson Memorial, now the Hutchinson, on Canal and Villere streets.

In New Orleans, in the eighteen twenties, in addition to the Charity Hospital, there existed the Marine and Naval Hospital, and a private institution named the Orleans Infirmary situated at the corner of Circus and Poydras streets and under the supervision of Dr. J. S. McFarlane.

The following taken from the report of the Board of Administrators of the Charity Hospital of the year 1832 is illuminating of that momentous epoch in the life of that institution:

**To the Honorable the Senate and House of Representatives of the State of Louisiana:**

The committee to whom was assigned the duty of visiting and examining into the condition of the Charity Hospital of the City of New Orleans, have given to the subject that care and attention, which the benevolent object of the Institution demands, and beg leave to report, that, having examined that humane establishment in all its departments, with a scrutiny commensurate with its importance, take great pleasure in awarding to the gentlemen, to whose care the administration of it has been committed the approbation and praise, which is due to faithful public servants, and philanthropic individuals. Their untiring zeal in dispensing health and comfort to the wretched beings, whom misfortune has driven to ask alms at the hand of the public munificence, can only be requited by the gratitude of the recipients of their attentions and the confidence of their fellow citizens. The building is a proud illustration of Louisiana liberality. The model of it and the style of its construction do equal honor to the head of the architect and the hand of the mechanic. The internal police and regulations bear strong testimony of the ability and labor that have organized them, and if observed and enforced with the same unyielding firmness, that seems, at present, to characterize the officers, cannot fail to meet the fondest hopes of the friends of the institu-

tion. Your committee need only state the number of patients received the last year from almost every State and nation, and kingdom on earth, to exhibit in strong colors the wide-extended usefulness of this unfading monument of individual liberality and public beneficence. During the year 1832, 2,480 unfortunate fellow beings have shared this open-handed beneficence, of whom 1,545 have been restored to health, to friends and to society. Five hundred and sixty-nine have died, a number which when we reflect on the wasting pestilence which has visited our city, in a character, from which it would seem as if we had been marked out as the peculiar object of its relentless violence, certainly does no dishonor to the skill of the gentlemen who have charge of the medical department. There were on the 1st day of January past 167 under treatment producing an average number for the entire year of 180. We have much cause to congratulate ourselves that only 40 of the whole number were citizens of Louisiana. Here, your committee cannot forbear to express their surprise, that the peculiar situation of this institution and the unlimited dispensation of its charities have not attracted the attention and enlisted the interest and generosity of other States. The liberality of Pennsylvania, which, we are always happy to acknowledge, furnishes a proud example which, it is devoutly to be wished, might be imitated by others. We doubt not that the generous spirits of that philanthropic State reap a rich reward from the reflection, that during the last year, her liberality contributed to the relief and comfort of 111 of their unfortunate fellow-citizens, whom circumstances had removed far from their homes and their friends.

Your committee approach the financial concern of this noble and humane establishment with many misgivings. They deeply deplore that an institution so laudable in its object, so extensive in its benefits, and presenting so wide a field for the exercise of the highest and purest feelings of our nature, should depend for support on means extremely capricious in their duration, and which cannot be advocated on principles of religion or on morals. The doctrine that the end may sanctify the means, is scarcely plausible in theory, and certainly is most dangerous in practice. The whole amount of moneys received by the institution during the year 1832 was two hundred and thirty-nine thousand, eight hundred and ninety-two dollars and twenty-five cents (\$239,892.25): of this amount one hundred and ninety thousand, one hundred and nineteen dollars and twenty cents have been realized from the sale of property of various descriptions (\$190,119.20) the sums of sixteen thousand one hundred and sixty-nine dollars and seventy-eight cents (\$16,169.78) embracing one legacy of five hundred dollars (\$500) and fifty dollars (\$50) collected by the marshal has accrued from premiums on State bonds, interest on State bonds and moneys invested; leaving a balance of thirty-three thousand, six hundred and three dollars and twenty-seven cents (\$33,603.27), which has been derived from what is called the ordi-



nary sources of revenue. Of this ordinary revenue, thirty-one thousand and forty-one dollars and sixty-six cents (\$31,041.66) have been received in shape of taxes on gaming licenses. Hence it appears how small a portion of necessary expenditures of this institution is derived from any substantial and permanent sources of revenue. The disbursements during the same year, including fourteen thousand, five hundred and fifty dollars and forty-five cents (\$14,550.45) due individuals on account of the preceding year, and also nine thousand dollars (\$9,000.00) due the Louisiana State Bank for money loaned, amounted to one hundred and forty-eight thousand, two hundred and fifty-nine dollars and sixty-eight cents (\$148,259.68), of which sum thirty-one thousand, four hundred and seven dollars and seventy cents (\$31,407.70) were appropriated to the ordinary current expenses of the establishment. Eighty-six thousand, eight hundred and eighty-five dollars and sixty-two cents (\$86,885.62) were expended on the new edifice; six hundred and ninety dollars and eighty three cents (\$690.83) were paid for commissions and tax on sale of real estate; two thousand and six hundred dollars (\$2,600.00) were paid for four slaves, for the use of the Hospital, and three thousand, one hundred and twenty-five dollars (\$3,125.00) interest on State bonds, leaving a balance in favor of the institution of ninety-one thousand, six hundred and thirty-two dollars and sixty-five cents (\$91,632.65); from this sum we may deduct fifteen thousand dollars (\$15,000) for the completion of the building, which is now rapidly progressing, and we have seventy-six thousand, six hundred and thirty-two dollars and sixty-five cents, the entire productive capital of the institution. From this sum, we may, with some degree of certainty, anticipate a revenue of seven thousand, six hundred dollars. The amount annually required to support the establishment considerably exceeds thirty thousand dollars, and for upwards of twenty thousand of which we are obliged to rely on the frail and unsubstantial resource of gaming licenses. Your committee much regret that the law requiring all persons opening public theatres in the City of New Orleans to give four representations per annum at the will of the Council of Administration, has not been carried into effect, and that the law imposing a tax of ten dollars on each and every public ball has not been rigidly enforced. Your committee believe that by a watchful observance of these laws, the present revenue of the institution might be increased several thousand dollars.

Your committee have regarded, with deep interest, the unsubstantial and insufficient resources of this asylum of human wretchedness, and, with diffidence, submit a few suggestions upon the proposed means of rendering them more sure and permanent. The edifice, when completed, will have cost a little less than one hundred and forty thousand dollars. It is sufficiently spacious to accommodate, with no stinted convenience, nearly four hundred patients, allowing the most liberal provision for officers and attendants.

The apartments are large, neat, well ventilated, and admirably well adapted to the peculiar object for which they were designed. It is hoped, for the sake of humanity, that the time is not near when diseased indigence will occupy all this vast structure. And it is believed that the superior comforts and advantages, which the peculiar structure of the building, the discipline and habits of the servants, and the constant medical attention, hold out to invalid strangers, cannot fail to draw to it very many who would gladly make a liberal compensation for such accommodations. Your committee, therefore, recommend that the Council of Administration be authorized to furnish in a suitable manner one or more wards as they may deem expedient, for the special accommodation of such persons. Judging from the success of the plan, in other similar institutions in our country, we shall fondly anticipate from its adoption, a sound and important source of revenue. Your committee recommend as an additional source, the enactment of a law imposing a small tax upon all foreigners arriving in the port of New Orleans. The justice of this requisition will appear most palpable when we reflect that, of the number of patients received into the hospital during the last year, 1709 were subjects of foreign governments. And your committee beg leave farther to report by bill.

B. G. TENNEY,

Chairman of the committee on the part of the Senate.

J. WATKINS,

Chairman of the committee on the part of the House.

(To be continued.)

## THE TREATMENT OF DIABETES MELITUS WITH INSULIN (ILETIN).\*

By I. I. LEMANN, M. D.

*Introduction:* "Insulin is here." This is the fittingly dramatic manner in which Joslin, in his new article in *Oxford Medicine*, announces the discovery of the long sought for pancreatic hormone. From the days of Claude Bernard, more than half a century ago, the hunt has been continuous and the scent strong. Minkowski and von Mering, in the late eighties of the last century, produced the phenomena of diabetes in dogs by removing the pancreas. In the early years of this century Opie and others were able to correlate the diabetes with damage to the islands of Langerhans. Ten years ago, Allen, confirming earlier works, showed that atrophy of the pancreas was brought about by ligation of the ducts, but that the remnants containing only island of

\*Read Before the Meeting of the Orleans Parish Medical Society, April 9th, 1923.

Langerhans prevented the appearance of diabetes, for the latter developed only after these remnants were removed. In spite of all of this, attempts to isolate the internal secretion of these islands of Langerhans had always failed, though a number of investigators have seemed at times to be on the verge of its discovery. Scott, for example, had performed successful experiments, which, if persisted in a little further, we know now would have yielded successful results. It was thought (and we know it was true) that the digestive enzymes of pancreas destroyed the internal secretion when all attempts at its extraction from the pancreas were made. In 1921, Banting, working in Professor McLeod's laboratory in the University of Toronto, proposed to his chief to try to secure an extract from the remnants of pancreatic tissue left in dogs after ligation of the ducts. He argued that the atrophy of the pancreas would ensure the absence of digestive enzymes and that this extract of the remnants would represent entirely an extract of the islet tissue and should, therefore, contain the hormone. Banting and Best were promptly able to prove this thesis and to obtain in this way the hormone which has been named Insulin. Later, they isolated it from the pancreas of the calf fetus, for it was known that the fetal pancreas contained no digestive enzymes. Experiments with the new hormone showed that it was not affected by alcohol and advantage has been taken of this fact and the fact that the digestive enzymes are destroyed by 50 per cent alcohol, to obtain the new hormone from adult animal pancreas, that is to say, slaughter-house material.

Dr. Eustis, who will follow me, will describe and demonstrate to you some of the physiological action of this new hormone. I shall say here merely that experiments first upon normal animals, upon diabetic dogs, then upon patients have shown that it reduces the blood sugar of the normal as well as of the diabetic. In the latter, it will control the phenomena of diabetes as long as it is used. It is not a cure, but supplies artificially, temporarily and fleetingly the lacking pancreatic hormone. It does not do away with the necessity of dieting.

Why, then is it wonderful? Because:

(a) It restores to normal the severe and starving diabetics and causes them to gain in weight and brings back their vigor and energy.

(b) It rescues the toxic cases from coma and restores them to normal.

(c) It tides even the mild diabetic over emergencies, medical or surgical, e, g., typhoid or other infectious disease, and surgical operations related or unrelated to the diabetes.

(d) It adds vigor to the mild diabetic and makes of him practically a normal man.

I shall now relate to you my experience in 14 cases which lead me to make these statements. Before I begin, certain acknowledgements are due. In the first place I am under great obligation to the firm of Eli Lilly and Company, with whose preparation of Insulin (called by their trade name, Iletin), all of these patients have been treated. For a period of nearly two months Dr. Eustis and I were furnished the material for the observations free of all charge. During this time and a little longer some 50 to 60 other clinicians in other parts of the country were similarly furnished. The discoverers of Insulin have patented it and turned the patents over to the University of Toronto and the University has licensed Lilly and Company, of this country, and the National Research Council in Great Britain to manufacture it. In Canada, the University of Toronto will produce it. It is not the aim of the University to make more than enough to maintain a testing laboratory. Any surplus will be devoted to further research in the same field. Acknowledgements are next due to Dr. Eustis and Dr. Giles, to Professors Garrey and Denis, to Dr. M. P. H. Bowden for her untiring work in the laboratory without which none of these reports could have been made, to the authorities and resident staff of Touro Infirmary, especially to Dr. John D. Spelman, Superintendent, and to Drs. Liles, Ray and Grant of the Interne staff, and last, but not least, to the nurses of that institution.

#### **Restoration of Severe and Starving Diabetics.**

Case 1., I. R., female, aged 22: Symptoms of diabetes developed in August, 1921. When she first came under my observation, in



March, 1922, she weighed 120 pounds, having lost seven or eight pounds. At that time her tolerance was about 30 grams carbohydrates, protein 60 grams and fats 75 grams. During the next two months she sank so that a diet of C 16, P 18, F 50 caused her to show sugar. She constantly lost weight and strength and from August, 1922, to the end of the year she was in bed. During August she had diet not exceeding 500 calories; during September one of about 1,100 calories. By November, when Iletin was begun, she had gone down in weight to 80 pounds. She has now been taking Iletin since November, 1922, has regained her strength and has been able to return to work. She is able to take a diet of C 60, P 70, and F 150, which covers her caloric needs and has permitted her to increase her weight to 99 1-2 pounds.

Case 2., C. B., male, aged 15: Onset of diabetes April, 1921, with loss of five pounds in six weeks. He was relatively easily kept free of sugar for the next three or four months and gained back his weight, but in the following winter he began to have sugar again and lose rapidly and constantly in weight and strength. When he was referred to me in November, 1922, by Dr. J. B. Elliott, he weighed 64 pounds, a loss of 23 pounds in the previous year. At that time he had been taking for sometime a diet of C 15, P 20 and F 30, and on this was showing sugar. He has been taking Iletin constantly since November 22. He weighs 93 1-2 pounds, a gain of practically 30 pounds. He is taking a diet of C 60, P 60, F 140. He reports that he does anything that any other boy does except eat. He appears vigorous and healthy in every way.

Case 3., S. E., female, aged 20. Diabetes discovered about January, 1921. In September and October, 1921, she was easily brought free of sugar and was dismissed with a diet of C 65, P 80, F 110. She remained on this diet approximately a year, maintaining her urine for the most part free of sugar. When she came under observation in October, 1922, her tolerance had sunk to C 40. She has been on Iletin since November 22, and has been able to take a diet again containing C 60-65, P 50, F 130. On this she has gone up in weight again from 112 to 117 pounds and feels perfectly well in every respect. She had not menstruated for several months prior to the use of Iletin and the menses have been re-established now for the past several months.

#### **Rescue of Toxic Cases From Impending Coma.**

Case 4., J. N., female, aged 16. Was referred to me by Dr. Frank Chalaron on November 23, 1922. She had consulted him that day on account of pruritus. Her symptoms of diabetes had dated back about a year. When admitted she was barely able to drag herself along. The next day it was apparent that she was on the verge of coma. She had the Kussmaul air hunger, and was restless, confused and apathetic. She was rescued by the use of Iletin and the intravenous injection of bicarbonate of soda, and glucose to provide an abundant buffer against excessive Iletin.

Blood sugar became normal on the 11th day and the urine was usually free of sugar. On that day she went into coma again, due to the excessive dosage and was promptly rescued by the intravenous injection of 25 c. c. of 10 per cent glucose solution. Consciousness was restored in the most dramatic fashion by the time the injection was completed. This girl remained under observation for two months, during which time she gained 16 pounds.

Case 10., E. J., female, aged 14. Was referred to me by Dr. Adolph Jacobs. He had been summoned the day before to see the patient in what was supposed to be a mild case of the prevailing grippe. Later, he was told that for a year she had been ailing, losing weight and getting progressively weaker. She had had a tremendous appetite and thirst and was troubled with frequent urination. Dr. Jacobs found in the urine a large amount of sugar and acetone and diacetic acid. The next morning he was summoned hurriedly because she had great difficulty in breathing and apparently a tracheal obstruction. This latter, Dr. Joachim was able to negative at once. The patient was then admitted to my service at the Touro Infirmary, markedly toxic, hyperpneic to an extreme degree, employing all her accessory muscles of respiration. By the intravenous injection of soda carbonate and Iletin, together with glucose solution as a buffer to make sure of a sufficient glycemia, the hyperpnea was relieved at once. Iletin was continued intramuscularly and within a week the patient was able to take an adequate diet without glycosuria. Meanwhile, her weight rose from 76 1-2 to 98 1-2 pounds, due to water retention and edema on account of excessive use of salt. When the latter was restricted, the edema disappeared and the weight fell to 80 pounds. It has since risen to 87 pounds and the girl has been restored to a sense of well being and normality that she has not known for a year. She says that she feels she has been made over.

Case 14., A. C., female, aged 20. Came to this country eight months ago from Greece. Two weeks ago she was brought to consult Dr. S. M. D. Clark because of amenorrhea which had existed ever since her arrival in this country. April 5th, Dr. Clark was consulted again because of a perirectal abscess which he advised should be incised at once. The patient refused both because of fear and because of timidity, and in her reaction and excitement went for a long walk of 90 blocks. The next morning the pain had been so great that she consented to the operation and she was brought to the Touro Infirmary where, under gas and oxygen, the abscess was drained and a dilatation of the cervix and curettage of the uterus was performed immediately after her admission. Specimen of urine obtained from her just before she went to the operating room, was mislaid and lost through the carelessness of a nurse. In the afternoon, the patient was very restless and complained of pain in her chest. Dr. Lines, the interne on Dr. Clark's service, had been with me in the case of J. N., Case 4, and recognized the acetone odor of the breath and the hyperpnea. He obtained the urine and found sugar, acetone and diacetic acid.



Dr. Clark, therefore, asked me to assume charge of the patient. She was somnolent and extremely hyperpneic. The respiration was 44 per minute, the pulse 130. She was given soda bicarbonate intravenously which did not relieve the hyperpnea. In this case we ventured to use Iletin in large doses without the use of glucose as a buffer. In the first seven hours 70 units were given, 50 units intravenously, 20 units intramuscularly. The elimination of the already formed ketone bodies was promoted by forcing water drinking and giving normal saline intravenously and tap water by Murphy drip in the rectum. Treatment was begun about midnight, April 6. The next morning the respirations were 22-24 and quiet. That evening, April 7, the patient was smiling and interested in everything going on. Iletin, 10 units intramuscularly, is still being administered every four hours and she is being given oatmeal and orange juice. We shall expect no more ketone bodies to be formed and those already formed to be eliminated in the next few days. We shall then begin to build up a balanced adequate diet and hope to find, as in the other cases, that what appeared at the beginning to be an extremely severe case, will prove one easily controlled by small doses.

It is interesting to learn that in this case also the symptoms of excessive appetite, excessive thirst, excessive urination had existed for at least eight months and had gone unrecognized as pointing to any serious constitutional disease. It is also interesting to observe that there were in her case the following important contributing factors for the production of coma: (1) Observation of Holy week with meagre diet with large amounts of fats; (2) extraordinary physical exertion; (3) acute septic infection (perirectal abscess), (4) obstipation for 48 hours; (5) anesthesia; (6) morphine

Case 7., Mrs. G. J., aged 39. Was referred to me about March 1, 1923, by Dr. H. Bayon. For many years she has been very stout, her weight being 300 pounds. During January she had felt very tired and listless and was troubled with frequent urination. She feared at the latter, a return of the pyelitis which she had had a year or two before and for dread of the instrumental treatment of the latter she had put off consulting her physician. Finally, when she did consult him about February 1st, sugar was found in the urine in large quantity. There was no evidence of pyelitis. During February frequent attempts were made to bring her sugar free by periods of starvation, oatmeal days and green vegetable days, but without avail. By the end of February the urine was still showing large quantities of sugar and acetone and diacetic acid and the blood was reported as 500 mgs. per 100 c. c. The patient had lost 50 pounds, had developed anorexia, nausea, vomiting and great weakness. In this condition she was admitted to have the Iletin tried. The degree of her acidosis is indicated by the  $\text{CO}_2$  combining power of the blood plasma, 24 vol. per cent (normal 60-70) and  $\text{CO}_2$  tension of the aveolar air 18 (normal 45). She was given carbohydrates only (oatmeal and orange juice) with large doses of Iletin to

insure their combustion and the incidental combustion of the fats. Thus further formation of ketone bodies was avoided. The elimination of those already formed was promoted by forcing water drinking and giving tap water by Murphy drip through the rectum. We had the gratifying experience of seeing the acidosis begin at once to diminish and disappeared entirely in eleven days. At the end of that time the acetone bodies had completely disappeared and her alveolar air reading was normal. Her diet has been kept low for several reasons: (1) We have wished to reduce still further her bulk. (2) Even with a diet of C 60, P 60, F 120, a total of 1,560 calories, it has been necessary to give unusually large doses of Iletin to keep the urine free of sugar. The blood sugar now ranges from 180 to 220 mgs. per 100 c. c. The patient has been restored to apparent normality, has no complaint and feels better than she has for months.

*Coma Cases Resulting in Death.* I have used Insulin in two cases of completely developed coma—both of whom died. One was a woman of 42 years, who had been under treatment with Insulin in New York for several months. Hers was apparently a very severe case. She had improved greatly, but the glycosuria had never been brought under control. She had started on her way to her home in California and on the train developed anorexia, nausea and abdominal pain. Her bowels had not moved for two days prior to her departure and did not move while she was on the train. The pain was so great as the train neared Bay St. Louis that a doctor was called on board at this point and gave her a hypodermic of morphine. After this she went to sleep and was brought to Touro in deep coma. The Insulin had been discontinued during the journey. Strenuous efforts with Iletin brought no results.

The other case was that of a negro in the service of Dr. Lucian Landry at the Charity Hospital. A leg was amputated for diabetic gangrene. Several days later I was called in consultation. The patient was in deep coma. The administration of what I then considered large doses produced no effect. Today I would use larger doses than I did in either of these cases. I am not sure even with larger doses that I should always succeed. Insulin will cause the combustion of the carbohydrates and thus bring about the combustion of the fats and hence prevent the formation of ketone bodies. It cannot undo the dam-

age done to the brain cells by the ketone bodies already formed. The remedying of the latter condition and the elimination of ketone bodies must depend upon other methods.

#### Assistance in Infectious Disease.

Case 5. Dr. D., male, aged 44. Had been diabetic since his 28th year. At the end of December, 1922, he came down with typhoid fever and was ill about six weeks. Toward the end he developed anorexia, nausea, vomiting and hiccough. In this condition he was admitted to the Touro. Iletin was begun immediately. A nasal tube was passed and food administered both through it and by the mouth and water by Murphy drip into the rectum. The hiccoughing, nausea and vomiting were immediately controlled. By the use of Iletin the diet was at once increased to include more than C 10, P 50, F 150, so that within a couple of weeks the doctor was so much improved that he was able to return home.

Case 9. R. A. B., male, aged 54. Sugar in urine discovered in 1910 at age of 41. I first saw him in 1913. He had at that time a large tolerance and could eat all the vegetables that come to the table, 1 apple, 1 orange and 3 ounces of bread daily without having sugar in the urine. His weight was 219 pounds. After 1915, I saw him no more professionally. During these years he had placed no restriction on his diet, eating even batter cakes and syrup. He lost constantly in weight, reaching a level of 150 pounds several months ago. March 18, 1923, I was called to see him in consultation with Dr. M. H. McGuire, whom he had consulted on account of what seemed to be a mild case of the prevailing grippe. He had lost all appetite and all he had taken in the preceding twenty-four hours was lemonade made with 3 dozen lemons and 2 pounds of sugar. His urine contained 10 per cent sugar and the amount excreted in 24 hours was estimated to be one pound. Regulation of his diet brought this in eight days down to 1.5 per cent. He was then put on Iletin which in moderate doses promptly caused the disappearance of the sugar. This patient in two weeks of adequate diet which he cares for with the aid of Iletin, gained wonderfully in strength and energy. The loss in weight has been checked and he has now begun to gain.

#### Effect on Mild and Moderately Severe Diabetics.

Case 8. J. F. P., male, aged 50. Was referred to me by Dr. J. F. Chalaron, who had treated him for granular irritation around the inner neck of the bladder. Diabetes was discovered in 1910 at the age of 37 years. At that time he weighed 200 pounds. He did not lose weight until 1921; he then went down to 145 pounds which he has maintained for two years past. His chief complaints were the irritation in the bladder, nervousness and lack of energy. His tolerance was found to be less than 40 grams of carbohydrate. On moderate doses of Iletin it has been possible to raise his diet adequately to

cover his needs and he had begun to gain in strength vigor and weight. He is less nervous and the bladder worries him considerably less.

Case 6. R. B., male, aged 47. A mild diabetic losing weight steadily in spite of adequate diet. Blood sugar ranged from 150 to 180 mg., and the urine contained sugar only occasionally. He complained particularly of loss of weight, strength, energy and great irritability. He had heard of the Iletin and insisted that it be given. Its effect has been very remarkable in restoring his energy and capacity for work and he now maintains his urine entirely free of sugar.

In view of the necessity of hypodermic administration of the remedy, of its great cost and still somewhat limited supply, I am far from advocating its use in all cases of diabetes. There are many mild diabetics who can maintain themselves perfectly well without it and *need not take it*. Please notice that I say *need not take it*, for I believe that every diabetic would be benefited by it. For the present I have set an arbitrary limit above which I am not inclined to give Iletin. Whenever the patient can take at least 60 grams of carbohydrates, 1 gram protein per kilogram of body weight and fat sufficient to cover his caloric need, and on this diet can maintain strength and energy and keep his urine free of sugar, I believe it is unnecessary to employ Iletin.

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#### THE DOSAGE AND METHODS OF ADMINISTRATION OF INSULIN.\*

By ALLAN EUSTIS, M. D.

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In the early experimental work with Insulin in Prof. Macleod's laboratory at the University of Toronto it was determined that the injection of this substance in overdose in rabbits caused definite symptoms, characterized by excitability of the animal even to the point of convulsions, followed by coma and death. Intense hunger was also observed, the animal eating ravenously, and if sufficient food were given, the characteristic symptoms of an overdose were delayed and often not manifested. It was also observed that the blood sugar steadily declined in quantity and when it reached 45 milligrams per 100 cc. of blood (0.045%) the animals were

\*Read Before the Meeting of the Orleans Parish Medical Society, April 9th, 1923.



seized with convulsions. These convulsions are very similar to strychnine poisoning and can be induced in the quiescent animal by shaking the rabbit, or even by raising it up by its ears. Convulsions occur from an overdose in from two and a half to four hours after hypodermic injection of the Insulin. It was finally decided by the Toronto group to establish as a unit the amount of Insulin that will lower the blood sugar to 45 milligrams per 100 cc. of blood (0.045%) in a rabbit weighing about 2 kilos.

The preparation used in this country under the trade name of Iletin, is manufactured by Eli Lilly & Co. of Indianapolis, as Dr. Lemann has told you, and was supplied to us gratis by this firm for the clinical tests. The unselfish and scientific manner in which they have undertaken the clinical tests of this new remedy before general distribution of the product deserves the commendation of the entire medical profession. While the Toronto group have standardized their Insulin so that one cubic centimeter contains one unit, Iletin, the American product, contains in the stronger solutions as high as 20 units per cc. A unit of Iletin is the amount of Insulin which will lower the blood sugar of a rabbit weighing 1 kilo to 45 mg. per 100 cc. of blood in from one to four hours after having been fasted for 24 hours. It is marketed in rubber stopped vials in different strengths, and wrapped in yellow, white and blue labels, to lessen the danger of an overdose.

H-5 contains five units per cc., yellow label; H-10 contains ten units per cc., white label; H-20, contains twenty units per cc., blue label.

I am mentioning these details as I feel sure that it will not be long before this remedy will be available to the general profession, at any rate, to those members of the profession who will take the trouble to teach their patients how to calculate out their diets and examine their urine. One unit of Iletin will metabolize one to four grams of glucose, but this action varies in each individual case, and it is therefore essential that the carbohydrate tolerance of each patient be first established before starting treatment, the carbohy-

drates, proteins and fats being slowly increased, with increasing doses of Insulin.

*Time of Administration.* The maximum effect of the remedy is reached in from four to five hours after injection and in our cases we have injected either just before or immediately after the meal, the best results, apparently, being when given before meals. In severe cases, and in coma, it should be given every four hours, and this also applies to operative cases of diabetes in which the glucose is being given by proctoclysis, or by hypodermoclysis. Some few patients can get along on only two injections, but most of them will require three injections daily.

*Methods of Administration.* Unfortunately, the remedy seems to have no effect when given by mouth or by enema, and must be administered by needle hypodermatically, except in diabetic coma cases, when it should be given intravenously. There seems to be some slight effect when the remedy is introduced in the form of a nasal spray, but absorption by this route is too indefinite to be of value.

On the suggestion of Dr. F. P. Chillingworth, I became interested in the administration by inunction, and in two cases this method of administration was resorted to with definite evidence that the Insulin was absorbed. It will be noticed that when the rubs were discontinued on three occasions, the patient's blood sugar promptly rose in twenty-four hours, with reappearance of sugar in the urine to disappear again when the rubs were resumed. However, it will also be noticed that it requires three times the dose by inunction as by needle, and this method of administration becomes quite an expensive item to the patient, and had to be replaced by the needle in both of the cases in which it was tried. The second case on whom I resorted to inunctions was a child of five, who resisted the use of the needle, necessitating a struggle each time administration was required. She remained sugar free with only five units by needle, and forty units by inunction, the rubs being given four times daily. While without rubs it required 25 units hypodermatically, to render her sugar free. The importance of thoroughly



rubbing in the ointment was well demonstrated in this case, and may account for the fact that no one else seems to be able to obtain results by inunction.

As long as the trained nurse was kept on the case, the child remained sugar free, but when a relative gave the rubs, sugar promptly returned in the urine, although the child was on the same diet, and using the same ointment. I am convinced that in these two cases, the inunctions were most certainly efficacious.

The ointment used was made from anhydrous lanolin, which takes up approximately 40 per cent of water, and by using the concentrated solution of Iletin, H-20, containing 20 units per cc., very small quantities of the lanolin were required, for each rub, approximately only half a drachm of ointment being required. If further tests show that Insulin can be administered in this manner, it will certainly be a great help in the treatment of children with diabetes.

*Dosage.* As stated above, the dose for each individual case after establishing a maintenance diet, must of necessity vary, and in our experience, has varied from five to sixty units a day. In adult coma cases with a high blood sugar content, or one in whom there is 5 per cent or more of sugar in the urine, 20 units can safely be given intravenously, and 10 units hypodermatically, frequent examinations of the urine and blood sugar being made and the dose repeated or lessened, depending upon the effect of the first injection. Inasmuch as it has been my experience that the glucose from the protein molecule is metabolized even by Insulin, with greater difficulty than preformed glucose, I make a habit of administering glucose either intravenously, or by proctoclysis, aiming at burning up the excess of fatty acids, rather than ridding the circulation of excessive glucose, until the patient has recovered from coma. As long as the urine contains sugar there is no danger of hypoglycemia unless a large dose is given, provided the product is well standardized.

*Symptoms and Treatment of Overdose of Insulin.* Dr. Lemann has reported the characteristic symptoms in

his case of hypoglycemia, which may be summarized as intense hunger, weakness, cold, clammy perspiration, muscular twitchings and coma. Treatment of the early symptoms, which should be explained to all patients taking Insulin, consists in the prompt ingestion of glucose. A glass of orange juice will give almost immediate relief of the weakness and hunger, but in coma cases from overaction of Insulin, more heroic methods may be necessary. Dr. Banting advises 1 cc. of 1-1000 solution of Epinephrin hypodermatically, which mobilizes the glucose in the tissues, and if the patient is unable to swallow, in a few minutes the intravenous of glucose, 25 cc. of a 10 per cent solution.

In rabbits the recovery from hypoglycemia, after the subcutaneous injection of glucose, is remarkable to observe, and you will notice that the animals eat voraciously as soon as they recover.

#### PROTOCOL.

Effects of injection of Insulin on Rabbits in lethal dose.

5 p. m. Brown rabbit, weight 6 pounds, equals 2.7 kilos, was given 40 units of Insulin by needle, subcutaneously in the abdomen.

7:20 p. m. Severe convulsion with evacuation of urine, lasted about two minutes, then rabbit became quiet, but droopy.

7:40 Animal lying flat with head extended and tail drooping; respiration rapid, takes notice of noises and lifts head and ears.

7:57 5 cc. of 10 per cent glucose by hypo.

8:00 Ate cabbage, which he formerly refused; ears still drooping.

8:08 Active and washing his face.

8:13 Normal, 5 cc. more glucose given.

The graphs of two cases are shown to prove that Insulin can be absorbed through the skin if properly rubbed in, the scope of this paper not covering the clinical aspects of the treatment, this being left to Dr. Lemann in his paper, while the blood findings in these cases will be reported by Dr. Giles, without whom we would not have been able to make these investigations, and to whom thanks are due.

Thanks are also due to the Department of Experimental Medicine of Eli Lilly & Co. in charge of Drs. Clowes and Walters, for their generous supply of Insulin during the course of these investigations, to Touro Infirmary for the free beds, to Drs. Lanford and

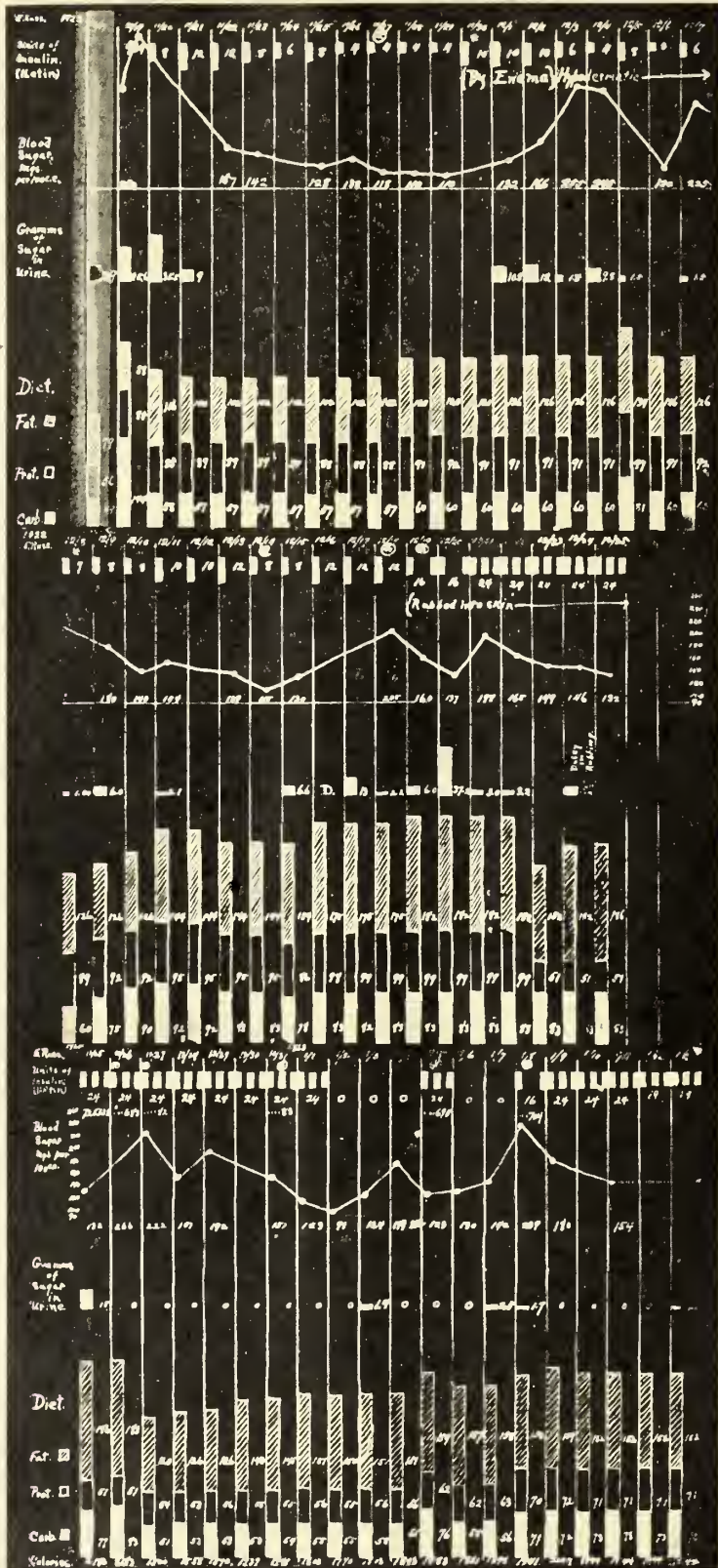


CHART I. White male, age 19, showing prompt effect of Insulin when given hypodermatically, the inefficacy of administering it by enema, as well as its good effect when rubbed into the skin, from Dec. 19, 1922, to Jan. 1, 1923. A rise in blood sugar as well as a reappearance of the glycosuria, will be noted on Jan. 4 to 7, when the rubs were discontinued.



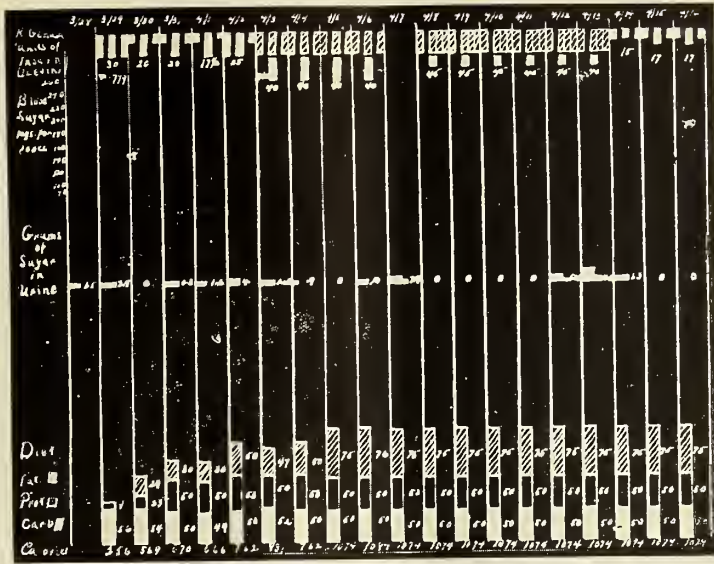


CHART II. White female, five years old, on the verge of severe acidosis. Showing the effects of the absorption of Insulin through the skin crossed rectangle representing the units of Insulin rubbed into the skin, and the solid rectangle representing the amount of Insulin given hypodermatically.

It will be noticed from this chart that when the Insulin was thoroughly rubbed into the skin by the trained nurse, up to April 11, the urine remained sugar free. After the nurse left the case on above date, the sugar promptly reappeared in the urine, to be controlled later by hypodermatic administration.

Bowden of the Pathological Department, for their laboratory examinations, to Professors Garrey and Denis for many helpful suggestions, and to the latter, many laboratory determinations, and finally, to the nurses at the Touro Annex, and to my two assistants, Misses Monroe and Brechtel for their zealous co-operation in every way.

determination should be done daily, and that a micro-method for blood sugar determinations should be attempted.

**TREATMENT OF DIABETES MELLITUS WITH INSULIN (Iletin).\***

By DR. U. W. GILES.

The reason for elaborating a micro-method was on account of assuming a secondary anemia may be produced in the patients, and also psychic deleterious effects may occur on repeated collections of such quantities of blood withdrawn daily. However this assumption has proven false, because I have withdrawn from 3-10 cc. of blood for 52 consecutive days and comparing the red blood count and hemoglobin today it compares favorably with that previous to the experiment. The micro-method was elaborated under the guidance of Dr. Denis, using 0.1 cc. of blood for the sugar determination instead of customary 2-5 c.c as required by the Folin and Wu original method. The method was first attempted with a fair degree of success, using Folin-Wu original method as a standard of comparison, but as I became more efficient with the technique of the method the greater the variation between the two methods; and being more interested in other problems this method was abandoned without discovering the reason for the variation. The method of Folin was adhered to, merely using smaller quantities of solu-

In the study of Diabetes there has been a closer collaboration between the laboratory and clinical investigator than any other disease. The main advances of knowledge of this condition have been done principally by men who have been thoroughly familiar of laboratory principles and experimental investigation.

Laboratory methods have been particularly helpful in the diagnosis of very early diabetes; and it is only through laboratory means that we are to determine the severity of the case and the detection of a beginning Ketonuria.

Previous to starting the Iletin experiments it was suggested that blood sugar

\*Read Before the Meeting of the Orleans Parish Medical Society, April 9th, 1923.

tion, with a few minor changes when deemed advisable.

Recently Dr. Denis has carried out certain experiments, i. e. collecting the blood from normal individuals, mild and severe diabetic patients and also patients in coma. These bloods have been precipitated immediately, 3, 6, and 24 hours respectively at room and ice box temperature.

The results seem to show that in normal bloods the sugar content is lowered at certain degrees of rapidity; while in diabetics the blood sugar deteriorates at a slower rate; that the blood collected from patients in coma change at an extremely low rate or none at all in 24 hours; and that in the patients receiving Iletin the blood changes in direct proportion to the amount of Iletin received. This variation of Glycolysis explains the great variation of blood sugar determinations on the same individuals.

Recently I reported a 444 mg. blood sugar per 100 c.c of blood and a different laboratory reported 176 mg., but on questioning the technician it was discovered he had precipitated the blood 27 hours after collection.

A spleno-myelogenous leukemia patient, with a blood sugar of 126 mg. showed deterioration of 100 per cent in one hour.

The favorable comparisons were gotten when the two methods were used simultaneously on severe diabetic bloods. The greatest variations were gotten on the same diabetic persons when receiving Iletin. Burdened with my clinical duties thirty minutes to two hours would elapse between the two precipitation periods. On observing these changes found by Dr. Denis and looking back over the micro-method, it appears that the variations may not be due to the method itself or the technique, but in the time I precipitated the bloods. This assumption has later proven correct.

You have observed on one of the charts shown by Dr. Eustis that the fasting blood sugar is 222 mg. per 100 cc. of blood, and sugar is present in the urine. The patient is given Iletin and one hour after administration the blood is collected and the blood sugar determination made and 124 mg. is found

and the urine does not reduce Benedict's Solution. The next the blood sugar is again determined and 218 mg. is reported and the urine again reduces Benedict's Solution showing that Iletin does temporarily lower the sugar in the blood and banishes it from the urine.

Observing the chart of Mr. R. you notice that this man may take 180 gms. of carbohydrate and excrete 150 gms. of sugar in his urine. This partially has been explained by Drs. Lemann and Eustis as a burning of his body tissues and also probably a delayed sugar excretion. I do not feel that this fully explains his condition, because there is a definite impairment of some other function associated with partial lack of the pancreatic factor. Between Iletin injections the blood sugar invariably rose showing that a continual supply is necessary for the working enzyme. When the effect wears off, gamma glucose which is readily utilized or stored is no longer formed in appreciable amount, and a major portion of the sugar circulating in the blood cannot be removed, with the result that the sugar rises up to the leak point of the kidneys.

The experiments of Clark, Hewitt and Pryde, Winter and Smith have shown that normal blood sugar is a gamma glucose and that of patients suffering from severe diabetes is of an abnormal nature probably a. b. glucose.

Mr. R. yesterday took 90 units of Iletin and the diet was 30 carb., 30 protein and 100 fat and he excreted 36 gms. of sugar in his urine. Also an emotional disturbance must be considered. On observing this man you will notice a muscular twitching or spasm of thumb and index finger of left hand. It has been suggested that this condition is due to an organic lesion, but Drs. Van Wart and Holbrook negated this suggestion. In the diabetic clinics and wards I have seen just such conditions as this showing muscular contractions of the toes, hands, pectoral, abdominal and facial muscles; and also showing such a variation in the intake and output of carbohydrate. On questioning these individuals invariably a mental depression was noted. Carefully inquiring into this man's history it is discovered his business has recently gone into insolvency; he has recently lost his home



through fire, and at present forced to borrow money to meet his expenses, etc.

*Laboratory Examinations:* Examination of blood and urine are carried on daily for varied lengths of time, depending on the severity of the case. Twenty-four hours specimen of urine should be collected daily in usual manner and examined qualitatively and quantitatively making useful routine tests for volume, specific gravity, etc., also examined for sugar, acetone, diacetic acid and total nitrogen. The  $\text{CO}_2$  combining power of the blood should be made at times. The bulk of the laboratory work was done by Dr. Bowden and it is only through Dr. Dowden that these experiments could have been completed.

*Ketonuria, Acidosis and Coma.* In many diabetic cases glycosuria is not the only problem reckoned with; a disturbed fat metabolism, ketonuria, acidosis and coma. Ketonuria associated with glycosuria clears up when sufficient carbo-hydrate is burned and this usually is brought about with diatetic management. However, with the injection of Iletin the ketonuria and glucosuria clear up quite rapidly. It apparently seems that in patients with an acidosis and taking a sufficient amount of Iletin the sugar disappears about 2 to 3 hours before the acetone from the urine and that acetone reappears 8 to 9 hours later and about 2 hours before the reappearance of sugar in the urine.

At the present we are not able to lay down a hard and fast rule as to the exact amount of Iletin and just what diet to be given. Iletin certainly is an advancement in the therapy of treating diabetes and its complications. While it is an advanced step in the therapy of coma, yet in advanced cases it has almost proven hopeless.

*Hypoglycemia:* In the comatose the danger of hypoglycemia must be combated by administering sufficient glucose at the same time. We must correct the disturbed fat metabolism and decrease the ketone production, and no need be paid to the glycosuria at this time.

In administering glucose intravenously it should be of the purest form and sterilized under pressure. I have

recently given from 5 to 800 cc. of a 10 per cent glucose for eight consecutive days.

The comatose patient shows a response by a rise in the alveolar  $\text{CO}_2$ , fluttering of the eyelids, response to painful stimuli and reduction of the ketones. The alkali reserve rises more slowly than the reduction of ketone bodies and certainly later than clinical signs and symptoms, consequently we can easily be misled by the latter. Disappearance of sugar is no indication that the patient is much better and we should discontinue heroic treatment; for it merely indicates that more glucose should be given or possibly the use of epinephrin.

*Summary:* 1. Blood sugar can be decidedly reduced even below normal value.

2. Glycosuria is abolished.

3. Alkali reserve and alveolar  $\text{CO}_2$  can be lowered.

4. Ketosis disappears from urine and blood.

5. Increased utilization of carbohydrate, shown by an increased respiratory quotient, and also explains the base of metabolism is increased.

6. The blood sugar of diabetes differs from that of normal persons.

7. In diabetics the decreased amount of blood sugar produced by injections of Iletin, contains a greater amount of normal blood sugar as shown by the alteration approaching normal.

#### DISCUSSION.

**Dr. J. B. Guthrie:** This is a therapeutic measure that is not going to be one of the things to be brought up and then cast aside. It is what we have been working and hoping for. There has been much of experimenting with pancreatic extracts in the treatment of diabetes. We have known for some time that the activating hormone of the liver came from the islands of Langerhans, but all attempts at utilizing it in diabetes have failed up to the time of Banting's work.

I happened to see one of Dr. Lemann's early cases. The case came in with pronounced acidosis and I saw the patient from time to time at the Touro. It was fascinating to watch the conquering of this diabetic syndrome—something I had not seen before.

Recently there was admitted to my service in Charity Hospital the woman Dr. Giles mentioned. She weighed 70 pounds on admission and had a blood sugar content of 623 mg. per 100 cc. The urine showed a larger output of sugar than total amount of carbohydrate consumed. She was a complete diabetic,

throwing out for days more glucose than the total of carbohydrates and proteins ingested. A prolonged state of malnutrition had produced pellegra lesions. This patient now receives 15 units of Iletin daily and has gained, in nineteen days, four pounds. Her skin has cleared up, the dry, harsh appearance has disappeared, she has with Iletin a tolerance of carbohydrates 50 gr. protein 56 gr. and fat 106 gr. She is sugar-free on this diet, and the diet is something more than sufficient for her daily need.

In another case also in the service of about the same weight, there was not quite so low a tolerance, but with the most restricted diet short of actual fasting, there was sugar in the urine. There was a tolerance lower than 30 gr. It is a sad thing to think of a patient being a slave to the hypodermic needle three times a day for the rest of his life. This is the outlook at present. The question of expense is a most important one. The expense will probably be cut down in the future. Perhaps some philanthropist will endow Insulin so that the charity patient can have it as long as he is willing to come.

What are we going to do with negroes? These are difficult patients under hospital conditions. We can trust very few of our patients to use a hypodermic needle themselves. Attending a case three times a day may be impossible. Why feed them three times a day? Why cannot we give them two meals a day and reduce the number of hypodermics to two, one-half hour before meal time? Could we not avoid the daily visits altogether? It seems to me that perhaps we might be able to get an oil suspension which would be absorbed gradually and act as gland implantation. We have succeeded in other directions with injections in oil suspension. It is worth further effort.

We cannot give Iletin indiscriminately, even with a cake of chocolate in the pocket for protection.

I do not mean to say that a daily blood sugar estimate is necessary, but it has to be done at intervals. Without blood sugar tests we are at sea. The first case I mentioned has a high threshold and a correct estimate of carbohydrate metabolism could never be obtained from the urinary output. Unless we are prepared to observe these cases by repeated blood sugar estimates, we should not yield to the temptation of using the Iletin excepting to keep up a previously determined dosage.

**Dr. Devron:** "It may seem ridiculous, but it occurred to me that as these doctors arrived at those conclusions by ligating the ducts of Wirsung, thereby isolating the active principle or Hormone; why cannot some of our local surgeons tie these same ducts in persons having diabetes instead of using hypodermics three times a day?"

**Dr. I. I. Lemann (closing):** I have committed a very grievous error; I have failed to express my appreciation to the hardest worker of them all, Dr. M. P. H. Bowden. If she had not been on the firing line we would not have been able to carry out our observations. I failed to mention her at all. I intended to put her name at the end as a climax.

I think it is also due the Society to explain the status of Insulin at the present time. Insulin is not on the market generally. Banting and Best patented the discovery and turned it over to the University of Toronto. The University of Toronto has licensed Eli Lilly & Co. in the United States and the National Research Council in Great Britain. The University of Toronto will manufacture it in Canada. It is not intended that there shall be any actual profit accruing to the University and any surplus will be devoted to research in the same field. Up to now the Toronto group, as well as Lilly, have felt it was not safe to put Insulin in the drug stores for prescriptions or otherwise. As you have seen, it is yet a matter of great importance to control the administration of Insulin with accurate determination of the tolerance of patient. Up to now, the men to whom the preparation has been sent have been approved by the Toronto group.

Dr. Giles pointed out that there are many people on whom it will be difficult to continue the use of Insulin for all of their lives. How can they do it? Several observations have to be made. In the first place, I do not yet believe that it is necessary to give Insulin to all diabetics. Many have mild cases and can get along without it. In view of the necessity of hypodermics and because of the limited supply, I think that we should set a level above which we may deny Insulin to the patient. Personally, I have set such a line: If the patient can, on a diet of at least 60 grams of carbohydrates, 1 gram of protein per kilo of body weight, and sufficient fat to cover the caloric needs of the body, keep energy and weight, he does not need Insulin. Insulin will benefit all patients, but all patients are not **compelled** to take it.

In the second place, we may look upon the use of this preparation as we do the use of digitalis. Heart cases are put on their feet by the use of digitalis and rest. I think that we have every reason to believe that we may restore patients by temporary use of Insulin and then they may go along for a period without Insulin and with dietetic treatment only.

Finally, I would like to answer Dr. Devron. I think the Doctor has failed to understand my statement thoroughly. Ligation of the duct of Wirsung brings about atrophy of the pancreas, leaving in the remnants only islet tissue; from this islet tissue insulin is produced by extraction. Ligation of the pancreatic duct will not cure diabetes but will produce fatty diarrhea.



# PROCEEDINGS OF THE LOUISIANA STATE MEDICAL SOCIETY

Report of House of Delegates to General Assembly, Annual Meeting of 1923,  
at New Orleans.

During the present meeting of the Louisiana State Medical Society the House of Delegates held two meetings. The Council has also been in session and attended to all matters which were presented to them.

The House of Delegates had numerous and interesting matters for consideration which were disposed of expeditiously after due deliberation and consideration, the most important of which are presented to you for your information.

The report of our President, Dr. Paul J. Gelpi, was replete with interesting facts and recommendations. A special committee was appointed and made the following recommendations thereto:

(1) Thanks to our friends in the last Legislature for aid and assistance rendered.

(2) Vote of thanks to the Board of Directors and the Editorial Staff of the New Orleans Medical and Surgical Journal.

(3) Commendation of the Executive Committee, Secretary and his office for their attendance and cooperation during this tenure of office.

(4) Recommendation that the affairs of the Journal be under the control of the Executive Committee who will appoint a Journal Committee with overlapping terms of office for membership on this Committee.

(5) That the Hospital Abuse Committee should become active and in conjunction with like Committees from Parish Societies and Hospitals to formulate laws to correct Hospital abuse, after which to consult with the Committee on Public Policy and Legislation for the purpose of formulating and introducing a Law for Hospital Abuse.

(6) That the House of Delegates go on record as opposing plan offered by the American Medical Association of districting the United States into District organizations.

(7) Recommendation that a Committee of 5 be appointed to develop plans and means for the erection of a memorial to the lamented Dr. Walter O. Reed in commemoration of valuable services rendered his profession.

The Secretary-Treasurer's report giving the activities of the office for the past year was submitted and upon recommendation of Secretary's Report Committee two recommendations, as follows, were adopted:

(1) May 1 was the time decided for suspension and June 1 for the time for dropping from the rolls of the Louisiana State Medical Society any member failing to pay annual dues up to these dates and reporting same to American Medical Association

(2) That the fiscal year of the Society revert back to January 1st for reasons made known in the Secretary-Treasurer's report.

The Chairman of the Council, with the other reports of Councilors from their respective districts were submitted and approved. These gave activities and medical efforts occurring in the various Congressional Districts.

Likewise the various Committee reports, both standing and special, were called and all of them, with the exception of the Committee on Hospitals and the Committee on Health Problems and Education, submitted their reports.

As per request in the report of the Committee on Public Policy and Legislation, a vote of thanks was sent to the various Senators and Representatives who were of material assistance and aid to our Public Policy and Legislation Committee in Baton Rouge during the recent session of the Legislature.

Upon recommendation of the old Budget and Finance Committee the new Budget and Finance Committee will be of only three members with overlapping terms of 1, 2 and 3 years respectively.

The Committee on Medical Education submitted a very interesting report reciting the activities of our medical schools in this State. This was a very unusual report and showed that medical education was being conducted in New Orleans on just as high a plane as in any other center of the United States.

It is interesting to know from the reports of the Committees on Vivisection and Public Policy and Legislation and that two bills antagonistic to the medical profession,—namely the Anti-vivisection bill and the bill to legalize the practice of chiropractic in this State, were combatted by this committee and defeated.

The House of Delegates disposed of a very important committee report "Care of Indigent Physicians" by placing this Committee as a standing committee with its present Chairman, Dr. C. A. Weiss to develop plans and means for future consideration to take care of our indigent physicians. This represents a decidedly new and progressive step by the State Society to aid its members in time of distress.

The report of the *New Orleans Medical and Surgical Journal* owned by the Louisiana State Medical Society, showed an immense progress within the last 10 months and presented a financial statement which was flattering.

The Louisiana State Board of Medical Examiners submitted what was considered the best report that we have ever been furnished from this Board giving in detail the activities and accomplishments during the past year.

A very interesting letter from Dr. W. C. Woodward, Executive Secty., Bureau of Legal Medicine and Legislation was presented and the House adopted recommendations condemning the Veterans Bureau for training ex-service men as chiropractors and as opposing practice of the Legislative Bureau from amending and promulgating regulations to the National Prohibition and Harrison Narcotic Acts without consulting the medical profession.

They also adopted a resolution favoring the organization of the Women's

Auxiliary to the State Medical Society as requested by the Women's Auxiliary of the A. M. A.

Concerning the report made by Dr. T. E. Wright in 1922, House of Delegates voted that District Societies should be entitled to one delegate in the House of Delegates.

Also, as per recommendations made by our retiring President, Dr. Knighton, amendment to the By-Laws was passed reducing from 10 to 7 papers in the Surgical and Medical Sections respectively, this cutting down by 6 the total number of scientific papers.

They also, after all legal requirements had been made, voted for the amendment to the Charter whereby our retiring President should be a member of the Executive Committee for one year.

The House of Delegates went on record as opposing the present manner of labeling caustic preparations and requested Legislative Committee to formulate bill after the Pennsylvania bill, for introduction at the next session of the Legislature.

Also it adopted resolution favoring the present Charity Hospital appeal.

Upon request from the State Board of Health resolution was adopted endorsing the collection of Vital Statistics in the State and the report to the Council for consideration of members of the Louisiana State Medical Society who failed to report vital statistics as they should.

*Marriage Law:* The House went on record as favoring a Law restraining the insane, feeble minded, epileptic or people infected with venereal diseases from marriage and special committee was appointed to draw up a suitable Law containing these sentiments and views and report back to the House of Delegates at the 1924 session for confirmation.

Dr. C. P. Gray was elected as fraternal delegate to coming meeting of the Mississippi State Medical society and Dr. S. C. Barrow of Shreveport was appointed fraternal delegate to the coming Texas State Medical meeting.



Resolution Committee offered the following resolutions which were adopted:

WHEREAS, the Ladies, the Local Medical Profession, Mayor of the City of New Orleans, the Arrangement Committee, Scientific Exhibitors, the Tulane College of Medicine, Tulane Post-Graduate School of Medicine, Loyola Post-Graduate School of Medicine, Eye, Ear, Nose and Throat Hospital, St. Luke's Sanitarium, the Local Press, Chief of Police, **The New Orleans Medical and Surgical Journal** and the various clubs have left nothing undone to make the present meeting of the La. State Medical Society both pleasant and profitable;

BE IT RESOLVED, That the thanks be extended on behalf of our Society to all concerned for their gracious and untiring efforts to make our stay in their midst most pleasant and profitable.

WHEREAS, The Officers and Clerical Force of the Society have been untiring and successful in their efforts to maintain the strength and dignity of our Society during the past year,

BE IT RESOLVED. That the thanks of the Society be extended to our past officers and the office force for their unflinching devotion to our beloved Society.

WHEREAS, It has been generally commented that the business of this meeting has been transacted with such punctuality and

smoothness that the fact that there was a machinery of operation was scarcely apparent.

BE IT RESOLVED, That thanks and appreciation be extended to our Secretary-Treasurer, Dr. P. T. Talbot and his Assistants, whose foresight and efficiency rendered the above possible.

Respectfully submitted,

(Signed) DR. A. O. HOEFELD,  
Chairman.

We are very proud to report the unusual attendance at the annual meeting just passed, which showed a total registration of 486 members of the State Medical Society and with guests and visitors ran the total registration up to 602. This is a distinct evidence of increased interest of the members of the Society at the Annual Meeting. An added feature of our meeting was the scientific exhibit, composed of 56 exhibitors, displaying specimens, cuts, etc., of medical interest.

Trusting that the above report will receive your approval and our actions warrant your commendation,

Respectfully submitted,

P. T. TALBOT,  
Secretary-Treasurer.

# New Orleans Medical and Surgical Journal

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## EDITORIALS

### A STATEMENT OF THE BOARD OF DIRECTORS.

It is just one year since this JOURNAL became the property of the Louisiana State Medical Society. The committee of arrangements for the meeting of the American Medical Association last held in this city, after entertaining the members in an unusual and successful manner, still had left in its treasury some three thousand dollars. After deliberate consideration this sum was devoted to the State Society to be used as a first payment on the purchase price of the JOURNAL, all of which has been duly published, but is told again to freshen the reader's memory.

This left a balance to be paid of two thousand dollars, represented by three notes of \$666.66 each, one to be paid annually. Note number one has been taken up and the interest for the first year has been paid in the two others. The money has come from the earnings of the JOURNAL, not from the treasury of the Society which, up to date, has not had one cent of expenditure for the acquisition or the publication of the JOURNAL.

This financial result was made possible only because the Board of Directors insisted upon following a conservative and economical policy, not yielding to the wishes of the over-zealous who, through the sudden adoption of radical

changes, might have led to a debit instead of a credit on the balance sheet.

Nothing is easier than to spend money, especially the other fellow's, but our desire was, not to splurge nor to attempt to shine by means of an ill-afforded brilliancy, rather to demonstrate the financial possibilities of the State Journal, serve its membership by the publication of the annual proceedings, and furnish a medium for the dissemination of other medical information and the interchange of ideas.

Our aim was to add gradually to the attractiveness of the JOURNAL, both as to its physical make up and its literary quality, in proportion to our financial ability. After the purchase price has been liquidated, more rapid progression rightfully can be anticipated. In the meantime, during the short time we have remained in full control, we have done the best we could. The future of the JOURNAL will depend upon the co-operation of the members of the State Society and the degree of their disinterested assistance.

### VOLUME SEVENTY-SIX.

Owing to the fact that the Executive Committee of the State Society had not yet appointed the Journal Committee which will be charged with the management of the JOURNAL and be endowed



with the powers of a Board of Directors, the Existing Board had been requested by the Executive Committee to continue in authority until the new appointments could be made.

Inasmuch as the former editor-in-chief had already announced his inability to continue in office, owing to the lack of time necessary to fulfill its duties and, furthermore, because of some disagreement as to policies and authority, the Board of Directors deemed it simpler to assume all responsibility for the editing as well as the publishing of this the first issue of volume seventy-six.

Certain changes in form and appearance, which have been under consideration for some time, but could be inaugurated consistently only with the beginning of a new volume, will be noted. We hope they will meet with the favor of our patrons. At any rate we have done what seemed to the best advantage of the JOURNAL and, consequently, the society. Whatever may be the verdict our comfort will be that we have served as managers during the past year to the best of our ability and that we shall have served with an increased responsibility until relieved by the appointment of our successors.

#### THE NEW MANAGEMENT.

The president of the State Society, by authority of the Executive Committee, has appointed the following as members of the Journal Committee. Dr. H. B. Gessner, New Orleans; Dr. A. A. Herold Shreveport; Dr. Oscar Dowling, New Orleans; Dr. A. O. Hoefeld, New Orleans; Dr. H. W. E. Walther, New Orleans.

They will take over the managing and editing of the JOURNAL and we bespeak for them the same measure of kindness and co-operation that we have enjoyed during our term of office. The more rapidly they can improve the publication the better pleased shall we be. It is not often that valedictories come in such close succession, but our turn has come to say farewell and thank you. Long live the JOURNAL.

#### OUR RUSSIAN COLLEAGUES.

A communication received from Dr. W. S. Thayer calls attention to the de-

plorable condition of the physicians of Russia. While the demands for their assistance have multiplied many times, they have been lacking in medical supplies and almost deprived of the necessities of life. They are in need of food and clothing for themselves, of drugs and surgical instruments for their patients, to say nothing of books and journals printed in English.

The American Medical Aid for Russia, the Medical Division of the American Friends (Quakers) Service Committee are trying to collect the above mentioned necessities and are in a position to assure American physicians that contributions will be efficiently distributed to Russian hospitals, medical schools and individual physicians.

It would be of immense help if all who can afford to do so sent some money and those who have them to spare sent clothes, files of journals, medical books and instruments.

Naturally, most of us no doubt feel out of sympathy with Russian politics and disturbances, yet we must remember that the physicians, from the very nature of their calling, are more apt to be the least involved in the upheaval and the most deserving of our commiseration.

Many nationally known and esteemed physicians of this country are included in the membership of the committee, whose secretary is Frances Witherspoon and whose address is 103 Park Ave., New York City.

#### CHARITY HOSPITAL APPEAL.

As we write, the indications are that the appeal made to the people of Louisiana, for funds to put up some necessary additional buildings, by the Board of Administrators of the Charity Hospital, will bring about three hundred thousand dollars. This amount, of course, is quite inadequate to fill the need but it will do something. In addition, the main purpose of the Board has probably been attained, that is the dissemination of information regarding the hospital which was necessary to acquaint the profession and the people with the actual situation there. This should make it simple for the legislature to do the remainder at its next session.

# PROCEEDINGS OF HOTEL DIEU STAFF

MAY, 1923

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## THE SELLA AND THE OPTIC NERVE.

**DR. DIMITRY** stated that he became interested in the bony orbit in search of explanations for certain head and eye complaints which were not well understood. He mentioned that many of them were usually classified as primary but he could not accept of such a disposition, which then led him onward to the realization that he should become familiar with radiograms of the cranium and that he should study his problems with the radiologist if he was to accomplish his desires. He stated that there existed an immense number of air cells in the different bony plates which formed the orbit, and stressed the effect that pathology in these cells would have upon the eyes, but he centered his remarks upon the sella and the effect that changes in the sella would have upon the optic nerve, the other ocular nerves, and the vascular supply to the eye. He called attention to the anatomical location of the chiasm, the optic tracts and nerve, and by diagrams demonstrated how they may be affected when disease exists in and about the sella.

He stressed the necessity for a more familiar knowledge with the normal sella, in fact if the subject was to be understood there should be a complete

knowledge of the middle fossa of the cranium. He considered the size and development of the sphenoid and then projected different tracings of the normal sella and finally showed a collection of tracings of the altered sella. In conclusion he contended for a greater cooperation with the radiologist, when you wished for greater details, and not to delegate the entire work to him, when facts possessed by yourself would be of mutual benefit.

**Dr. Homer Dupuy** (discussing Dr. Dimitry's paper). We are breaking into new ground. Dr. Dimitry is right, and pathology in the Sella Turcica region explains many serious eye diseases. We now know that the optic nerves very frequently pass through the Sphenoid Sinus being only surrounded by the mucous lining of this cavity. Sinusitis must, oftener than we suspect, involve these very nerves. As to the Clinoid processes, their haziness does not necessarily mean pathology. They are subject to normal variations found in all bone structures. See how the Styloid process varies as to size. The X-ray pronouncements relative to the Sphenoid are not yet infallible. Of course we have made material progress and we must keep up the good work.

Paper was also discussed by Drs. L. A. Fortier and J. T. Nix.

**Dr. L. A. Fortier** exhibited skiagraphs of metastatic tumors of lungs. Discussed by Drs. Danna, A. C. King and Couret.



# PROCEEDINGS OF TOURO INFIRMARY STAFF

MAY 9, 1923

**DR. H. N. BLUM:** I have four cases of injury caused by foreign bodies which I wanted to show tonight but only three cases have come. This gentleman was in Ward C. About three weeks ago he was sent down from the country with a history of an injury to his eye caused by hammering a piece of metal. I saw that he had a wound of entrance of the foreign body at the lower corneo-scleral limbus. The foreign body had penetrated the eye, there being apparent a wound of entrance and the X-ray showed the foreign body to have remained in the eye ball. It was located with the Sweet apparatus and also shown by the movement of the shadow corresponding to the movement of the eye ball. There was a hemorrhage in the anterior chamber and in the vitreous. Removal was attempted with our small hand magnet but since the foreign body was beyond its field of action, we were unsuccessful. In such cases, we require a giant Haab magnet. The smaller the foreign body, the greater must be the magnetic power and the further the distance the greater the magnetic power required. The foreign body was located at the posterior pole of the eye and when the point of the magnet was pushed in the lower cul-de-sac in proximity to the posterior pole, there was evidence of pain. We knew then that the foreign body had moved and that it was magnetizable. Gradually, the foreign body was coaxed to the anterior part of the eye ball and then removed at the wound of entrance. It came out with great rapidity and there was an audible snap. The foreign body is here shown and it is two or three mm. in diameter and triangular in shape. I regret that we are unable to show the X-ray pictures because they have been misplaced. The situation today is that though the foreign body has been removed the condition of the eye is still serious. The steel came out with such rapidity that it is very possible that as much damage was done coming out as in going in. The cloudiness of the vitreous makes it impossible to see the red reflexes of the retina. Examination fails to show any evidence that the lens

has been damaged, the foreign body evidently traversing the eye around the edge of the lens.

Whether or not the operation was a success remains to be seen by developments in the future. We know that the fellow eye has been protected against sympathetic ophthalmia. When foreign bodies are magnetizable, in a very large percentage of cases they may be successfully removed, if not at first, after several trials. Sometimes we have to make an incision over the point corresponding to the location of the foreign body in order to get the full power of the magnet especially when we operate with a small hand magnet. In the cases of wood, copper and glass, or other non-magnetizable objects, we have to operate by opening the sclera at the point of localization or by a point opposite to that place where we can introduce a forceps and grasp the object, removing it thru the vitreous, and of course accomplishing much traumatism thereby.

Case 2. This gentleman is a grocer and one day while hammering on a barrel hoop he felt something strike his eye. The wound of entrance is about in the neighborhood of 7 o'clock at the corneo-scleral limbus. The path of the object can be traced through the cornea, through the iris, around the edge of the lens, thru the coats of the eye at its posterior pole, back to the orbit. You see that he has a linear wound at the limbus, and hole in the iris and with the ophthalmoscope, the hole in the chorio-retina may be plainly seen. With the X-ray, the object was definitely located in the orbit. The patient has normal vision today, the wound being temporal to the macula, the eye is quiet and while he has some scars in the posterior eye ball, some vitreous opacities which will bear close observation, the prognosis seems to be good. Of course it was unnecessary to use a magnet in this case since the foreign body was no longer intraocular.

Case 3. This is not a case of foreign body but in the absence of another case which I intended to present, I thought this would be of interest to the internists. This woman came to the clinic with complaint of failure of vision of right eye and gradual loss of vision in the left eye. You may see that she has a cataract in the right eye which is a complicated cataract. She has an incipient complicated cataract of the left eye. She was placed on mixed treatment and her general condition improved. I do not remember whether the

Wassermann was a positive or not (since this time another Wassermann has proved negative.) I sent her to the medical clinic for general examination and Dr. Cole made a clinical diagnosis of probable T. B. of the upper right lobe. I have always believed that mixed treatment was harmful with tuberculosis patients. Her general condition has apparently improved though the eye condition has not changed. Tuberculosis of the eye in our part of the country has been considered a rarity, it may be that we have failed to recognize cases. It is doubtful that the use of tuberculin would be of much benefit in clearing up the diagnosis, since it has been said that the focal reaction to any protein injection would be the same as that following tuberculin.

We can only make a diagnosis of this case by the progress of the case.

Case 4. This particular case is of more than usual interest. He came to my office about one year ago complaining of a gradual increasing dimness of the left eye. He had gotten a foreign body in the eye the year before by working at his trade of auto mechanic. When he came to me, there was a very thin bluish white scar in the cornea, a hole in the iris, and a black object in the posterior lens. X-ray picture of the eye showed the foreign body present in his eye and the patient has been kept under observation while the opacity of his lens gradually increased until the whole lens was cataractous and until the lens could be successfully removed. At the time of the operation, the nasal half of the lens which was soft came out without difficulty and the temporal half came out in one large piece containing the foreign body on its posterior surface. There was very little interference with the wound at the time of the operation but despite this fact, the slow intraocular infection became gradually manifest. I believe that this infection was caused by the foreign body itself, which being in the lens was latent and only became manifest at the time of the operative procedure. There was practically no iritis and all of the inflammatory signs pointed to an infection of the deep eye. This foreign body was on the posterior surface of the lens and after it had been removed from the eye, we saw that it was attractive to the magnet. Prognosis is fairly good. The eye today is quiet but there are numerous vitreous opacities which interfere with a clear view of his fundus and therefore with good vision of his eye.

**Dr. M. Feingold** (Discussing Dr. Blum's cases): With the rise of industry at the end of the last century, and with the greater use of steel, the number of injuries to the eye increased to a very alarming extent and the need was soon felt for means of removing steel from the interior of the eye. It must not be forgotten though that quite a long time before attempt had been made to remove pieces of steel by the use of a magnet. Great hopes were placed in the giant magnet Professor Haab of Zurich was to build for the purpose of saving the sight of eyes with such injuries in such manner that the other eye would remain unharmed. Methods of localiz-

ing foreign body in the eye were developed, such as the sideroscope, the different methods by means of the X-ray and also by watching the effect of the magnet. But we must admit that the results have not fully justified our hopes. When the foreign body goes in, it destroys certain tissues in the eye, it cuts a path in the eye and when we remove it, it must, most of the time, cut a new path through the eye. If during the first injury, tissues were torn and hemorrhage produced, the road of the exit is again having similar results. Statistics show that very small numbers of the eyes are ultimately saved with good eye sight and without danger to the other eye.

Another point emphasized by Dr. Blum is the size of the foreign body and its momentum. This was shown very well in two of his cases—in one case the foreign body was comparatively large, but it had sufficient momentum not only to cut the eyeball and enter the eye, but the force was sufficiently great to cut the ball again and produce a second perforation; as emphasized in his other case, it is on the other hand rather good to have a small foreign body with very little momentum.

During the late war quite a number of interesting injuries occurred. Small foreign bodies like innumerable fine pieces of lead or stone were sprinkled into and lodged in the eye; injuries with pieces of rust free nickel steel from bullets lodged in the retina and remained visible in the eye without damage to the eye. That foreign bodies can heal and remain in the eye for years and not do any damage was demonstrated by me some years ago before this and since. A boy's left eye had been injured by a lead bullet from an air rifle, penetration of lid, cornea, iris, and lens occurred and the bullet remained lodged in the retina without injury to the sight during the time of observation, several years. Iron, steel, etc., are rather irritating to the eye and demand removal; lead, glass, etc., are rather inert. Unfortunately, all iron is not magnetic, and can, therefore, not be removed by the magnet.

Another chapter of foreign bodies which has of late gained considerable importance, is the change produced in the eye by copper. Copper will, if remaining in the eye, produce certain changes which are of tremendous interest, which have been termed chalcosis.

The patient of Dr. Blum's with tuberculosis and who improved under antitubercular treatment is paralleled by another case of Dr. Blum which he had transferred to my service at Charity Hospital. A colored man with numerous small gelatinous nodules in each iris, severe apical infection in the lungs, who improved under mixed treatment and salvarsan given because of a positive Wassermann. A piece of iris from his left eye was removed by me during operation and histologic examination shows the nodules in the iris resembling tubercles. That tubercular patients might improve under antisiphilitic treatment is unquestionable. Recent literature emphasizes that we cannot lay too much stress on im-



provement under tuberculin treatment it may simply be reaction to a foreign protein.

**Dr. W. P. Bradburn:** I am presenting this case to-night because of the improvement noted in the case, an improvement which is almost unbelievable. I saw this patient here a week ago which was an interval of about 7 weeks from the time I first saw her and after the diagnosis had been made and treatment begun. When first observed, that is, 8 weeks ago, the patient was running temperature of 101 to 102 degrees, and gave a history that for a year past she had not been feeling well, had lost weight, etc., but in the three months previous she had gone down rapidly and had had a constant irritating cough with some expectoration of blood. She had to be brought down to the hospital on a cot. She was extremely weak and emaciated, practically no appetite and had lost her interest in all things generally. Examination at that time showed dullness in the left side of the chest from about the fourth rib, mid axillary line, downward, the flatness following this level anteriorly and posteriorly. Percussion sound over the upper portion of the lung was about normal as compared to the right side. There were no rales to be heard in either lung. A tentative diagnosis of probably tuberculosis associated with pleurisy with effusion was made, a needle was put into the chest, and 50 cc. of a straw-colored fluid removed. This was not exactly the straw-colored fluid of tubercular pleurisy, there was a slight haze. I took this personally to Dr. Lanford, who made immediate examination and reported that the sediment is made up of blood cells and the large embryonal type of cells suggestive of neoplasm. The culture made of the fluid removed was negative. This case was then referred to Drs. Samuel and Bowie for X-ray. Their report follows ("evidence of an extensive pericardial adhesion with marked opacity over the lower portion of the left lung. There is a large mass in the upper portion of the left lung which is probably a new growth.") Having confirmed the diagnosis of neoplasm by means of X-ray the case was turned over for deep therapy to Dr. Bowie. After Dr. Bowie's exposure the case was allowed to go home within twenty-four hours. When seen a week ago, that is seven

weeks after deep therapy, the patient had come down to the office in automobile, was feeling distinctly better, able to get about the house and had taken a new lease on life. Her temperature does not go over 100 and she tells me that within three days after she left the hospital, that is four days after deep therapy exposure, all blood ceased and she began to notice a distinct improvement. Percussion showed the fluid level distinctly lower than at the first observation and X-ray taken at this time showed as above.

This case is one, I believe, that some years ago without the use of the deep therapy would not be here today, and I believe that the prolonging of her life has been due to Dr. Samuel's and Bowie's use of the deep therapy. The further progress of the case is still to be determined. She is to report back at intervals of two months for X-ray examination of the chest and observation. I am presenting this case because of the marked improvement within the short interval of time, 7 weeks, and also to take this opportunity of acknowledging my indebtedness to Dr. Lanford, as he first suspected the cause of the patient's condition, and to Dr. Samuel and Bowie for their handling of the case subsequently. We trust that the patient will continue to improve.

**Dr. Hirsch:** What reaction did she have following deep therapy treatment?

**Dr. Samuel:** She had some vomiting afterwards, but not a great deal, because she was not given a carcinoma dose. She was given a sarcoma dose which is less than carcinoma lethal dose. She had 80 minutes. Some remains of the growth are still present and we thought we would radiograph her in four or five weeks and if it is not entirely cleared, we would give her about one-half of the dose anteriorly and posteriorly. We had a case from the surgical clinic four weeks ago. Dr. Brewster might remember a colored man with a sarcoma of the axilla which also involved the pleura. He was re-radiographed, and tumor has almost disappeared under the carcinoma dose which was about 120 minutes. We hope to present those two cases together so we can see just what the dosage has been in both of them.

# BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

By DR. P. T. TALBOT, Sec.-Treas.

We are very gratified to announce that up to the present writing the membership of the Louisiana State Medical Society numbers 1,102, while this numerically compares favorably with the membership at the same time last year, we have not yet the last year's enrollment. We have succeeded in getting some new members in 1923 who were not members in former years, yet we have been compelled to drop from membership some names to date, who did not pay their dues for the current year; these names have been sent to the American Medical Association and will thus bar them from becoming Fellows or Members of the American Medical Association. We earnestly hope that those who have been dropped will renew their membership in the State Society, as no doubt is the case some of them have negligently passed this important function, forgetting that the dues of the State Society should be paid in advance.

We are very desirous of getting more members in the State Society. Our Councilors in the various Districts have been very active in organizing those Parishes where needed, and in many other ways adding new names to our rolls, but their energies and enthusiasm must be more productive in bringing in the proper members into our organization. I dare say there are three or four hundred, high class, eligible physicians in our State who are not enjoying mem-

bership and the privileges of organized medicine. Just how may we reach these and draw their attention to their professional obligation to "Organized Medicine"? Surely there is some way that they may be influenced. We have in the past tried various plans, which have at times been successful, but as a whole not securing desired results.

It may be interesting to know that one of the most important features of membership in our State Society is our Medical Defense and its protection to our members against malpractice suits. The Secretary-Treasurer recently had the occasion to confer with reputable Insurance Companies and was astonished to learn that to underwrite such a fund and protection, an annual expenditure of some \$2,500.00 was required, being about \$2.25 per member. This amount when paid would annually consume over 50 per cent of our income and would therefore be prohibited.

This is merely recited to show what the State Society offers its members and for their protection and does simply bring out the old adage "In union there is strength."

*We Must Have More Members in Our State Organization*, we have to progress and in order to do so we have to reach out and get more members who by their influence and work will help in a scientific and economic way to make our State Society what it should be.

At 8 P. M. the graduating exercises for the nurses were held in the Arcade Theatre and were attended by a large and enthusiastic audience.

This hospital formerly owned by a stock company, is now owned and operated by Drs. L. B. Crawford and G. G. Aycock and has an able and efficient Superintendent, in the person of Miss A. L. MacGahan. The Nurse's Training School was recently inspected by Dr. Crebbin and given a high recommendation.

St. Mary's Health Association is now conducting an Orthopedic Clinic, at the hospital, every third Saturday, under the direction of Dr. Paul McIlhenny, of New Orleans. It is the aim of the hospital authorities to extend this work to adjoining parishes.

ST. MARY'S HOSPITAL, Patterson, La., observed her Hospital Day, which was dedicated to the memory of the late Dr. William D. Roussel, its founder. As it conflicted with other dates, this institution was unable to participate with the National Hospital Day, but selected May 31 in its stead.

From 9 A.M., to 5 P.M., Drs. F. J. Kinberger and John T. Crebbin of New Orleans, assisted by doctors of the parish and Miss Milliken, Parish Nurse, together with the staff of St. Mary's Hospital, examined a large number of babies two years of age and under. Much helpful instruction was given to the mothers and it is felt that the efforts put forth by the visiting men were well worth while.



## NEWS AND COMMENT.

**GRADUATE SCHOOL OF MEDICINE, TULANE UNIVERSITY.**—The thirty-sixth annual session of the New Orleans Polyclinic, Graduate School of Medicine of Tulane University, came to a close June 9. In spite of unsatisfactory financial conditions, the session just closed numbers among the good ones, there having been 202 students, registering from thirty-three states and two foreign countries—China and Canada.

**TULANE GRADUATES SEVENTY-SEVEN DOCTORS.**—The annual commencement of the School of Medicine of the Tulane University of Louisiana was held on June 6, 1923, and there were graduated with the degree of Doctor of Medicine seventy-seven young men. The new Dean of the School, Dr. C. C. Bass, presented the diplomas, with a few words of farewell and encouragement to the young physicians. There were also graduated twenty-eight pharmacy students, who were awarded the degree of Graduate in Pharmacy. Those granted the degree of doctor of medicine are as follows: J. F. Allison, J. C. Allen, H. B. Alsobrook, H. S. Awtrey, J. J. Baron, Clara B. Barrett, R. C. Basinger, H. J. Battalora, M. E. Bizzell, C. W. Blackshear, D. Brannin, O. W. Britt, C. S. Carter, C. E. Catchings, Jr., J. C. Chapman, L. J. Clark, J. A. Colclough, H. O. Colomb, W. H. Cook, C. G. Devron, N. S. Dickson, H. C. Douglass, J. P. Dyar, D. J. Farley, J. V. Ferguson, W. L. Fitzgerald, J. R. Flowers, T. P. Frizzell, Jr., G. G. Garrett, E. B. Gill, P. M. Girard, W. H. Gordon, Mary R. Gould, L. D. Gremillion, Goldie S. Ham, R. T. Hambrick, M. D. Hargrove, J. A. Hart, R. E. Henderson, J. S. Hodges, J. R. Horn, Jr., Sarah E. Huckabay, M. C. Hunt, G. E. Knolle, M. S. LeDoux, C. J. Lewis, A. H. Little, J. N. Lockhard, F. L. Loria, C. O. Lorio, T. P. McGahey, E. H. Maurer, Z. L. Merritt, K. A. Morris, L. J. Neal, J. G. Palmer, C. V. Perrier, L. K. Pruit, K. C. Reese, M. J. Rivenbark, C. C. Rudolph, M. Salazar y Baldiodeda, A. A. Scardaccione, W. M. Scott, J. F. Shuffield, J. F. Sicomo, T. Sims, C. T. Smith, T. L. Smith, A. Sternbach, W. D. Stick-

ley, G. H. Sumner, F. M. T. Tankersley, C. B. Tittle, C. H. Tyrone, J. M. Washam, F. K. Williams.

**PROVISIONAL BIRTH AND MORTALITY FIGURES: 1922**—The Department of Commerce announces that provisional birth and mortality figures compiled by the Bureau of Census for 1922 show lower birth and higher mortality rates than for 1921. For the 24 states shown for both years, the 1922 birth rate was 22.7, against a rate of 24.4 for 1921, the highest 1922 rate being 30.2 for North Carolina and the lowest 18 for the state of Washington. For the 33 states mortality rate shown for both years, the 1922 rate was 11.9, against a rate of 11.6 for 1921, the highest 1922 rate being 14.7 for Maine and the lowest 8.1 for Idaho.

**TUBERCULOSIS IN PORTO RICO.**—According to Dr. J. G. Townsend, of the U. S. Public Health Service, who recently returned to the United States after a five months' study of the tuberculosis situation in the island, the laboring classes in Porto Rico suffer greatly from the disease. The death rate from tuberculosis is a little more than 200 per hundred thousand. This is greater than that of any state in the Union except Colorado, where the death rate is enormously increased by the constant immigration of tuberculosis patients, for whom there is no longer any hope.

**THE CONGRES INTERNATIONAL DE MEDICINE ET DE PHARMACIE MILITAIRES** met in Rome, Italy, on May 28, at the Military Hospital. The congress was held under the patronage of the King and Queen of Italy, assisted by Premier Mussolini, who received all the delegates.

**THE CHICAGO COUNCIL OF MEDICAL WOMEN** was recently organized in Chicago. Membership is restricted to women holding a license to practice medicine, the council being limited to seventy-five active members. The incorporators are as follows: Anna E. Blount, Alice Conklin, Effa V. Davis, Mary E. Hanks and Lena K. Sadler.

Officers for the first year are: Anna E. Blount, president; Mary E. Hanks and Annie White Sage, vice-presidents; Lena K. Sadler, secretary; Eliza R. Morse, treasurer.

**SAFEGUARDING HEALTH OF WORKING CHILDREN.**—Twenty-two states now require the physical examination of every child applying for an employment certificate, according to the newly revised edition of a bulletin on "Physical Standards for Working Children," issued by the Department of Labor through the Children's Bureau. The bulletin contains recommendations of a committee of physicians who were appointed by the Bureau to prepare a standard form for use in examination of children seeking to enter employment.

**QUININE URGENTLY NEEDED.**—According to dispatches to the Near East Relief headquarters at New York City, a great shortage of quinine exists in the Russian Caucasus and Armenia and in consequence an alarming increase in malaria fever is reported. H. C. Jacquith, overseas director of relief operations, urged that a large shipment of quinine be sent at once, stating that ten thousand kilos were needed in the republic of Georgia alone, and that the government has been able to provide only a small fraction of the necessary amount. He stated that many of the people were able to pay the cost of the drug, but it was not obtainable at any price.

**DR. OSCAR M. SCHLOSS**, for the past two years head of the department of pediatrics at Harvard University, will return to New York to resume the chair of pediatrics at Cornell University Medical College, which he left to assume the duties in the department of pediatrics at Harvard. Dr. Schloss will also resume the directorship of the pediatric service at the New York Nursery and Child's Hospital.

**THE INTERNATIONAL SOCIETY OF THE HISTORY OF MEDICINE** at its meeting held in Antwerp April 11, 1923, voted to hold the fourth International Congress of the History of Medicine at Geneva, Switzerland, during the third week of July, 1925. Officers

elected at the recent meeting were as follows: President, Dr. Charles Greene Cumston, Geneva; secretary general, Dr. A. de Peyer, Geneva; honorary president, Sir D'Arcy Power, London. Dr. Edward B. Krumbharr, Philadelphia, was elected one of the honorary vice-presidents.

**INFLUENZA EPIDEMIC IN ALASKA.**—It is reported by officers of the United States Coast Guard cutter "Haida" that an epidemic of influenza exists on the western coast of Alaska. According to the report several natives on Sannak Island died from the disease, and at Morzhovs, practically every person was sick and that the food supply was very low. The cutter landed food, medicine and coffins, and left a medical officer in charge.

**MERGER OF CHINESE MEDICAL SCHOOLS**—A merger has been effected between the North China Union Medical College for Women and the School of Medicine of Shantung Christian University. Funds are in hand and ground has been broken at Tsinanfu for the erection of new buildings. Shantung Christian University has under consideration the opening of the pre-medical departments to women students.

**CHARITY HOSPITAL GRADUATES NURSES**—Governor Parker on Wednesday, June 6, presented diplomas to seventeen graduates of the Charity Hospital School for Nurses. Miss Camille A. Hyland won a pin and the \$100 scholarship for the highest average in theory and practical work. Miss Catherine B. Carroll merited a course in bacteriology for the second highest average, Miss Angeline R. Glaudi will receive an anesthesia scholarship for "special interest in her duty," and Mrs. Tress L. Martin received a \$50 prize in recognition of her duties and services to the sick. "Service and sacrifice" was the subject of an address by Dr. John T. Crebbin, president of the Louisiana State Nurses' Board of Examiners.

**THE LOUISIANA ANTI-TUBERCULOSIS LEAGUE** on Friday, June 8, re-elected Dr. Ernest S. Lewis, president. Other officers elected were Rabbi E. W. Leipziger, first vice-president; Mrs. J. St. Clair Favrot, second vice-president;



Miss Kate Gordon, secretary; S. E. Allison, treasurer. The meeting was held in Hotel Grunewald, representatives from all parishes attending. Preparations for a campaign to raise funds for the erection of new buildings for the sanitarium at Greenwell Springs, La., recently destroyed by fire, were made. According to the report \$5,647.77 was realized from the sale of Christmas stamps.

THE SEVENTEENTH FRENCH CONGRESS OF MEDICINE will be held at Bordeaux, France, September 27 to 29, 1923. Subjects which will be considered are as follows: 1. Sequels of malaria. 2. Report on the sympathetic and the endocrine glands in pathology. 3. Treatment of meningococcal infections.

THE BOSTON TUBERCULOSIS ASSOCIATION is making an experiment in health education by showing lantern slides at the clinics of the Boston Dispensary. As considerable time is spent by patients waiting their turn for examination it was decided to utilize the time in helping to educate the people regarding tuberculosis and disease prevention in general.

THE UNITED STATES CIVIL SERVICE COMMISSION announces the following open competitive examinations: Junior Medical Officer (Pathologist), Junior Medical Officer (Assistant Anesthetist). Receipt of applications will close July 24. Full information and application blanks may be obtained from U. S. 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.

AT THE ANNUAL MEETING OF THE AMERICAN BRONCHOSCOPIC SOCIETY held in Atlantic City, N. J., May 9, Dr. R. C. Lynch of New Orleans was elected president. Other officers elected were Drs. Fielding O. Lewis, Philadelphia, vice-president, and William B. Chamberlain, Cleveland, secretary-treasurer.

TANGIPAHOA PARISH MEDICAL SOCIETY was reorganized May 30 at Hammond, with fourteen present. The following officers were elected: Dr. E. M. Robards, Ponchatoula, President; Dr. L.

L. Ricks, Kentwood, Vice-President; Dr. A. L. Lewis, Amite, Secretary-Treasurer. It was decided at this meeting to hold their regular monthly meetings on the Monday evening of each month.

AN ORGANIZATION MEETING OF WASHINGTON PARISH MEDICAL SOCIETY was held at Bogalusa on May 31, with sixteen present. Dr. J. L. Brock, Franklinton, President; Dr. E. D. Robbins, Bogalusa Vice-President; Dr. F. Michael Smith, Franklinton, Secretary-Treasurer. This Society will meet monthly at Bogalusa as guests of the Great Southern Lumber Company, at the invitation of Col. Sullivan, manager.

DR. HENRY DICKSON BRUNS was awarded the high honor of Phi Beta Kappa at the University of Virginia on June 12, 1923, for scholastic attainments.

DR. MARCUS FEINGOLD of New Orleans is scheduled to give an illustrated lecture on "Fundus Lesions and Their Histo-Pathology," at the Graduate Course in Ophthalmology and Otolaryngology, to be given under the auspices of the Ernst Fuchs Society; Colorado Ophthalmologic Society; Colorado Oto-Laryngological Society, in Denver, Colo., July 16 to 28.

DR. T. J. DIMITRY and family left June 10 for an extended motor trip in the West. Dr. Dimitry will attend the meeting of the American Medical Association in San Francisco, after which they will proceed to Portland, Seattle and Alaska.

THE PACIFIC COAST will be visited by many Louisiana physicians who are on the way to the meeting of the A. M. A. in San Francisco.

REMOVALS.—Dr. L. S. Charbonnet, from 1141 to 630 Maison Blanche Building.

Dr. R. E. Windham, from Merryville, La., to Port Arthur, Tex.

DIED.—On June 7, Dr. D. S. Brosnan of New Orleans, aged 44 years.

During June Dr. W. H. Billingsly of Shreveport, La., aged 35 years.

On June 9, Dr. T. D. Warren of E. Tallassee, Ala., aged 35 years.

## BOOK REVIEWS AND NOTICES

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

**Inflammation in Bones and Joints**, by Leonard Ely, M. D.—J. B. Lippincott Co., Philadelphia and London, 1923.

This volume is one of the most useful contributions on this subject with which I am familiar. It is the expression of opinion by one qualified by training, experimental work and clinical experience.

The author in his preface states, that he realized it required considerable temerity to write such a book, but that it is based upon personal observation and research.

The book is written in a way that should make it very acceptable to teachers and may be easily placed in the hands of students as a text book. Though it contains many statements which might prove sources of controversy it is nevertheless valuable.

In describing the various structures of bone, the author states there is no such structure as an "Endosteum." "Endosteum is simply marrow." That it is a specialized portion of the marrow no one disputes. That the cells directly within the compact bone have a special function of regeneration seems not to be disputed by authorities notable among these may be named Hey-Groves.

The author states that bone cannot suffer contusion. If we compare this with observations made by Major E. K. Martin, of the R. A. M. C., we will find that bones which had been fractured by projectiles show all the evidence of bruise. (See *British Journal of Surgery*, Vol. 5, 1917-18.)

A startling statement is made that bone tissue itself is not subject to inflammation, nor actively to disease but simply reacts to disease or changes of its contained marrow. And yet we find in another place the author states that "bone cells are an integral constituent."

It is interesting to find the author in agreement with those who are inclined to disregard the term periostitis as a definite entity, believing that the real inflammation in such a case is usually in the bone marrow. After experimental work he is in thorough accord with the views of Sir William McEwen. Along this same line the author discusses the repair of fractures. "After fracture, hemorrhage takes place into the marrow canal and on the outside of the cortex beneath the periosteum, the hemorrhagic exudate is replaced by granulation tissue, and this in turn by fibrous tissue and cartilage. As time goes on cartilage is ossified by penetration of blood vessels." . . . "In no instance have I been able to detect any evidence that periosteum takes an active part in it."

As a result of his experimental work on bone transplantation he states that the bone graft is eventually absorbed, although it may remain visible for years.

The chapter on acute Osteomyelitis is very valuable. Under the head of treatment we find the author in agreement with those who believe in opening the marrow cavity, where the primary disease proper exists. He states that under no circumstances must fear of infecting the marrow induce one to stop.

The chapter on acute suppurative arthritis is rather startling, because the author speaks of the use of drains, injections of formaldehyd and glycerine after Murphy's advice. No reference is made to the Willem's plan of treatment. It is also surprising to find the author referring to sprains as definite entities.

The bibliography appended to each chapter should make the work a most useful reference volume for surgeons doing work along this line. One will find the book a valuable addition to his library.

ISIDORE COHN.

**Disease of the Skin**, by Henry H. Hazen, A. B., M. D., St. Louis, C. V. Mosby Co.

Some of the best books on Dermatology can be found among those written by American authors; Hazen's book is among them. In a short review, the many excellent features of his book cannot be touched upon, but to a Southerner, having practised and taught Dermatology in the South for many years, and having seen a great many diseases of the skin in the dark races, a regret comes that his chapter on the cancer in the negro (skin types) was not expanded many fold. Hazen's wide experience with skin diseases in the negroes and Indians should make him an authority on that phase of the subject, and one would have been much pleased to have had his experience with X-ray, radium, etc., in the treatment of those diseases in that race.

H. E. M.

**History of Medicine**, by Fielding Garrison, A. B., M. D.—W. B. Saunders Co., Philadelphia and London.

This introduction to the history of Medicine is a splendid product of the Surgeon General's Library. It is a noteworthy American achievement.

After reading such a delightfully written volume we can hardly fail to realize that we are the inheritors of a glorious heritage. To know medical history is to know the history of the human race. This, the third, edition takes us through our medical activities during the World War. It is up to the minute. It represents a gigantic output of material crystalized into a small space. It is the needful book to stimulate and inspire. For we have our own galaxy of great men. Should we not know something about them?

Such a volume with its bibliographic notes for collateral reading is of immense cultural value. Through such a history we learn to know what a whole-souled, whole-hearted human the Doctor is, and we are thrilled with pride at the recital of the conspicuous part he is ever playing in the progress of the human race.

H. D.



# New Orleans Medical and Surgical Journal

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## ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

### REFLECTIONS ON THE ETIOLOGY OF RICKETS.\*

By LUDO VON MEYSENBURG, A. B. M. D.

New Orleans.

Instructor in Pediatrics, Tulane University of Louisiana. Associate in Pediatrics, Touros Infirmary.

If we survey the history of medicine we cannot but be impressed by the fact that almost every generation has its predominant medical interest. The role played by infection has been a conspicuous one since the time of Pasteur and continues so to the present. But within the last decade nutrition and nutritional disturbances have become the nucleus of medical interest. The reason for this is not hard to find. With the advance of civilization there is a constant effort exerted to conserve and to emphasize the importance of the minimal. The recent World War affords a striking example of the part played by nutrition in maintaining national health and vigor, when we consider that faulty nutrition and not, as in previous wars, infection, proved to be the crucial problem of the conflict. The discovery in 1911 of the vitamine (1) added fresh interest to the subject, for it disclosed a new group of dietary factors vitally important for the welfare and existence of the human race.

Ever since Glisson (2) in 1659 published his report on the symptomatology and incidence of rickets, there has been widespread interest in its etiology. This interest has been sustained rather than active, for the investigator of the rickets problem was at once bewildered and

seemingly hopelessly confused by the multiplicity of theories concerning its etiology. It is not my intention to run the gamut of these theories, but I shall confine myself only to pointing out the more important and promising facts which now, as the result both of laboratory and clinical investigation, stand out as landmarks in the advance of this difficult and fascinating problem.

Before discussing etiology, it will be necessary to answer the question: "What is rickets?" To pediatricians this may seem an unnecessary question to put, we are, nevertheless, finding it increasingly difficult to define rickets satisfactorily—and this difficulty becomes constantly greater as our knowledge broadens. In answer to that question I can do no better than to quote Park (3) of Yale who defines rickets as a "disturbance in the metabolism of the growing organism of such nature that the salt equilibrium, in particular as regards the calcium and phosphorus, in the circulating fluids is disturbed, and lime salts no longer deposit in the bones." Indeed an excellent definition, but one that does not fulfill the requirements of *clinical* standards..

We are all perfectly familiar with the cardinal signs and symptoms of this disorder and I will refer only to the roentgen-ray diagnosis as one of the significant advances of the last few years. Even this method has been found, like almost all diagnostic procedures, to have important limitations. In furnishing information as to the earliest beginnings of rickets, the X-ray is found to lag behind clinical examina-

\*Read Before the Orleans Parish Medical Society, May 28th, 1923.

tion. I make this statement after an experience embracing several hundreds of roentgenograms of the wrists, checked by clinical findings. Altho this tardiness on the part of the X-ray may seem most improbable, it must be borne in mind that we have to compare the picture of the wrists with clinical changes noted at the costo-chondral junctions, for here the rachitic rosary or beading is found frequently to precede the changes in the epiphyses of radius and ulna as demonstrated by the radiograph. I might add that it is quite easy to distinguish roentgenographically between active rickets and healing or healed rickets. This we cannot always do clinically. Another laboratory procedure, which will be referred to later, is diagnostic in this connection.

Theories regarding the etiology of rickets have been in the past based almost entirely on hypotheses or on general impressions gained by clinicians in the course of their medical practice. They have been all-embracing, incriminating errors of diet, of hygiene, faulty metabolism, inactivity of the endocrine glands, bacterial invasion, etc. It was not until the laboratory worker took up the problem of investigating rickets in the experimental animal that significant facts began to crystallize out.

The classical experience of Bland-Sutton (4) in the London Zoological Gardens should long ago have lighted the way, but his work went practically unnoticed. He demonstrated the remarkable power of cod-liver oil in preventing rickets in caged lion cubs when he added that substance to an otherwise unchanged and apparently rickets-producing diet.

A good many years later Mellanby (5) another Englishman, carried out the first serious and prolonged investigation of rickets in animals on controlled and restricted diets. His purpose was to prove that rickets is a dietary deficiency disease in which the vitamin Fat-soluble A constitutes the deficiency. Without going into the details of his work, suffice it to say that by eliminating as far as possible, this vitamin from the diets of a large series of puppies, he was able to produce, to his own satisfaction and that of the British Medical Research Council, rickets in these animals

The Council accepted his conclusions and published them in its report on the Accessory Food Factors. That subsequent investigators have failed signally in corroborating the work of Mellanby does not retract from its value as constituting the first great landmark in the investigation of this disorder from the standpoint of the diet. Those who do accept Mellanby's work and refer to rickets as a vitamin-deficiency disease are at once confronted by this clinical paradox: Given 20 babies in a ward of a child-caring institution, all free from disease, all on diets which are quantitatively as well as qualitatively identical, hygiene, fresh air, sunlight and all other factors identical—10 develop rickets, 10 do not. If there were a vitamin deficiency in the diet, *all* should become rachitic; if there were no deficiency, *none* should develop rickets. This fact has led some to believe that heredity is the determining factor; if both parents were rachitic, all their children will become so; if only one parent, half the children; if neither parent, all the children will escape it. But this again is not the case. Whereas it is true that there does seem to be a familial tendency to the disease, we must remember that most rachitic babies are of the slums and it is the slums that is inherited.

More recently the rat has been extensively employed as the experimental animal and possesses many obvious advantages over the dog. The almost simultaneous and quite independent observations of Sherman and Pappenheimer (6) and of McCollum and his associates (7) have shown that rickets can be produced at will in the rat by a diet deficient in inorganic phosphorus, and that if this salt be added to the dietary in sufficient quantity, rickets fails to develop. However striking and conclusive the experiments may be, it is at once apparent that in the light of clinical experience they cannot indicate that infantile rickets is merely dependent on a deficient phosphorus supply, for we know that cow's milk contains approximately five times as much phosphorus as woman's milk and yet we see rickets far more frequently in the bottle-fed baby. Furthermore I have shown recently (8) that the woman's milk upon which the baby develops rickets has the



same inorganic phosphate content as that upon which the baby thrives normally.

These experiments on the rat are, however, of the greatest importance for we find their clinical analogue in the work of Howland and Kramer (9) who report the inorganic phosphate contents of the blood serum markedly reduced in babies with active rickets, and this finding I (8) have, among many others, corroborated. Furthermore Hess and Gutman (10) have, shown that this constituent of the blood rises as the rickets heals. To this group Howland has given the name "low-phosphorus Rickets", as contrasted with other cases in which the blood shows a slightly reduced calcium content, which he calls "low-calcium rickets." In the experimental animal, however, a low calcium diet leads not to typical rickets but to osteoporosis.

Let us leave for a moment the salt constituents of the diet and turn to the knowledge we have gained from a therapeutic measure, namely the administration of cod-liver oil. A great many years ago Kassowitz recommended the use of cod-liver oil in the treatment of rickets and he combined with it phosphorus. His use of it was entirely empirical. The followers of Mellanby use it because it was found to contain in highest potency what they call the "anti-rachitic vitamin." We use it because we know that it increases calcium and phosphorus retention in the body and above all because it is a *specific curative and preventive of rickets*. What is the substance in cod-liver oil that cures rickets? Several attempts have been made to isolate the chemical substance, the nearest approach being that of Zucker and his associates (11) who demonstrated that the anti-rachitic substance lay "in the ether-soluble, unsaponifiable fraction after alkaline hydrolysis." Let us call that substance X and ask ourselves: are there any other foods containing it? Butter fat and green vegetables probably contain it, tho in such small amounts that they have no therapeutic value as ordinarily given to infants. There is perhaps no more striking example of a cure than that which follows the administration of cod-liver oil and which can be beautifully

seen in serial X-ray pictures of the epiphyses of the long bones.

In 1919, Huldchinsky (12) reported that the ultra-violet ray exerted a curative action in rickets, tho he had been preceded by Palm (13) who in 1890 appreciated the value of sunlight and was a staunch exponent of its use for the eradication of the disease. Later Raczyński (14) in 1912, wrote "that it is the sun which plays the principal role in the etiology of rickets" and supported his claim with studies on the mineral metabolism of puppies as influenced by sunlight. This work has more recently been confirmed by a host of investigators and the curative action of the sun's rays has been demonstrated by the X-ray, blood chemistry and clinical examination. Huldchinsky's discovery that it is the ultra-violet end of the sun's spectrum which causes lime salts to be deposited in the bones has received abundant corroboration both here and abroad.

Hess and Ungar (15) have made use of the ultra-violet rays of the carbon arc light to prevent and cure infantile rickets, and these investigators together with Pappenheimer (16) were successful in preventing rickets in the rat by exposures to the mercury vapor quartz lamp. X-ray therapy has failed to exert a similar curative action.

Of what significance are these cures in the consideration of the etiology of rickets? Let us see. Rickets, as is well known, occurs mostly, if not exclusively, in the winter months when babies are largely deprived of sunlight. Furthermore the sun's rays are not as intense, nor do they contain the same quantity of ultra-violet rays in winter as they do in summer. Hess and Lundagen (17) have very recently shown in a chart, derived from the New York Meteorological Observatory, that the Sun's spectrum contains in arbitrary units zero units ultra-violet rays in November, December, January and February and 1000 units in May, June and July. I reproduce here the chart taken from the above quoted article.

These ultra-violet rays in order to be effective must penetrate, and they do penetrate, the skin. And so we find here the probable explanation of the fact that negroes with their deep pig-

ment layer beneath the skin and the dark-skinned Italian are so prone to rickets when removed from their natural habitat. In Africa the negro goes about naked and obtains the maximum beneficial effect of sunlight and rickets is there unknown. In sunny Italy the Italian, likewise, spends most of his time out of doors and rickets is rare. When these peoples, however, come to a temperate zone, as in this country, are forced to wear clothes and are closely housed, they lose the protective action of the sun to a very great extent and almost 100 per cent of negro and Italian babies in the north develop rickets. Cod-liver oil can, however, take the place of sunlight in preventing and curing rickets, for, as mentioned above, it exerts the same influence over the mineral metabolism of the body as do the sun's rays.

In the consideration of the pathology of rachitic bones and cartilage there would seem to be four possibilities to account for the failure of proper ossification. First, that there is a deficient calcium supply in the diet or a failure of absorption of a sufficient supply; second, that there is an alteration of the form of the blood calcium, making it less available for the normal formation of bone; third, that there are absent intermediary products, possibly of the ductless glands, possibly of salts, particularly phosphates, which are necessary for the deposition of calcium in the bones; and fourth, that there is an alteration, chemical or structural, in the osteoid tissue and provisional cartilage cells or matrix, such that calcium, even tho it may be supplied in sufficient and proper form by the blood, cannot be taken up by these cells. Or there may be a combination of any or all of these possibilities.

That there is no deficiency in the diet of calcium we know to be true for the artificially fed baby, and I am now investigating the calcium contents of woman's milk in connection with rickets. My results will be reported later. To the second possibility, namely, that there is an alteration in the form of the blood calcium, I (18) directed particular attention two years ago while working in the pathology laboratory of Columbia University. I found that there

was no alteration in the normal relation between dialyzable or available calcium and the non-dialyzable or protein-combined calcium in the blood serum of infants with active rickets. The third possibility is now under critical investigation in many laboratories throughout the country, while the fourth has not been touched upon.

A great many attacks have been made on the endocrine glands as causative factors, but mostly with negative results. Recently, however, Pappenheimer and Minor (19) have shown in a large series of cross-sections of parathyroids of rachitic and non-rachitic infants, that there is a very definite hyperplasia of these bodies in the rachitic cases. Studies of the thymus, thyroid and other ductless glands have led to no positive conclusions. What significance this parathyroid hyperplasia in rickets may have we are not in a position to state at the present time.

I have said nothing about predisposing and contributory causes of rickets and I will only mention that prematurity is the foremost of these. As regards congenital rickets, I think we are now in a position to state that it does not exist, for Schmorl (20), the greatest pathologist of our times, investigated the ribs and long bones of the extremities of more than 100 infants born either at term or prematurely, without once finding evidences of the disease. The earliest age at which he was able to find rickets was one and one-half months.

To sum up: we can say that the greatest advance in the rickets problem has emanated from the laboratory within the last half-decade; that investigations both here and abroad are bringing more sharply into focus the importance of sunlight and the ultra-violet rays of artificial light and the substance or substances in cod-liver oil which exercise such a profound influence over the calcium and phosphorus metabolism of the body.

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#### HEADACHES WITH REFERENCE TO SOME PHASES OF REFRACTION.

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The eye, as an optical instrument may be said to consist of a nearly rigid spherical capsule with a bull's eye (the cornea) in front, the capsule being filled with a liquid of uniform optical density (the aqueous humor and the vitreous), in which is suspended a lens of adjustable focus. Between the bull's eye lens in front and the suspended lens behind is stretched a diaphragm (the iris), which acts as a stop to cut off the peripheral, irregularly refracted rays. This stop works automatically, its aperture (the pupil) contracting whenever the illumination becomes too intense, and dilating when the illumination becomes too feeble. The lens is made up of strata varying in optical density from depth to depth. If in such a structure we connect all the points whose index of refraction is equal, we get what is called an isocindical substance.

The function of the refractive media of the eye, which form a part of the enveloping or protective system of the latter, is so to conduct and concentrate the light that impinges on it as to set up appropriate stimuli in the sensory organ proper (the retina). The eye which is composed of these two struc-

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tures, one subserving nutrition, protection and conduction; the other subserving sensation constructed upon the principle of a camera obscura. This consists of a box, blackened on the inside, the anterior wall of which contains a strong convex lens, which throws upon the posterior wall an inverted image of the objects that happen to be in front of the camera. In the human eye, we find instead of the convex lens quite a number of refracting substances, namely the cornea, aqueous humor, lens and vitreous and instead of the posterior wall, the retina which not only receives the image, but at the same time perceives it.

Hence a diminution of visual power may be produced by two different causes; either the conductive apparatus of the eye is defective, so that a sharp image is not thrown upon the retina, or that retina (the sensory) is at fault so that the image is not properly perceived.

In order to throw a sharp image upon the retina, the conductive apparatus of the eye must fulfill two conditions. In the first place, the refracting media must be perfectly transparent; hence opacities of the cornea or lens, changes in the consistency of the aqueous or vitreous, make distinct vision impossible. The second condition is that the refractive power of the media be such that they project an image of external objects which is both perfectly distinct and lies at the same time precisely upon the retina. The variations from this rule, we designate as errors of reflection and accommodation or *Ametropia*.

Headaches may emanate from the eyes, even when the eyes are not really diseased but simply subjected to strain as in *ametropia*. The physician should always think of the eyes as a cause in frequent headaches especially if there is nothing in the history of examination in general to account for them. The headache is easily recognized as a *Eye Headache* if the eyes are inflamed, styes, weeping, sensitive to light or to pressure; but in those cases of headache, in which the eyes present no external signs, are due to errors of refraction, mainly *hyperopia*, *astigmatism*; anomalies of accommodation, or disturbance of muscular equilibrium. These headaches come on after undue or prolonged exertion of the eyes. They are

usually relieved by sleep, but in some cases are present upon first awakening, if after prolonged use of the eyes the night before. They are infrequent in young children, but present themselves in the study age from 10 to 20 years, when to the stress added by study are added the nervous disturbances caused by the developmental growth of the body as well as the eye.

Another form of headache is the *Panorama headache* brought on by looking at a series of moving objects and is usually due to uncorrected errors of refraction.

*Neurasthenics* may have headaches referred to the eyelids, to the eyes, or behind the eyes due to eye strain and they may be brought on by even slight exertion of the eyes and are not brought on by prolonged use of the eyes as in errors of refraction.

Another form of headache is the *headache of Prodromal glaucoma*, and it is this terrible disease which usually comes on so insidiously and progresses so gradually, that the patient may not be aware of anything but failing sight, and seek attention after it is too late. This disease (*Glaucoma*) is hardening of the eyes, increase in tension until optic atrophy and blindness set in for which there is no cure. It is therefore essential that the general man be on the lookout for this disease, as it is to him they first come for the relief of the headache, in the early stages. The headaches come on in the afternoon or evening and may be brought on by any excitement as shopping, company, theatres, etc. It is usually relieved by sleep, but may be so severe as to prevent sleep. If seen after the attack the eyes will usually reveal nothing; but when seen in the attack, the striking shallowness of the anterior chambers will be noted. In their absence a careful and precise history can be elicited especially if the attacks have gone on for some time. The headaches are almost absent in summer, but recur in winter; infrequent at first, but recurring more frequent, severe and of longer duration. The headaches are associated with a clouding of sight, and the appearance of colored rings or haloes around electric or candle light. The last symptom cannot be laid too much stress on. We may find typical glau-



comatous excavations of the optic nerves and arterial pulsation of the central retinal artery upon slight digital pressure. It is amazing the relief that can be obtained within 15 to 30 minutes by the instillation of a 1-2 per cent eserine or a 1 per cent pilocarpine solution in the eyes. In these cases of headaches due to glaucoma, we do not prescribe glasses, but we make them stop all near work if possible, and these cases have to be under observation of an oculist often for years if we use therapeutic measure as miotics, and then if these fail to control the attacks, operative measures may have to be instituted.

Asthenopia or weak sight may be defined as a sense of strain and weariness that is set up by the use of the eyes, and the patient describes it as the eyes give out. It may occur alone, Asthenopia simplex; with pain, Asthenopia Dolens; with headaches Asthenopia Cephalalgica; with irritation, redness and burning of the eyelids Asthenopia Irritans. In Asthenopia Cephalalgica, the headaches may be accomodative, errors of refraction, hyperopia and astigmatism; or muscular disturbances of the exterior muscles of the eye; neurasthenia; photogenous, caused by excessive or improper illumination; or reflexly produced by morbid conditions of other organs as the nose and its accessory sinuses, teeth et cetera.

The asthenopic headaches due to errors of refraction or muscle disturbances are the commonest of all eye disorders and the symptoms are most amenable to treatment, either by the correction of the refraction or by eye hygiene as proper working illumination or removing the cause of the asthenopia. The types of the various errors of refraction and how they produce headaches will be taken up more in detail.

Emmetropia or normal sightedness is that condition in which the eyes can focus either for far or near and cause the points of the object to be clearly and distinctly received and precisely placed upon the retina without the aid of a correcting glass. Only 15 per cent of eyes are this way at birth, and at the age of 20 the number has reduced to about 5 per cent after the development of the eye has been completed. This shows what a small per cent of the eyes are actually normal, but not all abnormal eyes give trouble.

Hyperopia or farsightedness of the eye which is shorter than the normal eye. 80 per cent of infant eyes are hyperopic at birth and as the eyes grow with the rest of the body, at about the age of 20 the number is reduced till about 48 per cent. The eye of the newborn is very short in length; the cornea has about the same curvature as that of the adult but the lens has almost twice the curvature of that of the adult. This and the short diameter account for the hyperopia.

The rays coming from infinity or parallel, but which in our tests we use a distance of 20 feet, do not focus on the retina but are carried behind it due to the shortness of the eye, in a hyperopic eye. To see for far or near they must accomodate. Accomodation may be described as the ability to focus for near and it is commonly accepted as being brought about by the action of the ciliary muscle which contracts and allow the lens to become more convex. This brings the rays more sharply to a focus, or a nearer focus. The more the lens becomes curved or convex, the nearer the focus.

A normal eye must accomodate to see close by or for near work and the accomodative power of the ciliary muscle increases up to the age of 10 years, and then recedes until between 40 and 45 years of age, it is practically gone. This is why most people need a glass to read with after the age of 40. This age when accomodation is gone is called Presbyopia.

The hyperope has to use his accomodation for far to focus the rays on the retina and he has to use more than a normal eye for near work, so the average amount of accomodation being present in all eyes regardless of their normality or abnormality; he always has a deficit in his accomodation. This is what causes the headaches after prolonged use of the eyes; the tiring of the ciliary muscle.

Myopia or near sightedness, 5 per cent of eyes at birth are myopic and this increases more rapidly until about the age of 16 when it becomes stationary. At this age the percentage of myopes have increased to about the same as hyppropes or 48 per cent. If after the age of 16 the myopia still continues to increase, it is then called progressive or Pathalogic myopia. The myopic eye

is longer than the normal eye, and consequently objects have to be closer than in the normal or hyperopic eye to be focused distinctly on the retina. If the objects are too far away, the rays come to a focus before the retina is reached and then instead of being perceived as distinct points are seen as blurred ones or what are called diffusion circles. To see better, myopes blink the lids, thus reducing the size of the palpebral aperture, making them slit like. It may be compared to looking at objects thru a pinhole, which even to a normal eye makes objects more distinct. Myopes see very well close by, or near objects; so therefore they require less accommodative power than a hyperope or normal. The result is that Presbyopia is very often delayed or may not be present at all. This explains why some individuals can live to a very ripe old age, and never require glasses for reading purposes. Individuals who have lenticular changes, early formation of cataracts may become myopic, then they are able to dispense with their reading glasses until the cataracts grow so much as to interfere markedly with vision. Myopes as a rule suffer little with headaches unless the error is large or complicated with astigmatism. It is, however, necessary to correct myopia in youth to prevent any chance of it becoming progressive after the developmental age. For in real progressive myopia the individual is always in danger of complete blindness from myopic changes in the choroid or retina, or from detachment of the retina. In high errors of myopia, the vision may be so indistinct that glasses have to be prescribed for even imperfect vision for far or near.

**Astigmatism.** All eyes have some astigmatism due to the complicated course all refracted rays take and their consequent failure to focus sharply. That is why a star is always pictured as having several projecting points, while as a matter of fact it is round. In astigmatism all the rays coming from an object do not focus sharply upon the retina at the same time; in hyperopic astigmatism some of the rays fall behind the retina, others directly upon it; in myopic astigmatism some of the rays come to a focus before the retina is reached, and only some reach the retina

precisely. Astigmatism may be alone, but in most cases it complicates myopia or hyperopia, and is called compound hyperopic or myopic astigmatism. In other cases, the rays fall both behind and in front of the retina, and not on the retina, and is then known as Mixed Astigmatism.

Astigmatism is also classified into Regular and Irregular; the former is physiologic and it is when the regularity of the objects shape predominates over the irregularities, so the irregularities are negligible and can be corrected with glasses; the irregular astigmatism usually pathologic due to opacities or pathologic changes in the conductive apparatus of the eye, and the images are always distorted as looking through a badly made window pane at objects outside. This form is not corrigible to glasses. An exception to this is the astigmatism that forms after cataract section and is amenable to correction by glasses.

Astigmatism is either congenital or acquired rather early in life. It changes little up to the age of 50, then it may increase or change its axis. Most of the regular astigmatism is due to variations in the curvature of the meridians or axes of the cornea from the average normal curvatures. The principal meridians are based upon the radii of a circle and spoken of as vertical or 90, and horizontal or 180. The lens is less responsible for astigmatism, and is only compensatory for the change in the curvature of the cornea. Astigmatism usually affects both eyes, but not to the same degree, but the principal meridians are symmetrical. Headaches are a very frequent symptom of astigmatism, even in very slight errors at times, and often the headaches are out of all proportion to the amount of astigmatism. This is due to the distortion of vision due to the shape of the diffusion images, none are sharply focused upon the retina. The individual is always trying to see the whole object, but can't and has to use his accommodation to see first one part, then the other parts and this continuous rapid adjustment of the accommodation, tires the ciliary muscle and headaches ensue. This is very true if prolonged use of the eyes is resorted to. The treatment is by refraction and eye hygiene.



Each eye has six muscles externally and these are supplied by three different cranial nerves, and together the eyes have twelve muscles, some of which are antagonists, others are helpful or increase the action; while still other only act as adjuvants in some positions and are antagonists in other positions. The directions in which the eyes may be moved are so numerous, and the whole muscle system of the eyes are so complicated that one wonders why there are not more cases of headache due to disturbed muscular equilibrium.

When we direct one of our eyes towards an object to see it distinctly as possible, we are said to fix or fixate that object. The macula or fovea centralis is the most sensitive portion of the retina; hence in performing fixation, we normally and unconsciously direct the eye, so that the image falls upon the fovea. In the majority of cases if one eye fixates an object with its fovea, the other eye will do so too. The whole extremely complicated mechanism of muscles and nerves with which the two eyes are supplied is designed primarily to move the eyes that they shall both be directed accurately to the object we wish to see, and that each eye shall receive the image of that object precisely upon the fovea. This is called Binocular Fixation, and the movements of the two eyes are co-ordinated to do this.

In the normal condition, both eyes must not only fixate the object when they are open, but the eyes must be straight when one of the eyes is closed. When one eye deviates when covered, either turning in, out, up or down, this denotes a muscle insufficiency or Heterophoria. The normal muscular equilibrium is called Orthophoria.

In the third class only one eye is straight at a time, even when both eyes are open, and this is called Heterotropia, Strabismus, Cross Eye or Squint.

It is in the second class or Heterophoria (tendency to), or Muscular insufficiency that we have headaches so often, and this is particularly true in the heterophoria of the vertical or oblique muscles of the eyes. We have numerous tests to determine which muscle or muscles are involved, and it is the routine practice of every ophthalmologist

(not the optician or optometrist) to take the muscle balance in refracting cases both before and during the drops, or in cases where he believes the headaches to be due to muscular imbalance. This information is used in the basis of prescribing glasses, which may be accompanied by muscle exercises or the exercises alone to strengthen the weakened muscles.

In the Heterotropias or Squints, they usually appear mainly in childhood during the developmental age, and especially after an infectious toxic or contagious disease, but produce little headaches, for the child soon learns to disregard the improperly focused image with the deviating eye, and only uses the non-deviated eye. This is why the deviating eye becomes amblyopic or decreased vision due to non-use. It is essential to refract these children early, not for the symptoms, but to preserve the vision in the deviating eye, and very often glasses may correct the physical defect without operative measures. Very often the vision in the deviating eye may be improved by covering the good eye, thus making the deviating eye bear the brunt of seeing, and thus develop its power.

Strabismus coming on suddenly in adults is usually paralytic and in the idiopathic cases most of them are luetic. They suffer with headaches because of the diplopia, due to the improperly focused images of the deviating eye. Refraction is not indicated in these cases until after some months, for the deviation is often corrected by removing and treating the cause.

In squint coming on after the loss of almost all or entire sight in one eye, is the effort of Nature to throw out the disturbing elements so that the good eye will not be bothered, with the blurred and faulty image of the poor seeing eye. This squint gives no trouble and cannot be corrected by refraction and only approximately by operative methods.

These are only a few of the disturbances of refraction, accommodation or muscular equilibrium which may produce headaches, and nearly every physician knows the miraculous cures affected by proper refraction and hygiene of the eye. This paper is also a plea for the physician to be on the alert for early glaucoma, so that it may be treated and

vision preserved or bettered, before changes take place which ultimately lead to incurable blindness.

### A CASE OF SILENT CALCULOUS PYONEPHROSIS.\*

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(A contribution from the Surgical Department of the Tulane University School of Medicine.)

The object of this paper is to report a case in which, notwithstanding the efforts of medical men armed with the equipment of a good hospital, a diagnosis was arrived at only at autopsy.

M. B. H., aged 61 years, was taken ill on Wednesday, November 22, 1922, complaining of what she called a "terrible" backache; this caused her to be put to bed at once. On the 23rd she complained of "awful" pains in the abdomen; she vomited; passed bloody-looking urine; was given an enema which was quite effective. There was severe pain in the abdomen on the 24th, both sides involved, but especially the left; vomiting occurred again; the urine was still bloody-looking; the bowels moved by enema. Morphine was given twice on this day.

November 25th she was still suffering with abdominal pain; no vomiting; urine less bloody-looking; enema given with good results; morphine given once this day.

November 26th, Sunday, she was brought into New Orleans from Covington, requiring a hypodermic of morphine on the way for epigastric pain.

Examination at Touro Infirmary this day showed the thorax negative except for a few dry râles at the right base. The abdomen was distended, but not rigid; there was tenderness above and on both sides, less below. Vaginal and rectal examinations negative. Urine examination negative. Total leucocyte count 15,500, with 87 per cent neutrophils. Blood pressure 140-80. Temperature 101° rectal.

The previous history was negative aside from an attack of jaundice with gall-bladder pain some five months previously.

Believing that operative interference

was contra-indicated by the absence of abdominal rigidity, by the diffuse character of the pain and by absence of localization, as well as by the exclusion of obstruction through the efficiency of the enemas given, I called Dr. Randolph Lyons in consultation. We had a fluoroscopic and skiagraphic study made of the chest and gastro-intestinal tract, the latter in connection with an opaque enema and a barium meal. The findings showed certain changes in the chest and colon which were of no particular interest and did not advance the solution of our clinical problem.

Three examinations of the urine, with special reference to the presence of blood, were all negative. Blood counts, 9 in all, showed a range of leucocytes from 15,000 to 22,000, with a percentage of neutrophils ranging from 85 to 89. Rectal temperature ranged at first between 99° and 101°, went to 103.8° on December 3, then ranged between 102° and 103°, finally reaching 104° on December 9. The abdominal pain which was a notable feature of her case throughout was at times colicky, with a desire to go to stool. Sodium sulphate was given twice, with good results. A review of the bowel movements shows a total of 48 movements in 14 days, a little over three a day, including the results of enemas and saline purgatives.

December 7th the patient was seen by Dr. Rudolph Matas, who saw no indication for operation.

December 8th, the seventeenth day of illness, examination of the lungs revealed consolidation of both lungs. On the same day phlebitis in the right leg appeared, with severe pain.

Death took place December 10th, on the 19th day.

Autopsy, held by Dr. J. A. Lanford, revealed an accumulation of pus estimated at 1,000 c.c. lying between the left kidney, the spleen and the omentum, which bounded it on the right. The infection had evidently come from the left kidney, which was firmly embedded in adhesions, its upper portion forming the floor of the abscess cavity. On sectioning, this kidney was found to be the seat of a pyelonephritis, which had largely destroyed the function of the organ. The pelvis presented a large stone (1-4 by 3-4 inches), blocking the

\*Read before the Orleans Parish Medical Society, May 6, 1923



ureter, and was distended. The gall-bladder contained several stones varying in size from a pea to a marble. Both lungs presented evidence of pneumonic consolidation.

#### COMMENT.

Looking back over this case we find certain evidence on which the diagnosis might have been made, though this was not strong or conclusive. One bit of evidence was the pain in the back, described as "terrible backache," which was complained of on the day of onset, but not again during the remaining 18 days. Another was the bloody-looking urine reported by the practitioner in charge of the case as occurring on the first three days following the onset, but not present thereafter in the gross, nor confirmed by the microscopic examinations. No doubt the jamming of the stone into the apex of the pelvic funnel accounts for the complete absence of pus and blood from the urine. Re-examination of the X-ray pictures after the autopsy showed the shadow of the stone very clearly. It may well be that a more careful study of the films, although taken with reference to the gastro intestinal tract, would have shown the shadow to the trained observer and directed attention to the infected kidney.

One naturally thinks of an exploratory operation as a helpful procedure in such a case. Had one been done it would have directed to the epigastrium and to the gall bladder region because of the history of trouble here some five months previous. Nothing had occurred to attract attention to the left upper quadrant where the large pus accumulation lay silent.

#### THE CHARITY HOSPITAL OF LOUISIANA. By ALBERT E. FOSSIER, A. M., M. D.

(Continued from last issue.)

The present site of the Charity Hospital was selected in 1832, and the building was completed during the winter of 1833. The cost of construction and the grounds amounted to approximately \$150,000.00. This magnificent edifice, which is fast approaching its doors and inaugurated its long service

centenary, stands to-day practically the same as on the first day it opened its to suffering humanity. Some subsequent changes of a minor character shall be referred to later.

Even at this time it stands as a model of Hospital architecture for this climate; its high ceilings, long and wide halls, numerous large outside openings, spacious verandas, give it sufficient ventilation, make it cool in summer and at all times cheerful. These are essentials of construction not usually found in more modern institutions.

In the Historical Epitome of the State of Louisiana, with an Historical Notice of New Orleans. Views and Descriptions of Public Buildings, etc., etc. Published in New Orleans in 1840 is the following: "In the year 1815 the building now occupied by the Legislature and Officers of the State was finished and opened as an hospital for patients, who were received here; the great increase of the population of the city, rendered a large and more commodious edifice necessary; which was accordingly begun A. D. 1831 on the square of ground bounded by Gironde, Gravier, St. Mary and Common streets, and completed so that the patients were removed thither in the winter of 1833-34. Mr. Hemhill was the architect and builder, and the whole was completed at a cost, including the land, of \$149,750 83. About the same time the old building was sold to the State for the sum of \$125,000, payable in bonds, having 50 years to run, at an interest of 5 per cent per annum. The "New Charity Hospital" so-called, is a building of great size, being about 290 feet in its total length, and three stories high. It is composed of a corps of loges opening into a spacious hall, intersected at right angles by another running lengthwise of the building on which the wards open. From this hall access is had by broad stairs to the upper stories which are similarly divided, and thus to the cupola from which there is a magnificent view of the city and environs. The lower story is occupied by the Library, Physicians' Room, Surgeons' Room, Medical College, Lecture Room, etc., and the second and third stories into wards for the patients, twenty-one in number, as also into four other apartments de-

\*The author is not responsible for phraseology of quotations, as they are taken verbatim from text.

signed as such; but owing to the plan not being carried out, now used one as a chapel and three others for the accommodation of the Sisters of Charity; who with noble benevolence here passed their lives in attendance and kind office to the indigent sick. It is calculated to hold 540 patients."

The second floor was appropriated to the use of female patients and was divided as follows: a ward for women of good character, another for those of bad, and also one for the exclusive use of surgical and obstetrical cases. The grounds around it were enclosed with a substantial brick wall and were handsomely improved and always very neatly kept.

The Sisters of Charity inaugurated their long period of admirable devotion to the sick and afflicted on January 6, 1834. For over 89 years they have given uninterrupted altruistic services to the Charity Hospital. Too much cannot be said in praise of these pious religieuses, who spurning all mundane glory, dedicate their lives to unrelenting toil for the alleviation of suffering, and who have braved pestilences and epidemics and even risked existence itself for the devoted love of humanity. Such sublime sacrifice and renunciation of the comforts and pleasure of this world in the interest of the suffering poor, is only possible with those whose vocation is a religious one, and who have consecrated their existence to the greater glory of their Creator. The services of the Sisters of Charity are indispensable to the Charity Hospital and their value cannot be appraised merely in monetary terms. The respect they command is an incentive to a greater discipline and a stimulus to more energetic work from their subordinates. In actual work, in enforcing economy, in preventing waste, their services have been invaluable, and their scrupulous management of the domestic and nursing department, has been the leading constituent in the success of that institution through nearly a century of uncertain revenues and inadequate appropriations. Succeeding Boards of Administrators have recognized and publicly acknowledged the moral weight and the great economic worth of these ladies in the management of the Hospital.

New Orleans grew by rapid strides; the population in 1830 was 49,826, of which 28,530 were whites and 21,280 were negroes; ten years later, in 1840, it had increased to 102,204. It is recorded that: "It was very nearly made up of Americans, French, Creoles, and Spaniards, together with a large portion of Germans, and a good sprinkling of almost every other nation of the Globe."

The death rate was extremely high, and the census would have shown a still greater increase in population had the city been in better sanitary condition; it was believed that about five hundred immigrants died every year through the so-called acclimatizing process.

The first issue of the New Orleans Medical and Surgical Journal, published in May, 1844, contains the following description of an insane asylum, "a department of the Charity Hospital," which shortly afterwards ceased to operate: "In the rear of the main building is the lunatic asylum, built by an appropriation of the Legislature in 1841. The building is 103 feet long by 35 feet broad, and three stories high. A gallery extends the whole length and height of the house in front, and affords a fine promenade; a passage of 9 feet wide runs through the whole length of the building on each floor. On each side of these passages, the rooms open, 38 in number, well supplied with light and air, and with doors and windows well secured. The stairs run up at the end of the house, and occupy but little space. At the opposite end from the entrance, on the ground floor, is the bathing room, in which is to be found an admirable apparatus for the shower bath, the use of which is so often required in the treatment of mental diseases. The third story of the Asylum is divided into two spacious sleeping apartments. At each end of the building are spacious arbours, which are covered with vines, affording an admirable shade in warm weather. These with the grounds immediately around the Asylum, are well adapted for exercise in the open air." This building occupied by the insane was converted, in 1849, into a department for female patients, and is to-day the colored female building. This change inaugu-



rated the total segregation of the female from the male patients, an arrangement always desirable in a large establishment of this kind.

From the same Journal the following glimpse of the internal management and its relation to its visiting staff is available:

“Previously, in 1843, the Board of Administrators elected annually four Physicians, one Visiting Physician, and a House Surgeon, to perform the professional services of the Hospital for 12 months; who had their duties prescribed and received a small compensation. At the session of the Legislature in January, 1843, the Professors of the Louisiana Medical College petitioned that body to grant them a certain portion of the public square, on which to build a College Edifice; in consideration for which privilege they offered to render all the necessary professional services to the Charity Hospital for the term of ten years, free of charge. As soon as the other physicians of the city became apprized of the movement, they at once sent to the Legislature a counter-petition, numerous signed, protesting against the prayer of the Professors, so far as related to the granting the exclusive attendance of the Hospital, but making no other objection to any other aid the Legislature might think proper to extend to the Medical College; they likewise agreed to attend the Hospital gratis. The result was that the Legislature very properly granted the Professors a site for a College Edifice, and held them bound to attend the wards of the Hospital for the next ten years, provided they should be called upon; but that they should be entitled to no preference in the election of attending Physicians and Surgeons, by the Board of Administrators. The Board can make its selection from the body of the Licensed Physicians in the City; and if their appointments are not accepted, they have a right to demand the services of the aforesaid Professors. They moreover increased the number of Attending Physicians to eight, and Visiting Surgeons to two, and made the election semi-annual.

The Professors are generally elected to attend the wards of the Hospital during the winter season, and are enabled

thereby to deliver valuable clinical lectures to the Medical Class.

During the term following the adoption of these regulations, the professional services were most punctually performed; and the mortality of the Hospital will compare favorably with any previous similar period. The Hospital was more frequently visited by the Physicians of the City, and more attention was paid by them to post-mortem examinations, and to special anatomy, than probably was ever done before during the summer season.

Some half-dozen students are admitted into the Hospital who are furnished board and lodging in the house, and are required to perform all the minor operations by the attending Physicians. To be admitted, they are required to give satisfactory evidences of their qualifications, moral character, etc.

Admirable opportunities are afforded these students to prosecute their studies; but a few of them, however, can be induced to remain at their posts during the sickly season; and it is melancholy to relate that of the three who determined to stay last summer, two died of Yellow Fever.”

To the rear of the Lunatic Asylum was the dead house—or Morgue. It is described as a small single two-story building, divided into two rooms; one of these contained the corpses before burial, and the other was used as an autopsy and dissecting room. This small simple structure was no doubt ample for the purpose it served; in a contemporary Medical Journal is reflected the appreciation of the anatomists and pathologists of that time: “This latter (the dead house) is well supplied with light, air and water, good tables and benches; it is altogether admirably adapted to the purposes for which it was designed. It is doubted whether any city in the world presents so pleasant and convenient a place for the study of Anatomy, as this Dead House. Well lighted, well ventilated, a hydrant of clear gushing water, and plenty of fresh subjects—what more could be desired.”

The group of buildings composing the early Charity Hospital was completed with the addition of two small offices in front of the main building, facing

Common street, now Tulane Avenue. They were used by the clerk and the porter, whose duty it was to attend to the front gate, and give entrance to only certain privileged persons without paying an admittance fee of twenty-five cents. This toll has been only recently abolished, the fare box, a relic of an old mule street car, is still existing at the entrance of the Hospital.

This item of interest is taken from the January number of the *New Orleans Medical and Surgical Journal* of the year 1847: "We are gratified to learn that the administrators of the institution have determined to erect an amphitheatre for the performance of surgical operations. Such a thing has long been wanted. Heretofore operations were performed in the wards to the great terror of the surrounding sick, with the inconvenience to the operating surgeons, and where it was impossible for a large number of spectators to witness what was being done. A good amphitheatre is indispensably necessary to a large hospital, and we are glad to hear that the one proposed is to be erected as soon as possible.

The annual report of 1847 is of historical importance. We find the following:

#### MAIN BUILDING.

Admitted .....	11,690
Discharged .....	9,369
Died .....	2,037
Remaining on the first of January, 1848 .....	828

#### LUNATIC ASYLUM.

Admitted .....	678
Discharged .....	541
Died .....	85
Remaining on the first of January 1848 .....	125

These are the largest figures ever seen on the books of the Charity Hospital. No hospital should be permitted to take in double the number of patients it can entertain comfortably, for it cannot be done in justice to the sick. The wards of the Hospital are literally crammed. A row of beds extend all around the walls and another in the middle of the floor. Many patients have to sit all day and to lie upon pallets at night. The whole house is infected with Typhoid Fever, thus ren-

dering it dangerous for patients laboring under other diseases to go there. The House students, nurses and Sisters of Charity are suffering from the disease. Diarrhea and Dysentery are also common, and there are seven or eight cases of small pox in the adjoining lunatic asylum. But one thing is lacking to complete the catalogue of miseries—erysipelas will probably break out before long, and then the cup will be full. We deem it our duty to record these melancholy facts to make up the Medical History of the day. When evils become glaring and outrageous they enforce reform, and often not before."

This deplorable condition, due to the greatly overcrowded institution, resulted in much needed improvements, for in the year 1848 and 1849 a large and important addition was made to the group of hospital buildings which greatly increased its capacity and for many years provided sufficient accommodation to the indigent poor of that growing city. A new wing was constructed in the rear of the main building practically the same size of and paralleling the one previously used by the insane and then converted into the Women's Department. It was planned to provide suitable accommodation for the Sisters of Charity, and sleeping quarters for the stewards, also to serve as a refectory for the officers and other inmates of the Institution. This building is existing to-day and is serving practically the same purpose as originally intended.

The Hospital at that time could comfortably accommodate one thousand patients, and had a yearly average of between eleven and thirteen thousand admissions. It was then one of the largest, if not the largest, hospital in existence; it stood favorable comparison with those of Europe and America. At that time in Paris, the Hotel Dieu had a capacity of 810 beds and La Charite 494 beds. In that city there were many more charitable institutions, but the two mentioned were the largest.

Again mention is made in the Hospital report of 1845 of the Abuse of the Charity wards of that Institution by persons able to pay for medical services: "A large number of these patients are not proper subjects of charity, and the



State should not be taxed with their medical expenses; yet they have free access to this Hospital.”

And also in the annual report of 1846 the same complaint is voiced: “This extraordinary number (8,044) affords sufficient evidence that access to the Hospital is altogether too free and easy—one-half that amount of real objects of charity suffering under sickness could not be found in our city during any year.”

The following quotation from the same report is of especial interest to the profession of to-day who resent the unjust imposition of a tax on the practice of Medicine: “In conclusion, we cannot omit this occasion to remark, that whilst the physicians of New Orleans are attending annually in the services of the State, between six and seven thousand invalids, without charge, the Legislature, in its wisdom and liberality, thought proper at its last session to impose a tax upon the Profession.”

The following summary from the report of the Board of Administrators shows the then relative low cost of *hospitalization* as compared to the current time:

Income of the Charity Hospital for the year 1849:

Tax on passengers.....	\$53,412.46
Ball licenses .....	2,524.15
Exhibitions, licenses.....	294.00
Fines on gambling.....	2,000.00
Donations .....	603.92
Gate money .....	868.70
Pay patients .....	4,091.80
Deceased patients .....	588.08
Sale of sundries.....	861.55
Bills receivable .....	3,725.02
State appropriation .....	10,000.00
Profit and loss.....	270.02
Insurance Ac. dividend.....	199.90
Slaves Sold .....	1,925.01
General charges .....	59.25
Bills payable, accom.....	8,500.00
Interest account .....	27.44

Total .....

Admissions to the Charity Hospital in 1848 and 1849:

Number of admissions in 1848..11,955

Number of admissions in 1848..11,945

Increase of patients in 1849.... 3,613

or 30 23-100 per cent over 1848.

11,945 cost in 1848, \$68,048.54, or \$5.78 per patient.

15,558 cost in 1849, \$66,351.32, or \$4.26 per patient.

Reduction per patient \$1.52.

The year 1847 was made eventful in the annals of that institution by its historical connection with the Mexican War.. It also chronicles the great epidemic of typhus which raged throughout the city and which originated from a focus of infection arising in the Charity Hospital. We are told of the stragglers return of sick and discharged soldiers of the United States Army and that scores of wounded heroes worn out with typhoid and dysentery taxed the utmost capacity of not only the Charity but of every other private and public institution.

The register of the Hospital shows on the 29th of April the admission of sixty-nine Irish immigrants taken from the ship Stephen Baldwin which had just arrived from Liverpool. Three hundred refugees were embarked on that ship; they had heard of the liberty and prosperity of the new country and were determined to risk the uncertain destinies of a long voyage to America to escape the persecution of a despotic country. Twenty-six of these immigrants never viewed the shores of their promised land, for in a watery grave they found everlasting peace and relief from tyrannical despotism. The deplorable condition of those fortunate enough to survive the tortures of that voyage is thus described: “The foreign immigrants are the most miserable set of poor, half-starved wretches, worn out by the combined horrors of a long sea voyage, ship fever and bowel complaints ever seen.” That the combined influx of soldiers and immigrants strained the utmost capacity of the Charity Hospital, and taxed the ingenuity of this community (just renowned for its hospitality, generosity and charity) to provide for these unfortunates, is best attested by the following quotation: “As matters are going on, this large institution may be completely monopolized by foreigners; and in case of an epidemic our own poor will be totally excluded from its benefit. It seems to us that they should either at

once be sent up to the great West, or there should be established, beyond the precincts of the City, a Hospital for their special accommodation. They are fellow beings and we cannot see them perish in our streets; though from the present prospect, it is apparent that the benevolence and generosity of our citizens will be heavily taxed before the summer is over." Typhus soon spread to the four corners of the town and became epidemic and in its wake the death of four Charity Hospital attendants, martyrs to their devotion and love of humanity. The congestion became so great it was necessary for the Irish Immigrant Society to establish emergency hospitals in the upper part of the city. Physicians and Apothecaries were appointed by the Municipal Council to visit and to furnish gratuitously medicines to the sick. All religious and benevolent societies rose to the occasion, and nobly responded to the call of distress; they vied with each other in rendering distinguished services. Yet, such noble charity resulted in only scant appreciation. Complaint on that score is thus expressed: "These poor creatures (almost exclusively foreigners), seem to be incapable of appreciating the active benevolence expended in their behalf, and often display a disgusting want of sympathy with each other, yet this does not stay the hand of charity."

The greatest evils are sometimes blessings in disguise, calamities frequently usher in reforms which lead to immunity, catastrophies arouse the indifferent to impending dangers, and pestilences promote research which often result in their eradication. In 1850 another typhus immigrant from the ship "Uriel" arrived and reported the death of many during the passage. The sick were sent to the Hospital and the vessel detained at the point for a few days to be cleansed and disinfected. These precautions prevented a spread of the disease in the city.

"Hospital unusually free from diseases;" observed the New Orleans Medical and Surgical Journal in its July number of the year 1850, "and we announce it as at once both remarkable and indicative of the high state of public health that between ten and twelve of the wards of the Charity Hospital

have been recently closed—the number of patients having diminished so rapidly as to vacate a large portion of the building. Such an event at this season of the year should not be allowed to pass unnoticed, and we record the fact with great satisfaction." This records a most unusual phase in the existence of that institution.

A few years previous to the Civil War the annual expenditures varied from \$73,000.00 to \$78,000.00. The ceaseless tide of immigration, and the great influx to our city of individuals from all those States bordering the Mississippi river and its tributaries, provided through the tax on passengers the bulk of the revenue for the maintenance of the Charity Hospital. In 1854 this tax amounted to upwards of \$71,000.00, but decreased to \$41,000.00 in 1855; in 1856 to \$28,000.00, in 1857 to \$30,201.75, in 1858 to \$19,640.25, in 1859 \$14,130.10, and 1860 to \$16,335.35. The great falling off of the revenue derived from this tax left a large deficit in the annual budgets that had to be provided for by State appropriations.

The admissions to the institution during the same period varied between nine and thirteen thousand. A very small number of these were native Louisianians, the greater majority being foreigners.

The following figures taken from the report of the Board of Administrators of the Charity Hospital for the year 1859 are practically the same as those of a few previous years.

Patients admitted from Louisiana	377
Patients admitted from United States	1,634
Patients admitted from Foreign Countries	10,753
Unknown	11
Total	12,775

It is interesting to note that the largest number of foreigners admitted were Irish, 5,888 of whom were administered to that institution, which was very nearly half the total number of admissions; the next largest number were Germans and Prussians, their registration amounted to 2,262, then the French with 742 and the English with 591. This



proportion remained fairly constant during the fifteen years previous to the Civil War.

In the year 1848 "Letheon" (ether) introduced by W. T. Morton, was used with his permission in the Hospital. A choice of anesthetics soon become a matter of controversy as to the relative merits of ether and chloroform. This editorial in the June issue of the *New Orleans Medical News and Hospital Gazette* of the year 1859 gives an aspect of the choice of general anesthetics in the early years of its use in our hospital: "From the *London Medical Times and Gazette* we learn that 'Dr. Haywood of the United States' " (of Boston, we presume), has written a letter to the *Surgical Society*, in which he recommends the abandonment of Chloroform, and the substitution of ether. "He states that in all the large hospitals at Naples, Lyons, and in America, ether is alone employed, "etc." We must beg leave to correct an egregious error into which Dr. Haywood has fallen, if he classes the *Charity Hospital of New Orleans* among those wherein ether is used in preference to chloroform. We are a daily visitor to the *Charity Hospital*, and we do not recollect having seen ether administered except as a rare experiment. Since 1848 Chloroform has been in daily use in the Institution; it has been and is still given to all sorts of cases, medical, surgical, and obstetrical, and we do not know of more than one or two deaths from its use. Indeed, in all *New Orleans*, we have heard of but two deaths from the use of the agent and we are not now certain that either of them occurred in the Hospital. A woman (a hospital patient) in the hands of an intimate medical friend, did one day appear to die under the administration of chloroform, but the tongue was quickly and forcibly drawn forward, and she respired again.

The fact is, our Boston brethren have a little local pride about ether which blinds them to the superiority of chloroform. But they have an up-hill business of it if they think of making other people endorse their ideas. We think we can confidently predict that *New Orleans* will never embrace ether as an anesthetic."

A gruesome episode is related by

Doctor Ernest Lewis in his "Reminiscences." This duel between these two prominent house surgeons should be recorded in the historical annals of the Institution in which they so faithfully and efficiently labored: "During the same year (1860) a tragic incident occurred in the *Charity Hospital*. Dr. John Foster, the House Surgeon, had succeeded Dr. Chopin, who filled that office from 1853 to 1858, succeeding Dr. Foster in turn. They were bitter political enemies and professional rivals. One of the internes by the name of Weams was fatally shot in a brawl at a Carnival ball by a law student and conveyed to the *Charity Hospital*, where he was seen by both Chopin and Foster, but at different hours. What one prescribed the other threw out of the window. One morning their visits clashed and a fight followed at the bedside of the dying student, which had no consequence as they were separated by mutual friends. A few days later, meeting in front of the hospital entrance and both being armed, they engaged in a gun battle in which Chopin was wounded in the neck and the external jugular vein severed."

When war between the States was declared, the smouldering fires of suspicion, rebellion and hatred burst into a conflagration that swept the Country, and was a holocaust of the patriotism and heroism of a whole nation. Again the *Charity Hospital*, the largest in the Confederate States, was called upon to surmount tremendous obstacles. The Board of Administrators recognizing the predicament in which the Institution would be placed made the following recommendation to the Legislature:

"In asking the Legislature for renewal appropriations for the next fourteen months, we would respectfully refer to the fact that this Institution is now, and probably will continue, during the existing year, to be the most convenient if not the only refuge in the southwest for sick and disabled soldiers and mariners. The patients of the old *Marine Hospital* having been transferred to the *Charity Hospital*, we have been compelled to set apart several wards for the accomodation of sick soldiers and sailors, and although through the kind assistance of Collector Hatch, a small fund in his hands (\$1,023), set

apart for the support of the old Marine Hospital has been paid over to the treasurer, yet, with this exception, no provision has been made by the Confederate Congress, nor has any funds been furnished by the administration for their support. For the ensuing year, the Charity Hospital will be compelled from the exigencies of the case, not only to meet the ordinary demands of the sick and disabled, but to subserve to some extent the purpose of a military and naval hospital, at a time when ample provision of this nature is indispensable." No contemporary reference as to the activities of that Institution could be found during the war. No annual hospital reports were printed, and local medical journals suspended publication during these trying days. The activities of the Hospital, and the role it played in that great drama are handed down to us in the "Reminiscences" of Doctor Ernest Lewis, in which he related his personal experiences as Acting House Surgeon during the war: "Before the annual meeting of the Board, February, 1862, Dr. Sprague, the Assistant House Surgeon, resigned, and at the suggestion of Dr. Nichols, I petitioned the Faculty for a premature examination, to apply for the vacant hospital position, which was granted, and passed. At the meeting of the Board I was elected. A few months later, Dr. Nichols resigning, I was appointed Acting House Surgeon with an increase in salary. The full title was not given me, I was informed by the President, Judge J. N. Lea, because of my youth. I was not then 22. On the surrender of the city to the Federal fleet and the arrival of General Butler to take possession, his Medical Director called at the hospital and requested me to assign a part of the institution for his sick and wounded. I flatly refused, telling him the institution was for the poor of the State only, but the Federals being in power, he could take possession if he chose and the Hospital Staff would withdraw. He replied he would not have us do that and left. He afterwards converted the St. Louis Hotel into a military Hospital.

Before the federal occupation of the city the old Marine Hospital, on Tulane Avenue, where now is the House of Detention, was used as a Confederate hospital, with Major C. Beard in charge. Cut off from his sources of supplies, it had to be closed. He wrote me to that effect and of his dilemma regarding his sick and wounded, requesting that they be received at the Charity Hospital. My consent being given, they were transferred here. This coming to the knowledge of General Butler, led to the arrest of the members of the Board and myself. When brought to his presence at the Custom House, looking at me sternly he said, "How comes it, sir, that you, a physician, have discriminated between my sick and those of the Confederacy?" I answered, "they were not received as soldiers, but as Charity patients," and handed him Dr. Beard's letter, which he read and, looking up, said, "I see you have an excuse, but having established a precedent, you will have to receive my men." Making a virtue of necessity and not aspiring to martyrdom by imprisonment at Ft. St. Philip or Ship Island, I answered, "Very well, sir, but furnish me with medical men to attend them, as we are very short-handed." He then authorized me to employ two physicians at a salary of \$50.00 a month each, which he would pay them. I appointed my friends, Dr. Robert Davis, the uncle of Dr. Davis of our city, and Dr. Cleary to that duty. Some time later he issued his famous order compelling everyone to take the oath of allegiance or register as enemies of the United States Government. The entire Hospital Staff registered as enemies excepting J. A. Root, an interne, who took the oath of allegiance and became Assistant House Surgeon in 1871. When General Banks superseded General Butler, he appointed a Republican Board, and at the annual meeting in February, 1863, Dr. Smythe was elected House Surgeon. I was offered the Assistant House Surgeonship with an increase of salary, but declined."

(To be continued.)

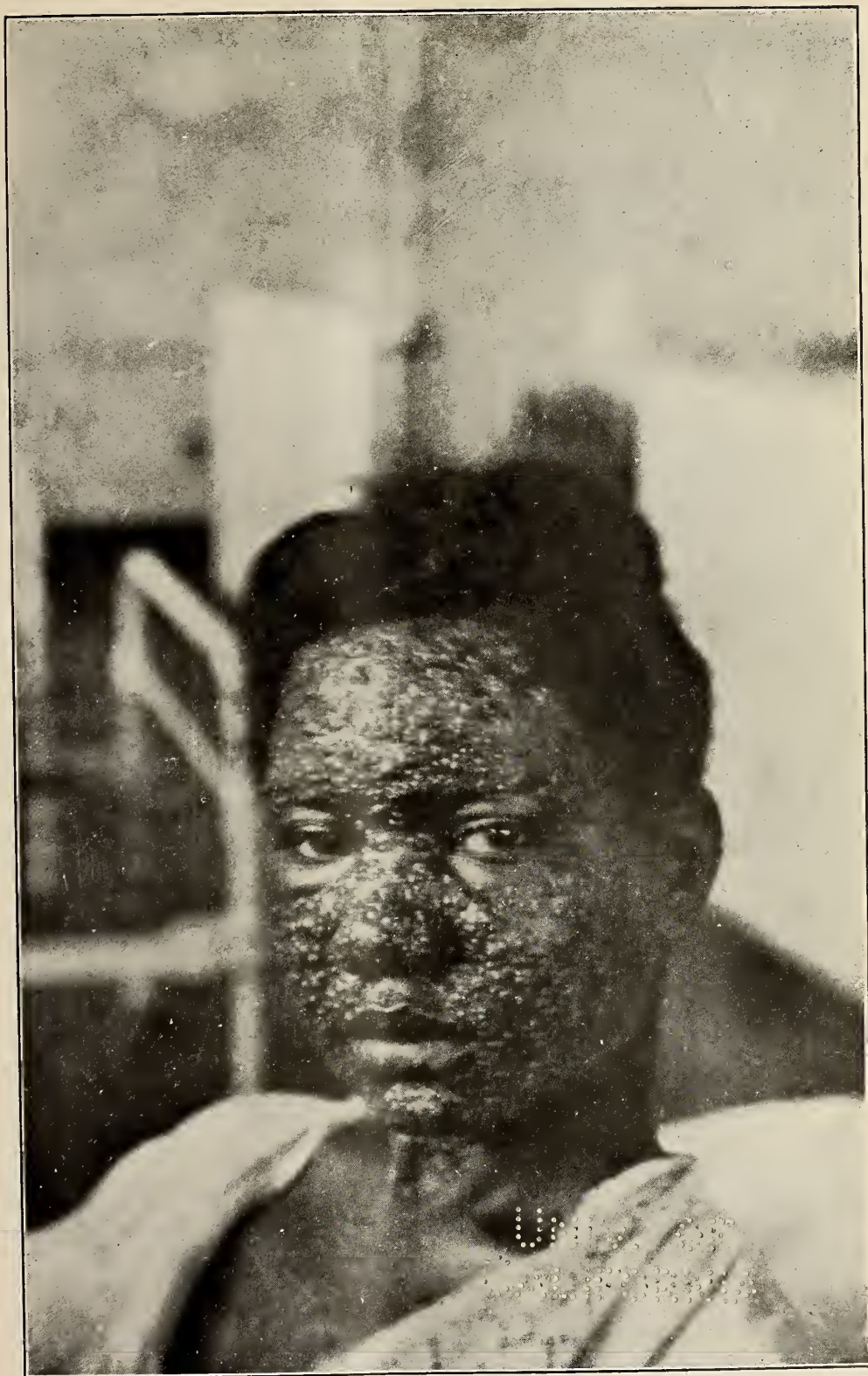






Confluent Smallpox Papulous Eruption.





Confluent Smallpox Umplication of the Pustules.





## SMALLPOX — HISTORY, DIAGNOSIS, SYMPTOMATOLOGY AND TREAT- MENT.\*

By J. G. STULB, M. D.  
New Orleans, La.

### HISTORICAL RESUME.

Smallpox dates its origin to remote antiquity. Its first appearance in the world is hidden in the mists of the past, and although such authorities as De Haen, Willan, Moore and Barren assert that it was known in ancient Greece and Rome, Adams and other writers of note deny this and advance other theories. Even as early as the tenth century, the celebrated Rhazes, the Arabian, wrote exhaustively on the subject. Galen was evidently familiar with the pest, as will be evidenced by reference to his first, fourth, ninth and fourteenth books. The Chinese are reputed to have known the disease 2,000 years before the Christian era.

Whether small pox was known in ancient times or not, is immaterial at this date, but the fact remains that it is one of the most noxious scourges that afflict mankind and sanitary measures to prevent its prevalence and spread cannot be too severe.

### DEFINITION.

Smallpox is one of the most infectious diseases known. It is an acute, contagious, febrile, exanthematous malady, characterized by several stages of eruption—macular, panular, vesicular and pustular.

Smallpox respects neither sex, age nor race. It may infect the fetus in the womb of the mother and attacks the nonagenarian as well. The symptoms are chill, fever, headache, lumbar pains and, sometimes, vomiting. It is transmissible not only by direct contact with the patient or by fomites infected by those afflicted with the malady; but sometimes infection takes place through the air at considerable distances. The life of the germ is great and dried pus from smallpox patients has been found virulent years after.

### ETIOLOGY.

The cause of smallpox has not yet been discovered.

### INCUBATION.

The time of incubation is from ten to fourteen days and the danger to others commences with the initial period and lasts through the disease, as long as there are scabs on the patient. Some writers observed the incubation period to be as long as eighteen or twenty days.

### SYMPTOMS AND COURSE OF THE DISEASE.

Smallpox usually commences with a chill and the temperature is characteristic. From the onset erythematous exanthema is frequent. It is irregularly scattered over the body or appears between the umbilicus, symphysis and Poupart's ligament and on the inside of the thigh; however, the lesions are macular and are sharply marked and a shotty feeling manifests itself.

It has been my experience to observe that the exanthema at times closely resembles that of measles in fact so closely that it cannot be differentiated at times from a severe form of measles. The catarrhal symptoms of the eyes and nose, however, are absent. A very severe type of smallpox, generally confluent or hemorrhagic, with pemphigus, follows. Such cases call for special consideration of the prodromal symptoms to make an early and positive diagnosis.

Smallpox eruptions appear on the third day, first on the face, then on the trunk, arms and legs, and the temperature drops, but not to the normal, to rise again with the stage of suppuration (the formation of pustules). During the second week the fever drops irregularly to the normal. In cases where the eruption is tardy, a cup of hot tea every two hours will bring it out in from twelve to forty-eight hours.

The skin offers less favorable conditions of growth to the virus than the mucous membrane, which is ordinarily affected, and therefore gives the body an opportunity to better protect itself by the production of antibodies.

The principal varieties of smallpox are:

- (1) Variola, discrete.
- (2) Variola, confluent.

Complications: Edema of the glottis; bronchitis; broncho-pneumonia; myocarditis; convulsions in children. In

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adults the delirium may persist and become violent, and finally subside into a fatal coma. Boils are very frequent and may be severe. Pemphigus (bullae) and cellulitis.

A catarrhal and purulent conjunctivitis is also present. The secretions cause adhesion of the eyelids and unless great care is taken this complication may develop into ulceration and perforation.)

(3) Variola, Hemorrhagic, petechial or black smallpox.

The illness starts with the usual symptoms, but with more intense constitutional disturbance. On the evening of the second or on the third day, there is a diffuse hyperemic rash, with small hemorrhages, and the spots increase in size. Pemphigus (bullae) appears at times. Death may take place before the rash appears.

#### DIAGNOSIS.

It is not an easy matter to differentiate smallpox from some of the maladies which simulate it. A differentiation of smallpox from chickenpox is sometimes difficult, especially after the development of pustules and vesicles. Chickenpox lesions appear on successive days and are seen in different stages of development: macules, vesicles, pustules and scabs may be observed side by side and light pressure will rupture the vesicles and pustules. If the diagnosis is doubtful, from the character of the eruption, the temperature curve, the initial exanthema, the prodrome and the length of time of development of the eruption will materially help in arriving at a correct diagnosis.

Some writers claim that varicella (chickenpox) is rare in the adult. I have not found it so, but have seen during the past year over one hundred cases in adult men and women.

Close observation will generally differentiate between smallpox and chickenpox, but as I have above stated, it is sometimes very difficult to differentiate. Smallpox is generally ushered with a chill; varicella is not. Varicella is very seldom characterized by initial fever; when present it is very slight and generally disappears within twenty-four hours. In smallpox, however, the fever

reaches 102 degrees F. and persists for about forty-eight hours. The eruption is also slightly different and a close study of the skin lesions will generally clear up any doubt which may exist.

The diagnosis of smallpox from syphilis, pemphigus, impetigo contagioso and measles is an easy matter and need not be touched upon in this paper.

#### PROPHYLAXIS.

Vaccination and re-vaccination is the surest way to prevent smallpox and should be compulsory in every State. In Louisiana vaccination is not compulsory. In New Orleans, compulsory vaccination of children before entering the public schools and re-vaccination every seven years, is the law, due to combined action of the City Board of Health and the School Board.

Immunization was introduced into Europe by Timoni (1713). Pilarini (1716) and Lady Mary Wortley Montague (1721), wife of the English Ambassador at Constantinople, who brought it in vogue in England that year. Variolation was then more practiced than vaccination. Thousands of persons were inoculated, even troops in the Continental Army; but vaccination was soon recognized as a safer procedure than variolation, since the inoculated subjects, in the latter case, became smallpox carriers, through the sores. But it was not until the publication of Jenner's epochal work (1798) that the human virus for vaccination was accorded the lead.

Lady Montague's method consisted of rubbing into the skin of the healthy the dried substance of vesicles of light cases of smallpox. This usually produced a light attack of the disease and protection for life. The skin offers less favorable conditions of growth to the virus than the mucous membrane, thereby giving the body an opportunity to protect itself better by the production of antibodies.

At the time Lady Montague introduced variolation into England, it was common knowledge among the people of the country of Gloucester that passing through an attack of cowpox would protect against smallpox.



Jenner, who thoroughly examined this fact, published his results in 1798, showing further that the vaccine could be used from man to man with the same results. A little later it was experimentally shown that calves vaccinated with the contagion of smallpox would develop cowpox and this re-vaccinated into man produced only local vaccine pustules, but protected against smallpox infection. The passage of the virus through the calf diminishes the virulence of the contagion; several passages through the calf are necessary before it is sufficiently weakened to be safely used on man. It was later observed that the protection produced by this vaccination practically lessened and that re-vaccination every ten years was necessary to protect permanently. This method is now commonly used in States where vaccination is not compulsory.

Vaccination is ineffective after the first symptoms of smallpox have made their appearance.

Isolation is an absolute necessity in suspected cases. No one but physicians and nurses, under careful precautions, should see the patient during the course of the disease. The patient should be confined in an established isolation hospital. If it should become necessary for any one, except physicians and nurses, to visit the patient, he must be vaccinated, as well as those persons who have been in contact with him, pending the clearing up of the diagnosis. Isolation has to be made at once, as danger of infection commences with the first symptoms and should be continued as long as any scabs can be found. The soles of the feet have to be especially examined; here, where scabs adhere to the hard epidermis longer than anywhere else, frequent bathing of the feet in hot, soapy water will cause their removal. Rigorous cleaning of face, hands and head after seeing a patient is necessary to prevent carrying the contagion to others; and everything that comes in contact with the sick has to be thoroughly disinfected, which is best done with overheated steam. To prevent the drying scabs and their debris from dropping off the body and spreading through the air, I direct the patient to be anointed with iodized-phenol, 5 per

cent in cotton seed oil; the warm *bath* is given every morning and scabs gently removed by washing and the patient is dried and again anointed. I have used in my private practice, as a disinfectant mouth wash, potassium chloride, tr. ferri chloride, of each three drams, glycerine two ounces, aquae qs. to make a six ounce mixture. One teaspoonful in a half cup of hot water is used as a gargle three times a day, after each meal, with the greatest advantage. The nascent chlorine has a decided bactericidal effect. Nothing should be taken by mouth for at least an hour after the wash has been used.

### TREATMENT.

A specific treatment is not known. The treatment of smallpox has to be symptomatic, simple in light cases, but requiring judgment and painstaking care in the severer form, especially in patients with damaged organs. Every patient, after an examination has been made, should be given a large dose of castor oil, calomel and soda, each grains five, preferably followed in six hours by a saline laxative in hot water. I consider this last measure of great importance on account of the cleansing of the bowels, as well as the effect it has on the circulation. Dr. Otto Lerch states that dilated hearts contract and that a flabby, irregular pulse becomes more regular and firmer after such a purgative. I can confirm this observation. There is not an infectious disease where the muscles of the heart are not affected.

Smallpox is dangerous even in the light form. Most of the symptoms are symptoms of intoxication and the cleaning of the bowels and keeping them clean will lessen this danger.

The mouth cavity has to be carefully examined and cleaned after every meal and cleaned with a solution of chlorate of potash, or boric acid, followed by a decoction of slimy substances.

To dilute the blood and protect the kidneys large draughts of water are necessary. This is best given at stated intervals. I direct that a tumbler full be given every two hours, to which half a teaspoonful of spirits of nitre should be added; this will impress the patient

and the nurse, and in this way prompt attention will be secured.

The diet is generally that of a fever patient.

During the febrile process large amounts of liquids are indicated to dilute the blood and make it less toxic and irritating, and for the same reason condiments—pepper and salt—must be used sparingly. The food is given in liquid form, the medicine diluted with water and fruit juice added to allay thirst. If the patient objects to large quantities of liquid, it must be given in an enema, or by hypodermoclysis as physiologic salt solution; when the kidneys are affected the salt must be replaced with sugar of milk. Milk may be given as soup with an addition of lime water. Buttermilk is well borne. Beef tea enriched with cereals and eggs, orange juice beaten with sugar, the various meat wines, and milk jellies, are all useful.

After the patient has passed the febrile state, then the diet may tend, gradually, to a semi-solid, and finally to a convalescent diet. In my hospital practice I prescribe throughout the febrile state, an oatmeal soup—that is, oatmeal thoroughly boiled with milk to a creamy consistency—a bowlful three times a day, followed, after umbilication of the pustules, with a thoroughly boiled vegetable soup, and this gradually by a convalescent diet. This regime is well-borne and liked by the patient.

The temperature is a negligible factor. Only in cases of hyperpyrexia, it should be lowered with some of the well-known anti-pyretics. In cases of great excitation, a prolonged warm bath, or luminal-soda, veronal, or chloral hydrate, may be given.

If the treatment, as outlined above, is closely followed, antipyretics and narcotics will never be required.

The treatment of the eruption is best carried out with hot compresses, which relieve tension and pain. Permanganate of potash may be added to the water as a deodorant. I apply as routine treatment an ointment consisting of ichtosan or ichthyol 25 per cent, in vaseline and lanoline, equal parts. This gives relief and prevents pitting; occasionally, in-

stead, 5 per cent phenol, in bismuth and vaseline and lanoline, equal parts, if cheapness has to be considered. Finsen recommends the treatment with red light to prevent the formation of pus and pitting. I have had no experience with this method. The intense itching felt by the patient during the time of desiccation is relieved by prolonged warm baths and the soapy bath, to accelerate the removal of dried scabs.

#### MORTALITY.

One of the worst heritages that the discoverers of America brought to the New World, was smallpox. It was unknown to the American Indian prior to the landing of Columbus on the Western Continent. It appeared in England in the first part of the thirteenth Century and two hundred years later invaded Germany. The first outbreak in America occurred in Mexico in 1527. First occurrences in other countries are not authentic.

The Mexican epidemic was the worst ever recorded in history. Prescott's "Conquest of Mexico" gives gruesome details of this scourge, and says that it went "sweeping over the land like fire over the prairies." Nearly four million natives died within a few years. The aborigines seemed to be specially susceptible to the malady, whole tribes being annihilated and wide sections depopulated. Entire communities were decimated in Brazil in 1633, while Ecuador lost 100,000 within a few years after the invasion of the disease.

Even far-off Greenland has been visited, losing about one-third of her population in the eighteenth century.

Historical accounts of the ravages of smallpox could fill several volumes, and the above resume is given to show the great mortality of this loathsome disease, if allowed to go unchecked.

My personal experience in the management of smallpox has led me to believe that it is not such a deadly disease if properly attended to and rigid prophylactic measures followed. During the period I was in charge of the smallpox cases at the New Orleans Isolation Hospital (January, 1917, to December, 1919), the cases and deaths were as follows:





Confluent Smallpox.





## SMALLPOX CASES AND DETAILS IN THE ISOLATION HOSPITAL, NEW ORLEANS.

	1917		1918		1919	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
January .....	24	0	28	0	4	0
February .....	30	0	65	0	11	0
March .....	47	0	49	0	21	0
April .....	22	0	23	0	18	0
May .....	16	0	16	0	22	1
June .....	4	0	17	0	14	1
July .....	14	0	0	0	3	1
August .....	0	0	1	0	0	0
September .....	2	0	1	0	1	0
October .....	3	0	1	0	0	0
November .....	2	0	1	0	3	0
December .....	9	0	5	0	3	0
Totals .....	173	0	207	0	104	7

Total number of cases under my care during the three years I was in charge at the Isolation Hospital, 520; deaths, 3. It will be noticed that there were no deaths in 1917 and 1918, and that the three deaths in 1919 occurred successively in May, June and July. These fatal cases were almost moribund when brought to the Isolation Hospital, and there remained little to do but ease the sufferings of the stricken ones.

## INFECTION.

The virus invades the human body through the mucosa of the respiratory track. The time of incubation is from ten to fifteen days and the danger to others commences with the vesicle stage and lasts throughout the disease and as long as there are scabs on the patient.

I doubt natural immunity from the disease. It is my opinion that one attack of the disease protects for life.

It is also my opinion that vaccination is ineffective after the vesicles have made their appearance. The virus is in the blood stream and propagation takes place until expiration of the period of incubation.

A case of interest that came to my knowledge was the admission into the Isolation Hospital of two women, both in a pregnant state. Both were suffering with confluent cases of smallpox. They were discharged as cured after approximately forty days' treatment, and free from all infection. About two weeks after discharge they gave birth to children, with no signs of smallpox, nor any eruption, as far as the children were concerned. This demonstrates that when the mothers of these children became infected they carried this infec-

tion, simultaneously, to their fetuses; and further that the discharge of the mother free from all infection of the disease, applies to the foetus as well.

During my connection with the Isolation Hospital of this city, I was summoned to a home in the lower portion of our city where it was reported smallpox was prevalent. In this house I found three cases of smallpox; one of the cases was a child of eighteen months, another an infant of about six days, and the third the mother of both of these children. These patients were removed at once to the Isolation Hospital.

Investigation of the case developed that the eighteen-months-old child had been sick for twenty-one days preceding my visit and that the eruption appeared on both the mother and younger child three days after its birth. This demonstrates that the mother and younger child were infected shortly after the appearance of the eruption on the first child, taking into consideration the usual period of incubation. This is further demonstrative of the fact that the mother and her fetus were infected at the vesicle stage.

Another summons brought me to a residence on Soniat street, where two cases of smallpox were found; i. e., mother and infant. Both patients were removed to the Isolation Hospital.

Investigation of this case developed that the mother, while in a pregnant stage, visited her husband daily at the Isolation Hospital; the husband having been brought to this institution suffering with bubonic plague. Nine days after the birth of the child eruption appeared on both the mother and child, which is demonstrative of the fact that

the mother and child were infected about six days preceding the birth.

I had occasion to vaccinate a one-year-old child in this same house on the same day that the other two patients were removed to the Isolation Hospital. Ten days after vaccination this child developed smallpox the period of incubation showing that it had been infected prior to vaccination.

#### DISCUSSION.

**Dr. Ralph Hopkins (New Orleans):** By no means of least importance in the problem of smallpox is the question of diagnosis, and the differentiation between atypical cases of variola and atypical cases of varicella. One point that is most helpful in leading to correct diagnosis is the characteristics of the individual lesions in these two diseases. The importance of this point was very strongly impressed upon me in the recent outbreak of smallpox in Marine Hospital 66, the national leprosarium. In this isolated community there was no question of differentiation between smallpox and chickenpox—it was smallpox, some hemorrhagic, some confluent, some serious, and some very mild. But I do believe that some of the very mild cases, had they occurred in another community, would have been called chickenpox. In many of these the constitutional symptoms were far less than would have been found in even moderately severe chickenpox, and the number of lesions and the usual distribution of smallpox were lacking. The one characteristic, however, in which almost all the cases ran true to smallpox form was the individual vesicles. They were almost always of the type of smallpox vesicles, not the superficial lesions of chickenpox. They were conical in form and hard, some being even harder than the papules of which they were a development. Some of them could not be ruptured by a single puncture, but required numerous punctures to empty them of the fluid. In using this method of differentiation between smallpox and chickenpox it should be borne in mind that chickenpox lesions, as they occur on hands and feet and face, on account of the greater thickness of the integument in those regions, are most likely to be taken for the hard vesicles of smallpox.

The lesson to be learned from our experience in Hospital 66 is the necessity for vaccination, even if the community is isolated, as the leper institution is.

**Dr. Oscar Dowling (New Orleans):** The inclination on the part of many physicians when called upon to diagnose smallpox or chickenpox seems to be to give the patient the benefit of the doubt. In many instances this apparently is the cause of the spread of the disease. In some communities smallpox has been called chickenpox until in another community someone from the former place died from smallpox; then definite information would be furnished the State Board of Health that smallpox existed in both places. We have frequent requests from doctors to send

an expert to determine whether or not a case is smallpox. While I can understand the desire to place the responsibility on the State Board of Health, I feel it is a reflection on the local health officer, and if he cannot determine whether the case is smallpox or chickenpox he is at liberty to call in two other men in the parish. Surely three doctors in any parish can diagnose smallpox as opposed to chickenpox. If smallpox could be confined to those who wanted the privilege of having it, it would be a good plan to permit them to suffer the consequences, but unfortunately this is not the case and the burden of controlling the disease rests upon the local and State health officers.

**Dr. J. G. Stulb (closing):** I will answer Dr. Bel first. After successful vaccination you are protected, according to the authorities, for seven years; but that does not necessarily mean that you cannot contract smallpox. It is possible that following the first vaccination you may contract smallpox, but you will have a mild type. But from you could be conveyed the confluent type or the hemorrhagic. Vaccination is nothing else than rubbing a live virus into the body. I was vaccinated when a boy, but I developed a mild type of smallpox twenty years ago, and from me developed some of the most virulent types that were ever seen by man.

#### CARBON TETRACHLORIDE IN THE TREATMENT OF HOOKWORM DISEASE WITH REPORT OF CASES.\*

By SAM HOBSON, M. D.

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Ankylostomiasis or hookworm disease as a clinical entity has been recognized for three centuries. However, it was not until the work of Dubini in 1838 that the etiological factor of the condition was established. Dubini first described the causative parasite, and due to the peculiar bent or curved appearance of its mouth gave it the name of "hookworm." There quickly followed the investigations of Billhartz and Griesenger, Wucherer and the monumental contribution of Looss, who first described the cardinal fact of the penetration of the skin by the larvae and the route by which these latter reach the intestines. At the present time the life cycle of the parasites, its modes of entrance into the animal economy and its baneful influences when infesting its host, are all well known.

Infection by means of the two chief forms of hookworm, *Ankylostoma*

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duodenale and *Necator Americanus* is widespread. There is scarcely a tropical or subtropical country in which heavy infestation of the native population is not present. Recent figures show that in India 60 per cent, in Porto Rico 90 per cent, in the Philippines 12 per cent, in the southern United States 15 per cent, in the mining centers of Germany and France 6 per cent of the native populations suffer from hookworm infection in a graver or milder form. Statistics obtained from the examination of recruits called to the colors under the selective service act during the late war revealed hookworm infection in sections of the United States where, up to then, little evidence of the prevalence of the disease had been noted. The economic loss of the various countries where native population shows endemic hookworm infection is appalling. This economic loss is referable to factors so well known as to require no discussion here.

With the establishment at once of the etiology of hookworm disease and the facts that there are no secondary hosts, that the infection is not readily spread by the ingestion of milk or water, that flies or insects do not carry it, it would appear that control should be very simple. Such, however, is not the case; even the prevention of the disease is extremely difficult. The principal angle of attack on ankylostomiasis has been, and very naturally so, attempts to exterminate mature worms in the intestines of human beings in order to check the supply of eggs at its very source. For this purpose various drugs have been employed. Thus, eucalyptus and chloroform, betanaphthol, oleoresin of aspidium, oil of chenopodium and finally and more generally thymol have been used; this latter drug has of late years been the agent of choice unless the patient showed some idiosyncrasy to its use. In 1921 Hall, Zoologist of the United States Bureau of Animal Industry conceived the idea that carbon tetrachloride, a drug practically abandoned as a therapeutic agent fifty years previously, could be successfully used in the treatment of hookworm disease. He carried out experiments with gratifying results upon dogs and monkeys and hav-

ing administered to himself 3cc of the drug by mouth, reported that it could be given with impunity in such doses to human adults, urged its use in the treatment in human ankylostomiasis and finally warned against possible impurities which could be found in the drug as purchased upon the open market. Stimulated by these investigations there presently appeared a number of favorable reports upon the human administration of the drug. Thus Nicholls, Director of the Bacteriological and Pasteur Institutes of Ceylon, and Hampton, Director of the International Health Board, reported the use of the drug in from 4-10cc doses. They added to the subject a detailed report of the negative histological findings in the various organs of a condemned criminal who had consented to take the drug experimentally in two doses of 6cc each at 13-day intervals. S. M. Lambert reported his observations in 20,000 cases and later in 50,000 treated cases.

The consensus of opinions of these investigations was that carbon tetrachloride is a vermifuge and vermicide of great potency; that it can be administered with safety to humans; that it gives little discomfort to the patient; that it permits treating at low cost vast populations suffering with hookworm.

That Hall's original warning as to the possible ill effects of impure drugs was not sounded in vain is proven by S. M. Lambert's experience. After treating 42,000 cases with no fatality, he was unfortunate enough to lose three cases in his next series of 8,000. This he ascribes to a chemically proven impure carbon tetrachloride which he had used in the treatment of this last series. Histological examination of the various organs from one of these fatal cases revealed extensive focal necrosis in the liver, changes identical with those described by Pessoa and Meyer following experimental intoxication with the drug.

The plan of treatment for ankylostomiasis by means of carbon tetrachloride recommended by most investigators is as follows: light supper; no breakfast the following morning; 7:00 a. m. carbon tetrachloride (C. P.) given in the dosage of 2 to 3 minims per year of age, the maximum dose being 45 to

60 minims (3 to 4cc.). The drug may be given in freshly filled hard gelatin capsules, or floated in a tablespoon of water; 9:00 a. m. a purge of magnesium sulphate should be administered; 12:00 noon, a light meal may be taken. The treatment should not be repeated in a lesser interval than three weeks. No more than two treatments need be given. Alcohol addicts should not be given the treatment.

With the widespread prevalence of hookworm infection in patients admitted to the Charity Hospital, New Orleans, and in view of the favorable reports of the carbon tetrachloride treatment, it appeared profitable to attempt the treatment of this condition with carbon tetrachloride. Accordingly a number of cases were so treated. As some of these cases illustrate various aspects of the use of the drug, and the various modifications in my plan of treatment, it is desired to briefly tabulate them.

*Case I*—C. H. D.—1797, white male, age 22. Admitted with the complaint of "swimming in head" and epilepsy. Physical examination negative. Routine examination of feces showed many uncinaria ova. Thymol administered in usual manner; one week later stool still showed uncinaria in numbers. Thymol repeated for four more doses, making a total of five treatments, after which uncinaria ova were still found in stool. Twelve days after the last treatment by thymol, carbon tetrachloride, 5cc. floated in ice water and followed in three hours by magnesium sulphate, was administered. During next 48 hours patient passed 40 hookworms. Three examinations of stool at weekly intervals have failed to show any ova. Here the carbon tetrachloride administered as one dose of the amount recommended as a maximum cleared a case of hookworm disease that had failed to respond to five thymol treatments, illustrating the efficacy of this newer method of attack.

*Case II*—C. H. D.—5915, white male, age 36. Complaint "diarrhea." Physical examination revealed nothing of importance. Feces examination positive for hookworm ova. Carbon tetrachloride 5cc. administered about two hours after a full meal; patient vomited immediately. A second attempt at admin-

istering carbon tetrachloride two hours after a meal again resulted in immediate vomiting. The next day the dose was repeated, but on a fasting stomach, followed in three hours by magnesium sulphate. Medication retained; patient complained of no unpleasant symptoms. One week and four weeks later stool examinations were negative for uncinaria ova. In this case two attempts were made to give the drug shortly after the ingestion of food as recommended by some authorities. In neither attempt was the medication retained. Since, the plan followed has been to administer the drug on a fasting stomach.

*Case III*—C. H. D.—5709, white male, age 44. Complaint—"weakness". Physical examination: patient very anemic; heart enlarged, downward and to the left; systolic murmur heard best at the apex and transmitted to the left axilla. Total red cells 795,000; hemoglobin 25 per cent; eosinophiles 12 per cent; many uncinaria ova present in stool. Carbon tetrachloride administered 5cc. on a fasting stomach followed in three hours by magnesium sulphate; patient passed 125 hookworms. One week later total red cells 1,250,000. Few uncinaria ova present in feces. Carbon tetrachloride 6.5cc. given. One hour later patient complained of a numbness in the extremities, "queer" feeling in head, nervous and felt like he was going to die. No nausea or vomiting. These symptoms disappeared in a few hours. During the next 24 hours 30 hookworms were counted in the stools. In about three weeks he had gained weight and was greatly improved. Total red cells 4,125,000. Feces negative for ova after three examinations. A larger dose than usually recommended, 6.5cc., was used. Outside of numbness in extremities and "queer feeling in head" which persisted for a short time, no untoward effects were noted.

*Case IV*—C. H. D.—9506, white male, age 18. Complaint—"heart trouble." Physical examination revealed nothing of importance except patient appeared very nervous. Feces positive for uncinaria ova. Carbon tetrachloride 6 cc. administered followed in two and one-half hours by magnesium sulphate. Patient complained of a "funny" feeling in



head; bowels moved twice before the magnesium sulphate was given. Patient passed many hookworms during the next 24 hours. Ten days later a few ova were found in stool. Carbon tetrachloride, 6cc., administered. No symptoms. Seventy-five hookworms were passed. Discharged three weeks later after several negative stool examinations. Here two doses of 6 cc. each were required to rid the patient of his infection. It would therefore appear that it is not always that one treatment will effect a complete cure.

*Case V*—C. H. 8141, white male, age 23. Complaint—"run down" since having swamp fever. Physical examination negative. Feces positive for uncinaria ova. Carbon tetrachloride, 6cc., administered. No symptoms. Hookworms passed were not counted, but many were seen in stools. Repeated feces examinations before discharge were negative. Here is illustrated a case in which one moderately large dose of 6cc. of carbon tetrachloride cleared a hookworm infection with no untoward results.

#### SUMMARY.

Carbon tetrachloride is a vermicide that has proven of value in the treatment of ankylostomiasis.

The administration of the drug in amounts of 3-6cc. usually effects a cure after one or two doses.

Care should be taken to secure a chemically pure product.

The drug is pleasant to take, and in ordinary doses of a pure product induces no ill effects in contradistinction to the other drugs recommended.

Administration of carbon tetrachloride should be on an empty stomach, followed in two or three hours by magnesium sulphate.

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#### DISCUSSION.

**Dr. C. C. Bass (New Orleans):** I wish to express appreciation of the fact that Dr. Hobson has so ably presented this timely subject before this Society.

The evidence that has been accumulating during the last year or two since carbon tetrachloride was introduced as a remedy for hookworm infection seems to indicate that we have in it as much of a specific as any other previously known remedy. Perhaps it is more specific and more effective than a good many of these that we formerly used; at the same time having the special advantage of being comparatively inexpensive.

One question that arises and should be given serious consideration is the harmfulness or harmlessness of the drug. Choice of remedies should be governed to a large extent by their safety as well as their effectiveness. All of the previously employed remedies which are effective for hookworms have fatalities charged against them. Carbon tetrachloride also now has fatalities charged against it, and in all probability as it is used more there will be more. We must appreciate the fact, then, that we are not dealing with a perfectly harmless remedy, but that we must employ it with care, and that, until further information has been accumulated, caution should be used in the direction of small doses. All of the remedies that we have for hookworm infection, including this one, are poisonous and are capable of destroying life if given in sufficiently large doses. This brings up the question of the size of dose we can give with safety. We do not understand at the present time why it is that one individual is badly poisoned, perhaps with a comparatively small dose of any of these drugs, while in another individual the same dose has no such effect. There is no method, so far as we know at the present time, by which we can select in advance the individual who possesses this special susceptibility to the effect of any one of these drugs. Dr. Hobson noted symptoms of poisoning from carbon tetrachloride in two cases out of six which should, I believe, be a warning as to the possible danger from this apparently very effective remedy.

**Dr. J. T. Halsey (New Orleans):** I want to call attention to three points, the observance of which should make the administration of this apparently valuable remedy almost entirely safe. In addition to the deaths reported by Lambert, there have been several fatal cases reported by others, but in many of the cases, in which more or less severe poisoning occurred, there was a history of chronic or recent alcoholism. Therefore the first thing that we should remember is not to give carbon tetrachloride to hard drinkers or to anyone who has recently been on a spree.

The second point is, to use the drug so as to get the minimum of harmful effects with at least satisfactory efficiency. Very few of the cases of poisoning have occurred when the dosage was not greater than one teaspoonful for an average sized adult. I believe that for the present we should never give more than 4 cubic centimeters or one dram to a patient weighing about 150 pounds, and correspondingly larger or smaller doses to individuals weighing more or less.

The last point, which I believe to be equally important, is to take measures which will lessen the possibility of poisonous amounts of

the drug being absorbed. Hookworms are almost all in the very upper portion of the small intestine. If the patient swallows a drug on an empty stomach, in a very few minutes that drug has passed into the small intestine, and in a few more minutes it has done all the harm to the worms that it is going to do, and if allowed to remain in the gut any longer it may be absorbed and poison the patient, for if absorbed in sufficient amounts it is unmistakably a poison. Consequently, not three hours, but at the latest two hours, or better still one hour after taking the carbon tetrachloride the patient should take magnesium sulphate or other briskly acting purge. In this way I believe the vermifugal action will not be lessened, while there will be much less chance that enough of the drug will be absorbed to produce any serious symptoms of poisoning.

**Dr. Oscar Dowling (New Orleans):** I want to appeal to the doctors over the country as well as those in some of the smaller towns, for their influence in bringing about better sanitary conditions in the home, with the hope of eliminating hookworm disease. In my judgment if the doctors of the State of Louisiana would make it a routine practice to examine their patients for hookworm, they would find more of them suffering from the disease than they realize are affected by it.

It is difficult to get statistics. If every case of hookworm disease were reported we could possibly find some way of making arrangements for the treatment of those affected. I appeal to you as the health officer of Louisiana for greater effort on your part toward this end—that of eliminating the hookworm.

#### ONE HUNDRED PER CENT RESULTS IN THE TREATMENT OF TYPHOID.\*

By S. J. COUVILLON, M. D.,  
Mouleville, La.

In presenting the successful results in the treatment of a varied number of typhoid cases covering a period of eighteen years of rural country practice, it is not my purpose to institute anything new or perplexing to the profession in the treatment of this dreadful malady, save, perhaps, to cite the astonishing fact that I'm yet to report my first death resulting from the disease.

The lines of treatment which I have followed are not anything the ordinary practitioner, nor the specialist ever attempted, and while the mortality rate according to statistics varies from 8 to 10 per cent, I'm really proud to enjoy a distinction that, out of 134 cases of genuine typhoid fever, the recoveries have been 100 per cent.

\*Read Before the Louisiana State Medical Society Meeting April 24-26, 1923.



I very often wonder if those fortunate results are due to the treatment itself, or do they result from a natural change in the cyclical evolution of the disease? Is not typhoid fever less fatal than it was 25 and 30 years ago? Has it become less virulent in nature? These hypotheses are admissible, for the history of medicine tells us that epidemic diseases appear to undergo not only changes in different years and seasons, but they also appear to undergo more lasting changes. I'm quite willing to admit this hypothesis and I have the kindest respect for certain traditions which have been handed down to us by our forebears, but I cannot forget that in a number of circumstances, and notably in the treatment of typhoid fever, the greatest progress has been realized.

As you will agree with me, to arrive at a positive diagnosis of this disease in the rural districts, is most difficult, owing to the inaccessibility of good laboratories, and while I never altogether resorted to this RELIABLE method in determining positive diagnosis, yet I never meditated when in doubt. Recognizing the disease as a bacteriemia and especially in suspected cases, my diagnoses were always arrived at through blood culture findings, the medium to reach the bacillus typhosus. At times when I have been confronted by endemic and seeming epidemic conditions, I would very often do away with blood culture methods of making a diagnosis and declare my cases purely from the usual clinical symptoms and signs. The same regular line of treatment applied and, of course, with perfect results. In the variety of cases which I have had, a large number escaped or failed to develop intestinal lesions and this was particularly true with my early experiences in the handling of typhoid fever cases. I presume that the recognition of this fact years ago led me to differ with my superiors and with the manner I was taught—to believe that the disease was essentially an enteric fever. It is at such exigencies that blood culture diagnosis plays an important part, as well as with the exceptional cases which begin with angina, gastric catarrh, lobar pneumonia or intermittent fever. These conditions are well calculated to puzzle the clinician. The

same condition of affairs are applied to the slight forms, to ataxic forms, with early delirium, meningitis or acute mania.

Candidly, I feel that there is absolutely no excuse for any confusion of typhoid fever with other protracted febrile conditions, as any simulating ailments, can be immediately differentiated through the serum reaction and blood culture findings, not to disregard, however, the bedside experience of rural physicians in properly determining such conditions by clinical symptoms.

Within the last years, typhoid has been pathologically regarded as a bacteriemia from the onset. It has not been so long that pathologists and bacteriologists have positively determined the condition not to be a hyperplasia of any special tissue, but rather a proliferation of the endothelium, rendering the circulatory apparatus the seat of the virulence of the toxins. As a matter of fact I have been theoretically in accord with these well-established facts years ago, as well as to be convinced that the disease not only presents lesions in the Peyer's patches of the terminal ileum, but as well in the solitary follicles of the cecum, causing a tendency to stasis and where the absorption of toxins are more pronounced.

Having had these facts in mind with all of my cases, my usual measures of treatments have been always properly instituted, special symptoms and complications handled as conditions would warrant, bringing about seeming marvelous results in the handling of typhoid fever cases, extending over a period of 18 years of practice.

What our health boards, hygienic experts and specialists tell us to do now regarding the preventive measures of typhoid, has been placed into execution by me all this time, and while it has always been a very hard matter to have some of the most essential points carried out in the rural districts, still I have met with little difficulty to intelligently apply the typhoid vaccine and with exceptionally good results from all angles. It has not been very long since I have used the first typhoid vaccine in the treatment of such cases, but it has been some time since I have ceased to use them. The theories advanced for its

efficaciousness are indeed disappointing to me. I have tried them in a variety of cases, but I have been unable to discover their merits. The same condition which applies to the various septicæmias is equally true with a system where there is already a bacteriemia. We are all familiar with the effects of serum on the other forms of infection and the one designated in the treatment of typhoid fever should be shelved.

REST, BALNEOTHERAPY, DIET, ELIMINATION, are the four real measures when properly instituted, form the fundamental principles of treatment. Rest is a measure which is universally practiced in all long and continued illness and occupies a very popular domain with the success of typhoid fever patients. It proves so beneficial in the latter stages of the disease, particularly when cases are threatened with intestinal hemorrhages, meningitis and other types of nervousness.

Balneotherapy has proven almost a specific with all my cases, irregardless at what stage of the disease and what complication arose. The trials which I have given this branch of treatment, I'm willing always to give it the fullest justice. A time-honored sympathizer of the Brand baths, I regret that the disadvantages which it affords by the results of poor nursing facilities in the country and for the further fact that patients are less disturbed and manipulated, which proves so detrimental during the advanced stages of the disease, by the shivering, shock and other untoward symptoms so common following tub baths, I have found the cold packs preferable.

The packs are usually applied in the form of a sheet wrung in cold water at a temperature ranging from 50 to 55 temperature, the patient immediately wrapped into this cold sheet and rewrapped in a dry sheet, blanket or counterpane and made to remain in this packing according to the temperature and reaction. In the event that a fall in the temperature is unnoticeable within a reasonable length of time, the same procedure is repeated. I never applied the cold packs unless the temperature exceeded 102° F., but when reduced to 100°, I'd remove them. During the course of the disease, I would invari-

ably retain an ice cap to the head and in the interims of the packs, I always kept one over the abdomen. The abdominal ice bag largely minimizes tympanites and danger to intestinal hemorrhages and the head cap is very serviceable to control nervous manifestations. Balneotherapy must be commenced at the very incipiency of the disease and continued throughout its course. These packs are not only beneficial upon the symptoms of the present, but upon the symptoms of the future. They actually change severe types to moderate ones, lower the virulence of the bacillus, a powerful stimulant to the nervous system, the logical febrifuge, a powerful agent to combat the prostration common in typhoid fever. By its persistent uses, I have demonstrated the almost complete control of all nervous, digestive, cardiac, pulmonary and renal complications.

DIET in typhoid fever should be liberal and well regulated, consisting of easily assimilated foods, given at regular intervals. Nothing excels milk—pure fresh milk to which lime water is added. It's a splendid food, an excellent drink and a very good diuretic, but owing to its deficient caloric properties, it can not serve as a food alone and has to be combined with a variety of carbohydrates to lessen nitrogenous waste and combat the tendency to intestinal toxemia, which is always prevalent with stasis, particularly in the cecum. Combined with other foods, strained soups, mashed and baked potatoes, ice cream, strained vegetable soups, eggs in its different forms (soft boiled or the white of an egg raw, bread and butter, toast with cream), is the ideal diet, which will maintain the vitality of typhoid patients, thereby lessen the emaciation and general weakness which always follows.

Elimination, therefore, is very essential and under that head comes the medicaments which I have used and forms the only real drugs necessary in typhoid fever. Daily intestinal movement is the most essential point and this can usually be accomplished by a three dram dose of castor oil, to which 4 or 5 drops of turpentine are added. The same quantity of mineral oil with turpentine will do as well and are the



only means to overcome a too pronounced toxemia, thereby rendering the symptoms milder and the course of the disease shortened. Two or three pints of fresh water to which lactose, with citron and orange juices are added, should be drunk in the 24 hours, as an abundance of fluid flushes the kidneys, stimulate diuresis, which is one of the best features in prognosis. As long as the kidneys are active, in spite of severe symptoms, I'm always satisfied for the poison is almost eliminated and severe complications are usually absent. With balneotherapy well and systematically applied, a proper diet given at regular hours, thorough elimination to be kept in mind, I have seldom seen the dry red tongue, sordes on teeth, tympanitic abdomen and a general condition of stupor. The classical picture of typhoid is markedly altered and the two great factors of intoxication and infection are practically conquered.

I wish it to be strictly understood that in my early years of practice, I have used many remedies in the treatment of typhoid fever. I used practically all of the intestinal antiseptics known to the pharmacopeia, I believed then in the non-nourishing diet and in the Elixir Alimentaire, which in those days and still among a certain class of physicians, occupied a prominent sphere in the treatment of typhoid, both as medicine and a nourishment. I believed also in the treatment of symptoms as they arose and not the disease and as a consequence I've had cases of typhoid to maintain temperature for weeks and sometimes months, although free from complications. I have the record of a young girl who kept a temperature ranging from 101° to 103° and 104° for 91 days, due, I am convinced, to the indiscriminate use of Ducro's Elixir—an agent when used in protracted febrile conditions, serves no other purpose but to add fuel to the fire. The complications which I had with my cases then were a few cases of delirium and several with intestinal hemorrhages and they too were promiscuously drugged with the usual nerve sedatives and intestinal astringents. I had a corresponding number of such complications since, extending, however, over a longer period of years,

the regular routine of treatment only was instituted, the forms were milder and the results very much more satisfactory.

In conclusion, I wish to reiterate what I had to say in the beginning of this paper, and that is, I'm sure of not having brought out a point, new or difficult, which the ordinary practitioner, nor the specialist, are not familiar with, except perhaps the conception I always entertained since the early years of practice, differing as it were, with the first information I received on this all-important disease from the viewpoint of it being a special tissue infection. Said pathological comprehension induced me to do away with so many useless remedies, so unnecessary in the treatment of typhoid fever. The favorable symptoms and consequent recoveries, which all of my patients were so fortunate to reap, depended altogether upon the four cardinal points of treatment: *Rest, Balneotherapy, Diet, Elimination.* With such measures properly instituted, my patients were made able to fight for the perfect development of the agglutinins, which depends altogether upon bacteriolysis, setting free the endotoxins of the bacillus typhosus. In other words, my patients were able to develop their own immunity.

To accomplish all of this successfully every typhoid patient should receive the strict attention and surveillance of the attending physician. When danger threatens, do not thrust the responsibility of your case in the hands of another person. It's your property and it becomes a question of win or lose. Your visits should be frequent and regular, your instructions should be followed to the letter and if all such measures can be properly carried out, you may expect "One hundred per cent result in the treatments of Typhoid."

#### DISCUSSION.

**Dr. J. Birney Guthrie (New Orleans):** Dr. Couvillon referred twice to an egregious error in the teaching of the pathology of typhoid fever, I cannot remember whether I am responsible for part of the doctor's medical education, but I do know of one institution in this particular neighborhood where no such teaching has been in vogue for twenty years.

I feel the title of his paper is sensational—that his paper should be accompanied by a little more proof. It is rather inconceivable

to me that a man living in the country district of Louisiana should in eighteen years present a series of 154 cases of typhoid fever, all of which were confirmed by blood cultures. That is something that living and working next door to a laboratory we cannot accomplish. The difficulties connected with obtaining blood cultures are tremendous, and we all know the organism is recoverable from the blood only at a certain time in the early stages. So it seems to me a paper of this kind should be accompanied by more definite proof. We know men in the country can do wonderful work. The work of McKenzie, Jenner and others has shown us that we have to go to these men who see conditions frequently that do not come to us. Take for example malaria. What do we see or hear of malarial conditions? We have to look to you. But we work hard on our cases and we do not come here unless we have the data at hand on which we base our opinions, and I think it is incumbent on every man who presents a paper to give the data on which his conclusions are made. The fact that he lives in the country makes the obligation no less.

**Dr. A. A. Herold (Shreveport):** I wish to congratulate my good friend, not on his method of treatment, but upon his unusual success. I think a great many of us use about the same treatment.

I saw a case of typhoid fever not long ago, a severe case, that had been treated along these lines in a high class institution with a nurse in constant attendance, and although we tried to keep the toxemia down with mineral oil, balneotherapy, proper regulation of diet, complete rest, the man developed intestinal hemorrhage and died of dilated heart. Evidently the doctor has had something besides treatment in his favor. He has had luck with it, to show such good results.

He spoke of strained soups. If he had reference to meat broths I want to say that he is giving a food of very little value, but a very good culture medium for the intestinal tract. Otherwise I think his treatment is sane and rational.

Doctor Guthrie dwelt on the matter of confirming the diagnosis. We know that in the early days you can in many cases get the bacillus from culture. After that we have to depend upon the Widal reaction.

**Dr. R. McG. Carruth (New Roads):** Doctor Couvillon has contribute da very remarkable paper and I congratulate him as much upon his courage in coming here and telling us that he has had 100 per cent cures in typhoid fever, as I do upon the systematic manner in which he has brought together his points and elucidated the question.

It was Herbert Spencer who said something like this: "If a man think he knows a thing and say it, whether he be right or wrong, it is well. For if he be right, the world, in time, will come to know with him the truth, whereas, if he be wrong, the world will show to him his error, and the world and he will have profited thereby."

But my percentage of cures has certainly been far different from his. I want to congratulate Doctor Couvillon also on finding

out long ago that he failed to get results from Ducro's Elixir. I learned not to give this and various similar concoctions in typhoid fever many years ago, and I am sure my percentage of cures has possibly doubled since that time.

Doctor Couvillon spoke of balneotherapy, but I do not remember whether he included in that enteroclysis (injection of salt water into the intestinal canal), but that has been the treatment I have followed. I do not use the cold pack. My people do not like the cold bath, and I find better results from the warm bath in bringing down the temperature. I use a tepid saline injection every day.

**Dr. S. J. Couvillon (closing):** Answering Dr. Carruth, I wish to advise that what I mean with balneotherapy as one of the divisions of my line of treatment of typhoid fever, is hydrotherapy or treatment by cold applications and not saline injections as he understood. I wish to thank the Doctor and Doctor Herold for their kind discussions of my paper.

In reply to Dr. Guthrie, it is plain to understand that he did not follow the exact workings of this paper. My cases in toto are 134, not 154. Perhaps the next 20 cases I will lose them all. Another point is that I did not say in the paper that all of my diagnoses were based on blood culture findings. I believe to have made it plain, that it was the most positive way to arrive at a diagnosis, but owing to the disadvantages we are confronted with in the rural districts, my diagnosis were more frequently arrived at by the usual clinical signs and symptoms and that with the proper lines of treatments instituted, I secured the results that I have stated. In doubtful cases, however, I invariably resorted to laboratory tests. Under such circumstances, it would be a physical impossibility to make the exhibit of my various diagnoses, as the doctor desired.

The same applies to the remarks of Dr. Bel. I had only 134 cases in eighteen years of practice and not 154, and that it was only when my cases presented a puzzling picture that I resorted to the laboratory, but not always.

#### TREATMENT OF TETANUS.\*

By ARTHUR A. HEROLD, M. D., F. A. C. P.  
Shreveport, La.

It is our purpose, in this article, to deal with the subject of tetanus, purely from the therapeutic standpoint. A more fitting title, perhaps, would have been "Rational Treatment of Tetanus" or "The Treatment of Tetanus Without Useless Frills," as we shall explain later. The writer is not one of that group fond of radical departures from accepted teachings, but he believes that, if a method in general vogue today seems irrational, it should be decried and protested against, in unequivocal

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terms, even though it may have been accepted, without a murmur, from the day of Pasteur, John Hunter or even from Hippocrates!

At the last meeting of the American Medical Association, in St. Louis, Dr. Willard J. Stone of California read a most excellent paper on this subject, in which he submitted interesting statistics from both civil and military practice. When it came to the treatment of developed tetanus, he advised the usual procedures including antitetanic serum, intraspinal and intravenously. This method was freely seconded from the floor, until we had the temerity, in the face of what one might term the unanimous opinion of experts, to get up and say that we question the advisability of the use of serum in the spinal canal, on the ground that, when we consider the pathology of the disease, the treatment by the blood stream is the more rational and, in a limited number of cases, in my hands, has proven more beneficial, practically. My discussion, which, by the way, was not accurately reported in the published proceedings, was not received with sneers; on the other hand, I was told afterwards, by one of the participants, that my point of view "had a whole lot to it" and was well worth considering; the only reply on the floor was that experimental treatment, by Park and others, had pointed out that the intraspinal treatment, combined with intravenous, is the most beneficial.

First and foremost, it should be stated that the treatment of tetanus resembles, most markedly, the best therapy for certain mental conditions that we often encounter, in that the *real time to treat it is before it begins*; but, whereas, with this disease, the antedating usually is only seven to ten days, previously, in Neuro-Psychiatry, we must go back one or more generations, which makes it impracticable. But, seriously, if every case of what is called "potential tetanus", but which is, in reality, tetanus in the first stage, were to consult a physician and the physician were to exercise due caution, by not daring to take the chance of omitting prophylactic serum injection, we would not have cause for the discussion in this paper, today.

Unfortunately, though, a large num-

ber of these wounds do not come under a doctor's attention until the disease has reached what should be termed the second stage or, when the doctor does see the case early, he is sometimes careless or thoughtless and sometimes he thinks of the possibilities, but errs in judgment on the side of danger, instead of safety. I recall that, during my internship in the New Orleans Charity Hospital, where the giving of tetanus antitoxin was a routine procedure in suspicious wounds, we had several cases to come back with tetanus; upon looking up the records, we found that the use of the antitoxin was neglected in all cases, except one, and this one patient had a very mild—or what might be called aborted—case of the disease.

Now, as to the rationale of the various ways of administering the specific antitoxin, for treatment of a case of what we say has reached the second stage. It has been administered around the wound, along the tracts of the nerves from the wound, subcutaneously, intravenously, intraspinal (subdural and bulbar injections). Undoubtedly, in addition to excision of focus, the use of serum, deeply into the tissues, is rational; attempts to block the passage of the toxin inside the nerve sheaths are sane, but are of doubtful efficacy inasmuch as we know that it travels up in intimate association with the axon itself; subcutaneous use for slow absorption, to fortify intravenous administration is very good, but the subcutaneous method, alone, in this stage, is not to be relied upon. When we come to discuss the intraspinal use of this irritating substance, let us stop and consider, for a few minutes, in what diseases, direct medication thus used, is beneficial, with the pathology of these ailments. In meningitis, especially the meningococic form, where there is an active inflammation of the meninges, with the organisms demonstrable in the cerebrospinal fluid, the use of specific serum, early and in sufficient dosage, is indispensable. Next, we come to certain forms of spinal syphilis, in which direct specific medication was the vogue a few years ago; even though in this trouble, there is often meningeal involvement, the pendulum has swung back and I believe that I am justified in stating that a

methods of direct medication, as a routine, unless treatment by the more practical venous way, often supplemented by spinal drainage, should prove ineffectual. Now, with tetanus, it is universally accepted that the toxin reaches the central nervous system by way of the axis cylinders of the peripheral nerves and that, when it does get there, it is intimately bound up with the nerve tissue itself—and not causing a meningitis, at all. I have searched the literature to see if anyone has ever claimed to have found the bacillus tetani in the spinal fluid; the only thing approaching such a claim is that of Lacy & Murdock, in *Journal of Laboratory & Clinical Medicine*, where they report a case of tetanus, in which centrifugalized cerebro-spinal fluid revealed no organisms, but from which they claim to have isolated the germ from cultures; however, their work has not been confirmed, as far as we can learn, but, admitting that it is so, this case was probably an exceptional one. Now, then, except for this one instance, we have no evidence that the toxin is exerting its harmful effects anywhere except within the cord substance, itself; is it not reasonable and logical, therefore, to feel that there is better chance of reaching this substance through the vascular system than by bathing the cord in the antitoxin. There is a possibility that spinal puncture might prove beneficial, in conjunction with intravenous antitoxin, for, by relieving the pressure of the fluid on the outside of the cord, we enable the vessels within it to dilate to a sufficient extent to receive more of the antitoxin soaked blood.

Along this line, Dr. D. W. Kelly of Winnfield, reported a most stubborn case before this society last year, in which he finally won out by his persistence with the specific serum, subcutaneously and intravenously.

A brief report of one of my cases would not be amiss: P. W., colored, female, a cook, employed by my sister, came to me, in an emergency, with a large gash in the neck, inflicted by an otherwise harmless neighbor, while under the spell of the "green-eyed monster"; after cleansing, I sutured it and all went well till the tenth day, when she developed the usual muscular

rigidity, trismus and headache; symptoms, however, were rather mild, so that I was loath to believe my suspicions; she was seen by three other men, who confirmed them, however. Ripping open the wound and treating with peroxide of hydrogen dressing, with one dose of 20,000 units of antitoxin, intravenously, was sufficient to effect a cure.

On the basis of the pathology referred to above, I contend that intraspinal antitetanic serum is unnecessary; that, if it is unnecessary, it is harmful, for the foreign material, including preservatives, are dangerous, to a limited extent, when so placed; that all the good that is claimed for this mode of administration can be accomplished by intravenous and sub-cutaneous methods, alone, if given early and in large enough doses; that spinal puncture is permissible for purposes of drainage, as above outlined, or for the use of magnesium sulphate, to control convulsions, according to the Meltzer method; that to bathe the spinal cord in antitetanic serum, hoping to cure the disease by this method alone is comparable to bathing the exterior of the body in castor oil for obstipation.

Now, having dealt with my specific point, I wish, before closing, simply to refer to the other measures, which should not be overlooked. If it has not already been done, get your surgeon to thoroughly extirpate the focus, if one is known. The patient should be kept isolated, in a darkened and quiet room, on a mattress not too soft; he should be handled very gently and not worried with too much treatment, other than the specific serum. If convulsions are slight, under above outlined care and he is able to obtain a moderate amount of sleep, drugs should be withheld; if, however, anorexia, convulsions, etc., disturb him, chloral, chloretone or morphine should be used, until he can be put under the influence of magnesium sulphate, used intraspinally or subcutaneously, or both ways. These things, however, are only symptomatic, to tide the patient over until nature effects the cure and the only way that we can aid nature, of course, is by giving antitetanic freely, early in the disease and,



above all, by the methods by which it is effective.

#### DISCUSSION

**Dr. J. G. Stulb (New Orleans, La.)**—I fully agree with the doctor on the serum treatment for tetanus. The wound should not be laid open, but cleansed with soap and water and then antiseptic dressing, and then antitetanitic serum given intravenously. The same treatment as you give malignant fistula or anthrax—wash the wound, but do not open up the fistula. Put on an antiseptic dressing and if you put your serum in intravenously you go right to the spot.

**Dr. M. H. Foster (Alexandria):** I have had no experience with the method employed for the purpose he is considering, but I want to offer this. I know definitely from the work we have done that it is now possible to empty the spinal canal early without a needle. Give 100cc of 15 per cent solution of sodium chloride, and the spinal canal begins to empty itself. This emptying is completed and the serum starts back at the end of six hours. Then give the serum again and you will have accomplished your drainage by eliminating the spinal fluid.

**Dr. C. S. Holbrook (New Orleans):** There has been a great deal of discussion between the intravenous and the intraspinal treatment for tetanus. The past few years intraspinal therapy has been enjoying greater favor and there seems to be a tendency from the literature to rely in tetanus on the intraspinal method, although not neglecting the intravenous. We fortunately have seen some results from the intraspinal treatment of tetanus that we could hardly expect from the older method.

I recently saw a case, a child of six or seven, who following a five-day incubation period developed a violent case of tetanus. The intravenous serum was used, given three injections on successive days intraspinaly, and the child got well—a most violent case, and with such a short incubation period ordinarily the prognosis would have been extremely bad.

Another case, following abortion, incubation period of ten days, with violent symptoms—three doses of serum given intraspinaly; practically no reaction of any consequence from intraspinal therapy, although large doses were given.

I feel so strongly in favor of intraspinal treatment combined with intravenous, that I should hesitate to treat a severe case any other way. I make it a practice to give a large dose, 10,000 to 20,000 units intraspinaly every second day until they have three doses.

**Dr. A. A. Herold (closing):** Replying to Dr. Bel, I wish to say that I mentioned one case in which the authorities claim they found it in the canal, but that it had never been confirmed. I mentioned it, although it was against my argument.

Dr. Stulb speaks about the thorough cleansing, and, of course, that is necessary. I mentioned extirpation of the focus. We know

that is very important. If it is a ragged finger or hand, just have the surgeon take it off.

Dr. Foster spoke about the hypertonic saline solution to drain out the spinal canal, but according to my argument I do not consider it is necessary to use that because I do not care whether the serum reaches the spinal canal or not.

Dr. Holbrook did not say how the serum put into the spinal canal reaches the interior of the cord and comes in contact with this toxin which is bound up there. I admit perhaps I am prejudiced, because the cases which I handled by the combined method unfortunately resulted fatally, and I have a suspicion that perhaps the irritating effect of the serum on the spinal canal may have had something to do with the unfortunate outcome.

My whole point was this—that there is a better chance for serum to reach the place where the toxin is by getting it into the blood stream; then if you want to make a spinal puncture and give the vessels a chance to expand to a certain extent and allow more of the antitoxin to reach the cord itself, do it with this end in view.

#### A CONCEPTION OF PSYCHO-NEUROSES AND SOME ERRORS TO BE AVOIDED IN THEIR DIAGNOSIS.

By E. MCC. CONNELLY,  
Surgeon (R.) U.S.A.

I wish to speak this morning in behalf of the step-children of Medicine, the most misunderstood, most abused, and, I think, the most neglected of all our cases, the psycho-neurotics.

In this group we are accustomed to place all members of that great family of so-called functional disorders, with the exception of the psychoses, but, up to a few years ago, having placed them there, we stopped. In speaking of them, medical works referred to "detecting hysteria" or like expressions which were a rather accurate reflection of the mental attitude of most physicians in regard to these cases. I think, however, that most of us have now reached a better understanding of these conditions and accord to them at least a portion of the sympathy to which they are entitled.

A psycho-neurosis is really a social disease, and not a physical one and is the expression of the individual's failure to adapt himself socially and is, in fact, an effort on his part to escape from reality, just as a psychosis is. But unlike most psychoses he does not have

the mental deterioration and loss of insight to dull his suffering. On the contrary, he is keenly alert to every detail, and one of his most common obsessions is the fear of becoming insane.

His pain, unlike the physical suffering of organic disease, is mental and from it there is no escape for it occupies his entire consciousness. The usual things which afford momentary relief, or at least consolation, to a sufferer from organic trouble are denied him, if he summons his recollections of the past, they merely serve to remind him of what he might have been. The thoughtful attentions of his family accuse him of his failure and he reproaches himself for not providing for them as he should or not taking a normal interest, and so he goes on exaggerating his trouble appreciating his inefficiency and condemning himself for it, but powerless to resist. His family, his friends, and, too often, his physician regard him as a near maligners, or he thinks they do. They cannot understand his absurd resistance to all reason, why he persistently clings to silly ideas, admitting them as erroneous in one breath and taking them up again in the next. They do not see why he will lie in bed when there is nothing the matter with him. He is met on every side by assurances that he is perfectly well and he is adjured to "forget it". But he cannot forget it, and he goes on through life turning to first one thing and then another in an effort at sublimation.

Until recently, the advocates of the various schools were more or less intolerant of each other's ideas on this subject, and when a discussion of psychoneurosis took place, one wondered as to whether they were talking about the same condition or not. Of late, however, the lines have become less sharply defined and a more liberal attitude is prevalent, thus a psycho-analyst will consider a deranged function of the endocrine glands, the advocate of focal infections, may inquire as to a patient's dreams or the exponent of heredity may change the patient's environment. This is probably a result of our broadened knowledge having made it impossible for even the firmest adherents of the various schools to encompass all phases of a condition so complex by their own

narrow creed. In short, we have come to see that we are not dealing with a single symptom or group of symptoms or yet with any one cross-section of a case, but with the case as a whole, and a very intricate and complex whole into which many things and many combinations of things may enter.

In considering a psychoneurosis we must look into: 1st the functioning of the various organic systems of the body—the cardio vascular, the respiratory, the digestive, the central nervous and especially the endocrines; 2nd, the general mental make-up of the patient, especially his emotional reaction; 3rd, his heredity, his past life, the experiences which may have rendered him sensitive to certain situations; 4th, his present life with especial reference to his habits—alcoholism, excessive work, etc.; 5th, his present situation in life, i. e., unhappy marital relations, distasteful occupation, uncongenial social environment, etc., and any one, or all, of these factors may play an important role in the etiology of the condition and must be thoroughly gone into before a complete understanding of the individual case can be arrived at. It makes very little difference whether the outward symptoms which have focused our attention on the individual be alcoholism, industrial inefficiency, or an emotional upset, or something else; we must locate the causative factor and treat it or else we have done little to help our patient to a permanent adjustment. I can best illustrate this by citing a case which came under my observation in a social way sometime ago. A young lady awakened one morning totally blind, her condition was properly diagnosed by an eminent ophthalmologist as hysteria. This opinion was concurred in by an equally prominent internist and together they treated the case by suggestion and, happily, the blindness disappeared in a comparatively short time. This was perfectly proper so far as it went for, of course, we must deal with symptoms in psycho-neuroses, as well as in other diseases, but they stopped there and making no effort to ascertain the underlying precipitating cause pronounced her cured. Yet something caused her blindness, and, not having been removed, it would seem logical to



suppose that she may have another attack manifested either by blindness or by some other symptom. The trouble was that they, and I am sorry to say, a large portion of practicing physicians, think of hysteria and other psycho-neuroses in terms of symptoms and not as disease entities. In physical ailments they go beneath the surface, and if a man has a pain in his side with temperature, etc., they are not satisfied with saying he has an appendicitis or a cholecystitis or what not—treating him until the acute symptoms disappear and pronouncing him cured—but they look for and treat the infected organ. In organic conditions they think of the disease as a whole, all the way from cause to end result, and the temperature of appendicitis is merely the red flag of danger and so they remove the infected appendix which is the real cause of the trouble. They do not think of hysteria in this way, therefore, the blindness constituted the entire condition and, it having disappeared, the patient was cured. The difficulty is that a psychic reaction may not be seen nor felt, nor can it be measured with a thermometer, and many able medical men do not think it worth considering as an active causative agent of disease. They look upon the subconscious mind as a vague nebulous thing of doubtful existence and do not regard it as a vast storehouse of past experiences, containing our own complexes together with the great mass of instincts which have gradually been accumulated through the ages and handed down to us by our ancestors. And still the influence of the subconscious mind may be so powerful as to produce blindness, paralyze the entire body or change the whole course of a life. They grasp at the more tangible symptom, appearing on the surface and, if they are successful in relieving that, are content. In doing this they leave the patient exposed to the danger of other attacks which may not, probably will not, be so easily relieved or will not be relieved at all and condemn him to wander from doctor to doctor or, worse still, from doctor to quack, dragging out a miserable existence of suffering and social inefficiency.

As I have said before, I feel that a great many factors are to be considered

in the etiology of psycho-neuroses, but I believe a most important development towards a better understanding of these patients has been the introduction of psycho-pathology. Through it we are arriving at an appreciation of the tremendous influence the sub-conscious mind has upon the conscious life. With it we are able to look upon a psycho-neurosis as a disease entity and know that the various symptoms displayed, such as the paralysis of the hysteric, the irritability and agitation of an anxiety-neurosis are merely the danger signals by which we are warned. Just as the fever of an organic disease is a warning and while we must do just as we do in an organic disease and treat these symptoms as they arise, it would not do to let an alcoholic drink himself to death while we arrive at the cause of his trouble any more than it would do to let the fever of a physical case sap the vitality of a patient while we are making the diagnosis. We must go further, as we do in the physical case, and must not stop at the subsidence of acute symptoms. If we can arrive at this point of view and learn to recognize these men in the early stages of their disease, we may do much to relieve the suffering of the world and do more for our own reputation as physician. The specialist only sees these cases through the family physician and he is the man who must act promptly, for, unless taken early, the prognosis, serious at best, is well nigh hopeless.

I would impress the fact that a psycho-neurosis is a serious condition not to be considered lightly, which has to be handled with as much tact and judgment, if not more, than any other condition, if not taken early, before it has become chronic, is most difficult to palliate and well nigh impossible to cure. I believe I can illustrate the importance of an early diagnosis with a case which I now have under my care. This man, an anxiety neurosis, was referred to me some time ago by one of my colleagues. He happens to be an old college-mate of my own, and knowing him as I did then, I realize, with great force, how truly pitiable his present condition is. The neurosis dates back some twenty years, and he has gone from physician to physician, from quack to

quack; he has taken so-called psychological cures that he chanced to see advertised, spending everything he had and during that time only once before, about three years ago, has he seen a neurologist. To-day he is practically unable to do any work. He spends most of his time at his lodging in a dismal rooming house where he stays because he knows someone there who will sleep in the room with him and he dreads to be alone for fear of destroying himself. He has spells of agitation when he suffers intense agony. I found him in his room one very cold day last winter and he had not thought to light the stove. The most I can hope to do for this man is to relieve him to some slight degree, but had his family physician, twenty years ago, recognized his condition and advised him properly, he would have been spared not only the suffering that he has undergone, but he would probably be holding a responsible position, and leading a happy self-satisfied life at the present time.

It seems to me that the lay physician either does not consider psycho-neurosis at all or he looks upon the term as a mere diagnostic catch-all into which he may relegate all cases for whose symptoms he is unable to immediately locate an organic cause. There is as much danger and injustice to the patient in one extreme as there is in the other. We are all familiar with the fact that the mental attitude of the patient enters into most illnesses. Frequently this mental attitude is more difficult to treat than the disease itself. The diagnosis is not an easy matter, and at times it is most difficult to know just where the organic stops and the psychic begins. We must differentiate the primary neuroses, which are purely psychogenic in their origin, from the secondary neuroses which have some physical basis. Above all, must we differentiate the neurotic reactions engendered by physical ailments which clear up with the disappearance of the organic condition. The first step in making any diagnosis, is a thorough, complete physical examination. We must particularly eliminate lues, foci of infection, disturbances of endocrine function and diseases of the central nervous system. Having done this, we are in a

position to look into the emotional reactions of the patient. We expect a psycho-neurotic to be absolutely sincere in his symptoms and to react to them with far greater emotion than a normal man would to similar pains. He magnifies them and builds them up and gives every indication of their being intensely real to him. The man who has a paralysis of his leg when in the hospital, but who can dance or play ball when he thinks himself unobserved is not a psycho-neurotic, nor is the man who one minute sits and tells of his feeling of unreality, of his inability to concentrate, etc., and the next discusses something else in a perfectly cheerful manner. The psycho-neurotic cannot get away from his trouble in this manner, it is always with him, he cannot forget it nor give it up no matter what he wants to do. A man with physical troubles, on the contrary, has periods in which his pains are, to a certain extent, relieved. He is also able to think of his condition and discuss it with more insight, and can take an interest in other things. Probably the most difficult type of cases to eliminate are the psychoses; especially those, such as Maniac, Depressive Insanity or Dementia Praecox, who display hypochondriacal ideas. Their mental mechanisms are more or less similar to psycho-neuroses, their motives are similar, i. e., to escape reality. They are equally sincere, and, in early psychoses, there is often no way of establishing a diagnosis except by prolonged observation of the course of a case. Indeed, one of the most frequent types of case that we see are mild praecoxes, which have become arrested and who present little deterioration, masking under the guise of neuresthenia.

The limits of this paper have caused me to deal with psycho-neurosis in a rather summary manner. There are many important points that I have left untouched, but I have attempted to show that they are not to be taken lightly, that they should be looked upon as having a precipitating cause for their symptoms just as any disease has. That many factors are to be considered in their etiology, and if results are to be had from treatment, they must be recognized early and treated properly. Finally, the diagnosis is not to be made



without due consideration. They cannot be disregarded at all, nor yet can they be looked upon as a scape-goat if we wish to do justice to our patient.

#### DISCUSSION.

**Dr. L. V. Lopez (New Orleans):** The psycho-neurotic has been described recently by an essayist in the *Journal of Psychiatry* as being a safety-seeking individual whose first defenses have broken down. I think that is probably the best definition we have. In other words, the psycho-neurotic is an individual that, owing to his inefficiency in adjusting himself to any difficult situation, will seek some avenue of escape. He cannot face facts. He may develop symptoms without an organic basis, he may develop certain mental tendencies which if taken in time he can be sensitized, just the same as bacteriological infection. It may be a sexual subject, it may be an occupational subject.

Doctor Campbell in the same journal brought out the fact that a great many of us overlook helping these patients to get away from themselves. He gave an instance of a man who was a drug clerk, and his occupation became obnoxious. He never did care for it, but went into it to please his father. It was a long time before Dr. Campbell discovered this fact, but when it was discussed frankly with the patient he gave up the occupation and became a perfumery salesman. He had always been sensitive to odors as a child, and liked this occupation. Instead of advising him to give up his disagreeable occupation, Dr. Campbell was able to help this man continue as a useful individual.

Therefore the psychiatrist not only has to attack the problem as a medical man; attack the symptoms locally, but he must go further. It is true, as Dr. Connely has emphasized, that thorough physical examination, including the laboratory tests, is of primary importance in every case.

**Dr. W. J. Otis (New Orleans):** The reason these people are stigmatized is failure to understand the psychology of the normal and the abnormal. That to a large extent is the fault of the medical colleges, where insufficient time is given in the curriculum to the study of psychoneurosis and psychiatric conditions, and failure of hospital authorities to insist upon a compulsory neuro-psychiatric service; to the failure of the individual to receive proper attention, and to the failure to provide pavillions for the study of these people.

#### PRACTICAL POINTS ON THE SIGNS AND SYMPTOMS IN THE DIAGNOSIS OF EARLY PULMONARY TUBERCULOSIS.\*

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In the field of tuberculosis there is nothing more helpful to both physician

and patient than the diagnosis of the disease in its incipiency.

Phthisis being essentially a disease of intermittent course, presents a problem of great interest to the internist and to those who are especially interested in phthisiology—the very first symptoms are generally overlooked or passed up as a slight febrile disturbance or labelled some other condition, subsiding again without arousing suspicion; it is for this reason the disease has been allowed to take a firm hold on the individual and nearly always reaches a diagnosable stage by the time the physician is called in. The profession and the public should realize that the disease can be diagnosed in its very incipiency—given the needful skill. Following such diagnosis the physician sees the possibility of restoring a high percentage of his cases to a reasonable working capacity. The patient is at once aware of the fact that he has a terrific battle to fight, and yet, he will be grateful for the discovery of the disease while the prognosis is good. How is such skill to be acquired? Skill depends upon two factors—(1) the natural equipment both mental and manual of the physician, and (2) the amount of time he can devote to the acquirement of the technical dexterity and special knowledge needed to carry out delicate manipulations and to interpret the results—full mastering of the subtleties of physical examination is absolutely essential primarily.

However, full knowledge of the newer methods is also needed so that they can be used with profit. I refer to those methods which are so liable to misinterpretation, viz., the tuberculin tests and the X-ray, both valuable in their right places, but when knowledge of them is absent or imperfect they are liable to lead to fallacies. A febrile reaction to tuberculin, valuable though it may seem can be demonstrated in 50 per cent of the clinically sound: how striking are right apex phenomena, root shadows on a skiagram, fever after exercise, and the like—till their existence as part of the varying normal is brought fully into view. In these the absolute is wanting. Complete and thorough knowledges of the normal is needed, against which disease must be

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balanced and this more so with physical examination than with the special tests. However, I shall endeavor to present the practical points on the signs and symptoms of early tubercular disease in so far as these are of especial diagnostic value.

Before going into the physical signs it is necessary that one should acquire a certain definite knowledge of the very early symptoms which may lead to a suspicion of the disease. It is the essential first step in its diagnosis; secondly the early symptoms supply an answer more potent than all biological investigations, to the pertinent question, "Is the condition at the present time active?" It is through symptoms that suspicion is first aroused and the patient led to consult a physician, whose attention must be directed in the right channel. As Pottenger truly remarks, "the first and most important point in the diagnosis of phthisis is to know when to suspect it"; for in many cases we have symptoms that do not point to the chest as the center of disease, but attention is drawn into other channels, therefore, the physician must familiarize himself with the common symptoms and especially those most likely to lead him astray.

In the insidious cases there may be symptoms which are likely to carry the patient far into the disease before advice is sought, and to this class belong quite a few:

(1) Here we have the individual at the beginning who appears to be *constantly fatigued, run down*, and losing in weight, applies himself to tonics.

(2) There are a group of cases somewhat similar with *neurasthenic symptoms* where nervous depression, insomnia, and digestive disturbances are striking, but the underlying cause of which may be tuberculo-toxic in origin.

(3) Cases which develop an *anemia*, perhaps, which is the most striking symptom likely to lead to error. This is especially in young girls, therefore, no chlorotic patient should be passed over without examination of the lungs.

(4) *Dyspepsia* is common early in the disease which is often of a flatulent type associated with anorexia.

(5) *Fever and rapid pulse* may be first symptoms leading to disease, but tachycardia and palpitations on exertion may occur without fever or the pulse rapidity be out of all proportion to the thermometric change.

Any departure from the normal range of temperature must be held sufficient to demand an explanation, of which tuberculosis may or may not be the right one. There is no kind of fever distinctive of tuberculosis, but there are often certain elements about its temperature changes which are somewhat characteristic of the disease. What are these characteristic temperature changes? Instability of body temperature over slight causes as reading, writing, a game of cards, mental worry, a thunderstorm, and the like causing a slight rise, but perhaps the most common characteristic temperature reading which is met with in the very early stage, is a low morning temperature to 97° F. or under accompanied by a slight evening rise, the whole fluctuation being excessive. This condition may be accompanied by a pulse frequency out of proportion to the thermometric change. The importance of this increased swing of temperature as evidence of fever must be clearly recognized. Fishberg has remarked that "a patient with a temperature of 99.8° F. at 5 p. m. has not only 1° above normal when his morning temperature is 96.5°, but 3.3° above normal, and should be considered febrile." Another point, which has been remarked about the fever of tuberculosis, is the curious retention of appetite in its despite. One writer has declared that "all patients who eat and digest their food well, in spite of fever, are tubercular," and Fishberg remarks in support that "anorexia is a constant accompaniment of fever, excepting the fever of early tuberculosis," and he says this is also true in the differential diagnosis between pneumonia and acute pneumonic phthisis; "in pneumonia" he says, "anorexia is invariably complete, while in acute phthisis the appetite may be retained more or less, and in spite of a temperature of 103° F. or 104° F., the patient is apt to ask for nourishment."

Again normal temperature must not be taken as evidence of health, for early



phthisis may be afebrile, at least for a time but in such cases that the result of exercise, first suggested by Penzoldt, gives valuable information. However, before considering this we must know that there is a physiological rise of temperature due to exercise. How are we then to determine whether or not this rise is due to a tubercular focus? Temperature in excess of the physiological rise is most likely indicative of toxins carried out from the tubercular focus into the bloodstream, whether mainly bacterial or, in part, produced by autolysis of the diseased tissues. A practical method to determine this fever test in any suspected case is to have a control who may be an attendant or nurse of known physical soundness, and the only requirement of the test is that the patient and control share whatever exercise or labour test decided upon, which may be a long brisk walk or some other active exercise. The temperature must be taken in rectum, for mouth temperatures are no criterion of the internal body heat. The difference in rise of the rectal temperatures becomes then the measure of the evidence of active disease in the case under observation. This test is especially valuable when the activity of a focus is in doubt or where a subcutaneous tubercular test has proven positive to small doses without corroboration from clinical signs. Where chronic disease is present, we must bear in mind, however, the possible effect of tolerance leading to a negative result. Apart from other proof of tubercle we must also bear in mind that fever obtained under these conditions is no specific test.

(6) *Laryngeal symptoms.* Ready tiring of voice, hoarseness and aphonia due to tubercular disease already planted in the lung but giving symptoms at an early stage in the larynx.

(7). *Pleurisy*, which forms, as a rule a striking picture, is one of the most important of the early symptoms of the disease, and the more delicate have our methods of investigation become, the higher is the percentage of idiopathic pleurisies proved to be tubercular. Jousset claimed to have found the tubercle bacillus in every one of 23 effusions investigated. Pleurisy is followed in a large number of cases by pulmonary

disease. Now comes the question, in what manner does a tubercular pleurisy effect the parenchyma of the lung tissue? It must be remembered that the lymphatics of the pleura pass to the root glands which will be readily rendered tuberculous, because the normal lymph flow in the lung is from the periphery inwards to the root, the upper and middle parts of the lung draining into the tracheo-bronchial glands, as was demonstrated by Ghon, the middle and lower into the bifurcation glands, and thence to the tracheo-bronchial glands; now when tuberculosis of the lymphatic glands arise, the lymph flow becomes obstructed in several areas and this blocking of the lymph channels leads to distension and finally to a backward flow either directly, from incompetence of their valve, or indirectly, through the free anastomosis of lymph channels in the lung whereby the lymph is drawn outwards into neighboring systems. However, whichever way impelled, the tubercle bacilli travel outward from the glands toward the periphery with a fan-shaped distribution passing through the lymphatic walls as they go and, hence, starting peribronchial inflammatory changes.

The relationship of pleurisy and phthisis was thoroughly investigated by Allard and Koester. Among 2,123 cases of phthisis a history of idiopathic pleurisy was obtained in no fewer than 650. Again of 514 cases of pleurisy with effusion, followed up over a number of years, 47.7 per cent developed pulmonary tuberculosis. Even after dry pleurisy 42 per cent of cases developed lung disease. In patients developing pleurisy, between the ages of 31 and 35, 60.4 per cent afterwards suffered with phthisis. In most cases (85 per cent of the total) symptoms of lung disease develop within 5 years of the pleurisy.

Idiopathic pleurisy is strong evidence of tuberculosis in lung or gland or that the disease is not far away and it is necessary to keep such cases under close observation especially during the first five years following the attack.

(8). Another symptom which may mask a beginning tubercular condition in the lungs is a series of "colds" or *bronchitic seizures*, which may long obscure the diagnosis, but although the

possible varieties of cough are only characteristic to the trained ear, therefore, it is best not to presume that, even with experience, an examination of the chest can ever be safely omitted in any kind of a cough that lasts over three weeks.

(9). *Hemoptysis* or the spitting of blood as a possible early symptom is important to recognize. The fact that after the coughing and spitting of blood no further symptoms may appear for years, and yet, the disease be smouldering unsuspected. As there are a number of other diseases which may cause sputum to be blood streaked, I will only add that these other causes be excluded before reaching a conclusion as to whether it be of tubercular or non-tubercular origin. Lord, among, 1,381 post mortems at the Massachusetts General Hospital, found 15 cases where a hemoptysis without subsequent illness had occurred at some time in their past. In 14 of these, pulmonary tuberculosis was found to have been the cause, and the fifteenth was due to syphilis. It is, then, of the utmost importance that with a free hemoptysis (other causes being excluded) phthisis should be presumed, and the patient be treated for this disease until the risk of extension can be definitely excluded.

And now having arrived at a conclusion from symptoms to a suspicion of tuberculosis infection we now pass on to some of the practical points on the physical signs of early tubercular disease.

*First Inspection:*—I am not going to go into the ordinary detail of inspection but only intend to touch upon those points which are liable to be found in the diagnosis of very early stages of the disease.

(1). Fix the apex of the heart and exclude any organic disease of this organ before passing on to the lungs.

(2). *Asymmetry*—Under this I wish to mention that in 50 per cent of 1st stage cases there will be noted that on the affected side the point of the shoulder and nipple are lower than the other side, the nipple smaller and seems to lie farther back. Behind, the scapula at the lower inferior angle may reach 3 inches below that of its fellow and different distances from the spine, i. e.,

nearer the spine, muscular atrophy of a little of the pectorals but more of the upper part of the trapezius. The superior border of that muscle instead of running straight from the neck to the shoulder, is flattened wasted, and hollowed out so that, as compared with the opposite side, much less of it shows above the clavicle when viewed from the front, and above the spine of the scapula, when viewed from behind. This is more marked in men than in women. As to causation, the sign is pretty certainly tuberculo-toxic in origin. The characteristic unilateral trapezius atrophy strongly suggests that the weakening of the muscle in the upper part causes the corresponding half of shoulder girdle to sag with the weight of the arm known as "*drop shoulder.*" The natural inferiority of the left side has nothing to do with it, for the right trapezius is oftener affected than the left agreeably with the fact that the right lung is more frequently tuberculous. Pottenger, like Fischer, describes a spasm of the muscle overlying a tubercular apex due to reflex irritation by nerve paths. This sign has a great practical, value, clean, objective, and definite.

*Palpation and Vocal Resonance.* . . . .

It is but seldom of real value in the diagnosis of early apical tuberculosis.

*Percussion.*..... . . . .

Up to the year 1875 there was an "era of heavy percussion." but after this, C. A. Ewald recommended the very lightest percussion (Schwellemvert percussion) for outlining cardiac dullness. I, personally, am in favor of the light percussion stroke because it is based on the physical law that the smaller the stimulus the slighter will be the change, in which it can be sensed, so that the note over dull areas was practically absent, and the difference between this "nothing" and resonance is more readily detected by the ear when between resonances of different amount. Here again the skill of percussion and the determination of the pitch and quality of the percussion note depends again largely on the acute and acoustive qualities of the auditory apparatus to distinguish the difference in musical tones, since the percussion sounds are of complex musical nature, it depends upon



the particular musical qualifications of the percussor, whereas, one may be able to recognize the difference in a full tone or semi-tone ordinarily, so the one who is particularly versed in musical adaptiveness may recognize even a quarter tone difference between notes. On very many cases, a change of percussion note precedes any auscultatory evidence of disease and is less open to other interpretation than are the changes in breath sounds which represent the earliest auscultatory signs.

In percussing we must at first mark out Krónig's area of resonance at the two apices, known as Krónig's isthmus, and the earliest changes consist in a blurring of the outlines of resonance. This may occur on both outer and inner side, but commonly, the inner side most markedly at first. These changes may precede auscultatory signs and also symptoms such as cough and expectoration.

In percussing the rest of the lungs, we must bear in mind that the note above the level of the second rib is normally of higher pitch than that over the chest below, and in percussing up the back, that the note normally rises in pitch from the base up, but so gradually as to produce no striking changes from point to point. Again, a somewhat puzzling, but not uncommon, discovery in comparing the two lungs in phthisis is a contrast impairment on one side in front, but on the opposite side behind, what has generally been referred to as "crossed dullness". This depends on a compensatory hyperinflation or "relaxation" over one surface of the diseased lung, which becomes dull in front and hyper-resonant behind, or vice versa. The hyperresonant note gives a false impression that the opposite lung is dull, and thus a doubt appears as to which is the diseased side, a doubt which other signs will, as a rule, dispel.

Since tuberculous processes tend to first appear, or at any rate reach the surface, in the neighborhood of the apex of the lung, it is upon this area that attention must be concentrated in the detection of the earliest evidences of disease.

Krónig's Isthmus in health is normally 5 cm. (2 inches) across, and should not fall below 4 cm. in extent,

such as found in persons of sedentary occupation,—clerks, tailors, and the like, and also in those of small stature. Apices of 3 1-2 cm. or below are decidedly pathological.

Topographical percussion is especially valuable in detecting the presence of old and healed disease. It furnishes incontrovertible evidence of the presence of deep lung changes, whether active or arrested, in cases of "central" diseases, such as hilus tuberculosis, before the process has yet reached at any point the surface of the chest. The physical examination of a difficult and doubtful case of chest disease is not complete without the comparison of Krónig's areas of resonance.

Percussion then supplies us with the following information:

(1). The resonant areas are equal and of normal extent: evidence of healthy lungs.

(2). The areas are of normal measurement, but one is displaced in position: a condition described by Krónig under the name of "physiological heterotopia".

(3). There may be a blurring of one or other, or both margins of the resonant area with or without some general loss of resonance: a condition suggestive of early phthisis.

(4). A difference in the width of the isthmus on the two sides may be discovered.

Unilateral expansion of Krónig's area may be due to compensatory emphysema, and when this is bilateral there may be slight widening of the isthmus. Unilateral retraction may be due to tubercular changes, recent or remote, or to collapse either passing or more permanent or to induration, the result of collapse. Bilateral narrowing is characteristic of hilus tuberculosis but may also be brought about by fibrosis, due to inhalation of dust.

In this country, D. B. Lees has been the exponent of percussion and has called attention to the value of systematic mapping out of the chest. W. Ewart also agrees that percussion signs precede auscultatory signs in phthisis, except in the catarrhal form of invasion. Though accomplishment in auscultation must not be neglected, yet there is little

doubt that gentle percussion, too little practiced hitherto, is the easier to master of the two methods, and yields more certain and fruitful results.

#### Auscultation

In the diagnosis of very early tubercular disease through auscultatory signs there are (1) Breath sounds, and (2) Adventitious sounds.

In regard to breath sounds,—Dr. James Jackson Jr., of Boston in the year 1833, while a student in Paris, communicated to the Société Médical d'Observation, a paper on the prolongation of the expiratory sound as an important sign of the early stages of phthisis. But since then Dr. W. F. Dutton, whose article appears in the Medical Record in 1922, claims that 90 per cent of the cases of pulmonary tuberculosis can be detected before the usual stereotyped signs and symptoms become recognizable. He found in an observation of 20,000 cases a condition not previously observed and described in text-books which was for a while puzzling, but on close observation the sound was found to exist only in one condition,—pulmonary tuberculosis. The sound is one which is only heard on *inspiration* and is the sound of a fine wood-plane often varying in pitch between that of a wood-plane on soft pine and a soft rasping, continuous or alternating through the entire period of inspiration but *not* usually heard on expiration. The sound is heard best in second and third intercostal spaces anteriorly, on the side affected, between the sternal line and the midclavicular line, and is produced by the abrasion of lung tissue or infiltration on the external surface or in the parenchyma of the lung and does not affect the voice sounds, but only the breath sounds of inspiration, and which is known as the *inspiratory sound*. It is found to be confirmed in 90 per cent of the cases which were diagnosed incipient tuberculosis. From my personal observation of 200 cases, I found this sign to be present in between 90 and 95 per cent of cases, which were confirmed by x-ray, and the tuberculin tests, and which presented the clinical symptoms as follows:

(1). Chronic fatigue with slight evening rise of temperature, slight loss

of weight, with little or no cough,—70 per cent.

(2). Loss of weight, slight cough, anemia,—20 per cent.

(3). Dyspepsia, flatulated type, with anorexia,—10 per cent.

It is the sound of great diagnostic value. The normal inspiratory sound is a soft blowing murmur except over the right apex, in which inspiration is higher pitched, and somewhat louder. I do not attach much attention to the so-called interrupted, broken, or cog-wheel inspiration, as much error is likely to be made in so far as we find such conditions in cardiac excitement, or the effect on the neuro-muscular mechanism of nervousness or cold.

Harsh breathing is not a sign of phthisis, but occurs where there is compensatory over-activity in the healthier lung, or over a healed focus, and is of the type of puerile breathing, a sound normally heard over the lungs of children.

In the interpretation of the abnormal respiratory sounds, two points must come out for investigation:—

(1). Are they strictly localized to a small area of lung tissue?

(2). Are they present at the same spot on more than one examination?

If they do not fill these requirements their significance vanishes, so it may be said that any anomalous form of respiration fixed and confined to the summit of the lung suffices for a provisional diagnosis of phthisis.

To recapitulate:

(1). Examine inspiration and expiration separately, directing especial attention to the former.

(2) Having discovered an abnormality consider the following points:

(a) Can it be only a physiological difference between the two sides?

(b). Is it heard over a wide area or strictly localized?

(c). Is its localization related to an area where tubercle commonly appears?

(d). Is its localization persistent; does it remain on more than one examination?

(e). Is it supported by evidence from the sources, such as impairment to gentle percussion?



Adventitious sounds or Rales:—If adventitious sounds are present during quiet breathing, the case is no longer early, but I will just pass on with a very few remarks in regard to this stage of the disease. What is known as the "alarm area," described by St. Chauvet, is a spot that lies midway on a line drawn from the space between the 7th cervical and 1st dorsal spinous processes to the tubercle found on the spine of the scapula about the junction of its inner and middle thirds. Emile Sergent noted the first physical signs at this spot in 68 per cent of cases. Again infiltration of the lower lobe at a point opposite the 5th dorsal spine, Fowler claims a very valuable aid in diagnosis, and infiltration at this point coincident with signs at the apex, is almost positive proof of tubercular disease of the lung. Especially characteristic in early stages, are a few, perhaps three or four, sticky crackles at the end of inspiration, only present after a cough and with deep breathing, but if present in large numbers and during quiet breathing the case is no longer early.

The significance of adventitious sounds in phthisis depends less on their character than on their persistent localization to a particular area of the chest, and on their predilection for the apex of the lung. Isolated involvement of the apex of the lower lobe is a valuable confirmatory sign if found, but it is but rarely present. Remember that non-consonating rales or one or both

apices, only stand for catarrh, and are, by themselves, no justification for a diagnosis of phthisis.

In closing it might be apropos to suggest that thus far our facilities for study of clinical tuberculosis have been inadequate. Let us with a better understanding of the infection, promulgate new ideas, let us open our hospitals to the tuberculous and give the young man an opportunity to study the disease. Let us avail ourselves of the opportunity which the large clinical material now offers and we will all become more proficient in the early diagnosis of tuberculosis.

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# New Orleans Medical and Surgical Journal

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## EDITORIALS

### FOREWORD.

Your new committee has assumed direction of the publication and management of the Journal through the Secretary-Treasurer, who has been made General Manager.

At the first meeting, this action being confirmed at a subsequent meeting, the American Medical Association was promptly notified that we would adopt the advertising policy under which practically all of the successful medical journals of the country are now operating. In the future no advertisement will be accepted for the pages of the Journal that does not meet the requirements of the Journal of the American Medical Association. Those advertisements now running in the Journal will be discontinued as soon as the contracts can be terminated. This insures a Journal of the highest type and one which we hope will merit and receive the cordial support of every physician in Louisiana. We further hope that in due time every physician in Louisiana who is qualified will become a member of the State Medical Society.

The purpose of the Journal is to assist the Medical Society to unify the profession of the State toward further realization of its standards and ever-increasing excellence of service. The

means to this end will be the organization of a medical society in every parish and through these societies to reach every man or woman who proposes to practice medicine in Louisiana; also to endeavor to exclude those unworthy. When this standard shall be attained all practitioners will be fully and thoroughly equipped for the great responsibility laid upon them.

### MALARIA MUST BE ELIMINATED.

It has been clearly demonstrated that where there are no mosquitoes there is no malaria. We know the source of malarial fever and its possible remedy. Too many of us have noted its results in desolated homes, broken constitutions and lingering sickness. It is our duty to try to shape public opinion, to teach that private and public action conjoined in time will bring a new order, and to press the matter till all the resources of the popular will, fully apprehensive of the danger and the remedy, combine to work out the desired results.

Reports from an industrial institution in Louisiana where the payroll numbers four thousand show that during June there were seventy cases among these employees, causing an average loss of eight days, or a total of 560 days for one



month, which the management recognizes as unnecessary and preventable.

It would cost the parish authorities five thousand dollars, the State Board of Health providing a like amount, to put on an all-time health department which would insure an all-time health officer, a visiting nurse, a sanitary inspector and a clerical assistant. The loss in one month to the industrial concern above mentioned would almost pay half of the expenses of the parish for the all-time health department for one year. This health department would conduct campaigns for the control of communicable diseases (which includes Malaria), eradication of soil pollution, child welfare work including medical inspection of school children and education in hygiene.

We, therefore, ask the members of the medical profession throughout the State to enter during the current year upon the investigation and discussion of this subject in such a way as to fully convince our people that our mission is not only to heal the maladies of the body, but to shape and determine means that may prevent them.

#### A HOME FOR PHYSICIANS.

The movement inaugurated by the former President of the State Medical Society, Dr. Paul J. Gelpi, to establish a home for some of the faithful physicians whose lives were spent in gleaning in barren fields seems to be striking a popular chord.

Dr. Gelpi has started a movement which should be taken up and carried to completion. It means that a home owned and supported by the Medical Society shall be erected where congenial surroundings could be provided for the superannuated of our profession. As endowment legacies and contributions come in, provision could be made for instruction and comfort of the orphans and physicians and for the care of the widowed where advancing years otherwise lone and cheerless could be brightened and the sorrows of life more readily borne.

#### MORE REPORTING FOR DOCTORS.

Acting on the suggestion of the House of Delegates of the State Medical Society at the recent meeting in New

Orleans, the State Board of Health has added to the Sanitary Code Article 511, which reads: "Physicians and midwives shall report congenital deformities with the name of parents and address." The originator of this idea was Dr. Truman W. Brophy of Chicago, who enjoys the distinction of being one of the leading oral-dental surgeons of the world, and is noted for his success in the correction of deformities of the mouth.

Many children come into the world with harelip, club foot and other deformities which, if brought to the attention of the institutions of the State, might be corrected and the child instead of being crippled and deformed could be trained to a life of usefulness—an asset instead of a liability to the community. It is for this reason that physicians are urged to make prompt reports of all congenital defects with the hope, where the parents are not financially able to provide the necessary attention, that arrangements can be made for treatment of the child in some institution of the State.

#### MEDICAL PROGRESS.

Every little while something will come up that will make us pause and ask ourselves if we are really making any progress in a medical line—meaning, of course, all branches of medicine and surgery. It is true that many supposedly valuable discoveries or inventions have not had the "staying power," that we are still groping in the dark, more or less, on the cancer problem; that no one has yet definitely isolated and described the causative organisms of variola, measles, acute anterior poliomyelitis and other acute diseases; but, on the other hand, we should stop to consider the strides made in preventive medicine, in surgery, in pharmacology, in endocrinology, in the past decade.

We should remember that many new things are over-rated at first, so that the pendulum swings back too far after the first trials; then the remedy or method assumes its real position, midway, as it were, placed there by the conservative element in our profession.

Many radical innovations are acclaimed too soon, especially by the laity and the lay press. We remember how,

only a few years ago, the country became excited over Friedman and his turtle-bacillus treatment of tuberculosis; the then Secretary of State of the United States honored him with his presence at his clinic in New York. Again, we have but recently heard much of the "Abrams' method of diagnosis and treatment," shrewdly advertised and many honest men fell for it; it has now been exposed in both lay and medical press. Such things as these really serve to impede medical progress, regardless of whether they are intended as frauds, are put out with honest intentions or are simply premature attempts on what might some day be real valuable contributions to our therapeutic armamentarium.

Again, too often do we have really valuable contributions hurt by promising too much for them by the lay writers. We had a glaring example of this only recently in the write-ups of Banting and Best's wonderful work in producing insulin; some newspapers and magazines gave out the impression that we now have a certain and sure cure for all diabetics; of course medical men, who were informed, could promptly explain this misinformation away, but, unfortunately, these reports had some of the doctors misled, too.

All these things should be considered in estimating our "Medical Progress." The fact remains, however, that we are going steadily forward, in spite of occasional backsets and the Journal confidently looks forward to better and better work in solving our riddles; we are optimists and believe that each decade will be an improvement over the previous one in this respect.

#### AN APPEAL FOR INFORMATION ON MATERNAL WELFARE .

The Committee on Maternal Welfare of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons is anxious to procure accurate information as to the progress which each State is making in the matter of Maternal Welfare in order to formulate a report for our annual meeting in Philadelphia, in September.

A preliminary programme was published in the issue of the American Journal of Obstetrics and Gynecology for June, 1923, which it is hoped may be a suggestion of an outline for national work among all organizations which have a common basic line of endeavor, including Medical Societies, Departments of Health and Commissions of Social Workers.

We shall be under many obligations if you will be kind enough to send at your early convenience a brief synopsis of the results accomplished in your State and most important if possible a contrast of the record of the clinics or regions where patients have been privileged to have pre-natal care with the statistics of the community in general where no supervision has been afforded the prospective mothers.

These it is planned to have incorporated into the completed survey to be presented to the Association and to be published in the Annual Transactions later on.

DR. HENRY SCHWARZ,  
St. Louis,

DR. GEORGE W. KOSMAK,  
New York City.

DR. GEORGE CLARK MOSHER,  
Chairman, Kansas City.



**ANNUAL REPORT OF THE RETIRING  
PRESIDENT**

By DR. W. H. BLOCK  
New Orleans.

It is prescribed by our by-laws that at the expiration of his term the retiring President shall give an account of his stewardship during his term of office, but if you have listened attentively to the reports of the various officers you will agree with me that there is little left for me to report. However, there are a few outstanding features of the term of 1922 that might bear repeating.

Our meetings during the year have been well attended, the average attendance, 125, which would seem to indicate that, at least they were interesting. We have had two special meetings which deserve special mention, one was our Lewis night, the other Pasteur night. "Lewis night" was in celebration of the 60th anniversary of the entrance into the medical field of our own dearly beloved Dr. Ernest Sidney Lewis. It was, indeed, a great pleasure to thus honor him, who stands among us as the nestor, commanding the respect and deserving the love of all his fellow practitioners. Long may he continue to live among us, is the urgent prayer of your humble servant.

The Pasteur meeting was an event of the year and seemed to be thoroughly enjoyed by all present. Every phase of the subject was covered by various speakers and the evening was one long to be remembered by those who attended and appreciate the position of Lewis Pasteur in the history of the world.

Many new books have been added to our library during the year and yet we can never have enough. We have tried to supply the demand as it came, but with our limited means we have done the best we could. I wish to commend the librarian and his assistant upon their faithful and diligent attention to the affairs of the library.

During the year there has been added

to our library a separate reading room at a considerable expense. Reports from the office and from individual members would seem to indicate that it was a wise expenditure of funds. Many members have taken advantage of and enjoyed the comforts of this new reading room.

Our office has been improved by the purchase of new desks and chairs so that at the present time it is well equipped and convenient to carry on efficiently the work of the society.

The finances of the society are in excellent condition. By that I mean that you do not have to worry much about meeting our actual expenses. What we must worry about is to find more money to maintain and improve our library. The librarian has told you that he has spent approximately \$1,900 this year; \$1,000 of which came from the 1921 funds and \$900 of the funds of 1922, plus the salary of the librarian, makes a total of about \$2,700 spent for the library during this year. This, of course, is a rather small amount to maintain a library the size of ours, about 9,500 volumes and 150 journals, and it is, therefore, a problem to find more funds for this purpose. During the year the Board of Directors established a Library Endowment Fund, into which was placed some funds of the society which had been saved from the interest on our capital of \$30,000. Some of this was in Liberty Bonds bearing 4 and 4 1-2 per cent interest. These bonds were converted into first class 6 per cent bonds as recommended to us by the bank so that we have a Library Endowment Fund now of approximately \$3,500 bearing 6 per cent interest. It is desirable to increase this fund as quickly as possible in order to establish a steady and fixed income for this one purpose only.

The membership of the society has increased by fifteen during the year. This is somewhat of a disappointment to me. I urged in my inaugural address a strenuous campaign to get into the society men who are not members and who are good material. There are many of them, there are about 600 doctors in New Orleans and we have a membership to-day of 448. This means that we must be more diligent in the build-

\*Read before the Installation Meeting, Orleans Parish Medical Society, Jan. 8, 1923.

ing up of our membership in the interest of organized medicine.

I would like to suggest a few changes.

Our method of electing candidates is not satisfactory. The procedure at present is, the application is posted for thirty days, it is then considered by the Board of Directors who make their recommendation to the society and the candidate is then balloted on. This latter has proven to be a cumbersome and inconvenient procedure. I suggest that the by-laws be amended so as to give the power to elect candidates for membership in this society to the Board of Directors after the usual procedure of posting for thirty days.

I believe that the Judiciary Committee should be given more freedom to act. As at present constituted it is for all practical purposes nothing but a reference committee. It takes up nothing but what is referred to it officially. I believe that the Chairman of this committee should be given power to, and it should be made his duty to take up with his committee and consider and investigate anything that may come to his notice, in whatever manner, that smacks the least bit of unethical conduct on the part of any member of the society.

The Treasurer of this society has been a most faithful and efficient officer and I have frequently wondered what would happen had we not had so efficient a man in that affair. I am forced to the conclusion that the position, at present, is overloaded with responsibility, for the reason that we now have quite a large fund to be manipulated, expended, invested, and budgeted and I firmly believe that this duty should fall not upon the treasurer, but upon a finance committee. With this in view, I strongly recommend the creation of a Finance Committee, whose duty it shall be to recommend to the society the proper disposition of its funds and to establish a definite budget. This committee to be one of our standing committees appointed annually by the President.

In closing, permit me to express my deep sense of gratitude for the co-operation that has been accorded me by the members and the officers of the society and by the office force during my term

of office. It has been a pleasure to work with them and it is just such harmonious work on the part of all concerned that makes for the betterment of our society. Especially do I wish to mention the work of our Secretary. She has been ever diligent, faithful, and attentive, always striving for the best interests of the organization. I trust that such interest and enthusiasm will continue.

In conclusion, I wish to say that, while, to-night, I lay down the gavel to be taken up by my successor, I am still a member, a member in the ranks where I have worked for fifteen years, always with pleasure and an earnest desire to build up, and I propose to again take up my former status and continue my efforts on behalf of the Orleans Parish Medical Society.

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**INAUGURAL ADDRESS OF PRESIDENT.\***  
By H. W. KOSTMAYER, M. D.

New Orleans.

There occur to me three excuses for talking to you to-night: First, custom demands it; second, there might be something new to present; and third, it might seem desirable to bring before you matters not new, but of considerable importance. Unfortunately, nothing new has been presented, yet I do not wish my remarks to fall altogether in the category of "custom demands," so I needs must burden you with what I deem important, if more or less familiar.

The affairs of Charity Hospital are not directly those of the Orleans Parish Medical Society, yet the two institutions are so interdependent that the following considerations seem not inappropriate.

For the first time in the history of Charity Hospital the Visiting Staff is in absolute control of the medical affairs of that great institution. This would mean the prompt advancement of the Hospital to a place second to none of its kind in this country were it not for limited money and the overhanging shadow of possible change through political influence. Through concerted effort appropriations have been raised to the limit of the State's resources. However, little effort has been made to re-

\*Read before the Installation Meeting, Orleans Parish Medical Society, Jan. 8, 1923.



duce expense, and practically no sustained attempt has been made to remove the Hospital from State politics. Both ends might be attained if this organization sponsored the movements with sufficient vigor.

It is doubtful if there could be instituted more economical methods than those in vogue at present in the Hospital. The trouble is, the Hospital serves by far too many. It has long been the boast of this community that Charity Hospital asks no questions, but serves rich and poor alike. Think what folly this boast contains! The daily average number of resident patients is about 885 at a daily per capita cost of \$1.60. I am convinced that this daily average should be reduced by at least 100, a daily saving of \$160, and a yearly saving of \$57,000! Apply this same principle to the outpatient department and it is readily discernible how much more efficient the Hospital could become for those actually entitled to its benefits. In this matter we certainly should not stop at Charity Hospital, but we should regulate the charity done by each and every medical and surgical institution in the city. This not simply to increase the income of the profession, which it most certainly would do, naturally, but primarily to protect the worthy and needy poor against the impositions of the unscrupulous well-to-do. Social Service seems the logical stepping stone to this end, but the Hospital Abuse Committee may devise more direct means. Without the undivided support of this body all efforts of this committee will come to naught. We earnestly ask your serious consideration of this age-old problem and especially assign its active development to the Hospital Abuse Committee.

The necessity for removing Charity Hospital from politics hardly needs to be dwelt on. It has been talked of at intervals since the Civil War. Hardly does it seem possible that an institution devoted to the care of sick and injured should be looked upon as political spoil, and the positions growing out of its activities as plums to be dished out to those who did most to elect a Governor, without any reference to special fitness or general hospital efficiency. And yet this has always been so and will be so

to the end unless the profession takes a firm united stand against it. There are several simple legal means of bringing this about. None can succeed, except through the efforts of organized medicine—none could fail, if organized medicine became a unit in forcefully demanding its accomplishment. To the Committee on State Legislation we assign this problem, but it is the problem of each and every member which can be solved only by an absolutely united profession. The new administration feels that it will have justified its existence if it can but add momentum to these projects. How irresistible this momentum may become depends on the profession—in a word, on organization.

To anticipate the criticism that this is purely a hospital affair, I would remind you that the two institutions are closely dependent on each other. Furthermore, this problem is my hobby, and I have taken advantage of the opportunity to tell you about it.

As for the Orleans Parish Medical Society directly, I feel that in most matters I'll be better prepared to talk to you a year hence. However, this much is certain; Scientific programs should be made as attractive as possible in order to bring out large gatherings. To this end, careful consideration has been given to choosing the Scientific Essays Committee. In the final analysis, success in this direction depends on the membership. The administration, therefore, earnestly beseeches each and every one to remember all that this Society means to the profession, and to make regular attendance a part of the obligation of membership.

For the finances of the Society we have modest ambitions: To budget within the revenues and to live within the budget; and to add to the building fund, if ever so little, in order to establish the precedent that part of our annual income must go to increasing this fund against the time when we shall again possess our own home.

Assuming the duties of this office to-night gives me great pleasure and arouses no little pride. I am pleased because it seems but a short while (now that the years are gone) since I first entered the ranks of members, and I am proud (pardonably, I hope) because this

office is the greatest gift the medical profession of New Orleans can bestow. Feeling thus, I can not find words to express my gratitude and appreciation. I do sincerely and heartily thank you for the honor you have done me. Right or wrong, successful or otherwise, you may rest assured I will always be doing my utmost to prove worthy of your confidence.

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**REPORT OF THE SECRETARY FOR 1922.\***

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*To the Officers and Members, Orleans Parish Medical Society:*

It is my pleasure and privilege, as Secretary of the Society for the year 1922, to render a brief report of the principal activities. These have been many and varied. Several of the reports will probably be covered more thoroughly by the respective chairmen of the Standing and Special Committees.

The strength and stimulus of any scientific body, as you know, is judged by the character of its meetings, and it is with considerable pride that I refer to the splendid meetings we have had during the year.

Of the twenty general meetings, thirteen were for the purpose of listening to scientific papers; two were joint clinical meetings with the Charity Hospital Staff; three were the regular quarterly executive meetings (held in accordance with the by-laws), and two were special meetings. The latter were called for the purpose of discussing and taking action on the proposed legislation relative to the Physicians' Occupational Tax. In connection with this, I might say that, although our efforts were not entirely successful in this matter, some pressure was brought to bear and it is believed that in due time the physicians' demands will be recognized and the tax either modified or abolished.

Above one hundred and twenty-five (125) numbered the attendance at the regular meetings, against ninety (90) as reported last year, with the exception of "Lewis' Night," at which practically three-fourths of the membership was present. The executive meetings showed an attendance of more than twice that of last year.

Thirty-two (32) papers were read during the year, the subjects being distributed as follows: Medicine, Surgery, Gynecology, Obstetrics, Laryngology, Pediatrics, Radiology, Pathology, Urology and Chemistry. Of the thirty-two (32) papers read during the year, five were by invited guests.

Early in the year we listened to two excellent papers on "Warfare Gases" by Lieut. Col. Gilchrist. These papers were extensively illustrated both with still and moving pictures. One of the meetings was called at the request of several members to hear a paper on "Twilight Sleep" by Dr. Bertha Van Hoosen, of Chicago. This meeting was well attended and the paper was illustrated with charts and lantern slides.

The papers read by our own members represented much thought and work and some of them, tedious research—such papers are valuable additions to the scientific contributions of the Society. The evening of April 24th, affectionately known as "Lewis Night," at which Dr. Ernest Sidney Lewis read a paper entitled "Reminiscences," will ever stand out in the minds of the present membership as having been one of the happiest, most delightful and enthusiastic and entertaining meetings in the history of the Society, at no other of the members, certainly never a more time has there been a larger attendance beautiful demonstration of love and united interest for a man or a subject. As a fitting climax to this memorable evening, a silver loving cup, tendered by members of the Orleans Parish Medical Society, was presented to Dr. Lewis.

The men who so generously and ably contributed to "Pasteur Night," placed this Society on a footing with the best in the country, and to them we owe a debt of gratitude.

Twelve regular meetings were held by the Board of Directors and special meeting, which was called to consider some communications which had come to the Society in reference to advertisements which appeared in the local papers concerning some members of the Society.

One of the important steps taken by the Board, early in the year, was to have the Liberty Bonds of the Domicile Fund registered. Another important

\*Read Before the Installation Meeting, Orleans Parish Medical Society, Jan. 8, 1923.



action of the Board was that of creating a Library Endowment Fund, making provision for a nucleus, at least, for the Library in the future. Unsuccessful effort was made by the Board to secure, through the House of Delegates of the Louisiana State Medical Society, the balance left from the Entertainment Fund of the American Medical Association Meeting. We were successful, however, in acquiring through the influence of one of our members, a sufficient amount to purchase a multigraph and an addressograph for the office.

The Society is fortunate in having obtained, through the generosity of the Board of Administrators and the School of Medicine of Tulane University, additional space for the Library. A quiet Reading Room is now available for all members.

The influence of the Society in the community has been repeatedly demonstrated by the many communications received from various medical, civic and other organizations, requesting information, suggestions and frequently advice.

During the year several communications were referred to the Committee on State Medicine and Legislation. This committee responded promptly to all requests.

One member asked for Medical Defense. This request was investigated by the proper committee and forwarded to the Medical Defense Committee of the Louisiana State Medical Society.

Several matters of importance were referred to, and investigated by, the Judiciary Committee. These matters were handled with discretion and tact and the finding of the committee were accepted and filed.

The Membership Committee was abolished by an amendment to the by-laws. The duties of this committee is now referred to the Board of Directors, except that at the conclusion of the investigation of an applicant, they report their recommendations in writing to the general society, at a regular meeting, and the applicant is voted upon by secret ballot.

we close the year 1922 with a membership of 448, distributed as follows:

Active Members .....	412
Associate Members .....	20
Honorary Members .....	16

Resigned .....	2
Moved from city.....	4
Dropped (delinquency) .....	4
Loss by death (3 active, 2 honorary) .....	5
Total new members, 1922, were 29 (28 active, 1 associate).	

In addition, there are 13 applications pending.

The Secretary, who is or should be conversant with the most intricate workings of the Society, would not justify the trust imposed if, after a year's work (and in my case two years of service) she did not have some suggestions to offer for the advancement and betterment of the organization.

I would, therefore, like to make the following suggestions:

*Firstly:* At present is it difficult to get other than an approximate number of members who actually attend the meetings. Would it not be interesting to know the exact number

*Secondly:* An essayist is limited, according to the by-laws, to fifteen minutes for the presentation of a paper. To conform to this regulation many valuable points are frequently overlooked or often intentionally left out of the body of the paper with the anticipation that said points of interest will be brought out in the general discussion that follows. Such details and stenographic work as is essential should not be expected of the Secretary. Several methods have been tried, none being entirely satisfactory. It seems to me the work should be delegated to an experienced person.

*Thirdly:* With the present arrangement regarding meetings of different character, we are unable to anticipate more than twelve or thirteen evenings for scientific sessions, unless special dates are arranged. Would it not be possible to use the summer months for clinical meetings in the various hospitals and reserve the cooler months for scientific meetings?

*Fourthly:* The officers of the Society are all busy practitioners in one line or another; they are not trained for, nor do they desire to do detail work such as is necessary in an organization of this kind. My experience has taught me that, at present, the greatest need of the

Society is a thoroughly competent and experienced Assistant Secretary.

In conclusion, I wish to thank the President and each member of the Board of Directors for their most helpful suggestions and every hearty cooperation. To the general membership I haven't words to tell you how very gratified I am over the appreciation you have shown by the attendance at the meetings and the quick response to the many efforts we have tried to put forth in behalf of the Society.

I wish to thank the various committees for their promptness and assistance in handling the various matters referred to them.

Our greatest success throughout the year revolves around the Scientific Meetings, and this success has been due solely to the conscientiousness of the Chairman and Members of the Scientific Essays Committee.

I finally desire to thank the help in the general office for their many efforts in carrying out the work allotted them.

Respectfully,

ELIZABETH BASS, M. D.,  
Secretary.

#### REPORT OF RESOURCES ON HAND JANUARY 1, 1923.

Domicile Fund, Liberty	
Bonds, par value.....	\$30,000.00
Library Endowment Fund,	
Bonds, par value.....	3,500.00

Library Endowment Fund,	
Savings Account .....	1.25
Medical Relief Fund, Sav-	
ings Account .....	92.88
Petty Cash Account, balance	
on hand .....	4.28
Library Fund, checking ac-	
count .....	373.92
General Fund, checking ac-	
count .....	409.43
Total resources .....	<u>\$34,381.76</u>

#### REPORT OF THE GENERAL FUND.

January 1, 1922, to January 1, 1923.	
Balance on hand January 1,	
1922 .....	\$ 101.45
Total receipts, including bal-	
ance January 1, 1922.....	8,074.70
Total expenditures .....	<u>\$7,848.77</u>
Actual book balance January	
1, 1923 .....	\$ 225.93

#### REPORT OF LIBRARY FUND.

Bank balance January 1, 1922..\$	481.85
Receipts during 1922.....	5,518.07
Total amount of fund.....	<u>\$5,999.92</u>
Expenditures .....	\$5,798.10
January 1, 1923, bank balance	373.92
Checks outstanding .....	172.10
Actual book balance, January	
1, 1923 .....	<u>\$ 201.82</u>



# PROCEEDINGS OF HOTEL DIEU STAFF

JUNE, 1923.

The President, Dr. Homer Dupuy, in the Chair.

## A PECULIAR CASE OF ECTOPIC GESTATION.

*Dr. E. W. Walet* presented what he considered unusual symptoms in a case of Ectopic Gestation as follows: Amenorrhoea three months, no vaginal bleeding, was seized with acute and severe girdle pain in lower abdomen, attended by nausea, and was vomiting. Family doctor made diagnosis of acute appendicitis and sent to Charity Hospital. Pelvic examination revealed uterus about normal in size and a mass the size of a lemon to left of uterus, D. & C. revealed clean decidua membrane, Laparotomy revealed a Rt. tubal pregnancy about three months' duration to which was attached the vermiform appendix. Right tube and ovary and appendix removed.

*Dr. H. E. Nelson*—The unusual feature of this case was the absence of bleeding per vaginam. Most cases bleed profusely.

*Dr. J. A. Danna*—Why was a curettage done. Is it not true that there is very often a second extra uterine on opposite side? Did Dr. Walet make an attempt to save ovary on that side? Why did he not attempt to save right ovary? I do very few curettages.

*Dr. M. Couret*—I believe the procedure of curetting the uterus in suspected extra-uterine cases advisable because it

tells immediately the diagnosis. I have never seen an ovarian pregnancy and do not think it exists. The ovary should not be removed in these cases.

*Dr. Walet, closing:* I did a curettage purely for curiosity. My case was not absolutely certain. It was the only thing to explain all this woman had. I simply did a little dilatation. I did this to see if I could find my diagnosis. No real reason for going in abdomen, explored for the sake of palpable mass. It was a time for a decidual recurrence. I believe there is such a thing microscopically speaking as ovarian pregnancy because if it happens to rest there, why not take it on to ovary. The reason I removed the ovary, because when you open a cavity like that and the pelvis is filled with blood, the technique is to go down and remove the mass. You hold the mass with the hand and pull it out. You remove the mass containing the extra-uterine tube and ovary. The tube was ruptured and filled with placental remains. It was removed because it was a mass and not worth while saving. Dr. Levy asked about the microscopical report. It is a general rule that when a patient is shocked that you operate immediately. The operation itself is comparatively so simple that you do not shock your patient much. No reason why could not have tubal pregnancy on both sides.

## NEWS AND COMMENT

The City Council of New Orleans, on Tuesday, finally passed the ordinance to accept the donation of Mrs. Dibert for the construction of the Tuberculosis Hospital. The location of same to be in the Seventh Ward of the city. This has been under consideration for several years and its final disposition is looked upon with favor by the public, and especially medical men of the City and State.

Charity Hospital Appeal is receiving another boost in the form of a baseball contest to be indulged in by the Visiting Staff versus the House Staff and Intern Staff of the Charity Hospital. The contest gives all outward appearances of being one of keen rivalry, and promises lively entertainment to all those having attended.

The Delegates and Members of the Louisiana State Medical Society in attendance at the American Medical Association Meeting held in San Francisco have nearly all returned and report a very interesting and profitable meeting. Some still remain in the West visiting medical centers and otherwise enjoying well-earned rest and vacation.

It is with a great deal of pride that we note that some of our members received notes of distinction. Dr. Amedee Granger received a prize, and was especially commended for the Scientific Exhibit in Radiology. Dr. Urban Maes was honored with the Chairmanship of the Surgical Section of the American Medical Association for 1923-24.

The following physicians have returned and resumed practice after absence from the city for rest or study: Drs. G. C. Antony, J. C. Hardy, J. H. Landrum, A. M. Peters, R. O. Simmons, R. B. Wallace, and J. L. Wilson. Still absent: Drs. E. I. Gandy, J. I. Peters, Clarence Pierson, G. M. G. Stafford and J. A. White.

The Avoyelles Parish Medical Society met at Dr. Philip Jeansonne's residence, Plaucheville, Thursday, June 14th, at 7 p. m. An interesting clinical programme was discussed, preceded by a magnificent banquet served by Mrs. Jeansonne, assisted by a half dozen of the fair damsels of the village.

Dr. G. R. Beridon, President, in the chair.

The following members answered the roll call: Drs. Beridon, S. J. Couvillon, Ducote, Roy, Jeansonne, Chatelain, Poret, Quirk, Matthews, Buck; absentees, Fox, Plauche, W. F. Couvillon, Barbin, Lafargue, Tarleton, Jones, de Nux. Guest, Dr. Will Buck of Kinder. The minutes of the Hessmer, April 19th meeting were read and adopted.

Dr. S. J. Couvillon and Dr. R. G. Ducote reported a very interesting case of Placenta Praveia. The discussion by the various members proved lengthy and interesting.

Drs. Jeansonne and Roy reported a series of successful emergency operations for suppurating appendicitis, which were performed in private homes. The patients are all being prepared for radical operations later.

Dr. Roy reported an interesting case of toxemia of pregnancy and in the discussions Dr. Matthews pointed out the necessity of a thorough and complete quantitative urinalysis. In connection Dr. Couvillon described a case of cholecystitis complicating pregnancy, with kidneys in good condition and that as a last resort transduodenal lavages were instituted, establishing a miraculous relief and that 90 days later patient gave birth to a full term child without any further complication.

Owing to unavoidable reasons, Dr. W. F. Couvillon, essayist on a "report of a few unsuccessful cases," was unable to present his paper.

By Dr. Chatelain, that a vote of thanks be tendered Dr. and Mrs. Jeansonne for their genial hospitality and banquet tendered the society, and an amendment by Dr. Couvillon, that the Avoyelles Parish Medical Society meet in the different villages of the parish hereafter and that the expense of entertainment be borne by the local profession.

Bunkie was selected as the next meeting place on Thursday, August 14th, 1923, at 7 p. m. Dr. E. Stanley Matthews will present a paper on "Burns" and Dr. Kirby A. Roy will open discussion.



# New Orleans Medical and Surgical Journal

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## ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

### TRACHEO BRONCHIAL DIPHTHERIA.\*

HOMER DUPUY, M. D.,

We, perhaps, flattered ourselves that we had sounded and explored all the depths and shoals relating to Diphtheria. But have we exhausted the subject? For instance there has been very little said or written about that anatomical type of diphtheria which begins in the lower respiratory tract. It is not unlikely that a primary invasion of the trachea and bronchi is of more frequent occurrence than we suspect. The lamented (1) Lynah of New York made a notable contribution on this subject. I reported several cases before the (2) Southern Medical in 1921. A primary implantation of diphtheria in the larynx is now a common observation. The early and noticeable voice disturbance quickly attracts attention to the nature of the trouble. But this signal of dysphonia is wanting when the site of the local lesion is well below the larynx. There is no alteration of the voice. Moreover, there is not the faintest evidence of membranous deposit in the nose or throat. Hence the delay in making a diagnosis. Oftener there is not the slightest suspicion of the true nature of the affection. Tracheo-bronchial diphtheria may be mistaken for broncho-pneumonia or capillary bronchitis. Treating it as such, a fatality must inevitably be the outcome. Our post mortems in the Charity Hospital have proven this beyond the peradven-

ture of a doubt. When the invasion begins in the lower air-tract the microscope is of no assistance. The usual cultures taken from the throat will of necessity be negative. For the infection is not in that area. The patient will most probably die long before the membranous exudate extends upwards. And owing to technical difficulties, even cultures taken within the trachea may be negative.

So it is that we are driven to the clinical picture as our only source of reliance in making the diagnosis. The most suspicious sign of brewing trouble is the gradual onset, as a rule, of a persistent and progressive dyspnoea which increases to that degree when there is "tirage," or sinking in of the suprasternal and diaphragmatic regions.

At first the breathing is wheezy and noisy not unlike that heard in asthmatic attacks. Inspiratory stridor soon manifests itself and dominates the symptom-complex. There is a croupy cough, but the voice is clear—unaltered—and this is a very significant fact. There is "air-hunger" with the restlessness and frequent change of posture accompanying this pathetic state. While the toxemia is reflected in the rapid heart action and rise of temperature, the dominant signal of distress is the mechanical obstruction to breathing. Unquestionably, differentiation from other respiratory affections in some cases will prove a perplexing problem. But the knowledge that this type of diphtheria is with us opens a new avenue for thought. We will, and we must find the

\*Read Before Orleans Parish Medical Society, June 11, 1923.

way to diagnose with certainty such a condition.

Case 1—Miss Pedau, trained nurse at Hotel Dieu, complained of a "bad cold" April 2, 1923. Seen by Dr. Louis Levy April 4, 1923, who immediately recognized that there was some deep seated trouble in the lower respiratory apparatus other than the more common ailments. Pneumonia, broncho-pneumonia, and asthma were excluded. I was called by Dr. Levy who considered the patient as being very sick. She presented marked dyspnoea, an anxious look, cyanosed finger tips. There was suprasternal and diaphragmatic retraction. Inspiratory stridor heard over the trachea. The cough was croupy but the voice was perfectly normal. Nose and throat showed no signs of any membranous formation. The laryngoscope revealed a normal-looking larynx. Below the larynx, a mass of membrane protuded from the lumen of the trachea. Culture of *B. acidophilus* to 1 c. c. of trachea. Diagnosis: Tracheo-bronchial diphtheria. 20,000 units anti-diphtheritic serum given. Culture taken from trachea. Dr. Couret reported positive diphtheria. April 5, decided improvement; April 6, temp. 102; resp. 24; pulse 118. Dyspnoea returned and patient complained of difficulty in breathing. 20,000 units of serum again given. April 7, dyspnoea completely disappeared, temp. 99; pulse 98; resp. 20. Two control cultures April 16-18 negative. Uneventful recovery. Remarks: Dr. Levy's appreciation that the symptom-complex was not that usually seen in purely pneumonic and bronchial affections led to an early diagnosis. The drawing of the laryngoscopic image by Dr. Jules Dupuy we believe to be among the first of its kind in which a tracheal diphtheritic membrane is pictured through the laryngoscopic image.

Case 2—Baby Beatrous, age 18 months. Normal, healthy looking. On night of May 9, 1923, the baby seemed cross, irritable, with temp. 99. Purgative and alkaline sol. prescribed. Next morning croupy, and respirations labored. Absolutely no hoarseness. Syr. Ipecac prescribed. May 10, toward evening, pronounced respiratory effort. Child tossing and frequently changing position in bed. Decided "air-hunger." Temp. 101. Culture from throat negative for diphtheria. Nose and throat

normal. Dr. M. P. Boebinger saw the patient and made a diagnosis of Tracheo-Bronchial diphtheria. Dr. Homer Dupuy called in consultation verified this diagnosis. 20,000 units of anti-toxin given at 10 p. m. Within a few hours there was a perceptible improvement in the breathing. By noon the next day the dyspnoea had disappeared. The child seemed practically well. Remarks: We have here a rather sudden onset. The absence of any membrane in the throat, croupy cough, the notably clear voice. Inspiratory stridor heard over trachea. The progressive dyspnoea clinched the fact that in 98 cases out of 100 this was diphtheria involving the lower air tract. The rapid cure with a large dose of serum confirmed this. Credit is due Dr. Boebinger for an early diagnosis.

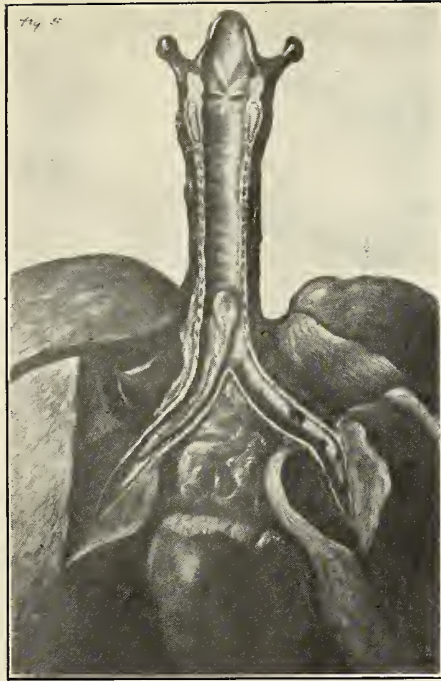
#### DISCUSSION.

**Dr. Jacobs:** As a matter of interest, I should like to say a few words about a case I had a few years ago. I gave the child 10,000 units of serum. I made a culture from the throat and the report from the Board of Health was negative. The child was admitted to Presbyterian Hospital and the trachea was practically clear, though cultures came back staphylococcus, but there was nothing to be seen. I believe Dr. Patton had a similar case in the hospital.

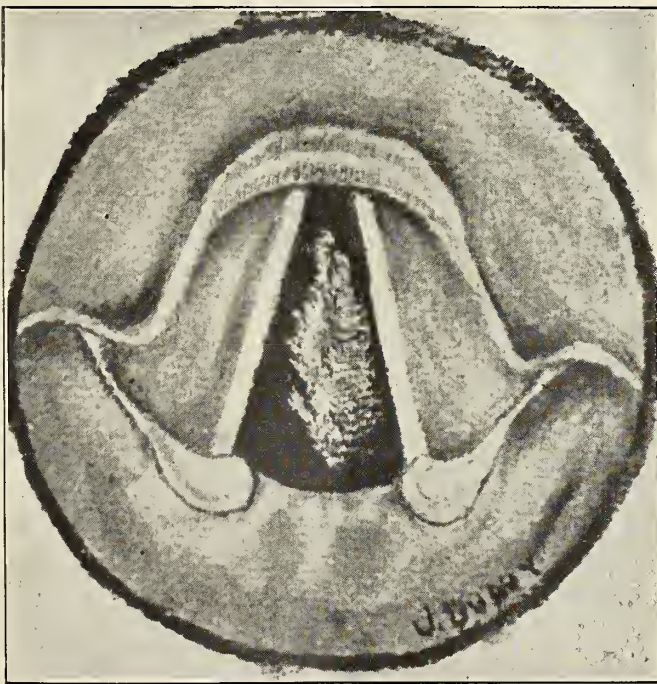
**Dr. Johns:** While I also, with Dr. Dupuy, deplore the lack of laboratory help in diagnosing laryngeal and tracheal diphtheria, I cannot help but feel that ear, nose and throat specialists do not take full advantage of the laboratory where it is possible to help. For instance, the routine puncture of ear drums to my knowledge is never routinely accompanied by the examination of the discharge by direct smears or cultures. Two cases this past winter have brought this out to me very forcibly. In the first instance I was called to make a spinal puncture on a moribund baby which had had both ear drums lanced and with the history that only a small amount of discharge had been obtained. Smears and cultures both showed innumerable diphtheroid bacilli and the cultures bore out the diagnosis of diphtheria. Spinal fluid was normal, but the baby died of the diphtheritic toxemia. The second case was an ear in a small child that had been discharging pus for about four months and was accompanied by occasional rise of temperature, considerable anemia and other evidences of severe toxemia. Diphtheria bacilli were demonstrated in both smears and cultures.

**Dr Dupuy (closing):** I was in hopes that some of the internists would enlighten us relative to making a differential diagnosis between this anatomical type of diphtheria and broncho pneumonia and capillary bronchitis. Tracheo-bronchial diphtheria must be so fatal a disease, owing to the large surface involved with the concomitant large absorp-





From Lynah. Shows membrane in bronchi and in lower trachea.



Drawn by Dr. Jules Dupuy from the Laryngoscopic Image.' Case 1.





tion of toxins, that early diagnosis is essential if we are to prevent a fatality. Certainly this affection involving only the lower air tract must be with us oftener than we suspect. Given a marked dyspnoea with a perfectly clear voice, with an obstruction to the incoming current of air in one lung, with an emphysematous picture giving the chest the usual barrel shape, we are justified in suspecting diphtheria of the tracheo-bronchial area. As already emphasized we cannot rely on the microscope as the membrane is low down and the throat is absolutely free from any exudation. Here is a field in which the bronchoscope and direct laryngoscopy will prove very helpful in arriving at the correct diagnosis.

#### ELIMINATION OF *B. COLI* FROM CULTURES BY INOCULATION WITH *B. ACIDOPHILUS*.\*

C. C. BASS, M. D. and W. E. JONES, M. D.

(From the Laboratories of Clinical Medicine, the School of Medicine, Tulane University, of La.)

*Bacillus coli* is a constant inhabitant of the intestinal canal of man and all warm blooded animals. It is one of the chief gas producing, putrefactive bacteria in the intestinal flora of man. Measures intended to reduce or prevent putrefaction in the intestinal canal must reduce or prevent the growth of *B. coli* and other putrefactive bacteria. Although it does not necessarily follow that what occurs in the test tube in this regard would also occur in the intestinal canal or vice versa, we thought that it would at least be interesting to see what the results would be if cultures of *B. Coli* were inoculated with *B. acidophilus*. It will be remembered that we already have abundant evidence that inoculation of the food in the intestinal canal with sufficient quantities of *B. acidophilus* causes rapid reduction and sometimes practically complete elimination of *B. coli* from the feces.

At first we attempted to more or less duplicate in the test tube the conditions which are provided in the intestinal canal by feeding milk cultures of *B. acidophilus* daily with meals. A tube of 1 c. c. sterile milk was inoculated with 0.1 c. c. 24-hour broth culture *B. coli communis* and in addition 0.1 c. c. of a 24-hour milk culture of *B. acidophilus* (*acidophilus* milk). Plates made from this immediately after inoculation showed 94% *B. coli* and 6% *B. acidophilus*. This was incubated for 48

hours. Plates made at this time showed no *B. coli* and 100% *B. acidophilus*. Thus *B. coli* in milk were reduced from 94% to none within a period of 48 hours by inoculation with 0.1 c. c. milk culture of *B. acidophilus* to 1 c. c. of the colon infected milk. This is considerably lighter inoculation than is brought about in the digestive tube when a patient drinks 500 to 1000 c. c. of *acidophilus* milk daily with meals.

In another experiment with *B. coli communis*, 1 c. c. of milk was inoculated with 0.1 c. c. 24-hour broth culture of the colon bacillus and in addition 0.1 c. c. of a 24-hour milk culture of *B. acidophilus* (*acidophilus* milk). Plates were made at once and these showed 94% *B. coli* and 6% *acidophilus*. The inoculated tube was incubated for 24 hours. Plates were again made and these showed about 1% *B. coli* and 99% *B. acidophilus*.

One-tenth c. c. of this milk still containing a few *B. coli* was added to 1 c. c. sterile milk. To this was added 0.1 c. c. 24-hour culture of *B. acidophilus* (*acidophilus* milk). This was incubated for 24 hours and plates were then made. These showed no *B. coli* present. In this case *B. acidophilus* reduced the *B. coli* to about 1% in 24 hours and again caused them to disappear entirely in 48 hours.

Exactly similar experiments were made using a broth culture of *B. coli communis* in place of *communis*. The quantities' time and conditions of the experiments were otherwise the same. The results were the same as those obtained with *B. coli communis*; viz, that colon bacilli were reduced to about 1% in 24 hours and eliminated entirely in 48 hours.

To what extent these test tube results can be transferred to the digestive tube must be determined by other experiments. It is reasonable to expect that whenever the diet consists of sterilized milk and other equally favorable food, somewhat similar results may follow ingestion of milk cultures of *B. acidophilus*. If so, *B. coli* should be quickly eliminated from the digestive tube following ingestion of appropriate quantities of *acidophilus* milk, provided the only food taken consists of sterilized milk or other equally appropriate material.

\*Read Before Orleans Parish Medical Society, June 11, 1923.

**THE POSSIBILITY AND PRACTICABILITY OF TRANSFORMATION OF THE INTESTINAL FLORA BY FEEDING MILK CULTURES OF BACILLUS ACIDOPHILUS.\***

C. C. BASS, M. D. and W. E. JONES, M. D.

(From the Laboratories of Clinical Medicine, the School of Medicine, Tulane University of La.)

If we examine microscopically the feces of the average individual, we find that they consist mostly of large numbers of bacteria of different kinds and in addition thereto, usually a smaller amount of undigested food particles. If we employ appropriate cultural methods, we are able to isolate from the feces pure cultures of many different strains and type of bacteria, the relative proportions of these varying greatly with different individuals and under different conditions. Although some bacteria of many different species are taken in with the food and drink, these constitute only a fraction of those found in the feces. Therefore these bacteria have grown in the digestive tube and it is known that a large part of the multiplication takes place low down, particularly in the colon. The digestive tube is a favorable culture tube and the food in different stages of digestion, contained therein, furnishes favorable culture media.

If these bacteria which can be isolated from the feces in pure culture are grown in suitable culture media, which we make from ordinary food substances, we find that some of them are capable of producing in the culture tube numerous toxic substances of complex nature. Some of them produce gases and some cause putrefaction of animal proteins. It is these putrefactive bacteria that produce toxic substances. There is good reason to believe and, in fact, we know that these bacteria produce similar substances when growing in the digestive tube. It is generally believed that these products of bacterial decomposition in the intestinal canal, and especially of putrefaction, may be absorbed into the system and may have more or less harmful effects.

The theory of autointoxication was perhaps first advanced by Senator (1) in 1868. Bouchard (2) claimed that the amount of the end products of putrefaction demonstrable in the urine

was a measure of the putrefaction in the intestinal canal. The theory was further popularized by Metchnikoff (3) who believed not only that the toxins produced in the intestinal canal were the cause of various diseases and abnormal conditions, but that they actually caused aging of the tissues of the body, senescence, and particularly premature old age.

Metchnikoff's claims attracted still greater attention because he proposed a method of controlling or preventing the growth of harmful bacteria in the intestinal canal by deliberately feeding cultures of other harmless bacteria. The *B. bulgaricus* was selected. The theory was that this organism would multiply in the intestinal canal and thereby crowd out the other bacteria.

Later researches, perhaps the first in 1908 by Herter and Kendall (4), have shown that *B. bulgaricus* not only cannot multiply but that it cannot live in the lower part of the intestinal canal. Large quantities of cultures of this organism may be taken in the form of milk cultures or otherwise, but none appear in the feces. In spite of this fact, which has been confirmed by numerous investigators, "B. B." preparations are still widely prescribed, thanks to the advice of the detail man and the literature put out by commercial interests.

The intestinal flora of the normal healthy nursing is much simpler than that of the older child or adult and, in fact, consists almost entirely of two species, *B. bifidus* and *B. acidophilus*. *B. bifidus* is more numerous during the first few weeks or months, but as soon as the baby begins to take some other food besides breast milk, *B. acidophilus* usually predominates. As the individual grows older, however, this organism which predominates in the intestinal flora during early childhood gradually gives place to the conglomerate flora of the older person. Nevertheless, a few *acidophilus* bacilli can usually be demonstrated at any period of life.

Please note that *B. acidophilus* is a normal inhabitant of the intestinal canal and that it can multiply there to the extent of becoming the predominant organism present. Another fact to note is that its normal habitat is chiefly the lower part of the digestive tube,

\*Read Before Orleans Parish Medical Society, June 11, 1923.



the part where the other supposedly harmful bacteria also grow most luxuriantly.

The growth of *B. acidophilus* in the intestinal canal is influenced largely by the diet of the individual. Lactose and dextrin are both especially favorable and, in fact, we can feed temporarily and experimentally a sufficient quantity of these substances to transform the intestinal flora from the usual mixed type to a much simpler one dominated by *B. acidophilus* and containing few or no putrefactive bacteria. It requires rather large quantities of these sugars, usually 300 grams or more daily, to bring about this result.

No doubt the presence of much lactose in the diet of the nursling is an important factor leading to the maintenance of the usual *B. acidophilus* flora.

Taking large quantities of cultures of *B. acidophilus* also leads to rapid transformation of the intestinal flora in most instances, provided the diet is at all favorable. This method of changing the intestinal flora and thereby preventing intestinal putrefaction has recently been impressively brought to notice by Rettger and Cheplin (5), of the Sheffield Scientific Laboratories of Yale University.

These investigators have shown by experiments on animals (rats) and on man that by feeding sufficiently large quantities of a fresh culture of *B. acidophilus* in milk, which they call "acidophilus milk," the intestinal flora may be simplified, the putrefactive bacteria being greatly reduced and *B. acidophilus* being established as the dominating organism.

In our own investigations we have endeavored to learn more of the fundamental influences which determine the intestinal flora and to apply this information in attempts to improve methods whereby transformation of the intestinal flora may be brought about in the most effective and practical manner. Brevity precludes giving much details here.

When properly produced, acidophilus milk makes a choice beverage. In fact, it is considered by most of those who have tried it, as the most palatable form of sour milk (or buttermilk) they have ever tried. Twenty-four hour cultures

are most palatable and are most useful for the purpose.

To get best results, the acidophilus milk should be taken with the meals, preferably some with each meal. The object is to heavily inoculate the food with viable bacilli. The quantity required is from one pint to one quart daily. Practically, a glass of acidophilus milk with each meal gives best results.

In persons taking acidophilus milk in this way, the number of *B. acidophilus* in the feces rapidly increases with corresponding decrease and sometimes practical disappearance of all other bacteria. A high degree of transformation is accomplished within a period of from 4 to 10 days, and this is usually maintained as long as the acidophilus milk is continued.

Coincidentally with the transformation of the flora, the feces change from the former neutral or alkaline reaction to the slightly acid reaction characteristic of the feces of the normal healthy baby.

In conclusion, by feeding a milk culture of a supposedly harmless organism, *B. acidophilus*, it is now possible and practical to transform the intestinal flora so that the putrefactive bacteria are greatly reduced or entirely eliminated. It remains for the future to show what, if any, therapeutic value this may have.

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#### DISCUSSION.

**Dr. Eustis:** I do not like to see this paper go by without discussion. Dr. Bass has brought out two very important points which I find most of the clinicians overlook. He stated that diet plays an important part; as he states, you cannot transform the intestinal flora by diet alone; on the other hand, we cannot expect to get *B. Acidophilus* unless we have food for them to grow on. I have watched these not only from the clinical

standpoint, but from the examination of the urine, and I find that lactose gives the *B. acidophilus* something to grow on and plays an important part in diet.

Now there is one more point in regard to the *B. bulgaricus*. Dr. Bass stated that it has never been known to grow in the intestines. If introduced into the stomach they will not grow, but if introduced into the duodenum they certainly will. It is the H Cl of the stomach that kills them.

**Dr. Johns:** I think that the really important thing brought out in this work of Drs. Bass and Jones is that it is actually possible to cause a complete transformation of the intestinal flora with *Bacillus acidophilus*, though the vast majority of cases where other set experiments with such bacteria as *Bacillus bulgaricus* were made have failed even under purely experimental conditions. People cannot be treated intelligently until this fact has been established. The problem now resolves itself into the question of studying cases and knowing just what kind of cases to apply it on before we can expect to get any favorable results. Most of the experimental cases that they have been working with have been undiagnosed cases with all sorts of vague complaints that could not be cured by any known medical means, and naturally only a few of these cases have shown definite improvement, so that the practical application of this treatment still lies in the future.

**Dr. Bass:** The addition of lactose to the diet has been given consideration. It has been found that it takes large quantities of lactose to accomplish very much; about ten per cent gives the best growth of *B. acidophilus*. A culture medium of any kind should contain about 10 per cent of lactose. We have gotten a baker here to make whole wheat bread, to which he adds 10 per cent of lactose. This bread contains a great deal of bran and other material and is a convenient form of giving lactose. This ought to be especially useful in cases of constipation.

I am inclined to believe that we have in the past been overlooking the chief source of putrefying bacteria in the intestinal canal. We take into the gastro-intestinal canal large quantities of bacteria with our food and this is no doubt an important source of intestinal bacteria. It is very easy, if one will take the pains to do so, to avoid many of the things which do contain large amounts of bacteria.

Another source of inoculation of the intestinal contents is the mouth and teeth. The individual who does not brush his teeth well after meals has large numbers of bacteria growing in the food remnants in his mouth, including *Colon Bacilli*. When such an individual eats again, he very thoroughly inoculates the food he takes.

#### URETERAL CALCULI.\*

By P. J. KAHLE, M. D.,  
New Orleans.

Much to my surprise in going over my histories, of the many cases seen which were suspected of having ureteral calculus, I find only sixteen in

which a diagnosis was made and proved, either by X-ray, by means of the waxed-tip catheter, or by having the patient pass the calculus subsequently. There were several more who were seen after an attack of renal colic and the probable expulsion of the calculus, but as the diagnosis in these cases could not be verified, I am not taking them into account. By far the largest number of cases referred, with a tentative diagnosis of ureteral calculus, were suffering from other conditions which stimulated it. It will not be uninteresting, I believe, to mention them, as a differential diagnosis had to be made. Among these conditions in which there was fixed pain in the lower lumbar region, along the course of the ureter, in the suprapubic area, in the upper abdominal quadrant, or even renal colic or pains radiating to the genitalia or over the anterior surface of the thigh, may be mentioned renal calculi, calculi in the pelvis of the kidney, nephroetosis, renal tumors with hematuria, four cases of undiagnosed renal hematuria, one case of glomerulo-nephritis with marked hematuria, ureteritis, renal infection with obstruction both intra and extra-ureteral, uro-pyelectasis, due to retro-displacement of the uterus, pelvic inflammation, ovarian cysts, or fibroids, sacro-iliac separation, tabes, seminal vesiculitis, prostatitis, cholelithiasis, two cases of appendicitis, in which the appendix was retrocecal, and one with a retrocecal appendix that had herniated and ruptured extraperitoneally, the pus extending up to the right kidney.

On the other hand, in the cases which proved to be suffering from ureteral calculi, some had been treated and even operated for other conditions.

From the small number of cases in this series there can be no conclusions drawn, but adding this mite to the already existing fund of information on the subject may help in a small way.

On analyzing these cases it is found that the calculus or calculi occurred in the right ureter twelve (12) times, or in seventy-five (75) per cent; twice in the left or in twelve and one-half (12 1-2) per cent; and twice bilaterally, or in twelve and one half (12 1-2) per cent of the cases. Twice, or in twelve and one half (12 1-2) per cent, the cal-

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culi were multiple, and incidentally, these were the cases in which they occurred bilaterally.

Six cases, 37 per cent, were in females; and 10 cases, 63 per cent, in males.

The ages of these patients, showed that six were between 20 and 29; four between 30 and 39; three between 40 and 49; two, between 50 and 59; and one, between 60 and 65.

These figures relating to sex and to the occurrence and numbers of calculi, differ from those given by observers such as Braasch and Judd, who report large series in which the element of chance is lessened. As to the age at which calculi are more frequently found, the figures conform very nicely. So too, in the localization of the calculi, there is less discrepancy, and we find that in these sixteen cases the upper third of the ureter was the seat of the calculi in two cases, 12.5 per cent; the lower third, including the intravesical portion of the ureter, in fourteen cases, or 87.5 per cent; while none were found in the middle third.

The symptoms in these cases showed that pain was present in all. There was a history of renal colic in thirteen cases; in three the pain was fixed, and had led to a diagnosis of appendicitis in two cases, and to cholelithiasis in one. Temperature was recorded in five cases; the lowest showed 100 degrees, the highest 107 degrees.

Frequency, urgency, or tenesmus, or all three symptoms, were present in fifteen cases at some time or other. In one case, no history of bladder disturbances could be obtained.

Gastro-intestinal disturbances, ranging from slight nausea to vomiting, were present in all cases having renal colic.

On examination, eleven of these patients were in splendid physical condition, while five were toxic as a result of co-existing infection and urinary stasis due to the blocked ureter or ureters. In three of these cases the kidney was enlarged and palpable, the obstructing calculus being at the pelvic brim in one case and at or near the ostium in two. There was gross hematuria in one case, microscopic blood in fifteen. Pus and bacteria were found in eight cases at some time or other, while in three cases leucocytes but no bacteria were found.

Albumin, varying from a trace to 2 per cent moist, was found in ten cases. In five, no record was made at the time and I am at a loss to know whether this means that no albumin was found or whether it was not looked for. In one case no albumin was demonstrable at any time.

Fifteen of these patients were cystoscoped and the ureters catheterized; one patient, a doctor, having passed a calculus, refused cystoscopy.

Only eleven of these patients were X-rayed. Of the remaining five, no X-ray was taken, because at the time of the examination the calculi were impacted and protruding from, or presenting at the ureteral orifice in two cases; in one, because a stricture of the ureter was found and was believed then to explain all symptoms, when the patient was referred to me after having been nephrotomized with failure to find a calculus which was apparently in the pelvis of the kidney and which had been diagnosed by X-ray only; in two cases, because the calculi had been expelled and all symptoms had abated. Of the eleven cases X-rayed only six showed the presence of calculi. This was confirmed as being a shadow in the line of the ureter by ureterogram, or by the insertion into the ureter of an X-ray catheter. In this connection, the suggestion by Bransford Lewis, that metallic instruments be introduced into the ureter to the point of obstruction and that a picture be taken after having displaced the calculus by means of this instrument, in order to prove that a shadow is cast by a calculus in the ureter and not by a phlebolith or a calcified gland in the line of the ureter, seems to me to be a good one and should lessen the chances of error, especially if an ureterotomy is contemplated.

In five cases, the wax-tip catheter was used for diagnosis or for corroboration. In two of these the X-ray was positive for calculi, while in three, the plates were negative for calculi.

Five cases were successfully treated medically, although four of them had had the ureters catheterized for diagnosis and had had papaverine injected into the ureter following the diagnosis. It may be that the catheterization and the papaverine were in part responsible for expulsion of the stone. The other

passed the calculus before cystoscopy and catheterization were undertaken for diagnosis.

These patients were given at the time of the renal colic morphine 1-4 gr. and atropine 1-150 gr. This was repeated every three hours when necessary and was supplemented in three of the cases by benzyl benzoate (benzylets). In only one instance did the benzylets seem to give relief. In the other two the morphine-atropine combination had to be resumed.

In ten cases the condition of the patient, due to complications, or to failure of the expectant treatment, led to their being handled by endovesical manipulations.

In one case with bilateral multiple ureteral calculi, three calculi from the upper third of the left ureter were removed at the time of a pyelotomy for the removal of a large recurrent calculus in the left pelvis. The calculi were milked into the pelvis and removed through the incision in the pelvis. This was done, however, after five calculi in the lower third of the right ureter had been caused to pass into the bladder by dilating the ureter, first by means of the Garceau catheter no. 11, and subsequently by means of olives, up to no. 21, and the high frequency current. After each dilatation papaverine (2 c. c.) was injected with a view of diminishing peristalsis and contraction of the dilated ureter. The calculi were expelled from the ureter after the fourth treatment. The calculi in the left ureter were not discovered until at operation, as they did not show in the X-ray plates taken. Both kidneys showed normal function. There was infection of the left pelvis.

In a second case, a right pyelotomy had been done twice, the second time for a recurring pelvic stone. At the second operation a catheter was passed from the pelvis to the bladder meeting with no obstruction. Some months after there were renal symptoms and a small calculus was found in the upper third of the right ureter. The urine which had cleared following the pyelotomy again showed evidence of infection. The kidney function was normal at all times. The Garceau catheter and papaverine (2 c. c.) were used twice and in ten days was followed

by the expulsion of a small phosphatic calculus.

The following case is interesting: an X-ray diagnosis of renal calculus was made and a nephrotomy had been done for its removal. It was not found and the patient was referred to me "to find out what was wrong." On examination this patient showed infection of the right kidney and a stricture in the lower third of the right ureter about two and one-half inches from the bladder. No. 4 catheter was introduced with difficulty through the stricture, while a no. 6, the Garceau catheter, and the olives were arrested always at the same point during the course of several examinations. The function of both kidneys was normal. No X-ray or ureterogram was made, as a diagnosis of pyelitis and stricture of the ureter seemed to be the correct one, and as the patient improved and ceased to complain after a few dilatations followed by pelvic lavage. On passing a wax-tip catheter no scratch marks were obtained and the possibility of a calculus in the pelvis of the kidney or the ureter was completely discarded.

After dilating the ureter every five days for two months and after the ureter had been dilated until it took a no. 21 olive without difficulty, the urine having cleared, the patient was discharged and requested to return in 30 days for further observation. On his next visit he brought in a round calculus of the mulberry type, 3-8 of an inch in diameter, which he had passed a few days after his last visit.

There can be no doubt that at the time of the operation, under the effect of the anesthetic, the calculus passed into the dilated ureter and was shelved at the site of the stricture. A dilated ureter above the stricture and consequently the calculus not coming in contact with the wax-tip catheter, was responsible for the failure to obtain scratch marks. I feel certain that this calculus, both on account of its size and its consistency, would have given a shadow and its presence would have been proved had an X-ray been taken.

Still another case in which a picture of a small calculus impacted at the upper end of the lower third of the right ureter, proved by the arrest of the catheter at this point and the pyelo-



gram, which showed a very much enlarged pelvis, with infection, offers some interesting points. In this patient, who was 63 years old, and who had had a cataract extraction, there developed temperature, chills, and an acute iritis with exudate into the vitreous, co-incidentally with, or shortly after pain and tumefaction in the right upper quadrant of the abdomen. The eye condition was attributed to a focal infection and this patient was referred for the purpose of determining if the infection was in the kidney. Several urinalyses showed at times a urine which was fairly clear and again a urine with pus, some blood, and colon bacillus. The patient was cystoscoped and catheterized—the left ureter being catheterized to the pelvis, while on the right side the catheters (4-6) could not be passed for more than a few inches. No urine could be obtained from the right side. The following day, the patient was rayed and pyelographed after having taken benzyl benzoate during the preceding twenty-four hours. At this time it was again found impossible to introduce catheters past the obstruction, although a small amount of infected urine was obtained. The Walther dilator was then used and after a bit of manipulation was passed. This was followed by the ready introduction of a no. 6 catheter., and the collection of urine which showed a pyo-pyelectasis. This was confirmed by the pyelogram. The patient's temperature fell, the tumefaction was reduced and nothing was done for 24 hours except to administer benzylets, morphine and atropine when necessary, and copious drinks of water. Within 48 hours the symptoms became aggravated and on ureteral catheterization it was found that the calculus was again impacted and that catheters could not be introduced. The Walther dilator was again used successfully and after thorough dilatation papaverine sulphate was injected into the ureter, after thorough drainage and washing with boracic acid solution. Forty-eight hours after this patient passed a small spiculed calculus and all symptoms subsided. The eye however had to be enucleated three weeks later.

The next case is unusually interesting because of the multiple bilateral calculi present, their size, and the un-

sually high temperature which accompanied the blocking of the ureters. In this case I was called in to see a patient who was extremely septic, who was nauseated and was vomiting, whose pains were general over the abdomen and more marked in the right iliac fossa. There was pain radiating to the areas supplied by the genito-crural. There was considerable distension of the abdomen. The possibility of a retrocecal appendix with a retroperitoneal pelvic cellulitis was suggested by the clinical picture, but a history of having passed "sand" prompted an urological examination. An X-ray showed bilateral calculi in the lower third, almost at the intravesical portion of the ureter and of such size and shape that a positive diagnosis of calculus was to be confirmed. The urine was slightly cloudy and was found to contain pus and colon bacillus. On cystoscopy, the bladder showed a mild acute cystitis which might have accounted for the urinary frequency with urgency and tenesmus. On catheterization of the ureters the right catheter met with obstruction in the intravesical portion of the ureter, while on the left, after a bit of manipulation, it passed an obstruction at the same level as on the right side. The urine from the left kidney was clear and showed only a few leucocytes. A pyelogram was not attempted, as the patient's condition did not justify it. A successful attempt was made to pass the obstructions on both sides by using the Walther dilator. Papaverine was injected, after draining the pelves. The urine on the right side was purulent. There was some relief following this and the temperature subsided somewhat. Within 24 hours, however, all symptoms returned, to be followed by relief after the same treatment as given above. It was noticed, however, that the calculi had made no progress from their site at the previous examination. During the following 24 hours, the patient had repeated chills and the temperature rose until it reached 107. In spite of the extremely septic condition of this patient his total count did not exceed 13,000 whites. No functional test was done.

The patient's condition was such that it was deemed advisable to temporize no longer, to do an open operation if

necessary. However, a last attempt was made to remove the calculi from the ureters by endovesical means and was successful. The rongeur forceps were introduced into the right ureter and opened carefully. This was repeated several times and each time could be felt to be grating against the calculus. Finally with the forceps opened wide against the stone, the forceps was closed and it was felt that it had taken a bite on the calculus. Traction was made and the stone delivered into the bladder. This was followed by a free gush of purulent urine. The same procedure was undertaken on the left side with the same fortunate result.

The patient's general condition was such that no attempt was made to remove the calculi from the bladder, he was sent back to the room, given benzylets, to facilitate the passage of other smaller calculi present, and was put on forced fluids. During the following twenty-four hours the temperature dropped 9 degrees to 98 and remained normal. The chills abated. The calculi that had been delivered into the bladder were passed per urethram the following morning. The urine remained cloudy. The white count, 48 hours after, was still up to 12,000, but there was no sign of sepsis or even of discomfort.

Subsequently, the ureters were catheterized, the pelvis washed with silver nitrate 2 per cent. In the course of 15 days the patient was discharged, with a clear urine and a normal kidney function.

The following case is interesting only because a suprapubic cystotomy had been done for the removal of a vesical calculus and yet the persistent cystitis would not yield. This patient came to see me five weeks after his operation and was found to be suffering from a chronic cystitis secondary to a pyelonephritis with calculus in the lower third of the left ureter. This patient had never had his ureters catheterized. Following repeated dilatations of the ureter with the Walther dilator, followed by the use of papaverine sulphate and the administration of benzyl benzoate in the internals, this patient, in about two months, passed a calculus, 3-4 of an inch long by 1-2 inch in diameter. As this calculus could not be passed from the bladder and endovesical attempts

at removal by means of forceps were unsuccessful, a litholapaxy was done under spinal. His urinary symptoms have improved, but a mild pyelonephritis still persists.

The next two cases were interesting, as they demonstrated the value of the scissors and the forceps in dealing with calculi impacted at the ureteral orifice.

The first of these two cases was that of a male who had renal colic and in whom a diagnosis was made of calculus in the lower third of the right ureter. Following the injection of papaverine through a no. 6 catheter, this calculus, small in size and irregular in shape, finally became impacted at the ureteral orifice and was accompanied by violent renal colic. The patient was brought to the office and on cystoscopy the tip of a stone could be seen presenting at the right ureteral orifice. An attempt to grasp it with the forceps was unsuccessful and the ureter was incised by means of the scissors. The forceps were then introduced and the calculus readily grasped and delivered from the ureter and then from the bladder.

In the next case there are several points of interest, among others, a mistaken diagnosis due to incomplete examination because of the patient's general condition. I was called in consultation to see an emaciated and profoundly septic woman who had renal colic, who was having frequent and prolonged chills and who running a temperature of 103. A nephrectomy had been considered and information was desired as to the presence and function of the other kidney. On cystoscopy a calculus was seen impacted at the mouth of the right ureteral orifice. As the forceps could not be inserted through the meatus, it was incised. This liberated the calculus somewhat and it projected into the bladder where it was easily grasped and delivered. Thickropy pus flowed from the right ureter. Then the ureter were catheterized and a functional test done. The right kidney showed no output of phtalein in half an hour, while the left kidney showed only 10 per cent in that time. From the nature of the pus coming from the right ureter, the absence of function, and the enlarged kidney, which was distinctly palpable, a diagnosis of calculous pyonephrosis was made. No X-rays were taken be-



cause of the fact that the patient had not been prepared and because the general condition would not permit of delay. The low function of the left kidney and the poor condition of patient led me to advise a nephrostomy, to be followed by secondary nephrectomy, if necessary, when the general condition had improved and the left kidney compensated. At operation, under gas, the kidney was opened from pole to pole, but no calculi or abscesses were found. To save time, the kidney was not sutured, but was simply packed with sterile gauze to prevent oozing and the wound closed with drainage. There was a rather slow but uneventful convalescence and the patient was sent home to regain her strength. The secondary nephrectomy has not been necessary, as this patient has fully recovered and her right kidney seems to be functioning properly.

There can be no doubt that this patient was suffering from a pyo-pyelectasis due to the impacted calculus and that the function of the kidney had been arrested by the pressure of the contents of this closed sac—that a kidney will come back and its function restored when the pressure is relieved, even after having been blocked for weeks, is, I believe, not an uncommon observation. I saw a case referred by Dr. Wm. Perkins and Dr. Leckert some years ago in which a patient had a mass in the abdomen which was diagnosed by me as a pyelectasis due to an obstruction at the uretero-pelvic junction; from this kidney no flow of urine could be obtained. A pyelogram was not successful, as no fluid could be made to enter the pelvis. It was after eight weeks of frequent catheterization that the obstruction was finally passed and was followed by a constant and prolonged flow of clear urine and a diminution of the mass. A functional test of the urine failed to show any trace of phthalein from that kidney. After dilatation with the Garceau catheter and the maintenance of the caliber of the ureter at this point—this kidney gradually improved in function and was finally perfectly normal. I have been seeing this patient once a year for ten years and he has had no recurrence of his symptoms, while his kidney has maintained itself normally.

A recent case, still under treatment,

is that of a young man with an impacted stone in the lower third of the left ureter at the uretero-vesical junction. This stone which failed to show by X-ray, but which was diagnosed by the history of renal colic, by obstruction to the catheters at a fixed site in the ureter, and by obtaining scratch marks on a wax-tip and on a filiform, has so far resisted all attempts at dislodging. There is no infection, as yet, and as drainage from the left kidney is not being interfered with very seriously, although there is a slight uro-pyelectasis and some dilatation of the ureter, I expect to temporize. In this case, morphine, atropine, benzylets, papaverine by injection into the ureter, and the dilators of Walther and Bransford Lewis have been unsuccessful. I have even used a filiform whip such as we use for strictures of the urethra, but have not been able to introduce it for more than two millimeters past the stone. It was during a manipulation—rotation on its axis of the filiform—that the scratch marks were made on the filiform. This was verified by introducing another new filiform and again obtaining scratch marks.

In the only case, of the sixteen reported here, in which an ureterotomy had to be done, there are a number of points of interest, of which the most interesting is the fact that although the ureter was dilated to a caliber greater than the smallest diameter of the stone, it was impossible to bring it down. The stone was sometimes at a higher level following manipulations, but after two months of endovesical operative methods, the patient consented to be operated. This girl of 20 gave a history of pain in the right side for ten years. These pains were in the nature of a colic, but the persistent discomfort in the right iliac fossa led to the diagnosis of appendicitis. In the course of the routine examination at one of our clinics, pus was found in the urine and she was referred to the G. U. department. An X-ray showed a shadow in the lower third of the ureter. On catheterization, obstruction was met at a site corresponding to the shadow. The urine showed pus and colon bacillus. Test showed a markedly reduced function. An ureterogram showed the shadow to be in the line of the ureter. The ureter

above the stone was somewhat dilated. The pyelogram showed a pyelectasis.

In the course of treatment by dilatation with the Walther dilator and then with the Bransford Lewis dilator and on taking pictures to see whether the stone had made progress, we found that at times the calculus was at the level of the fifth lumbar vertebra, but that it never did come below the level of its original site at the sacrococcygeal joint. Attempts were made to grasp it with the rongeur forceps, olive oil was injected into the ureter, papaverine was injected, but to no avail. Because of the infection, the damage to the kidney, as evidenced by the low function, the recurrent attacks of renal colic, and because of the constant pain, operation was advised and accepted.

The ureter was readily reached thru a Gibson incision, incised in its long axis about two inches proximal to the calculus, the calculus was milked up to the incision and delivered. A Garceau catheter was readily passed to the bladder. No sutures were used to close the wound in the ureter. A drain was inserted to the ureter, the muscles approximated and the skin closed, up to the drain, with linen. The patient made an uneventful recovery and was discharged on the fifteenth day.

The urine has cleared, but the functional capacity has not reached the normal. All pain and discomfort have vanished and the patient had gained ten pounds in the four months following her operation.

I am at a loss to give any reason for this inability to pass the calculus and for its invariable settling at the same site, unless it be that there was present some sacculcation of the ureter, just above a large calibre stricture due to a fibrosis of the ureter wall, into which the calculus was invariably directed. No ureterogram was made subsequent to the operation with a view of determining the presence of such a condition, although this has been contemplated. An interesting point in this case is the fact that at times this stone had apparently rotated on its axis and presented a different surface.

About five months ago a woman of forty was referred to me for the removal of a rather large calculus in the right ureter about three inches from the blad-

der. She had suffered for five years and had had an appendectomy done without relief of symptoms. Her pain was not constant, but every now and then was in the nature of a renal colic. The urine was normal. That the shadow in the right side was due to a calculus was proved by the wax-tip catheter, by palpating the stone per vaginam while a dilator was in the ureter, and by obtaining bits of the calculus by means of the rongeur forceps. The kidneys at the time that the patient presented herself, were normal.

The various dilators, the rongeur forceps, intra-ureteral injections of oil, papaverine, the introduction of several catheters for dilation, after using an injection of 5 per cent novocaine into the ureter, an attempt to dislodge the calculus by intra-vaginal manipulations while the dilators or the forceps were in the ureter in contact with the stone, were of no avail. Operation was offered, but rejected, as the patient was rather comfortable in spite of her many experiences with the operative cystoscope.

The two points that stand out pre-eminently in this case are, first, the inability to budge this calculus in spite of its accessibility and of the extensive dilatation to which the ureter was subjected; and secondly, the ability of the ureter to be subjected to considerable trauma with but little discomfort to the patient. It was not until after the eleventh dilatation—the last two having been done with the Bransford Lewis dilator—that the ureter, both above and below the stone, could be felt to be markedly thickened (per vaginam) and tender on pressure. At no time was any evidence of infection discernable in the urine following instrumentation. I am not prepared to say, however, that no permanent damage, with possible hastening of ulceration and ultimate perforation of the ureter and retroperitoneal infection, will not ensue from the probably too frequent and too enthusiastic treatments given in this case.

No routine treatment, with the use of any special method, has been followed in these cases, and I believe that this is as it should be. The series is not large enough to enable me to advocate any special instrument to be used in all cases needing dilatation, and even if it were,



it is my opinion that the conditions presenting in a given case would determine the course to be followed and the technique to be employed in that particular case.

There are to be considered in temporizing, in the hope that the calculus will be spontaneously passed, the question of size and location, the presence of anomalies of the ureter, such as strictures, tolerance to cystoscopic manipulations, and most important, the presence of infection and the possibility of traumatic anuria when the calculi are bilateral, and reflex when unilateral. These are all conditions that can be and should be determined by cystoscopy and catheterization of the ureter, in conjunction with whatever other means of diagnosis necessary for an accurate diagnosis.

Should the calculus be of such size as to justify the opinion that it can be spontaneously expelled and if there are no anatomical or pathological constrictions that will interfere with its passage; if there is no infection and the calculi are unilateral, then there is no reason for haste and undue instrumentation. Of the sixteen cases mentioned here, five or 33 per cent, passed the calculi spontaneously unless the catheterization of the ureters which was done for diagnosis in four of the five cases was responsible, in part at least, for their expulsion.

In connection with the cessation of renal colic or of renal symptoms, let me take occasion to mention here a recommendation made, I have forgotten by whom, that a cystoscopy be done, with a view to prophylaxis against vesical calculi forming with a passed ureteral calculus as a nucleus. I believe that this should be done even though a calculus be expelled, as there may have been multiple calculi present, of which, only one was not retained in the bladder. This is especially to be recommended in the case of patients who have some obstruction, such as enlargement of the prostate. It may be well to remember that in the presence of a diverticulum a small intravesical stone may find its way through the neck and give rise to conditions requiring much more extensive surgery than the mere introduction of the operative cystoscope and the forceps. In my own practice, I have had

a number of cases of vesical calculi which gave unmistakable histories of ureteral calculus with renal colic. One of the cases cited above, in which a suprapubic lithotomy had been done, although still suffering from occasional renal colic and renal infection, gave a clean-cut history of renal colic for years before his lithotomy.

Operative measures for calculi that have failed to pass spontaneously or for conditions complicating, which demand prompt action, fall into two types—the endovesical, made possible by the devising of special instruments to be used in conjunction with the operative cystoscope and the cutting method, or ureterotomy.

The former can be used in the majority of cases and certainly should be given adequate trial before resorting to ureterotomy with its consequent mortality due to either "hemorrhage, shock, sepsis and peritonitis", not to mention dilatation of the stomach from the prolonged administration of ether. Such post-operative complications as thrombosis, destruction of the ureter, pulmonary embolus, and fistula should be thought of.

I mention these complications with full knowledge of the low mortality reported by Judd in a series of 400 uretero-lithotomies. But as many ureterolithotomies are performed by men less skilled, and with fewer facilities for accurate pre-operative diagnosis and estimation of complicating conditions, it is advisable that the less serious endovesical methods be given a thorough trial. Just how long we are justified in attempting to remove ureteral calculi by endovesical means, I think must be left to the individual judgment of the surgeon who must form an opinion from the available data obtained after thorough examination.

Of the various endoscopic methods, the simplest, and possibly the safest, is the introduction of the ureteral catheter with a view of dislodging the calculus and favoring its descent. This may be accompanied by injection into the ureter of papaverine to paralyze the ureter and prevent further impaction, due to spasm of the muscles of the ureter. This paralyzing effect has, besides, the advantage of permitting drainage past the calculus and lessens the damage to

the kidney which would result from the back pressure and the infection present.

The cases here are so few that I would hesitate to draw conclusions as to the value of papaverine in ureteral calculus, but my experience with this drug in conjunction with catheterization for diagnosis, including pyelograms and treatment, has led me to believe that it is of distinct value in preventing renal colic after intra-ureteral instrumentation. I found that in inflammatory conditions due to infection, the cases having renal colic following catheterization and lavage, for either acute or subacute conditions, were not infrequent. I assumed that was due to an increased peristalsis with spasm and consequent retention, as a result of trauma to the inflamed mucosa, and I began the use of papaverine as prophylaxis against renal colic. The results were very gratifying. I am led to believe from this experience that the effect of papaverine on the ureter is positive and that it can be used to advantage in the attempt to effect the descent of calculi.

The use of oil to lubricate the ureter and thereby facilitate the descent of the calculus has always appeared to me to be a procedure based on theory and of no practical value. I cannot see how the ureter could be lubricated unless it were a non-contractile tube through which a calculus were meeting with obstruction due to friction. Cases of impaction and complete obstruction, barring those in which the lumen is constricted by anatomical narrowing or by pathological changes, are due, to my mind, to a contraction of the ureter about the body it is trying to expel. If oil were to be efficient it would have to have an antispasmodic effect on the musculature of the ureter, and as far as I know, no one has ever claimed that its action is such.

Of the various methods of dilating the ureter, I have had experience with the Garceau catheter, the Walther dilator, the dilator of Bransford Lewis, and the introduction of more than one catheter into the ureter following its injection with novocaine. With the probang of Lewis and the perforated artificial cork of Lespinasse I have had no experience. The introduction of the probang presupposes the ability to get beyond the calculus, a feat fre-

quently difficult. The possibility of rupture or laceration of the ureter with consequent extravasation of septic urine into the peritoneal cavity or into the retroperitoneal tissue seems to me to be a real danger and has been responsible for my not attempting the method where others have failed. I would prefer the open method as more scientific, more surgical and less fraught with dangers which are beyond the control of the surgeon. With the Lespinasse perforated artificial cork I have had no experience, but from a theoretical standpoint I would consider its application as limited, and in cases of infection, not without danger of damage to the kidney by blocking of the ureter.

Of the other methods of dilatation, I have found the method advocated by Crowell, I believe, and used successfully by Buerger previous to April 1921, of introducing more than one catheter into the ureter, to be difficult at times and impossible at others. When the method can be used it certainly has the advantage of draining the ureter and pelvis above the calculus and of stimulating the kidney to secretion in case of anuria, whether reflex or due to block.

In cases in which dilatation is indicated, I have found Walther's dilator invaluable as a preliminary to the use of the other types with which greater dilatation can be accomplished. It seems to me that the insinuation of the filiform between the wall of the ureter and the calculus with the subsequent rubbing by the uneven flexible metallic stem favors the freeing of the calculus from its point of impaction. It is an instrument which can be used to advantage when the ordinary catheter has failed, and, as far as my experience goes, one that is not apt to be followed by undue trauma and injury to the ureter.

The use of the rongeur forceps for grasping of calculi in the lower part of the ureter has served admirably in some of the cases reported above and I shall not dilate further on its advantages. For calculi incarcerated at the meatus, the scissors can be used for ureteral meatotomy. In the event of the impossibility of the blade's being introduced, it would be well to remember that the high frequency spark, as suggested by Furniss, has given excellent results.



In two of my cases, in spite of the use of those cystoscopic manipulations usually advocated, there was failure to cause expulsion of the calculus. In such cases and when urgency demands it, there should be no hesitation in doing an ureterotomy.

The incision and the technique will depend largely upon the site of the calculus. In the one case, the position of the stone suggested an incision about a half inch above and parallel to Poupart's ligament and then turning up towards the anterior superior spine of the crest of the ilium. This gave a splendid exposure and after identifying the bifurcation of the iliac vessels the ureter was readily found adhering to the posterior leaf of the reflected peritoneum.

It is hardly necessary to remind you, in order to reduce not only mortality, but also morbidity, which might result from complications due to interference with its blood supply, that it is essential that the ureter be handled gently and that extensive dissection or separation from its peritoneal attachment is to be avoided.

In the other case, should the consent of the patient be obtained, I shall do a vaginal ureterotomy, combining it if necessary with intra-abdominal manipulations to facilitate its removal.

Since the writing of these notes, the patient who had a diagnosis of calculus at the uretero-vesical junction made by the scratch marks on the filiform whip, has passed two small, rough, irregular phosphatic calculi.

636 Common Street.

#### DISCUSSION.

**Dr. A. C. Eustis:** I have my own ideas, but I may be wrong. I am under the impression that there is very little if any danger in catheterization of the ureters. Is it not more dangerous to temporize than it is to go right in and make a definite diagnosis? Are you likely to get suppression or other dangerous symptoms following catheterization for diagnostic purposes?

**Dr. H. W. E. Walther:** I just want to speak of two points on the subject which Dr. Kahle has so thoroughly covered; there is not much more to say, but in the discussion of ureteral stones one must ever bear in mind the fact that the X-ray is not infallible, and that in a certain percentage of cases the diagnosis is only going to be suspected by accurate studies of the urine and then confirmed with the ureteral catheter, plain or wax-tipped; then, in the treatment of these conditions, I think many of our medical confreres misconstrue our present way of presenting papers like this, due to the danger at least, that some

one gets the impression that we are trying to get all the stones out by cystoscopic means, and as Dr. Kahle's report shows, that is not the case, but if the vast majority can, (and they can be) removed by such means, we should give the patient the benefit of these so-called non-operative procedures. Particularly is this so in patients who have gone to the operating table for the removal of an appendix, right ovary and right tube when the pain was due to right ureteral calculi.

I wish to thank Dr. Kahle for the kind words he said about my dilator. It is rare indeed for a man to be praised in his home town, but my little apparatus has been in use for five years and I have had the pleasure of seeing it used in the largest clinics in this country. It is nothing but a flexible metal shaft with an 11 F. olive. I have had many of my friends tell me that with it they were able to get by obstructions in the ureter, though they could not do so with other instruments.

**Dr. W. A. Reed:** I hesitate in getting up with an experience of only about six cases of stone to recount. Four have had the stones removed by means of the cystoscope and its various appliances, but two have not yielded to those procedures. Both of these cases have stones in the same position, about 11-2 cm. from the orifice of the ureter. Both cases were cystoscoped repeatedly over a period of five or six months; one has intermittent pain in the kidney on that side and the other is free of symptoms. Both these stones are impacted very tight, and the only thing I can manage to get up at all is a Phillips filiform attached to a Walther dilator. How long can one safely wait to operate in cases of this kind? It seems rather difficult to suggest an operation which is as extensive as an open operation is, for stones that are so close to the ureteral meatus.

**Dr. Kahle:** I want to thank you gentlemen for your favorable criticism. I think there can be no doubt that Dr. Jamison's idea is to be commended, and that calculi should be sent to the laboratory for chemical examination.

In answer to Dr. Eustis' question as to the risks of catheterization, I believe that the reason for the prevailing opinion, that it is not without danger, is due to the fact that very often after catheterization there is a flare-up of symptoms in cases of a sub-acute or a chronic pyelitis or of a pyelonephritis. I believe, however, that where there is indication of the presence of a calculus, there should be no hesitancy in making a diagnosis by means of the ureteral catheter. The expulsion of a calculus can often be brought about by the mere introduction of the catheters. I believe we should catheterize these cases for diagnosis, to determine if there is functional impairment of the kidney, for drainage of the pelvis of the kidney and for the purpose of liberating an impacted calculus.

As far as Dr. Reed's question is concerned it is a little hard to answer. I should temporize if there is no infection. I would not hesitate to temporize indefinitely. I believe that when the drainage is good, no serious harm results from the presence of a calculus.

No matter how large the stone was, if the drainage were good and if the patient were not suffering from pain or discomfort, I would check up with the X-ray from time to time, to ascertain the position and rate of growth; catheterize to make sure there is no obstruction to the expulsion of the calculus, or no dilatation of the pelvis or calices. In the absence of infection, back pressure or dilatation, which might impair the function of the kidney, I would temporize indefinitely. We must remember that there is not infrequently some degree of ulceration of the ureter at the site of impaction and that with infection, which would aggravate the condition, there is a possibility of the extrusion of of the calculus into the peritoneal cavity, or into the retroperitoneal tissues with consequent infection.

**THE CHARITY HOSPITAL OF  
LOUISIANA.**

By ALBERT E. FOSSIER, A. M., M. D.

(Continued from last issue).

Desolation, poverty and ruin, the heritage of war, grasped in their ruthless clutches the whole Southland, nor did their dismal offspring, want and privation, spare even institutions of benevolence and charity.

The days of reconstruction were eventless in the history of the Charity Hospital, except that they leave record of insufficient resources, and buildings fast falling into decay. In his report for the year 1864, William H. Hunt, then Vice-President of the Board of Administrators admonished that to maintain the institution during the coming year, to enable it to dispense its incalculable blessings, to preserve its valuable buildings from decay, and to render them fit for the purpose for which they were originally intended, required an appropriation from the State of at least \$100,000.00. In response to his appeal the General Assembly appropriated the sum of \$40,000.00. The chief revenues of the institution after the war were derived from an appropriation from United States Government, and also from a tax levied on lotteries. In 1867 the sum of \$67,523.00 was paid by the Government for board, and for medical and surgical treatment for the United States seamen. The chaotic conditions of finances resulting from the large amount of worthless confederate money then afloat, financially embarrassed the Hospital; this valueless paper was used to pay the taxes and licenses due the institution. The Board of Administra-

tors was forced to appeal to the Legislature for relief and petitioned them to draft laws compelling payments to the Hospital to be made in United States currency. Another unsatisfactory source of revenue was that drawn from the annual benefits given by local places of amusement. Very frequently these benefit performances resulted in a shortage rather than a surplus. For instance, in 1865 the benefit performance given by the St. Charles Theatre resulted in a deficit of \$900.00. Fortunately the management magnanimously bore the loss. In 1866, only \$3.85 was realized from the same theatre, and in 1867 the proceeds from the same source were nil. Taxes from gambling always furnished ample returns to the Hospital, and in the year 1867 they yielded the sum of \$33,035.48.

Hon. Michael Hahn, member of the Board of Administrators, offered the following resolution which passed unanimously at the meeting of the Board on the seventh of September, 1868: "Resolved, that in admitting sick persons to the benefits of this Hospital no distinction be founded on race, color, or previous condition." This was recorded by the Carpet baggers Administration as being among the most important proceedings of the Board of Administrators.

The lack of an asylum or a place of refuge for the indigent and the incurables was greatly deplored by the Board in many of their general reports following the war. This condition was especially emphasized in the annual report of 1870. "It is more than to be regretted that the noble purposes of relieving the sick and healing the wounded, and of advancing the science of medicine and surgery, for which this institution has acquired a creditable and, we might say, enviable reputation, should be intruded upon and overrun by a species of idlers who simply want board and lodging and only pretend to need medical aid. Under no circumstances can a hospital, thus transformed into a lodging house for idlers and even drunkards, be the proper place for the treatment of patients suffering from diseases and to whom rest and quiet are absolutely essential for recovery." The report mentions that the Touro Alms House was in course of construction before the war, and bewails its site in the Third District on the river

\*The author is not responsible for phraseology of quotations, as they are taken verbatim from text.



bank, in a thickly populated part of the city. It further comments: "Providentially for the class it was intended to benefit, this benevolent prison was destroyed by fire."

The report of James Graham, Vice-President of the Board of Administrators for the year 1870, throws light upon the condition of the Hospital of that time. He demanded that a complete modification of the system of conducting the institution be adopted, so as to secure a more regular and better medical attendance, and bewails the fact that by reason of the large number of paupers flocking to the Hospital for relief because of the lack of suitable asylum for their proper care, its tendency as a hospital was trending downwards, approaching the status of a cheap boarding house, from which groove it must be elevated to its proper place. He also mentions: "The number of inmates really requiring medical treatment are at present considerably in the minority, and as a consequence are frequently neglected, the time of nurses, attendants and physicians being occupied in satisfying the clamors of those who are not sick, and who are in the majority, and who from fear of being discharged, feign sickness in proportion to the interest manifested in them. The great evil of this to the professional attendants is that diseases are no longer studied, the time given to the Hospital being occupied entirely in prescribing medicine. In fact, it can be safely said that for the past few years the surgeons and physicians attending the hospital have done little else." The following criticism is also registered: "In this connection it is right to state that the officers of the Hospital have faithfully and intelligently performed their respective duties, although not satisfactorily to themselves, or to the institution, and that a change of system will have to be made by the administration in order to effect an improvement." The only bright spot and redeeming feature in this condemnatory report is the sincere appreciation by the Board of the services of the Sisters of Charity: "In conclusion, the Administrators feel it a duty to express their appreciation of the sacrifices on behalf of the Sisters of Charity to the sick and suffering poor, who have been received and cared for in the Hospital. Their department has been managed

with the economy, regularity, system and exactness of detail which has alone amidst the changes of administration, preserved the character and reputation of the Institution."

The House Surgeon at that time was Dr. A. W. Smyth, assisted by Dr. J. A. Root. Dr. Smyth acted in that capacity from 1863 to 1877, when he was succeeded by Dr. George K. Pratt. The crime wave, a gruesome appendage of war, and brutal accessory to the reconstruction period, persisted for many years after the surrender of Lee. This is attested to even in the year 1874 by the large number of stabs, cuts and shot wounds mostly the result of personal rencontres treated in the Hospital. There is recorded in the reports of that year the murder of an Administrator of the Charity Hospital: "To fill up the measure of outrages, the last victim brought to the Hospital was Fabius McK. Dunn, a man of irreproachable character, and an administrator of this Institution. He fell pierced by the bullet of an assassin while quietly walking along the street last night, and expired soon after reaching the Hospital. As in other cases, the murderer escaped detention." The following report of the murder is taken from the *New Orleans Republican*: "The deceased was walking down Canal street, in company with Mr. Jenkins, the latter being a foot or two in advance. When crossing the railroad track on Basin street, they encountered four men, one of whom, passing Mr. Jenkins, fired a bullet into the heart of Mr. Dunn, who exclaimed: 'I am shot!' and after walking a dozen yards fell on the sidewalk. He was conveyed to the Charity Hospital where he shortly expired."

This paragraph taken from the report for the year 1876, is a memorial of the exceedingly low cost of hospitalization of that time as compared with the high rate of today: "We have the gratification of being able to state that we have provided for sick and well, and on the average of six hundred and fifty people per day throughout the year. Calculated at a cost of sixty cents per day, which is the allowance the city government makes for the board only of prisoners in the jail house or calaboose, the expense sums up 650 inmates at 60 cents per day for 365 days, \$142,350.00; while our expenses all told, including \$19,468.62, salaries of officers

and back dues of employes amount to only \$81,021.26." The Hospital was administered on the incredibly small sum of thirty-five cents per patient per day.

No less surprising is the following incredible mention of the usurious custom then in vogue: "The embarrassments and the accumulation of debts with which the institution has to contend have arisen from the fact of having to pay during the past five years over a quarter of a million dollars to the usurers to whom we are forced to apply for money in exchange for the warrants issued for the support of the Hospital, it having been impossible to us for years past to collect anything but trifling sums of money for them from the Treasury direct."

The year 1879 inaugurated many important changes and improvements. The following taken from the report of the Committee of Improvements from the Board of Administrators gives a good idea as to the status of that Institution previous to the 80's: "On first entering upon the discharge of our duties, the desolation and want everywhere apparent was appalling. Beds and bedding, provisions, drugs and necessities for the patients were sadly deficient, or totally exhausted, the beds not having a change of sheeting, and scarcely any winter covering, the supply of drugs and provisions being totally exhausted, while the credit of the Hospital was gone, and could not be used for the purchase of a pound of flour or salt. The buildings, too, were found in an almost dilapidated condition, the floors, walls and roofs being unsafe. In places, the walls and roofing had already succumbed to the neglect of repairs; other portions were threatening and in danger of falling in; the galleries of some of the buildings were fast receding from the walls; the stairs and landings were nearly impassable, and the supply of water (that most necessary element in a hospital) was very limited. Under such unfortunate conditions commenced our duties. Finding that it would be impossible to enter upon general repairs, until we had taken measures to prevent the falling of walls and galleries, we set at once at work to render these secure by clamps and bolts, and having succeeded in so doing, proceeded in the work of

thoroughly repairing and putting in order the several buildings. In several instances we were compelled to renew portions of the foundations of brick buildings before we could properly carry on the work of repairing them. Without specifying in detail all that has been done, we give the major part of the work of repairs accomplished, as follows: We have had hot and cold water distributed throughout all the wards. A new boiler has been put up, and the old one has been repaired and put in thorough working order, and new foundations put under all the machinery. Two new brick water closets have been built, (the old ones, so offensive and detrimental to the general health of the hospital having been demolished). One new lying-in division has been built, and the building set apart as the women's department thoroughly repaired; new galleries (open and closed) put up, and the whole building thoroughly ventilated between the floors and ceiling, making a vast improvement in its sanitary conditions; new venetian blinds have been put to all the windows throughout the Hospital. Steam radiators put in all women's wards. The roofs throughout have been all repaired. A new dining-room for female employes erected, and three new sheds and a brick store room built, seventeen new cisterns put up, capable of containing two hundred and forty thousand gallons of water. Water mains have been laid and forty-eight hydrants established in the grounds. The grounds have been thoroughly graded and relaid affording perfect drainage. The main buildings thoroughly repainted within and without, and the other buildings more than once. Two hundred new black walnut bedsteads have replaced the number of broken and worn out old ones. New beds and bedding, an ample supply furnished; an elevator has been put in the main building, and the Hospital connected by telephone with the telephonic wires throughout the city. Besides these, the Surgical and Microscopic Departments have been fitted with new apparatus and instruments, and we can now say that in all its departments the Charity Hospital is today better appointed and more thoroughly fitted and furnished than at any other time in its history."

In 1880, the Board decided that ap-



plicants for interns were to be appointed only after one year's study of medicine, and after a careful competitive examination proved them worthy of the position.

In that same year, Dr. A. W. DeRoaldes was made House Surgeon. He recommended the replacing of wooden beds by those of iron because the latter occupied less space and the former were harbors for contagious diseases, and greatly impaired the comfort of the patients. He strongly urged the institution of a special department for children and deplored that it was "a bitter fact that we are utterly unable to receive them or relieve their sufferings." He bespoke a special ward for the treatment of diseases of women and two additional colored wards; also, an electrical therapeutic room and a hydro-pathic department. And bewailed deficiency of improved and modern surgical appliances which were a vital need and which would have greatly facilitated their efforts in treatment. He alluded to the fact that the Hospital was misused as an alms house and claims that there were on that day 110 inmates out of 534 who were utterly incurable, and who should be properly placed in asylums and not allowed to infringe on the comfort of those more acutely in need. He also complains of the overcrowded condition of the Institution which was some times compelled to take care of the overflow of patients by placing pallets on the floor. The Hospital Medical Library was established during that administration. In his report for the following year Dr. DeRoaldes strongly recommended the erection of an additional building to obviate the crowded condition of the wards. He also insisted thusly: "A system of paid and responsible nurses is very much needed in the male wards; the establishing of such a corps would insure much better attention to the patients than the present system of unpaid nurses."

The following recommendation is interesting, especially considering the unhygienic condition existing in the City forty years ago: "Our privies which permit water and fecal matter to run from the vaults into the street gutters are detrimental to public health, and we have been called by the city authorities and Board of Health to abate the abominable nuisance; this can only be done

as in the case of large hotels and the customhouse, by laying a pipe to the river with the necessary force pumps, etc.

One of his important recommendations was to improve ventilation in the main building, by employing and increasing the size and number of windows. Dr. DeRoaldes in his two years of service, instituted and recommended some of the epochal reforms in the Institution he so faithfully served. Untiring and fearless in accomplishing his duty, indifferent to personal consequences resulting from the changes which he advocated as beneficial to the Hospital, his term of office terminated abruptly by the machination of enemies. Shortsightedness and lack of political courage on the part of the Governor of the State and the Board of Administrators of the Hospital deprived that Institution of the vision, knowledge and executive ability of that great House Surgeon.

Many of the transitions resulting in the present modern Hospital had their beginning during the Hoose Surgeonship of Dr. A. B. Miles. His name stands preeminently among the House Surgeons of the Charity Hospital. It has been asserted that during his tenure of office the most noteworthy advances and discoveries took place in the evolution of modern medicine, and that he only drifted with the current of medical progress; many are reluctant to admit that his great achievements were more than promptings of the urgency of the times, and the claim has been advanced that he executed many of the reforms suggested by previous administrations, and that his success was solely the result of his length of service with the hospital. However, it must be allowed that he added luster to his name by his accomplishments. His success can be, in a great degree attributed to his more than usual tact, his tenacity of purpose, and to his convincing personality.

His annual reports abound with suggestions for the improvement of the Hospital and for the comfort of the patients. The justice of his recommendations, his logical conclusions, the clarity of his style, his repeated forcible demands for the modernization of that great Institution, gained for him the confidence, respect and admiration of the Board of Administrators. He served the Hospital as Resident Student from

1873 to 1875, as Assistant House Surgeon from 1877 to 1881, and as House Surgeon from 1882 to the day of his death, August 5th, 1894.

In his first report are the following recommendations: The organization of the outdoor clinics for the poor. The erection of a House for Women and Children for which he advanced the following argument: "For many reasons our little patients (boys and girls and children) should be to themselves. The opening of a boy's ward is the initiative step in this direction. Girls and children, under five years of age, are now scattered over the female department to fill up the clinics and corners. A separate department for children is a pressing necessity in the Hospital."

The advancement of medical work in the Hospital, improvement of the operating room to facilitate the practice of surgery. In this connection it may not be amiss to mention that in that year (1883) for the first time, the operating room was supplied with clear hot and cold water, ready to hand.

The reorganization of the Outdoor Clinics resulted in a great increase of cases. In 1882, 6,000 visiting patients were treated, and increased to 8,769 in 1883. That year the total number of patients admitted was 8,820 of which 1,013 died—a mortality of 11 per cent. This was the smallest death rate in fifteen years. It is a matter of notice that there were recorded 2,972 cases of malarial fever, more than one third of the total number of admissions, and in 1884, there were 3,626 cases of malarial diseases, 1,009 from the country and 1,261 from the city—45 per cent of the inmates treated. There were 95 deaths from that disease—a death rate of 2.6 per cent—or 9 per cent from all causes.

The following recommendation made by Dr. Thomas Layton, vice president of the Board of Administrators, in his report for the year 1884, is worthy of mention and is especially interesting in view of the recent discussion on fire prevention in the Hospital: "While touching on the subject of improvements, the recent heart rending accounts of loss of life from fire in a public institution, in another section of the country, appear to me to afford matter for serious reflection on the part of everyone connected with the administration of the Hospital. In the event of

a conflagration occurring beneath its roof, are we fully prepared to meet the emergency? It will be answered that our water supply is practically unlimited; that we are in close proximity to one of the companies of our devoted fire department; that our hose and its apparatus are always ready for service; that we have large hallways and staircases, and that no danger need be apprehended. Still it should be remembered that these very halls and stairs act as flues during a fire, and that a large portion of the inmates of a hospital are incapable of assisting themselves. I therefore very earnestly recommend this subject to the consideration of Your Excellency and of my colleagues of the Board of Administrators."

Two very important additions were made to the Hospital group of buildings, to wit: the present white women's building in the rear of the main edifice, and the present morgue and pathological laboratory. The descriptions of these buildings is taken from the hospital report of year 1884. "The Annex or New Extension, originally designed on plans submitted by Dr. A. B. Miles, House Surgeon, and built under the supervision of W. A. Freret, Esq., architect, in accordance with his architectural drawings, is a comfortable constructed two story and attic brick edifice, with large, well lighted and wide corridors; wards ventilated according to modern hospital requirements (1000 and more cubic feet for each bed), linen rooms, mess rooms, dining room for convalescents, water closets, etc., and heat throughout by improved steam radiators. The building closely joins and forms a continuation of the old Female Department, which latter has been raised to the floor level of the annex by an elevation of two feet. The entire foundation is elevated some two feet and its ground thoroughly laid with the Fletcher sanitary flooring, thus ensuring preservation and dryness. The capacity of the new house is eighty-three beds for women and twenty-four cribs for children. It has been completely and newly furnished at a moderate expense. In connection with its furnishing it is but grateful to recognize the fact that some of the ladies of our city bestowed upon it twenty-four cribs for infants with their full outfit. By the considerate kindness of his Excellency



Gov. S. D. McEnery, we have been enabled to place in a tower surmounting the annex and especially constructed for the purpose, the famous Fournier Clock, lately used at the St. Louis Hotel State House. With its two, well marked and at night illuminated, dials, we are dispensing standard time to our inmates as well as to the neighborhood. The new house was open for the reception of patients on August 25th, 1884.

The new Dead House, opened September 1st, 1884, is located some eight feet interiorly from the wall on Locust Street, on the most unobserved portion of the Hospital grounds. It is a two story brick structure, containing on the ground floor, the appointments of the Dead House proper—paved and wainscoted with slate stone—with a suite of rooms from which the dead who are claimed may be buried by relatives and friends; on the second floor, the Pathological Laboratory and Museum of Pathology, two large, well lighted rooms, especially designed for the purpose.”

Annexed to the Female Eye ward (No. 40) was the Eye and Ear Operating Room. It was constructed with a view to light, with large French plate glass windows on three sides. This was soon absorbed by the female department in enlarging its ward space.

The Hospital then contained 700 beds and cribs, distributed in 52 wards.

Dr. Miles bewailed the old way of conveying the sick and injured to the hospital in City Wagons and Vehicles of all description, which has occasioned much distress to the patients, and resulted to their detriment in their after treatment. He was commissioned by the Board to purchase ambulances for

Hospital, and in September 1884, he visited Eastern cities to inspect ambulance service in connection with large institutions. On February 2nd, 1885, this service was inaugurated with two ambulances. The success of this new department was immediate, and the following reported: “Lives have been preserved by the prompt aid rendered on the spot in cases of poisoning and surgical accident. In the ambulance report, observe the preponderance of surgical cases. In my judgment, the usefulness of the service and the high appreciation in which it is held as a public charity, can best be maintained by

continuing the present plan of relief, under the rules and regulations first adopted. This should remain an emergency service, to render medical aid on the spot and transfer to the Hospital only the more seriously ill and injured.” In 1886, the present Ambulance House was erected. It was originally a two-story building; later another floor was added: shortly afterwards the increased service demanded the addition of a third ambulance. The second story of the Ambulance House was divided into quarters for students and drivers. Until then the first year students were housed in the main hospital building. Again, history repeats itself. The present overcrowded quarters for the internes and the lack of housing facilities for nurses and doctors is as acute as in the early eighteen eighties. This deficiency is reported for the year 1886, thusly: “This matter (the location of first year students in the main Hospital building) has been a matter of solicitude to the Board, who feared the deleterious effects of such insanitary conditions upon the health of the inmates of these rooms but were powerless, until quite lately, to apply the proper remedy.” In the last report (1882) we find: “The great needs of the Hospital today are quarters for the internes and additional quarters for the nurses.”

Dr. Miles reports: “It becomes my duty to report irregular attendance of the Visiting Staff, which is inconsistent with the welfare of the patients as well as preservation of system in the medical service. I respectfully recommend that the membership of the staff be limited to a number capable of doing the work and willing to attend the wards regularly. A small staff of punctual members would be preferable, and a limited membership would enhance the honor of election. A daily register of the attendance of each member of the staff should be kept, as is done in many well-ordered institutions, and submitted with applications for re-election, to guide you in bestowing honors where they have been deserved.” A register was placed near the main entrance, in which is inscribed the signatures of many of the members of the Visiting Staff of today. This dereliction on the part of some of the Visiting Staff was corrected, for the following year, the names of fifteen visiting physicians and

surgeons out of a total of thirty-five were absent from the visiting list of physicians.

An apercu of the management of the Outdoor Clinical Department of that period is had from this report of the House Surgeon for the year 1886: "The record of the Outdoor Department, herewith submitted, shows the treatment of 13,336 cases. The benefits of this Department, intended for those only who are needy and worthy, are too frequently sought by people who have means to secure medical attendance elsewhere. In the Outdoor Clinics are treated the milder types of disease, and also many patients more seriously ill, who prefer to live at home and come at intervals for consultation and surgical dressing. This plan proved an economy to the Hospital. At present, the Outdoor patients are treated in the Hospital Buildings, and many of them in the presence of the inmates. However orderly the management, the daily visits of so many patients necessarily disturb the inmates." Again, Dr. Miles strenuously urges the urgent need of a separate building to house the Outdoor Clinics, in which necessary treatment may be given without disturbing the inmates of the Hospital.

At the close of the year 1886, a special department for the treatment of diseases of the skin was established. Dr. H. W. Blanc was appointed Visiting Dermatologist.

That year, after dividing expenses of all kinds, including living, maintenance, improvements and repairs, etc., among the individuals living within that institution, the results showed the incredibly small sum of forty cents per diem per head.

The following year a Dental Clinic was established under the direction of Dr. A. G. Friedrichs. As all extraction and other emergency dental work had been performed by physicians, the addition of a dentist to the Visiting Staff was a great step forward in the progress of the Hospital. In this connection, Dr. Miles stated: "and many who formerly suffered at our willing but unskillful hands, now receive proper treatment."

The main recommendation in the yearly report of 1887 is the abolishment of the restriction by law of the

appointment of resident students other than Louisianians, and the institution of their selection by means of competitive examination.

Dr. Miles, in his urgent appeal to the Legislature to repeal that law, makes the following plea: "Under this system of restriction, the honor which usually attached to residents at the Hospital has been so much diminished that the Louisiana students, who are themselves the beneficiaries, prefer to enter into open competition with their classmates. The present law secures the appointment of a few students in advance of their preparation for the practical duties which devolve upon them, when by the system of open competition the same students would probably enter a year or two later, and then be better prepared to render competent service, and profit more by the practical advantages offered. My observation is that most of the Louisiana students who set their hearts and heads on entering the Hospital in open competition, have usually succeeded. The law is equally unjust to a few students of this State in hurrying them into responsible positions for which they are ill prepared, and to the patients whose lives are committed to our keeping. The benefits offered the students of Louisiana do not in the measure contemplated, redound to the advantage of the people of the State. The field of medicine is not divided by State lines, and the graduates of the State University scatter over this Southern and Southwestern country wherever opportunities for practice offer. Some of these, originally from other States, come to reside permanently in Louisiana, while many Louisianians emigrate elsewhere. The purpose of the law is patriotic, but entirely inconsistent with the liberal spirit which has always actuated the administration of the Hospital and calculated in the future to lower the standard of competency and impair the efficiency of its medical service."

That same year, Assistant House Surgeon, F. W. Parham, introduced strict antiseptic measures in the Obstetrical Wards and also instituted asepsis in his surgical service. This was one of the most important steps in the evolution of the present modern Charity Hospital. Nearly one-half of



the puerpurae of that year in the obstetrical wards of the Hospital suffered from septic fever. In the following year Dr. Parham's aseptic precautions produced astounding results. Dr. Ernest Lewis in his "Reminiscences" gives him due permit for the introduction of this life-saving innovation, when he says: "It is true this had been practiced before by Dr. Schuppert in his ovariectomy above mentioned, but not continued, and by Dr. LaPlace in his service, but also discontinued when he was called to Philadelphia, until revived by Dr. Parham, from which time it gained ground until it became the universal practice, when sterilizers were installed in the new amphitheatre." There is no mention of Dr. Parham's worthy achievement in the Hospital reports, although it was a very important milestone in the history of that Institution.

In the report for the year 1890 is the following announcement which may astonish many today to learn electricity was installed in the Hospital only thirty-three years: "The electric current of the Edison System was early in the year introduced and has been in daily use for general electrical purposes. The battery is in every way complete and furnishes both the "Faradic" and "Galvanic" currents. More recently the current has been introduced into the center room of the amphitheatre for cauterizing purposes and has proven fully satisfactory. The wires have been properly insulated and safeguarded against the causation of fire. The current is furnished as a gratuity from the Edison Company."

The long requested outdoor clinic buildings were constructed in 1891. There were two buildings, one for Women and Children, the other for Men and Boys. Both were two-story brick buildings, with sanitary roof, so constructed that an additional story could be added at any time should the exigencies of the Hospital require it. The present Board of Administrators took advantage of the foresight and vision of House Surgeon Miles by very recently constructing an additional story to the Men and Boys' Outdoor Clinic Building. Mr. Thomas W. Carter, the architect, thus describes these buildings: "There are two clinic buildings,

alike in architectural design and finish, each having a frontage of fifty-six feet on Tulane avenue, with a depth of sixty-two feet on the cross streets. The Clinic for Women and Children is situated near the corner of Locust street, that for the Men and Boys on the corner of Howard street. They are designed after the Venetian style of architecture and finished alike after a uniform plan of construction. The principal fronts on Tulane avenue are each divided into three compartments, resting on a deep splayed basement, the center having a handsome arched porch resting on side pulasters, with a flight of granite steps ascending to the Entrance Hall, flanked with bold rustic coins. The side wings and all corners on the first floor are flanked with the same rustic work and with plaster antae on the second story, which latter rests on a massive belting course, and are crowned above with the handsome entablature and blocking course. In the center of each front is a pediment, with the year of erection, 1891, in raised figures on the panels. The windows are of large and proportionate size, surrounded with neat moulded architraves on each floor, and in addition, on the first story, they are keyed to the belting course. The buildings are arranged with a central hall on each story, flanked on either side with the various Reception and Consultation Rooms; the whole fitted up with all the necessary plumbing appliances for supplying hot and cold water in each consultation room, and with heating and ventilating apparatus required in modern hospital construction. The grounds have been laid off into lawns, with Schillinger paved walks and the entire frontage on Tulane avenue has been enclosed in iron fencing, of ornate and durable workmanship, resting on a basement of brickwork, cemented to imitate stone." These buildings were considered the dernier mot of Hospital construction.

Dr. Miles sounds a note of warning against the well known abuses that unfortunately have crept into and become a menace to an Institution dedicated solely to the relief of the poor, in the following: "We will be enabled to organize more thoroughly the system of outdoor medical relief, and better restrict the charity to those who deserve

it. The Outdoor Clinics are established for the benefit of the poor, and it must be understood that those who come here for relief cannot afford medical attention elsewhere. There should be no conflict between this work of medical relief for the benefit of the poor and the avocation of the physicians of New Orleans. In the medical management of these clinics we bespeak their favor and co-operation."

In the annual report of House Surgeon Miles for the year 1892 is taken this interesting comment on the recently established Outdoor Department: "The organization of the Outdoor Clinics as a separate Department and their inauguration on the 12th of April under the auspices of his Excellency, Governor Francis T. Nichols, was a very important event of the year. These clinics are now thoroughly organized, offering facilities in the various clinical divisions for the treatment of all diseases, medical, surgical and special, occurring in men, women and children, white and colored. The medical service in this department has been improved by the election of a corps of externs who supplement the work of the interns without any official friction."

Garrison, in his "History of Medicine," says: "The nursing of the sick at the hands of trained well bred women is an institution of modern times. The period from the latter part of the seventeenth century up to the middle of the nineteenth has been called the "dark age" of sick nursing, in which the status and competence of female attendants had sunk as low as the Hospital in which they served. Outside of the Roman Catholic orders in which discipline and decency still prevailed, this was almost universally the case."

The nursing in the Jean Louis and Almonaster's Hospital was administered by negro slaves and by convalescents partly able to attend the more afflicted patients. In fact this *modus operandi* was in vogue until the year 1834, when the Sisters of Charity inaugurated their long period of devotion to the indigent sick. These Sisters not only supervised, but did the nursing; their assistants were inadequate and incompetent, and were principally recruited from convalescent patients barely able to perform the lightest duties, and whose only remuneration

was their meager board. This unsatisfactory and inefficient nursing persisted until the inauguration of the Training School for Nurses.

The first training school for Nurses was established June 15th, 1860, at St. Thomas Hospital in London and was endowed with the £50,000 known as the Nightingale Fund. But it was not until 1873 that such schools were inaugurated in this country. In that year they were organized in the Bellevue, New Haven and Massachusetts General Hospitals.

This all important question of trained nursing was agitated by the Board of Administrators in 1881. Encouraged by the glowing reports from many hospitals throughout this Country, its adoption was recommended. The following abstract from the report of December 31st, 1881, by Dr. Daniel C. Holliday, Vice-President of the Board of Administrators, evidences strong opposition to the movement, and is self-explanatory:

"In the connection we beg to state that the Board of Administrators sincerely regret a misunderstanding which arose between the Board and the Sisters of Charity—who have so long and so ably managed the details of our institution—and whose valuable aid no member of the Board for one moment failed to recognize and appreciate. The Board, knowing the growing demand for skilled and educated nurses in our City and State—and seeing the great advantages already obtained in Europe, and all the Northern and some of the Eastern cities of our Union, by the organization of Training Schools for the education of nurses, at once thought of inaugurating a similar school here, and necessarily the wards of the Charity Hospital as the proper field for such instruction suggested itself. With the above sole object in view, and feeling confident that an appreciative community would approve so laudable an object, the Board endeavored to introduce such a school in the Hospital. The Board never intended or thought that their motives would be questioned or in anyway be misinterpreted, but that the result showed how much they were mistaken. The misrepresentation and open assertions that this was only a move towards undermining the authority of the Sisters of Charity, and



ultimately to result in their services being dispensed with in the Hospital, no denial on the part of the Board nor reiterated disclaimers against such purpose were credited, but only engendered more bitter and widespread opposition. The Board without abandoning their first conviction that such a school could be established and would never under proper management interfere in any manner with the Sisters of Charity and realizing that they had the power to introduce the school, preferred abandoning all such grounds."

Through the strength of the opposition and culmination of after events, this movement aborted. The untimely demise of Gov. Louis A. Wiltz, whose unexpired term of office was completed by Gov. Samuel D. McEnery, resulted in the demanded resignation of the sponsors of this great improvement in the nursing department. The personnel of the Board was completely changed by Buchanan. On the first day of July, with only the exception of Mr. P. 1882, the new Board assumed the control and management of the Hospital and immediately proceeded to the election of a new House Surgeon. Dr. DeRoaldes was succeeded by Dr. A. B. Miles. These gentlemen suffered displacement because of their strong sense of duty and their fearless contempt of personal consequences while acting for the best interests of the Institution.

From the following quotation taken from the report of the Treasurer for the year 1882, an apercu is had as to the progress made towards the accomplishment of the Training School for Nurses by the Wiltz Board: "During the year 1881, and the early part of the year 1882, about twenty-two hundred dollars (\$2200.00) of the funds of the Hospital were expended in connection with the inauguration, equipping and maintenance of a Training School for Nurses, including fifteen months' rental of a building suitable for the purpose. For the some months past a controversy has been pending between the Board of Administrators of the Hospital and the Board of Directors of the Training School, relative to the reimbursement of said amount to the Hospital, and to the possession of certain articles of furniture and household effects, which controversy has, within the past few weeks, been settled by the

delivery to the Hospital of the property referred to, valued at about \$600.00 and the withdrawal of all legal proceedings for some time past pending in the Civil District Court of this parish."

This most important movement was thus squashed and our Hospital was deprived of Trained Nurses for fourteen years.

In 1889 a combination of public-spirited women undertook to organize the New Orleans Training School for Nurses. These same ladies established the Women's and Children's Hospital—with Training School for Nurses, on St. Joseph street, which was the precursor of the New Orleans Sanitarium and Training School for Nurses established in 1893 by physicians of the city.

Dr. Ernest Lewis in his "Reminiscences" narrates an interesting chapter in this period of the History of the Hospital: "The Training School for Nurses was organized in 1894, during the first year of my chairmanship. Dr. Bloom, who succeeded Dr. Miles as House Surgeon, and had as assistants, Drs. Fortier and Parker, worked very hard to get the consent of the Sisters. When the subject was first broached to Sister Agnes, she refused, for she sensed that trained nurses under the direction of untrained Sisters would prove embarrassing, and she would not consent to their undergoing training until Dr. Bloom proposed to go to Emmettsburg, and after interviewing members of the Council Board, consent was given, provided the sisters were excused from obstetrical or gynecological nursing, which was agreed upon."

In the 1892 report of House Surgeon Miles there is the following announcement of the organization of a training school for nurses, and the promised erection of a suitable home: "The organization of the Charity Hospital Training School for Nurses now in charge of your special committee intended to carry out the system of nursing contemplated by Sister Agnes, is a matter of very great importance, and this movement should be fostered in every possible way. As soon as the means of the Hospital will permit a home for the nurses should be erected on these premises."

In the report of Vice-President Wm. G. Vincent, is mentioned that a suitable home for the nurses had been provided;

"the most prominent of which (improvement) consists of the erection of an additional story to the building known as the "Annex of 1884," which is 160 feet long by a depth of 60 feet; constructed for the use of our Trained Nurses as dormitory and sleeping quarters. There are five double and eight single sleeping rooms, a lecture room, dining and sitting rooms, library and improved closets, together with all modern improvements." This is the White Female Department Building. Through his energy and non-remitting efforts the establishment of the School is greatly due.

House Surgeon Miles in his last report, dated February 12, 1894, makes this important announcement: "The Charity Hospital Training School is now permanently organized and in operation," and also mentions that the Nurses are domiciled in the Annex, in the additional story added for their use, but which should be considered only a temporary provision, and states that: "Suitable accommodations can only be provided in a separate home for nurses." He also mentions that: "The trained nurses are engaged at present only in the Female Department. It is contemplated by Sister Agnes, as early as practicable, to introduce trained nurses in all the wards of the Hospital. In this connection the advisability of a Training School for Male Nurses is being carefully considered."

The school was organized under the direction of Sister Agnes, with Miss Agnes O'Donnell, a graduate of Bellevue Hospital of New York Training School for Nurses as Superintendent. The courses of lectures were inaugurated by Dr. Stanford E. Chaille in January, 1894. He resigned a short time afterwards. The first faculty of lecturers was composed of Drs. J. D. Bloom, chairman; Joseph Holt, L. F. Reynaud, W. E. Parker, Paul Michinard, E. D. Fenner, J. B. Elliott, Sr., S. P. Delaup, Edmond Souchon, T. S. Kennedy.

The pay for the nurses was \$8.00 for the first year and \$12.00 for the second. The first graduation was on December 11th, 1895.

(To be continued)

#### ASTRAGALECTOMY (WHITMAN'S OPERATION) FOR RELIEF OF CERTAIN FORMS OF PARALYSED FEET.\*

By PAUL A. McILHENNY, M. D., F. A. C. S.  
New Orleans.

In 1901, Royal Whitman began advocating the enucleation of the Astragalus as a means of stabilizing the ankle joint in cases of paralytic calcaneus, in doing so he presented to surgery a procedure for producing a stability at the ankle in certain forms of paralysed feet which up to the present has never been surpassed. Although at first the operation was only resorted to for the relief of deformities resulting from complete paralysis of the plantar flexors of the feet it has since been used in various types of foot deformities, both congenital and acquired, and when carried out according to the minute details as laid down by its originator, has given universally good results. Since its origin it has been used for the correction of various paralytic foot deformities in almost a countless number of cases, and today is the operation of choice in the majority of cities where modern Orthopedic Surgery is practiced. As the centers for abduction and adduction of the feet are the joints below and in front of the astragalus, hypermobility in these joints, caused by a paralysis of the muscles supporting them, produces deformities which greatly incapacitate patients so afflicted. Astragalectomy with displacement of the feet backward produces a mechanical hindrance to normal mobility yet allows enough motion to enable the patient to eventually walk with quite a normal gait; it obviates the necessity of braces and even specially constructed shoes, and when there is an accompanying paralysis of the quadriceps extensor the stability in the ankle allows the knee to be locked in hyperextension. Primarily this operation is indicated in cases of paralytic calcaneus, and is to be recommended in paralytic flat-foot when the abductors are paralyzed and the dorsal flexors weakened; in paralytic club-feet when the abductors, extensor longus digitorum, and extensor proprius hallucis are paralysed, and in flail or dangle

\*Read Before the Orleans Parish Medical Society, May 14th, 1923.



feet in which there is almost a complete paralysis of the entire group of dorsal and plantar flexors; it is also to be recommended in adolescent and adult cases of congenital club-feet of marked degree with very resistant structures, and in certain deformities of the feet resulting from spastic paralysis. In the majority of paralytic deformities of the feet there is almost always a contraction of those muscles which were not affected by the original condition; if such be the case all contractions should be overcome by manipulations some time previous to operations for astragalectomy so that at the time of operation the feet may be easily placed in the position best calculated for weight bearing. In cases complicated by quadriceps paralysis Knock Knee is often a secondary deformity, and should be corrected by osteotomy before astragalectomy. Although this operation may be easily performed, it is absolutely necessary that certain details be borne in mind and carefully carried out, otherwise the result may be unsatisfactory to operator as well as patient. In other words, "if we are going to perform Whitman's operation, follow Whitman's directions if Whitman's results are expected." 1st. The foot must be displaced backward till the Tibia fits into the concave portion of the surface of the Os Calcis, and the malleoli grasp the neck, with the external malleolus well forward on the external aspect of the Cuboid; this brings the tibia into direct contact with the scaphoid and prevents dorsal flexion. 2nd. The foot must be placed in a position of slight Equino-valgus, the degree of equinus depending on whether or not there is a quadriceps paralysis. When the foot is displaced backward weight is transferred nearer the center, and greater stability is acquired because of dorsal flexion being limited by the tarsus impinging on the tibia; lateral mobility is at the same time limited by the malleoli grasping the neck of the Os Calcis. The operation consists of a curved incision beginning two inches above, and back of the external malleolus, curving down about the malleolus and extending across the dorsum of the foot; the peroneal tendons are dissected free, and are either cut or displaced; the tendon of the extensor longus digitorum

is displaced inwards, and all structures about the external malleolus, and over the dorsum extending to the head of the astragalus are severed; the foot is then dislocated inward and attachments about the external and internal aspects of the astragalus severed; the astragalus is then pried or twisted upward and outward until its posterior attachments can be severed when it may be delivered. The foot is now further dislocated to the inside, and all loose ends of capsule, ligaments, etc., are trimmed off; the articular surfaces of the malleoli are pared off and refashioned to fit more accurately about the os-calcis; the posterior portion of the scaphoid and the external portion of the cuboid are gouged out to make beds for the malleoli when the foot is displaced backwards; fixation sutures are placed from scaphoid to tibia and from cuboid to external malleolus to temporarily maintain position. If the case was one of calcaneus deformity with active peroneals, these tendons should be severed and transplanted into the Tende Achilles, otherwise they are returned to their original position. Interrupted sutures are placed in the anterior and lateral ligaments, and the skin closed in like manner. A plaster cast should be applied from toes to knee with the foot held in a position of slight equino-valgus and backward displacement. As the operative field is free from large vessels no excessive bleeding occurs, but because of the extensive traumatism considerable ooze may be expected, it is therefore wise to cut a fenestra in the cast before it hardens to facilitate inspection and dressing. As soon as the wound is healed the fenestra is closed, and the cast kept on for six weeks; a new cast is then applied and a more desirable position of the foot secured if necessary; a heavy piece of felt or cork is incorporated in the cast under the heel to make up for shortening, and the patient encouraged to begin walking. It is surprising to see how soon patients walk, and in many cases without pain. Cast or brace support should be continued for about four months after operation, after which ordinary shoes with raised heel, and in some cases raised sole also may be used. Because of greater stability, greater functional use follows, and within a year

it will be noticed that the limb has begun to develop more rapidly, and the patient to walk quite naturally.

I shall only cite three cases at this time, each of which is illustrative of a type in which astragalectomy has proved, one might almost say, curative.

Case 1—E. V., 14 years. Paralysis of Quadiceps extenso, Semitendinosus, Semimembranosus, Adductors, Abductors and Dorsal flexors of right foot. Leg two inches short, and Knock Knee. Was wearing high brace and walked with effort. Operation June 22, 1921. Osteotomy of Femur two inches above Condyles. Knock Knee correction. Three months later Astragalectomy and backward displacement of foot. Now walks well with raised heel and sole. No brace used.

Case 2—H. H., 15 years. Weight 211 pounds. Paralysis of Dorsal flexors and Abductors of right foot. Abductors weak. Position of Paralytic Club-feet; had worn ankle supporting brace, and was walking on outer side of feet.

Operation June 20, 1922. Astragalectomy, etc. Now walks well and dances. No brace.

Case 3—M. H., 12 years. Paralysis of Quadiceps, and complete paralysis of dorsal and plantar flexors of right foot. Could only walk with crutches. Leg two inches shorter than other.

Operation January 27, 1922. Astragalectomy, etc. Now does not use crutches, and walks well with no support other than ordinary shoe.

#### SITUS INVERSUS VISCERUM TOTALIS OR COMPLETE TRANSPOSITION OF THE VISCERA.\*

GEORGE S. BEL, M. D.,  
New Orleans, La.

*Situs Inversus Viscerum Totalis* or complete transposition of the viscera is one of the most ancient conditions and its anatomical peculiarities led to many curious theories of causation, and was, in the early days of medicine, looked upon as an anatomical curiosity and of particular interest to the anatomist and pathologist, but of recent years, it has become of utmost importance and immense significance to the clinician in arriving at a correct diagnosis by intelligent interpretation of the physical signs, and tremendous importance to the surgeon in thoracic and abdominal operations.

The early reports came from the anatomical room and pathological department, but the recent ones are mostly

recognized during life by the clinicians, due to the more frequent and careful routine examinations aided by the use of the X-ray and, in some instances, by the Electrocardiograph.

From the historical point, it is one of the most ancient conditions as Aristotle observed two cases of transposed organs in animals (Liver and Spleen). The next reports are found in the Sixteenth Century. In 1912, Karashima placed before the profession in catalog form a complete list of previously published cases; since then, a number of cases have been reported and among the most recent are Brimblecombe, Williams, Sherk, Funk and Singer. In some of the cases reported, the transposition was complete, implicating all of the viscera, while in others, it was partial; occurring more frequently in males; when in females, it does not interfere with parturition.

As to the etiological factor in the production of this peculiar anomaly, many theories have been advanced, but none have been definitely proved and still a subject for much criticism except that these anomalies have their causative factor operating at a very early embryonic period. The time allotted to this subject will not, at this reading, permit of a detailed description of the various theories propounded.

I feel this case is of sufficient interest to be presented:

J. J., British Honduras, colored male, aged 29 years, seaman by occupation, admitted to my service in Charity Hospital on account of dysentery.

*Complaint:* Pain in abdomen and frequent bowel movements.

*Family History:* Negative.

*Past History:* Had measles, mumps, whooping cough when a child—sore on penis six years ago; chills and fever four years ago and influenza in '915.

*Habits:* Was an alcoholic, drank all the whiskey he could get.

*Present Illness:* About 5 weeks ago, he suddenly developed a pain in the region of the umbilicus, followed by frequent stools which continued throughout his illness and the stools consisted mostly of mucus.

*Physical Examination:* A poorly developed, undernourished colored male, 5 feet, 9 inches, weighing 125 pounds.

\*Read Before the Louisiana State Medical Society,  
April 24-26, 1923.



A complete physical examination was made and I will leave out the minor parts in order to save time and suffice to say the Head, Face and Neck were negative.

*Thorax:* The chest was normal in shape and equal in expansion. The lungs revealed normal pulmonary resonance and respiratory sounds throughout. The apex beat could not be felt on the left side but was visible and palpable in the right, fifth and sixth interspace just within the midclavicular line. The right border of the heart dullness was 8 cm. to the right of the sternum in the fourth interspace and the left border of the heart corresponded to the left border of the sternum. The space which corresponds to the normal cardiac dullness on the left of the sternum was resonant. Auscultation on the right side of the sternum and over the sternum, the heart sounds were loud, distinct, and of normal quality. (No murmurs.)

Examination of the abdomen revealed a slight prominence in the upper left quadrant and on palpation, the lower part of the liver could be distinctly felt, extending about two inches below the costal margin, but was sensitive on pressure and moved with respiration. Percussion showed the liver dullness began at the 5th rib in the midclavicular line and extended to about 2 inches below the costal margin.

Traube's semilunar space which is normally hyperresonant because of the underlying stomach is now dull due to the position of the liver.

The splenic dullness was determined on the right side, corresponding to its normal position on the opposite side. The genitalia, extremities and reflexes were normal. This man was right handed.

Blood and urine examination negative except a slight leukocytosis. Wassermann negative.

X-Ray examination revealed the heart on the right side with transposition of the liver, stomach and colon.

The autopsy revealed a complete transposition of the thoracic and abdominal viscera, also vessels and nerves, the dome of the diaphragm higher on the left side, etc.

As to diagnosis and comment, no better illustration can be of the achieve-

ment in the scientific development of medical practice than the methods of physical diagnosis which are recognized as most applicable to the determination of the anatomic and physiologic deviations caused by the transposition of the thoracic and abdominal viscera, consequently emphasizing the importance of making a complete and thorough examination in every case.

The modern methods employed in Roentgenology have increased our armamentarium from the diagnostic side and allow early recognition with the correct interpretation of this rather uncommon curious anomaly.

It is of extreme importance to determine the presence of transposition of the thoracic and abdominal viscera and the most significant diagnostic point is their anatomic localization, especially when concerned in the surgical pathology of thorax and abdomen.

It must be remembered that congenital misplacement of the heart is rare compared with displacement from pathological conditions which mechanically influence its position and that the morbid lesions that displace the heart are usually readily recognized. In the abdomen when the liver occupies its opposite position, it may be mistaken for enlargement of the spleen, for example, as we have in malaria, leukemia and other abnormal conditions. An acute attack of the transposed appendix or gall-bladder may not be suspected until serious damage has occurred or, in women, may be mistaken for tubo-ovarian disease.

In conclusion, I wish to emphasize the following points of interest:

1. The functions of the various organs in this case appeared normal, and up to the time of the attack of Dysentery, patient was perfectly healthy, and the complete transposition had no influence on the health of the individual.

2. That transposition of Viscera is not so uncommon, as pointed out by the literature.

3. That it is no longer looked upon as an anatomical curiosity but of extreme interest and great importance to the clinician and surgeon.

5. The importance of a complete physical examination in every case as a routine procedure, aided by X-ray when possible.

5. A case of complete transposition of the thoracic and abdominal viscera, diagnosed by physical methods, subsequently corroborated by X-ray, and, finally at the autopsy table where it was photographed.

#### DISCUSSION.

**Dr. Lester J. Williams (Baton Rouge):** Doctor Bel has very ably presented this peculiar and bizarre anomaly, and it was a great treat to listen to his paper.

I very recently had a case of supposedly double heart sent in for examination, an old negro woman about 65 years of age. I examined her and found it was a case of situs inversus. I wanted her to take a barium meal, but she refused and promised to come back later. She did not come back however, and I learned that, never having seen an X-ray apparatus before, she thought that I was trying to conjure her, and refused to return.

**Dr. J. Birney Guthrie (New Orleans):** Acquired displacement of the viscera is an everyday occurrence, but the fact that the case here presented is one of congenital inversion of the viscera makes us feel that it may be more common than we judge.

I would like to ask Doctor Bel whether there were three lobes in the left lung, and whether the aorta was on the left side. Also it would be interesting to know whether the recurrent laryngeal on the right went around the arch of the aort or around the subclavian.

**Dr. A. A. Herold (Shreveport):** When we learn to examine all our cases thoroughly—when we have time to do so, we will probably find more of these cases. During the war we had two such cases in Shreveport, before the Medical Advisory Board. The whole point is that if we study our cases more thoroughly, make a complete physical examination of every patient, I have no doubt we would find the condition more common than we suspect.

#### A CASE OF STREPTOCOCCUS MENINGITIS

By DR. S. CHAILLE JAMISON,  
New Orleans.

R. S. Serial No. D. 8259. Admitted to Ward 14 Charity Hospital January 20th 1923. Complaining of headache. His family history and past history contain nothing of note. His present illness began on December 20th, 1922, when he began to have earache about three o'clock during the afternoon. The following morning the pain in his ear was so severe that he was unable to sleep; it was somewhat relieved by warm instillations of castor oil but was not completely relieved until later, when a thick yellowish pus began to discharge. This

discharge lasted for about four days and then ceased. Some three days after this, headache began, which was more intense when the head was in a dependent position. The headache has become more severe day by day and is unrelieved by any medication. He is uncertain as to whether his temperature has been elevated or not, though he was told by his attending physician that his body temperature was about 101. He has vomited twice. The character of the headache has been throbbing, and is located more particularly in the occipital region.

**Physical Examination:** A well-developed, well nourished white male adult, who does not appear to be very sick or in great pain. The head and scalp are negative. The external ear shows no discharge and the hearing is normal. The heart and lungs are negative. The liver is not enlarged, the spleen is not palpable, and there are no areas of rigidity or tenderness, and no masses in the abdomen.

**Reflexes:** The pupils react normally to light and distance. The abdominal and cremasteric reflexes are present. The biceps and wrist-jerks are normal, the patella reflexes are entirely absent. There is no rigidity of the neck. The urine was negative except for a few hyaline casts. The blood showed 10,250 white cells per c. m., 82 per cent of which were neutrophils 11 per cent small lymphocytes, and 7 per cent large lymphocytes.

An oculist's examination of the fundus revealed a suggestive early optic neuritis. An eye, ear, nose and throat specialist reported that the drum membranes were clear, the mastoids not involved. X-rays of the sinuses were negative. The temperature was normal, the pulse 60 to 80, the respirations 16 to 20 until the day before death, which occurred on the 27th, when the temperature rose to 101 with a pulse of 136 and respirations of 26.

#### DISCUSSION.

When this patient presented himself in the ward, it was fully realized that it was probable that he had either a cerebral abscess or meningitis. In the face of the negative history, however, and particularly the negative physical examination, it was seen that this diagnosis was not entirely applicable. The absent patella reflexes strongly suggested syphilis of the cerebro-spinal system, while



the normal temperature, pulse and respiration with the low leucocyte count, certainly did not point towards an abscess or meningitis. The examination of the aurist and the radiologist made us feel fairly sure that the ear or sinuses presented no suppurating focus. While the early optic neuritis could have easily accompanied an abscess or meningitis, it seemed just as well to point to a syphilitic cerebro-spinal involvement. The negative blood Wasserman certainly did not exclude syphilis of the cerebro-spinal system.

We felt at this time that every precaution had been taken to exclude an abscess, and we therefore felt justified in doing a spinal puncture. It must be borne in mind that spinal puncture is contra-indicated where abscess of the brain is in serious question, due to the fact that the lowered tension of the fluid precipitates rupture of the abscess.

January 3rd, 1923, 40 c. c. of cerebro-spinal fluid was withdrawn and found to be under some tension, with a strongly positive Wasserman reaction. A normal cell count, no increase in the globulin, a negative Colloid Gold curve and a negative culture.

Immediately following the puncture, the headache seemed to be relieved. On the 24th, the patient appeared to be septic. He still complained of severe headache, he was irrational at times, and the temperature rose to 99. On the 25th the pain in the head was less, but slightly rigidity of the neck was noticed. Another spinal puncture was done and 50 c. c. of fluid drawn. It was found to be turbid, to contain innumerable pus cells and a pure culture of streptococci. The Wassermann was strongly positive.

The diagnosis was now of course obvious and clinically it appears that the spinal puncture was a grave mistake, and if it did not bring about, certainly precipitated the spread of the walled-off pus, and excluded any hope of saving the patient's life. The next day the frank signs of meningitis were present—that is rigidity of the neck, Kernig's and Babinski's signs with strabismus and inequality of pupils. On the night of the 27th, the temperature rose to 104, pulse to 150, respirations to 30 and the patient died, one week after admission.

An autopsy held the same day was as follows:

On opening the cranium, the dura was found intact. No pus was found beneath it or at the base of the brain. The lateral ventricles contained a muddy white fluid. On opening the right internal ear, a large quantity of pus flowed into the base of the skull. The drum membrane and the mastoid cells were found to be clear. The exact origin of the pus could not be determined, but it appeared to come from the petrous portion of the temporal bone. Smears made from the lateral ventricles, the meninges and from the pus in the region of the right internal ear showed streptococci.

**Comment:** Exclusive of epidemic meningitis, tubercular meningitis and traumatic meningitis, the literature is unanimous in stating that streptococci meningitis heads the list and Gunert states that 91 per cent of the cases of streptococcus meningitis follow chronic otitis media. This, however, is

not the experience recorded at the Charity Hospital. During the last 17 years there have been only 14 cases of meningitis, exclusive of the types named above, and of these pneumococcal meningitis easily leads, of this type 11 cases having occurred, 1 each of streptococcus, staphylococcus and influenza meningitis.

There is little doubt that early operation, while the meningitis is still localized, offers the only reasonable prospect of success, and that recovery is very exceptional when a case has reached the stage in which micro-organisms are present in the cerebro-spinal fluid. I feel that lumbar puncture is contra-indicated in these cases, although it might be an advantage to know that the cerebro-spinal fluid was negative, thereby indicating that the meningitis was localized, and that surgical drainage would be efficient. It is obvious, however, that operative procedures should promptly follow the lumbar puncture if they are to be undertaken at all.

Bowers reports one case of streptococcus meningitis in which the lumbar puncture showed streptococci, which recovered following operation. Patzig reports a case which recovered following simple lumbar puncture. Shaw reports a case which was treated by repeated lumbar punctures with recovery. Others report cases which have recovered after sub-tentorial drainage.

In conclusion, I wish to emphasize the fact that any case presenting any symptoms of cerebral involvement following ear disease should be regarded with the utmost anxiety, and that a most careful study should be undertaken to exclude epidural accumulations of pus before spinal puncture is performed. In the case which I have reported, no effort was spared to this end, and yet we failed most lamentably, with possibly disastrous results to the patient. It is probable that the absent patella reflexes were purely a coincidence in this particular case and it is possible that the Wassermann was positive due to the active inflammatory process going on. In the future I expect to have more detailed x-ray pictures made with the hope that they may show areas of necrotic bone.

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#### DISCUSSION.

**Dr. Homer Dupuy (New Orleans):** If meningitis and brain complications belong to any one specialty, certainly the otologist and rhinologist gets his share of them. I believe it was McEwen of Glasgow who said that 80 per cent. of acute intra-cranial infections are of otitic or sinus origin, and when you consider this anatomical fact, that the optic nerve and the auditory nerve apparatus have around them a perineural space which is really a subarachnoid space; the middle ear, the nose, and the orbital cavity, can readily carry infection along these nerve tracts.

This case is unusual from the fact that there was apparently no focus of infection along the ear, sinus, the nose or the eye channels. Between the petrous portion of the temporal bone and the sella turcica lies the third cranial nerve, the sixth nerve. It is remarkable how meningitis at that point did not cause paralysis of some eye muscles on that side due to pressure on these nerves.

I quite agree that puncture of the cerebrospinal canal is not always safe in the presence of a meningeal infection. There may be a deep-seated abscess giving apparently no objective or subjective symptoms, such a puncture is contra-indicated in cerebral abscess.

It may be well to stress the fact that every ear infection is a potential cerebral complication, and we should also remember that the labyrinthine apparatus and the auditory nerve are surrounded by a portion of the dura.

This patient might have had an acute rhinitis or frontal sinus trouble lasting only a few days with the infection having traveled along the perineural space of the olfactory terminals in the nose—or along vascular routes from the frontal sinus.

**Dr. J. Birney Guthrie (New Orleans):** Dr. Jamison is unquestionably correct in refraining from lumbar puncture where abscess of the brain is suspected or brain tumor near the base. Dr. Dupuy has emphasized the contra-indications. In a rather exten-

sive experience with meningitis I think there is much more good done by performing puncture for diagnostic purpose than by avoiding it. I do not think Doctor Jamison has anything to reproach himself with in having made a lumbar puncture in this case. I believe in the long run, there will be more harm done by omitting lumbar puncture in these cases than from performing it. In the cases that showed middle ear complications in the Army the lumbar puncture was often the means that gave us our diagnosis. Certainly when meningeal symptoms are present and we have middle ear infection, we do lumbar puncture. Theoretically, there is objection to the use of puncture, and that might hold in specific meningitis. It is conceivable that a localized specific meningitis might be disseminated through lumbar puncture, but in the long run more good comes from the puncture in determining diagnosis than from omitting it through fear of complications.

**Dr. S. Chaille Jamison (closing):** I simply want to emphasize the failure of the laboratory procedure to give us warning. I was fully cognizant of the damage where there was no question of pus in the brain, but I looked to the laboratory to give me warning. For instance the cell count—it did not show it; the pulse and temperature were normal. I merely want to point out that in spite of these facts we went in, and I believe did this man irreparable damage. I have done two or three thousand lumbar punctures, but this is the first time I felt I ever did anybody anything but good.

#### WHAT THE STATE IS NOT DOING FOR ITS MENTALLY DISEASED.

HENRY DASPIT, M. D.,  
New Orleans, La.

It is not my intention to present to you any scientific consideration of the handling of the mental disease problem but rather to call your attention to public indifference and inertia in this field. By the state I mean the whole mass of its citizens of which we as individuals form a part, knowing full well that any real censure will be principally ours as we represent the accredited scientific profession dealing directly with such matters. If one seeks an explanation of such an unfortunate attitude on the part of medical men of our State, it may be found in the medical education they received in days only slightly removed both here and in other schools. It was undoubtedly the experience of most of you during your medical university life to have been told nothing whatever regarding morbid mental states or to have had the matter glossed over in a purely

\*Read Before the Louisiana State Medical Society, April 24-26, 1923.



perfunctory manner. Within comparatively recent years there has been quite an awakening in the psychiatric field. A newer and broader understanding has developed as to the factors playing a part in morbid mental states and a more humane and intelligent attitude toward the handling of psychotic individuals. It is well for all of us to remember that this interest is not confined to the psychiatrists and medical men but that it forms a considerable topic with the public as a whole. It accordingly behooves every one of us to become more conversant with the advances being made in psychiatry and if we in any sense live up to our obligations it will be in the field of prevention where our greatest effort will be centered.

You may expect to hear a denunciation of our State hospitals but such is most remote from my purpose. Be it well understood that there is no individual or institution held up for criticism or ridicule as I have nothing other than the sincerest respect and praise for the Superintendents of our State hospitals who are working under handicaps of a nature little appreciated by the profession or the public. My own observation of years past as a resident of the East Louisiana Hospital has been supplemented by recent visits to both of our State hospitals as well as to the State Colony and Training School at Alexandria. The general condition as to housing and scientific care have shown material improvement and there exists an esprit de corps which is most commendable.

What is our present situation? We have in our State two hospitals for the care of mental disease and the initiation of one for the care and training of mental defectives. Did it ever occur to you that Louisiana supports more beds for mentally diseased persons than the sum total of all other conditions? This naturally does not include hospitals supported by private enterprise. Even among these will be found much space given to psychotics. Both of our psychopathic institutions are overcrowded beyond all reason. The one at Jackson is much over two thousand, while Pineville is rapidly approaching the same mark. This excess is necessitating the reconstruction of many central

features such as kitchens, laundries, dininghalls and so on which are comparatively new but planned to meet smaller demands. This is growing worse daily. From no less an authority than the National Committee for Mental Hygiene comes an opinion that psychopathic institutions of greater population than fifteen hundred to two thousand are undesirable. This means that East Louisiana Hospital at Jackson has reached its limit and that the State Hospital at Pineville admits of but slight increase. An attempt to offset such conditions was made by Dr. Joseph A. O'Hara, Coroner of this Parish, who sponsored a bill in the last legislature for the establishment of a third State hospital. This bill passed the Senate with flying colors only to die completely in the childish paper-throwing preceding adjournment of the House. It is fortunate that the spirit which actuated such an effort has not died and that the bill will be re-introduced when the legislature again meets.

What is the community doing, actually carrying out, in the way of any State program to prevent the development of psychopathic increase which will call for more hospital beds, or for the direction and supervision of patients discharged from our hospitals? In the first instance, I am ashamed to say, absolutely nothing. In the second, so little as to merit no comment. I will admit that a ray of light can be seen in the action of the Superintendent of the State Colony and Training School who has been farsighted enough to outline a real policy but this is quite individual. In some communities private agencies are making an effort but these efforts are largely isolated in single groups without any comprehensive co-operation. In New Orleans the out-door or clinic service of the Touro Infirmary is doing creditable work even with the handicap of no ward service. The Louisiana Retreat plans scientific development but is marking time as the result of public ignorance which has resulted in uncalled for opposition. The Charity Hospital is doing nothing either in recognized outclinics or appropriate ward space. The City Hospital while doing well in a limited fashion is far from being equipped to meet the community need. In the field of the men-

tally deficient, the Milne and the Gumbel Homes while merely scratching the surface at least offer a beginning. A very good example of public inertia even among those who claim much interest in this work can be found in the fact that the Louisiana State Society for Mental Hygiene is in a state of lethargy with its last meeting about the time our present Governor went into office. I happen to be a member of that particular association and personally am quite willing to shoulder my part of the blame for such inaction.

It is not sufficient for a community to feel that as soon as a psychopath becomes grossly maladapted to his environment he is promptly received into an already horribly overcrowded State hospital. It is rather unexplainable when one considers that we dip our cattle, immunize against hog cholera, protect our humans against small-pox, typhoid, diphtheria, etc., glory in our campaign for Public Health, become enthusiastic in our efforts for Social Hygiene and yet, as a body, hardly turn a hand in the advance of Mental Hygiene. The far-reaching effect of such activity should be apparent to all thinking people. For those who cannot think in terms of racial betterment, the purely economic side should appeal. It is one of our greatest faults that most of us think in terms of initial cost and lack the vision to appreciate ultimate results which may be attained long after we have passed on the work to others.

Before making any attempt to speak even broadly of measures which would look to a betterment of conditions, there is a thing of paramount importance and it is the absolute depoliticalization of all State institutions. You, who were present at the last meeting of the State Society in New Orleans or who attended the general meeting of the American Medical Association held here, heard our Governor paint terrible pictures of conditions and appeal most pitifully for assistance from the whole medical profession. You will remember quite well how he positively affirmed that all political influence would be removed from all State institutions. In justice to him, I am quite ready to admit that he reappointed at Pineville a man who continues to get results; at Jackson, a man who came to our State highly endorsed

and who has lived up to expectations. Also that these appointees have received his unqualified support and have in no way been hindered in the proper carrying out of their work. BUT! Two sessions of the State Legislature have passed during his term of office and what action has he taken to remove from the next Governor the power which he, himself, exercised? The power to remove from office a Superintendent who, as far as I have been able to find out, met with the approval of the Board intrusted with the direction of that particular hospital. This is the position every Superintendent of every State institution occupies. An incoming Governor may accede to his whim or as the result of pressure for patronage remove any institutional head. The effect of such a situation on our hospital executives is to cause a constant unrest and uncertainty as to their tenure of office and is quite certain to detract from their efficiency. It also removes from the younger members of the staff the real incentive, the final reward of their effort. The resulting frequent changes in staff positions is certainly conducive to a low standard of hospital activity. It should hardly be necessary for me to say that each and every one of us should make it a point to see that our representatives in Baton Rouge support legislation to this end which will come before the next assembly.

After giving the men who govern our institutions some sense of security in their positions and making their removal possible only for adequate cause and after proper hearing, what can we do in the matter of a State program for Mental Hygiene?

The essential thing is a centralized direction of these activities which would coordinate such work: a Bureau or preferably a Department of Public Welfare. Under such a general department would function various bureaus dealing with special activities. Our chief interest now is in the Board or Bureau of Mental Hygiene which should be directed by a specially trained and experienced individual. The necessity of specifying that the director be qualified must be apparent to all as too many Governors have given conclusive evidence that they think because a man



has received a degree in medicine that he is capable of doing any detailed or specialized work. To outline the complete scope of such a bureau's activities is precluded by my time allowance and I will merely mention a few of the more important things that could be done.

Reasonable and constructive contacts could be developed with various Social Agencies dealing with the environmental surroundings of infancy and early childhood.

For the pre-school period, the encouragement of "habit clinics" where early morbid trends could be directed along proper lines. In such clinics, the realization that it is not only the child but most often the parent who requires direction would do much to smooth out many difficulties.

For the school period: A very close relation between the school clinics, psychiatric clinics, State and private schools for the defectives, correctional institutions and the Juvenile Courts. It is during this period that we will have the real opportunity of getting closest to the community. Our laws making it necessary that all children of a certain age attend school will naturally bring them all under scrutiny. Incidentally all schools whether public or private should be forced to conform to this principle of State supervision or be closed up.

A word about our State institutions.

There is no argument whatever against the need of a third State Hospital. Unfortunately its position will be much the same as that of those already operating but at the same time its location may be such as to make intensive work possible. I dislike the stress being laid on the necessity of establishing "a psychopathic hospital". Our present State hospitals are psychopathic hospitals or the public should know why.

The time has passed when State hospitals for the Mentally Diseased are solely places where our psychotics are sent for handling. They should be developed into centers of education to the general public. Whatever their location, they should have an outdoor or clinic service to cover their immediate country and from them "flying clinics" should go out at intervals. These clinics would fill a great need in communi-

ties removed from our general hospitals both in the way of prevention and for the observation and direction of patients who have been discharged or paroled from their respective institutions. The supervision of the discharged patient by the group that directed his hospital life is a very important point. Our state general hospitals should be obligated to conduct adequate psychiatric divisions, both clinic and ward services. This is most desirable both from the patient's standpoint and for the educational effect on the public. It is our duty to see that the public thinks of mental disease in the same way that they regard physical disease. The following words are from the report of Dr. C. Macfie Campbell appearing in the report of the Trustees of the Boston Psychopathic Hospital: "A sick person admitted to a general hospital, although on a special service, has at his disposal the consulting facilities of all departments. The resident staff usually consists of physicians specializing along various lines and the visiting staff is easily available. Under ideal conditions a patient with mental symptoms would also be taken to a general hospital, there to be admitted to a special service, and while in that service he would have available all the special facilities of the other departments should his symptoms require either special forms of examination or methods of treatment not available in his own department. In the actual situation patients with mental symptoms are brought to a separate hospital and not to a department which is an integral part of a general hospital."

Regarding the necessity for research, the need is too apparent to require anything other than mention.

The desirability of a more extensive parole system is known by all who have contact with our State hospitals. For the proper handling and supervision a Social Service Department is imperative. The East Louisiana Hospital has a single such worker who is expected to cover all phases of the institution's activities. This is naturally impossible. You may say that the cost would be prohibitive but I believe that Steckel of the King's Park Hospital, New York, has shown where it can be made a saving rather than an expense to the state.

He says: "Advocates of an expensive parole system often point to its financial benefits, while opponents reply that the added expense of a large social service department counterbalances to a great degree this financial advantage. In order to show in actual dollars and cents what has been saved the State at this hospital alone during the years 1918-1919 and 1920-1921, we have collected the following data: During the fiscal year ending June 30, 1919, we expended for salaries, wages, maintenance, and traveling expenses of the personnel of the social service department and for the transportation of patients, \$4,496.38. During the year the daily average number of patients on parole was 304.

"In the year ending June 30, 1921, owing to a large increase in the personnel of the department and the resulting growth of its activities, \$14,410.92 was expended for salaries, maintenance, and so forth. However, as a result of the increased activities rendered possible by the augmented personnel, the daily average number of patients on parole during the year was increased to 669, a gain of 365 over the year ending June 30, 1919. The annual cost of maintenance in the hospital being \$379.53 per patient, the gross saving amounted to \$138,528.45, or a net saving of \$134,613.91.

"This does not take account of money earned by patients who were employed during their parole period. 280 earned during their parole period \$134,344.00"

All advances and innovations cost money but in the field of Mental Hygiene you are investing in the best possible crop.

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#### WHAT LOUISIANA IS DOING FOR HER INSANE.\*

JOHN R. THOMAS, M. D.,  
Pineville, La.

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I am grateful for the opportunity, the honor and pleasure of saying a few words to you this morning on the subject of "What Louisiana is doing for her insane."

It is my belief that a very limited number of our best informed citizens know what the State is really doing for

its insane. As time is limited I will be as brief as possible in order to cover the essential points which I wish you to know.

For convenience of administration the State is divided into two districts for the insane, the first district comprising most of the Southern and Eastern parishes including the city of New Orleans, while the second district is composed mainly of the parishes in North and West Louisiana and a few parishes of Central Louisiana.

There are two large Hospitals for the insane in Louisiana and a colony for the feeble minded recently established at the old site of Camp Bearuregard.

One of the large hospitals and the larger of the two is the East Louisiana Hospital at Jackson and the other is the State Hospital at Pineville.

Patients from the first district are committed and sent to Jackson while those from the second district are sent to Pineville. That is the general rule but should there be vacancies in either hospital and no applications from patients in that district and should there be applicants in the other district they are sent to the hospital that can admit them. So overcrowded have been both hospitals in the past few years that this condition rarely occurs.

For you to understand and appreciate just how the State transacts its business of handling the insane up to the time of their admittance into one of the two state hospitals let me briefly give you the methods pursued.

When a patient is asked by relatives or friends or the citizens of a community to be committed to a hospital for insane the application is in this State made to the Sheriff or Parish Coroner and the Coroner then requests the Judge of the District Court to appoint a Lunacy Commission to examine the patient and pass upon his or her condition. This Commission is composed of the District Judge, the Parish Coroner, and one other physician appointed by the Judge. If this Commission adjudges the patient insane, he or she is then committed to the hospital in the district of which the parish of the patient forms a part. The Sheriff or the Coroner then writes the Superintendent of the hospital and makes request for the admission of the patient. If the request for the admis-

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sion of the patient is not accompanied by a question blank filled out, the Superintendent immediately sends a blank questionnaire for the Coroner to fill out and return, the object of which is to get as complete a history of the patient as possible to aid the hospital physicians in the proper diagnosis of the case. If there is room at the hospital the patient is immediately ordered brought in and this is usually done by the Sheriff who is often accompanied by one or more relatives of the patient. If there is no vacancy for immediate admission the patient is held at home until there is an opportunity for admission or if the case is violent and uncontrolable he is confined in the parish jail until advised by the hospital authorities that he can be admitted.

Unfortunately heretofore the requests for admission have always been greater than the hospital capacity of both institutions of the State and in spite of every effort on the part of hospital officials many have been obliged to remain in jails until such time as room could be provided.

So much for the detail of handling the insane up to their entrance into the hospital for care and treatment. Now for the State's care after their admission.

In Louisiana as in nearly all of the States of the Union, every hospital is administered by a Board of Administrators or Trustees who serve without pay. As a rule these men are selected from the ranks of the best citizenship; men who are known for the inprobity, ability honor and zeal in civic duty and righteousness. To this Board falls the duty of administering the affairs of the hospital.

It is their duty to perfect an organization not only to treat and care for the charges under their keeping and to see that it is well done but also to care for and protect the money of the taxpayers that is appropriated to maintain the institution.

This board selects an executive officer to carry out the rules and regulations prescribed and this officer is, in every well regulated hospital, a physician who organizes a staff of physicians, nurses, attendants and all necessary helpers to carry on the work of the hospital. It may not be amiss for me

to say here, and I do so with all truthfulness that the members of the Board under whom I have served as Superintendent at the Pineville institution have been men of the finest rectitude and have served the State with great honor and credit and with great benefit to humanity.

To continue your interest in this subject, let me say that as soon as the patient is received he or she is turned over to the Supervisor if a male, or the Supervisoress if a female, and is bathed and fresh clothing is put on the patient who is sent to a receiving ward and placed under the care of a ward physician and an attendant. All marks, scars, and bruises are noted and made a part of the patients record. The study of the patient is then begun by the ward physician. The patient is placed under his care and treatment until such time as this physician is ready to present him to the staff for diagnosis and their recommendations of treatment are outlined.

The staff is composed of all of the physicians of the hospital including the Pathologist and Radiologist.

Laboratory examinations of all secretions are made on all patients so that when the case is presented to the Staff every thing pertaining to both the physical and mental examination is unfolded. This enables the examiners to make a diagnosis and place the patient in one of the twenty-two classifications now recognized by the American Psychiatric Association and to outline a method of treatment best suited for the case. You can well imagine what a tremendous amount of work and detail this requires, and it is only those trained in psychiatry who can do so and get correct and effective results on diagnosis and treatment.

Every effort on the part of the hospital staff and assistants is exerted and put forth in the interest of the patient and the results at the Pineville institution have been most gratifying, between 25 and 35 per cent of the admissions being annually discharged.

Thus briefly I have outlined to you the manner of committing the insane to the State Hospitals and their reception and treatment.

There is no medical treatment per se for mental disease. When necessary,

of course, medicine is given for physical ailments but hope of restoration in cases that can be restored is usually directed to building up the physical body in the way of rest, food, and occupation. Patients shut up and kept in confinement offer little hope of improvement, much less cure.

The State Hospital at Pineville is without a properly equipped hospital building for the treatment of patients but another effort will be made at the next session of the legislature to get an appropriation for such a building, however, we do have a splendidly equipped laboratory building where all necessary analyses are promptly made.

The next question for your information would naturally be—Is the State doing all it can for these unfortunates? I will answer that by saying unqualifiedly "yes" and I believe that I can give you figures that will bear out my statement.

The total annual revenue or income of the State of Louisiana is approximately \$3,750,000 and the appropriations of the legislature at its session in 1922 for the insane of the State and for the Colony for the Feeble minded was \$836,000.00. These figures show that substantially one fifth of the revenues of the State is devoted to caring for its mental derelicts. This is perhaps the largest single item in the budget of the State.

These figures were given to me by Hon. W. N. McFarland, Supervisor of Public Accounts, who is not only an authority on the finances of our State but a public official without a peer in this or any other State. I further say that no State in the Union in proportion to its revenues is doing more for its insane and few as well as Louisiana. The appropriation above mentioned does not include the money derived from the severance tax or better known as the money derived from a tax on the natural resources of the State.

A half million of this money was allotted to the State Hospital at Pineville and there are now nearing completion four magnificent fire-proof brick buildings, and a similar amount has been used at the hospital at Jackson in the erection of splendid buildings.

The present Governor of the State, Governor John M. Parker, has exerted his best talents and efforts for the bet-

terment of conditions of the insane in the State and it is to his everlasting honor and credit that those magnificent buildings have been erected and the appropriations made as liberal as they are.

The real beginning of the uplift and improvement in the treatment of the insane in Louisiana began under the administration of the late Governor Hall. The appropriations under his administration were greatly increased and not only provided for better maintenance but gave two magnificent dormitories at the Pineville institution.

Governor Hall was a kind and charitable man and took a personal interest in the charitable institutions of the State.

The administration of Governor Pleasant continued the liberal appropriations for maintenance initiated by Governor Hall, but made no appropriation to take care of the increasing number of insane in the State and this is the reason for the crowded condition of the State hospitals that has prevailed for the past two years. This condition is, however, nearly solved for at the present time there are, I understand, no insane in the country parishes of the first district and only about 25 in the second district and they will all soon be in the Pineville hospital. The population of the insane as this time in the State is about as follows:

Number of insane in State Hospital at Jackson .....	2020
Number of insane in State Hospital at Pineville.....	1075
Number of insane in City Hospital for Mental Diseases in New Orleans approximately .....	100
Number of Insane awaiting admission to Pineville .....	40
Making a total of.....	3235

#### DISCUSSION.

**Dr. Joseph A. O'Hara (New Orleans):** I have been going around this State for a number of years telling the people what a great lot of good we have been doing for the insane, and now I have to tell you what we are not doing for the insane. I notice at the night meeting on public health a lot of subjects are to be discussed—malaria, the prevention of venereal diseases, tuberculosis and everything else; but not one word about mental hygiene. I want to ask the medical man, does he know of any greater carrier of dis-



ease, especially venereal disease and tuberculosis, than the feeble minded? They are the greatest breeders of all disease, and yet the board of health passes them up, or lets them down without a statement.

We have heard a good deal about what the doctors are doing for the insane, but I want to say that Governor Parker is one of the greatest champions of the protection of the insane that Louisiana has ever had. (Applause.) He has selected competent men to fill the positions, and they are doing beautiful and splendid work; but we have done so little for the insane of Louisiana in the last decade that what we are doing for them today is absolutely picayunish. For out of every nook and corner of the State you can hear the voice of these unfortunate insane begging for the establishment of psychopathic clinics in every hamlet of the State. We have neglected the establishment of these clinics where the proper people—the family and friends and relatives—can be instructed in the correct method of development and study, in mental hygiene, so that these individuals through their long, weary lives may be of some value to the State instead of an incubus.

We of today are responsible for future generations, and if we are absolutely and personally responsible for future generations, we are absolutely responsible for every case of insanity that they inherit from this generation. It is our duty to wake up and do something for these insane. Remember, it is a duty that has been thrust upon civilization to care for and develop those unfortunates of society that are unable to stand alone.

Take the money that has been invested, and the valuable time that has been lost, and then come with me to Broad street, and see the splendid institution under the care of Doctor Daspit, and if he were taken away from that institution tomorrow it would have to close its doors because this big city of 420,000 donates the handsome sum of \$18,000 a year to run it; this includes everything.

Then come with me to Boston and see the magnificent institution there constructed at a cost of one and a half million dollars, the Boston Psychopathic Hospital, endowed, with 100 beds for the treatment of acute insanity. They get \$250,000 a year, and they are going to get more. We get \$18,000 for the same thing that they get \$250,000 for.

This can be corrected in only one way, and that is by the education of the people of the State and of the city. Preventive medicine is the cry from all important educational centers. You will be visited in a few weeks by political office seekers who will ask for your support. But ask them what they intend to do for the insane of the State—what do they intend to do for the Shreveport hospital, for the Charity Hospital, and for the insane of the State, and the T-B hospital; then you can say what you are going to do for them. If you are going to do anything with politicians it must be before they get into office. The politician is willing to do anything, and he means everything he says; but when he gets to the legislative halls a man tells him he has to have a road built, or

a bridge built, or the State House wants a new coat of paint, and every time an appropriation is made they grab something from the amount that should go to the care of the insane.

As Doctor Daspit has told you, Governor Parker is in favor of caring for the insane in a better way, but I say it is your duty to go to your politicians when you go back and see that there is written into their platform a statement that they intend to care for the hospitals of the State, including those for the insane.

**Dr. C. S. Miller (Jackson):** Doctor Thomas has so well covered the field of what we are doing for the insane with the facilities we have, that there is not much left for me to say. I will say a word, however, in regard to a point he mentioned, and that is the increase of buildings. We have in the institution at Jackson increased our number of patients and have made room for them, and in so doing we have been able to take them into the institution much quicker. By doing this we have got results with a number of patients that possibly we would have not got, owing to the fact that they were removed from the jail and other places of confinement and did not become chronic in their mental disorder. So with the appropriation and the Severance tax we have been able to get the patients into the institution more rapidly and have been able to do something to help their condition.

The doctor also spoke of the treatment—that we did not use drugs. We make it a rule in our institution to handle our patients by giving them some form of hydrotherapy. Then the further treatment is occupational therapy. We think this is one of the greatest helps we have in handling mental cases. We know if they are allowed to remain to themselves they brood over their condition and gradually grow worse and worse. But if we can get them out of themselves, get them into some light work, maybe something they are interested in, and keep them occupied at all times, they forget their troubles, forget the disorders that are working within them, and are able, if not to improve their condition, at least not to go back. Some of them are brought to be useful to themselves and the institution. We have some patients that at first do nothing but unravel little bits of burlap, but this gives them occupation, and we build them up from that to where they can do other things, and after awhile they are really useful.

In placing our patients in the institution we place them according to their conduct and mental classification. For example, if we have a patient who is excited and has a tendency to become more so, we try to give him a quiet environment where he will not be around noisy people, and his excitement decreases.

The treatment and care of the insane at this time is practically in its infancy, but within the last few years it has advanced. We now have facilities, and as we have increased appropriations for their care and to put up proper buildings to handle these pa-

tients, we will get better results. We all know there are numbers of them throughout the State..

One of the other things the State has done is to provide a hospital for the feeble minded at Alexandria. Our institutions have been taking in the feeble minded cases throughout the State, and taking care of the feeble-minded there will relieve the State institutions and give us entirely psychiatric cases.

**Dr. Clarence Pierson (Alexandria):** I do not feel that I can pass this occasion without having something to say upon this subject, because of the long years I have been interested in this work.

I think the question is absolutely as Doctor Daspit has outlined to you, a question of prevention. The State of Louisiana, as stated by Doctor Thomas in his paper, has spent \$1,836,000 in the last eighteen months. Twenty years ago they spent \$135,000 in one year for the insane. We had no laws on our books at all. It is wonderful what has been done for this condition.

The question of prevention is up to the people of the State. Taxation has become so burdensome that it is no longer a question of whether we can have enough buildings, but is a question of the best education. The Charity Hospital that we all love so much, to which we all owe so much, has appealed to the public today, and it is really suffering because the State of Louisiana did not have enough in its exchequer to maintain it. We should have these psychiatric clinics throughout the State—we ought to have one at the hospitals at Shreveport and New Orleans. But we have no concerted action among the hospitals of Louisiana. Every one fights for its existence. An earnest appeal has been made to the Legislature for concerted action for these different institutions at Pineville, Jackson, Shreveport, and the hospital here. If we do not start in the medical school to teach the young man psychiatric work and laboratory work, you cannot expect them to do anything for this increasing population. It is an economic and scientific problem you must meet. So I say mental hygiene is the remedy. Every medical man in Louisiana ought to realize and know from his local conditions that it is necessary for him to rise and help relieve the local conditions by getting increased appropriations. The hospital for the feeble-minded is the entering wedge. How did we get that institution? By working for ten years in the Legislature and finally getting an initial appropriation of \$25,000.

**Dr. A. A. Herold (Shreveport):** The State of Louisiana has done a great deal for her insane in the last few years. I served as coroner in Caddo from 1912 to 1916, and it was nothing unusual to have insane persons in the jail for four to six months, notwithstanding the fact that Doctor Thomas was doing all he could to take them off our hands. We were forced in many instances to release these patients because they improved sufficiently to let them go. I understand this condition does not exist today, at least not to that degree. That is due in great measure

to the increase of funds from the Severance tax.

Going back to the question of taxation, we all know that in a few years, if the Severance tax holds, as it probably will, after the great agricultural college at Baton Rouge is established, there will be additional funds available, and we should keep our eyes upon our legislators. We have heard here of the great need of more money for the Charity Hospital, for buildings at Shreveport as well as New Orleans, also for the insane and for the tuberculous. We know money is needed for better roads and for other things. What conclusion can we come to? Ought we to go home and fight a reduction of taxation until we have more money available? Do not let reduction in taxation worry us. It is a test of good citizenship to stand up for sufficient taxation. The man who owns property should pay for the privilege of owning it—he should pay for citizenship. It would not be a bad idea to take it up with other state-wide bodies and fight reduction in taxation until these great medical needs can be taken care of.

**Dr. L. L. Cazenavette (New Orleans):** I have been instructing large clinics in the nervous wards of Charity Hospital for nearly twenty-five years. During that great length of time not only nervous patients have applied for treatment, but scarcely a clinic day passes that there is not some patient suffering from mental disorder coming from alleviation of the condition. I assure you that I feel that this great Charity Hospital should establish a psychopathic department, whether it be by simply devoting certain wards for that purpose, or the establishment of new buildings with proper laboratory equipment, etc.—we are greatly in need here of an institution where the mentally affected can be studied before they are committed to the State institution for the insane. Just as Doctor Thomas has said, the law requires that a man be certified insane before he is admitted to some of these institutions. I believe it is a great injustice to ask men to certify that patients are mentally affected and have to be placed in these institutions unless these men have had special training in that line. These patients should be studied in a proper institution before they are committed to the hospital for the insane. I therefore want to voice the opinion that we should do everything we can for an appropriation establishing a psychopathic hospital in connection with the great Charity Hospital of the State of Louisiana.

**Dr. John H. Thomas (closing):** I wish to fully agree with Doctor Daspit and Doctor O'Hara on the urgent necessity of another institution in this State. The Jackson institution is over-crowded. The Pineville institution will soon have in the neighborhood of 1400 patients, and in another year its limit will have been reached, so there is urgent need for the establishment of another institution in the State today.

In my opinion hospitals for the insane should never have a population of over 1500. That is the maximum population in New York institutions.



As to the feeble-minded, if you want to stop reproduction, stop reproduction. Unsex both males and females who produce this kind of people. Pass laws of that kind, and in three generations 50 per cent of the insanity of this country will be abolished. I know one family in this State that had fourteen inmates at Jackson and Pineville at one time. The way to get at this things is to stop reproduction of the feeble-minded, and that can be easily done by unsexing them.

**Dr. Henry Daspit (closing):** There is one point I would like to stress, and that is that most of us in large urban centers think only of our own communities. We must think of the State. The establishment of a clinic at the Charity Hospital will meet the local need and probably some patients over the State will be benefited; but it is impractical to expect the vast majority of these patients to come to that clinic. Therefore we must make it our business to take the clinic to the patient. The American Red Cross service has rural orthopedic clinics that meet at regular intervals, and there is no reason why we should not have travelling psychiatric clinics for educating the communities in the need of mental hygiene. When that education has been brought about efforts must be made to properly sterilize the feeble-minded, as Doctor Thomas and many others feel will be feasible. We could not possibly get a bill before the Legislature in years on that subject, so we must get at the people in the country communities and do the work there, and not content ourselves with establishing clinics in fixed State hospitals.

#### THE TREATMENT OF TUBERCULOSIS: AN APPEAL TO THE MEDICAL PROFESSION.\*

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Month after month the statistical reports of our Board of Health disclose that next to the diseases of the Circulatory System, tuberculosis gives the highest death rate.

When we pause to consider that in the past quarter of the century innumerable volumes have been written relative to the etiological, preventive and curative factors in tuberculosis, and that magnificent and forcible talks and lectures have been given by most earnest and energetic speakers; that various agencies in the form of Preventoriums, Clinics, Dispensaries, Sanitoriums, Hospitals, etc., have been instituted, and millions spent in the effort to instruct our population in how to combat the ravages of the dreadful

White Plague; we can but feel that the present mortality and the prevalent morbidity of tuberculosis are somewhat dispiriting.

It is true that the mortality of tuberculosis has been somewhat decreased during the past twenty years of extensive campaigning. However the morbidity of the disease remains unaltered.

It is to be hoped that with greater educational facilities and better cooperation of the people, we can anticipate more gratifying results in the near future.

To my mind, one of the missing links so necessary for the application of methods which mean the eradication of tuberculosis amongst our great Commonwealth, is the unlimited support and more serious thought and education of our medical profession. The indifference, the skepticism, and at times the negligence in tuberculosis displayed by some members of the medical profession, have no doubt been retarding factors in the solution of the many intricate and difficult problems of prevention, diagnosis and treatment.

Here in Louisiana few of us have devoted any thought or time to the study of tuberculosis in its various branches, therefore, we are lagging behind the accomplishments of our eastern and western confreres.

No wonder this great state of Louisiana cannot boast of even a modest State hospital for tuberculosis, but is dependent for the treatment of thousands of tuberculosis patients upon two camps, one tuberculosis department of a general Charity Hospital, and one private sanatorium, a total of about 200 beds.

The physician is the potential medium through whom the knowledge of the various complex measures necessary for the eradication of tuberculosis can be properly and efficaciously placed before the lay public.

But what if this physician is not well versed in the principles and in the application of these measures?

There is no reason why, if some of us older men in the profession have not kept step with the advanced guard that we cannot now show a greater interest in tuberculosis and try to infuse into our younger medical students and confreres some of the interest and

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knowledge which Trudeau, Brown, Baldwin, Pottenger, Minor, Krause, Von Ruck, and many others have so religiously given us as a sacred heritage in the battle against this scourging enemy of mankind. Allan Krause especially strikes the key-note in remedying this vexatious condition when he says, "Tuberculosis teaching in our medical schools demands attention and more active consideration." Its solution is the most pressing one before us today. Have you ever stopped to consider what it would mean if every year one of our several thousand graduates in medicine left school with some interest in tuberculosis, with some idea of how to make a diagnosis, with some judgment of what to do with the patient once he labelled him? Only those connected with tuberculosis institutions know how difficult it is to procure the assistance of a young physician who has acquired sufficient instruction in Phthisiology and Phthisiotherapy. How still more difficult it is to even interest the young practitioner in this branch of medicine. This inertia can be aroused if the medical student and practitioner have as incentive, the conviction that the study of tuberculosis in all its phases is not so easy and not so dry and uninteresting. The student of tuberculosis has a large field for study and research, and has the same right to aspire to the possibility of ultimately attaining a position of dignity and influence as well as the Internist, Pediatricist, Neurologist, Laryngologist, Surgeon, etc.

It is encouraging to note that the Public Health Service is making every effort possible in order to secure proper material and teaching facilities in tuberculosis. Within a few years this department will develop most competent men, capable of thoroughly and skillfully handling the burdensome and expensive problem of tuberculosis in the army.

How can we make it interesting for the one who wishes to enter this field of work?

By impressing upon him the fact that he requires something more than the mere use of the Stethoscope and X-ray in the diagnosis, and "Climate" for treatment, in order that he may achieve some perfection in the early recogni-

tion of the disease, and acquire results that will be emboldening and lasting.

The making of an early diagnosis of tuberculosis is not a simple matter and is paramount to the attainment of satisfactory and favorable results in treatment. The sooner we recognize the folly and danger of making a diagnosis of tuberculosis solely upon the stethoscopic findings, or the reading of an X-ray plate, or the extent of a positive tuberculin skin reaction, the greater will be our chances to form final conclusions that will be unmistakable.

It is only after a careful notation and complete analysis and study of the family and personal histories, of the clinical symptoms, of the physical findings, of the X-ray plates, of the blood pictures, of the sputum, of the tuberculin reactions, etc., that we can arrive at some positive decision in diagnosis, and thence obtain a clear conception of the tuberculous state of a patient.

How many are labelled tuberculous who have not even the slightest infection? How many go to an early grave because of the failure to properly diagnose the disease in time? It is imperative on our part before accepting the serious responsibility of advising and treating any tuberculous subject to be thoroughly familiar with the following:

1st. The infectiousness of the disease, and the various degrees of infection which different patients will manifest.

2nd. The anatomic changes with resulting physical and clinical findings.

3rd. The relative value of signs and symptoms in ascertaining the disability in the individual case.

4th. The technique in arriving at a correct diagnosis.

5th. A relative idea of what to do with the patient after he has been classified as tuberculous.

6th. The relapsing nature of tuberculosis.

7. The often overlooked fact that each patient must be considered as a personal entity, and his mode of living and course of treatment directed only after a full and complete study of his family, social and economic conditions.

The tuberculous with no "Activity" requires advice and observation, but the slightly "Active" and very "Active" tuberculous require more rigid and ag-



gressive care and treatment.

It is not fair to include all tuberculous in the same class, for if we do so we may disrupt the happy home of an "Inactive" tuberculous, while we may in another instant allow the "Active" and "Progressive" tuberculous to walk and work himself to a premature death.

With the "Active" tuberculous we must devote all efforts to combating the existing "Toxemia," and also the depletion and consumption of the body's tissues. We must thrive, regardless of sacrifice to the patient to attain a "mode of living" by which we will reduce to a minimum the exhaustive and destructive effects of the invading tubercle bacilli upon the vital organs.

The "arrest" of tuberculosis will depend upon the power and action of the body's resistant forces, i. e., the phagocytic and antibody function of the Leucocytes, and the reactive and reconstructive ability of the blood and fixed tissue cells.

In the treatment of tuberculosis, the Basic or Hygienic-Dietetic Treatment, consisting of Rest, Diet and Open Air furnishes the main weapon in the combat for supremacy between the foe's poisonous and destructive effects, and the resistance of the body cells.

To overcome the "activity" of the disease nothing approaches in value to rest. As Lawrason Brown so emphatically stated in a lecture at the New Orleans Charity Hospital, "If I were given the choice to pick out but one of all the different measures advocated in the treatment of tuberculosis, I would select rest." Yes, rest properly applied, rest both physical and mental, and rest until all signs and symptoms of "Activity" have completely vanished.

Next to rest, a good well balanced diet will be most efficacious in the upbuilding of the patient's debilitated condition. An exaggerated and excessive protein and fat diet of eggs and milk and various oils is unnecessary and sometimes detrimental to the tuberculous. Too frequent nourishment is injurious to the average tuberculous.

Three well balanced meals, five hours apart will meet the demands of metabolism in the majority of cases, whether they be "Incipient" or "Advanced."

An abundance of fresh air and sunlight, especially air free from dust,

completes the quota for the Basic treatment.

Is the "arrest" of tuberculosis dependent upon the patient living in a high altitude climate?

Most Phthisiologists agree to the fact that "Climatic Treatment" is the least essential for the "arrest" of tuberculosis, and that lasting and permanent results can be acquired in any climate.

A report of the survey of the Public Health Service of conditions in the southwest, which investigation showed that nearly fifty per cent of the tuberculous died within six months of arrival out West, certainly is not corroborative and not very convincing of the value of a high altitude climate.

From a scientific standpoint nothing has proven the value of a high-altitude in the treatment of tuberculosis.

As one author states "The scientific arguments presented for climate have not held water."

It is unfortunate that the Medical Profession has placed so much reliance in the curative value of climate, for it has been a formidable barrier in retarding the construction of many Hospitals and Sanatoriums in lower altitudes, and has prevented the application of many important Anti-Tuberculosis measures.

Alas! it takes more than the climate treatment to permanently "Arrest" the "active" tuberculous.

We know that even the Basic Treatment will not alone be sufficient to cause an "Arrest" in the majority of cases of Pulmonary Tuberculosis.

In the cases that will not yield to the Basic Treatment we must reach further and apply "Accessory Measures" of treatment which will gradually and persistently aid in the stimulation of the resistant and reconstructive forces of the body, and thus favor a healing that will be permanent.

Among the "Accessory Measures" of treatment, the Tuberculins (especially Koch's Bacilli Emulsion and Old Tuberculin) carefully administered by the clinical method or gauged according to the fluctuations of the Neutrophilic Index, have beyond the author's doubt, given encouraging results in bridging over many patients to a permanent recovery. During the past twenty years, a large number of Office and Sanatorium cases who persevered in their

treatment until discharged, and who received Tuberculin as an accessory, showed that relapses among such class of patients were practically nil.

Many of these cases have ceased to react locally and constitutionally to the Tuberculin Tests and apparently have attained a permanent healing by fibrosis.

Tuberculin is not administered solely with the view of increasing the specific antibody action of the leucocytes, but is given chiefly with the object of stimulating the bone-marrow and other cells in their formation of new leucocytes, thus producing an accumulation of a larger number of leucocytes in the tissues bordering the tuberculous lesions.

Such mild "focal reactions" reinforce the "phagocytic" function of the leucocytes, and affect the diseased areas by promoting the absorption of infiltrations, tubercles and disintegrated material which are finally replaced by new connective tissue resulting from the reconstructive power of the leucocytes and the proliferation of the fixed tissue cells. Besides the Tuberculins, such other medication as Creosote, Iodine, Heliotherapy, Etc., have their claim in the "accessory" treatment when indicated.

Artificial Pneumothorax, a much overlooked and neglected measure in this part of the country, and a valuable "accessory" in the treatment of tuberculosis, has certainly a firm and well established stand in the relief of the septic and hemorrhagic tuberculous.

Included as a most potent "accessory" is the remedying and correction of all conditions and defects that tend to lower the body's resistance: such as a disturbance of the digestive tract, the presence of non-tuberculous focal infections, physical and mental defects, improper heart's action, secondary anemia, etc. All such conditions must be carefully looked into before one can outline a course of treatment, regardless of the fact whether the tuberculous condition is "Active" or "Latent."

Finally let us not forget that Time, "The great healer of Nature", or, in other words, the duration of the patient's treatment is a measure upon which the consumptive's permanent recovery is largely dependent.

Relapses in Tuberculosis have been a taxing factor to the Phthisiologist. The study of post-results of treatment show

that the average patient discharged from the Clinic, Sanatorium or Hospital has about one chance in two of living five years; one in four of living ten years; one in seven of living fifteen years, and three chances out of one-hundred in favor of a recovery, if the patient is still "active" when discharged.

These figures prove most conclusively the fallacy and waste of labor and money to attempt an "arrest" in the "Incipient" tuberculous within less time than six months to a year; in the "Moderately Advanced" within eight months to two years; and in the "Far-Advanced" within one year to three or more years.

This appalling number of consumptives discharged yearly to relapse and die, forcibly places before us the necessity of advocating something more effective than the mere building of palatial and expensive Sanatoriums and Hospitals where patients are simply boarded and lodged, and allowed to remain for only a limited period. Our Home, Sanatorium and Hospital cases—Incipient or Advanced—must be given every advantage and facility to carry out the Basic Treatment, and should also receive the benefit of any "accessory" treatment upon which improvement or "arrest" of the disease will depend.

Every patient upon discharge must be urged and commanded not to overthrow all restrictions and care before he has been positively assured by his physician, that all lesions have been radically healed, and that the taking up of the ordinary trend of life will not lead to a relapse.

All discharged patients whose financial condition does not permit them to follow a careful life should be taught the need of Post-Sanatorium and Post-Treatment care. Colonization, Social Reestablishment, Vocational Training, Etc., all tend to the betterment of the consumptive and will keep the discharged patient in a fit condition to warn off any relapse.

These measures are of vital interest to the physician, but concern with the same responsibility our Legislators, Health Authorities and Social Agencies.

Conclusions:

1. The arousing of the Medical Profession's greater interest in Tuberculo-



sis, and the procurement of better facilities for the instruction and study of the disease are tantamount to a greater success in the eradication of the White Plague.

2. The diagnosis and treatment of tuberculosis are not facile, and require our assiduous attention and matured consideration.

3. The relapsing nature of tuberculosis forcibly impresses upon us the necessity for the immediate construction of the many institutions so vitally important to the indigent consumptive.

4. That the perseverant and successful worker in tuberculosis is well qualified to bear the plam: *Palmam qui meruit, ferat.*

#### DISCUSSION.

**Dr. John F. Buquoi (Covington):** Fully 90 per cent of the cases, incipient cases, of pulmonary tuberculosis pass through the hands of the family physician, and upon him rests the serious responsibility of its early recognition in order to determine the manner in which treatment may be instituted. The average medical man after graduation possesses rather meagre knowledge of physical diagnosis; proficiency in that line is acquired only after years of arduous labor and practice, and we physicians from the country are further handicapped in being deprived of the refined methods of examination enjoyed by our city brethren.

I agree with the doctor in claiming that the diagnosis of incipient tuberculosis is an no easy matter. No matter how proficient a man may be, he cannot diagnose a case by stethoscopic findings, X-ray findings, clinical symptoms, or temperature reading alone. Evidence obtained from such data should be used collectively to be of any use. After the disease progresses to the extent that destructive changes take place, the diagnosis is comparatively easy.

If the patient is found to be tuberculous, then the next thing is treatment. We are all thoroughly convinced that the fundamental elements of treatment are rest, well-balanced diet and climate. While on the subject of diet I would like to say a word of admonition. A number of cases are sent to our section of country in quest of health. The majority are moderately advanced, and are told by the physician at home "Go to the ozone belt, eat a good many eggs and drink as much milk as you can, and you will improve." This advice very often leads to disaster. After taking this excessive protein diet for a period of a week or so we are usually called in to treat a most violent attack of autointoxication, leaving in its wake the digestive organs seriously impaired. In this particular, very frequently the prognosis hinges on the fact that the patient must build tissue faster than the disease consumes it. Sometimes other measures are needed besides the basic treatment. Drugs should be limited, and only used when thoroughly indicated.

**Dr. E. A. Bertucci (New Orleans):** While the treatment of tuberculosis is an old subject, it is one of the most important that the internist has to deal with. Unfortunately, we have no specific chemical, botanical or physical agent that has a selective action on the tubercle bacillus, nor have we any therapeutic agent that will enhance tissue resistance, against the ravages of sclerosis of the affected area.

I believe the successful treatment of tuberculosis primarily lies in one important factor, and that is the early recognition of the disease. While we agree that the diagnosis of early disease is difficult, yet we can at least strongly suspect the disease from the various early symptoms, and therefore when we find signs in the chest by a thorough physical examination, we can then institute our treatment.

Most of these cases, unfortunately, come to the internist beyond the early stage, but when they come to us with symptoms, probably pointing to an obscure condition, we must try to find out the underlying cause of such condition by a routine examination of the chest, and there, in a great majority of instances, probably reveal trouble in the chest, and if found, then we can institute early treatment. Of course if these people have treatment early enough, the disease would never reach the advanced and hopeless stage.

**Dr. A. A. Herold (Shreveport):** The essayist and discussant come from the southeastern part of Louisiana, and I, representing the northwestern part of the State, wish to say that I think we ought to be grateful that a man of Doctor Durel's experience and ability had read a paper before our Society on this subject.

As you may know, we have a modern institution for the treatment of tuberculosis about eight miles out of Shreveport, where we have gotten remarkable results, not so much in curing patients, (although we have some arrested cases) but in the education of the tuberculous and their families. Unfortunately, we have to take some advanced cases at times, and they are the ones that keep the beds occupied.

As to the diagnosis, I believe I might say there are four methods in adults—correct history, thorough physical examination, X-ray, and the sputum. The last is the exception, not the rule, because very seldom do we get a case that shows the tubercle bacillus in the sputum that is not too advanced to accomplish much. However, we know that a mixed infection, especially the streptococci combined with an excess of lymphocytes, is a danger signal.

I want to heartily endorse what the doctor has said about diet. A few years ago the idea was to increase the weight, but now we know it is a bad thing to gain too much weight because very often it is a adipose tissue, which has no resistance, and there is more danger of complications.

Another thing, when we examine a tuberculous patient we should not over look anything. Be on guard for diabetes because we know it is often a complication.

I feel like Doctor Durel about climate, so much so that we advise our incipient cases to

first try treatment at home with rest, fresh air, proper feeding, and if after a limited time the patient is not making satisfactory progress, then we advise them to go to a drier, but not necessarily a higher, climate. I recall one case I had a few years ago in which we got an apparent arrest and the patient was feeling fine, free of fever, and yet we found the tubercle bacillus constantly present in the sputum, with numerous moist rales. She finally went west, and under favorable conditions she had the affected lung collapsed with artificial pneumothorax, she has apparently gotten complete arrest. She has been back home on visits.

Doctor Durel has not mentioned the autogenous vaccines, and we have seen some good results in moderately advanced cases. Whether that is due to protecting the patient from scavenger germs, or whether to the non-specific protein therapy, I am not prepared to say.

Doctor Durel has mentioned drugs, and I quite agree with him that there is not much reliance to be placed on them. I would like to ask if he has had any experience with nascent chlorine treatment, which I have seen in at least one case do a remarkable amount of good.

**Dr. L. Von Meysenbug, (New Orleans):** I want to emphasize one point brought out by Doctor Buquoi in his discussion and that is the danger of high protein feeding in the treatment of tuberculosis. Two or three years ago Dr. McCann, working at Bellevue Hospital, New York, showed, after thorough investigation and study of the basal metabolism, that high protein diet was only not indicated, but was actually harmful in the treatment of this condition. Dr. McCann went very thoroughly into the metabolism of the normal and also of the tuberculous patients, and the result of his work was as I have stated.

**Dr. J. G. Dempsey (New Orleans):** The question of tuberculosis to the average medical man is a "passing show." There is no doubt that the educational work done by the Tuberculosis League, with the assistance of institutional work and some institutional work done by individuals like Doctor Durel has been very important. Dr. Durel deserves a great deal of credit for carrying on this institutional work without a great deal of assistance or much cooperation. He has struggled along here for twenty years, and there is no question in my mind that we are in our infancy in the study of tuberculosis, and that we will at some time through some channel, gain the point that we are striving for. If you take into consideration the State of Louisiana and the number of tuberculous cases here, and what we have done, it is positively a disgrace. Think of the many institutions in our State, and how little attention is given to tuberculosis. Other States have hospitals for the tuberculous, and in every hospital a department for the treatment of tuberculosis. We need in the City of New Orleans and in the State of Louisiana, a modern institution for the care of tuberculous patients, equipped with the necessary buildings to carry on not only curative measures, but the industrial side of tu-

berculosis. We need a modern laboratory for scientific research work. We need a modern X-Ray department where this work can be carried on intelligently.

You may be surprised to know that the reports from Louisiana show 2063 cases reported in 1921, and 2052 in 1922. In New Orleans alone 651 cases in 1921, and 664 cases in 1922. This shows a small advance, but when you look down the list and take influenza you will find that many cases of tuberculosis died as influenza and have been diagnosed as influenza, and that accounts for the reduction of the number of cases of tuberculosis in the State. I might say in passing that we had 171 cases of influenza in 1921; 392 cases in 1922. In New Orleans 54 cases in 1921; 86 in 1922, showing conclusively that many of these cases called influenza have evidently had tuberculosis. Therefore let me say that as long as it is within the power of the medical men of the State of Louisiana, they ought to be the first to encourage treatment and care of our tuberculous cases. Gentlemen, it is very, very important.

**J. A. Storck (New Orleans):** It is trite to say that Tuberculosis should be anticipated, and that "prevention is better than cure." It is, indeed, difficult to anticipate Tuberculosis, but there are manifest phenomena often accompanying early invasion of the organism into the human body which deserves close observation. When, in addition to being tired, irritable, "run down", with a slight fluctuation of temperature, the patient presents the habitus enteropticus, a careful medical survey should be made of all young adults. This is advisable, especially in regard to those complaining of alimentary disturbances, and particularly when these disturbances are referable to the stomach. A follow-up of this class of cases yields important results, i. e., patients are found later to have easily recognizable tubercular diseases.

It should be our endeavor to give patients an early chance, and, when possible to warn them before Roentgenoscopy and the finding of the tubercular bacilli in the sputum tells the story.

**Dr. J. W. Durel (New Orleans) closing:** As to the question of diagnosis, I tried to lay special stress upon the point that we may be absolutely deficient in making a diagnosis of tuberculosis, if we depend upon any one clinical, physical, or laboratory finding. In other words, some of us belong to the school placing great importance upon the temperature record, and depend upon the latter for a final diagnosis of tuberculosis. Some rely exclusively upon the X-ray findings, and some upon the extent of a tuberculin skin reaction. Now, to arrive at a correct diagnosis of tuberculosis we must combine all the facts acquired in the case, i. e., the family, personal and clinical histories; the physical chest findings; the X-ray readings; the sputum analysis; and, in the absence of a positive sputum—the intra-cutaneous tuberculin tests, and sometimes the compliment fixation test.

But how can we say positively whether a patient has a tuberculous infection or disease, if we cannot find tubercle bacilli in his sputum? To my mind, only when the data



in hand is corroborated by a positive reaction to the intra-cutaneous and sub-cutaneous tuberculin tests, or a positive compliment fixation test, as preferred by some.

For example: Last year a patient was referred to Breaux Building from another ward of the Charity-Hospital, and his record showed tubercle bacilli in the sputum, and also the constitutional symptoms and signs of pulmonary tuberculosis. I examined him and accepted his in the T. B. department. He improved wonderfully and was apparently well in six weeks. After being discharged he returned to the hospital with a complaint of not feeling well. We took him back, but he became so impertinent that he was dismissed to be readmitted again by the admitting physician. His behavior was such after this, that I refused to pay any attention to the case. A year later he complained of a pain in the left Iliac region, and I had two or three surgeons in consultation, with the result that a diagnosis of a "cold" abscess was made.

He died a few months later, and upon autopsy there was not a single tubercle found in his body, and the "cold" abscess turned out to be an aneurysm of the left Iliac artery. Yet, this case occupied a bed in the tuberculosis department for a year and a half. You might say that this was a faulty diagnosis, but when we consider that the surgeons saw this case in a Tuberculosis Hospital, and that we did not make any further attempt to determine the tuberculous nature of the subject after receiving two reports of positive sputum, there is an excuse if we did not properly diagnose this case. No, I did not administer the tuberculin tests in this case because, at that time, the Charity-Hospital did not furnish our department with a supply of tuberculin and I did not intend to waste my individual supply of tuberculin on a patient that came to my department with a report of a positive sputum.

This case was an act of Providence for now the Charity-Hospital furnishes me with all the tuberculin required.

As to the autogenous vaccines, at the last meeting of the Southern Medical Association,

all agreed to the fact that the autogenous vaccines play an almost insignificant part in the treatment of tuberculosis.

As for the stock vaccines they are valueless and should not be used at all. I have had no personal experience with nascent chlorine or the calcium salts, but I should not doubt that any irritant to the bronchial mucous membrane would stimulate and cause some fibrosis about the tuberculous lesions.

I want to thank Dr. Dempsey for his well meant remarks, especially his statistics from the Board of Health.

In treatment we do not want only to fatten our patients, but our main object in view should be to keep them well and to eradicate the disease entirely. We also should be sure that a patient has tuberculosis before we label his as such. I remember the first three patients sent to my Sanatorium eighteen years ago when I first started in this line of work.

Competent and older men had previously diagnosed two of them as advanced cases of tuberculosis. I was young then, and felt that I should not contradict my older confreres. These cases had all the physical and clinical findings of pulmonary tuberculosis, but did not have tubercle bacilli in the sputum.

However, these patients improved rapidly, and one was well in three months. To-day I realize that neither had tuberculosis, and that it was a matter of a mistaken diagnosis: due to the fact that in the absence of tubercle bacilli in the sputum, there were no pathognomonic evidence of tuberculosis. I did not use the tuberculin tests at that time.

We know today that 30 per cent of cases in Tuberculosis Sanatoriums and Climatic resorts are cured so easily because they do not have tuberculosis. When one is dealing with an "active" tuberculosis it is another question, and a permanent recovery is not attained so easily.

I cannot believe in the value of any climate, because of the experience we have had in Louisiana and at the Charity-Hospital.... Right over there, at the Charity-Hospital, next to the gas tanks, the results acquired are equal in importance to those reported from anywhere else in America.

# New Orleans Medical and Surgical Journal

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## EDITORIALS

### THE FAMILY PHYSICIAN

Much has been said and written about the passing of the family physician, but recently the pendulum has swung in the opposite direction indicating a return of appreciation of the old time country doctor. We all remember him. He traveled on horse-back, in a closed coupe, a buggy or a two wheel cart. He was prepared to make thorough examinations and perform surgical operations in emergencies and was usually successful. He had the love, esteem and respect of every individual in the community. He was a leader among men and the idol of the women and children.

The *New York Tribune* pays him a tribute, quoting from Dr. Frankwood E. Williams, medical director of the National Committee for Mental Hygiene: "It is pleasant to hear a physician with a specialty praise the old-fashioned family doctor, the 'general practitioner' who has largely given away in the city to specialist, but in the country is, as ever, the present help in time of trouble. For him there are gratitude and affection that need no analysis. He may be old-fashioned, but he is as able a psychologist as the most modern. The best remedy in his medicine chest is common sense, which tactfully applied is a famous way of mental healing. His best dose is optimism. That is what all four patients out of five need. Only the fifth patient needs the specialist and the family doctor in general may be relied upon to take such cases to consultation."

The *Tribune* concludes, "There is

no danger of disparaging the skill and knowledge of the physicians and surgeons who are masters in specific fields; but it is good to be reassured that the family doctor, until lately the backbone of the profession, is by no means obsolete."

### OUR MEDICAL SOCIETIES.

The Louisiana State Medical Society is making for itself a history that will be enduring and of which the profession of the State may be justly proud. Its transactions for many years contain a fund of information, both historic and scientific, that is of great value to the present generation of doctors, and will be transmitted by coming generations with pride to the generations to follow.

What the State Medical Society is doing should be done by every Parish Medical Society. Each society should preserve its transactions, including messages and reports; scientific, medical and biographical papers; have them written on uniform paper before receiving them as contributions, and have them bound in creditable style, letting each year's proceedings add a link in the chain of history.

A book of portraits of members, and one for the dead, would add interest to the record. In other countries this is considered an important part of the record.

### DIAGNOSTIC FACILITIES.

There seems almost a consensus of opinion that diagnostic clinics and emergency hospitals should be established for the convenience and protection of those in need of quick service and for those who are unable to travel



to the Charity Hospitals or other institutions located in the principal cities of the State.

Hospitals are no longer places for the destitute, as they were when first established. They are recognized now as the place where the seriously sick, whether rich or poor, can be properly treated. The success of every hospital even in the smaller towns is evidence of the public confidence in institutional care. The community recognizes its value as a protective agency, and the individual as a place where disease is studied and the sick person properly cared for. If the hospital does not meet these requirements it is not properly operated and is a menace instead of a blessing.

#### SUSCEPTIBILITY OF MILK TO ODORS.

The susceptibility of milk to odors is universally known, yet many dairymen employ powerful disinfectants in and about the dairy and milk room. There is a good example of this given in the history of a large dairy in Copenhagen. Complaint was made that the milk tasted of carbolic acid. The milk from the farms was examined separately and it was found that 500 quarts smelled and tasted so strongly of carbolic acid that it was condemned. Not until the fifth day was the milk free from taint. It was found that the stable was cleaned and disinfected with a 2 per cent solution of carbolic acid to which was added a small amount of chloride of lime. The stable had to be aired two days before it again could be used.

#### COOLIDGE OR BANTING?

The thirtieth president of the United States and our sixth "accidental president", Hon. Calvin Coolidge of Massachusetts, is described as a quiet man, of retiring disposition, but a thinker with grim determination to act, and to act thoroughly and effectively, when the occasion arises; in other words, his reputation has been built upon deeds, not words. It is to be hoped that his handling the reins of our government will be along similar lines, well thought out.

Up in our neighboring country of Canada, there lives a modest, unostentatious physician, whose past does, in a great many ways, resemble that of our new chief executive. Dr. Frederick

G. Banting was little known beyond the confines of his home in London, Canada, until, thru his ideas and perseverance, the blessings of "Insulin" was bestowed upon the world, with its millions of diabetics. Dr. Banting had served creditably in the World War and had retired to his humble home, with a certain feeling of unrest; he wished to accomplish something. Altho a surgeon by choice, he was not so successful in this specialty and finally accepted a position in the department of physiology of the University of London, Can.; it was there that he evolved his ideas about isolating the internal secretion of the pancreas, free from the enzymatic substances and proteids. After a thorough discussion with Prof. Macleod of the University of Toronto, his alma mater, he learned that he would have to give up all else and devote his time and energy exclusively to this one subject; he decided to do this and plunged into the experiments and, undaunted by Collip and Macleod, finally completed the task, which has given him an international reputation. He has conferred an incalculable gift upon mankind and his discovery ranks along with Pasteur's, Koch's, Lister's and Behring's.

The policeman's strike in Boston gave Calvin Coolidge the opportunity, which he took advantage of and became famous; had he handled the situation otherwise, his public career would, very probably, have ended with the Governor's chair. Frederick Banting forced the issue, which has made him famous; had he failed, we most likely, would never have heard of him. The analogy ends here, however, for Mr. Coolidge will yet make or break his reputation; he may go down in history as a great president, as a mediocre or as a poor one. But, Dr. Banting's place in history—at least, in medical history—is already assured; he may yet do other work and add to his laurels; but, he can never erase his high standing, even if he accomplishes nothing else.

We have heard lawyers say that they would rather be chief justice of the U. S. Supreme Court than president; we could not understand. However, now we understand, for we feel that we are voicing the feelings of a large majority of the medical profession when we say that we would rather be in "Banting's shoes" than in Coolidge's.

# PROCEEDINGS OF TOURO INFIRMARY STAFF

New Orleans.

APRIL 11th, 1923.

Dr. C. A. M. Dorrestein:

I wish to present to you tonight two cases of ruptured hemorrhagic cysts of the ovary which occurred in my service in this Institution during the month of January of this year. These cysts are *not* of the type described by Sampson.

Novak classified the ovarian hematomas under three groups to which according to Sampson a fourth should be added.

The groups of Novak are: 1st, follicular; 2nd, stromal; 3rd, corpus luteum, and the 4th, of Sampson, comprises those cysts lined wholly or in part by endometrial tissue.

The Pathological Department classified the cysts in these two cases: the 1st, as a corpus luteum cyst, and the 2nd as a follicular cyst.

Both these cysts contained the dark colored hemorrhagic fluid of the chocolate syrup type described by Sampson in his monographs in the Archives of Surgery of September, 1921, and the American Journal of Obstetrics and Gynecology, November, 1922.

The Pathological Department report does not contain any reference to endometrial tissue or implantation Fallopian Epithelium, so we must conclude none was found.

These cysts are densely adherent to the surrounding structures especially the posterior leaf of the broad ligament, the intestinal mesentery and the lateral walls of the uterus.

These adhesions are explained by successive ruptures of these cysts and the irritating effect of the chocolate material on the pelvic peritoneum causing matting together of contiguous peritoneal surfaces wherever this fluid comes into contact with them.

If rupture occurs lacerating a fair sized vessel in the ovarian substance the resulting intra-peritoneal hemorrhage may be so great as to simulate ruptured extra-uterine pregnancy with serious symptoms and even fatal results unless the abdomen is promptly opened and bleeding checked. A case of this kind came under my observation sometime ago when a young woman was admitted with a diagnosis of in-

ternal hemorrhage. Upon abdominal section the peritoneum was found filled with blood for which no other cause could be found than a ruptured hematoma of the right ovary.

The immediate results of a rupture of a hemorrhagic cyst are those of an irritating pelvic peritonitis, viz: pain, fever, abdominal rigidity and distension, nausea and vomiting, leucocytosis.

The remote results are those of adhesive inflammation in the pelvis, matting together of the pelvic contents, dysmenorrhea, sterility.

The diagnosis is sometimes quite difficult especially in virgins. A right sided rupture presenting very much the picture of an acute appendicitis. The nearest I could approximate the true condition prior to operation in the first case was by a tentative diagnosis of pelvic peritonitis possibly of appendiceal origin. While it was noted that this patient had begun to menstruate a day before the onset of the last attack, this was thought to be a coincidence.

It is interesting to note that several of the cases in Sampson's series had a diagnosis of chronic appendicitis in addition to pelvic peritonitis.

Case No. 1—Miss L. L., age 28, single, native of this city, with unimportant family history, had had repeated attacks of right sided abdominal pain with constipation. Indiscretions in diet were followed by pain in right side of lower abdomen and vomiting. On December 30th, 1922, patient began to menstruate and was taken ill again with vomiting spells, vomiting several times and not food. Her temperature ranged from 100-103 with abdominal rigidity which was very marked over the lower abdomen. The leukocyte count on Sunday was 13,000 with 80 per cent polys. The lower abdomen was rigid and board like. A diagnosis of pelvic peritonitis was made, possibly due to appendiceal inflammation. Monday morning her temperature was normal, but during the day, Monday, she vomited several times, though on a water diet. Monday afternoon, at 4:00 p. m. her temperature was 101 and ris-



ing, pulse 122 and rising, and there was an area of intense tenderness over McBurney's point and a general tenderness over the lower abdomen with sharp intermittent colics which she described as gas pains. Removal to the Touro was decided upon.

Pre-operative diagnosis: Pelvic peritonitis, possibly of appendiceal origin.

Operation: The abdomen was opened through a right rectus incision and an enormously distended cecum presented. The peritoneal coat was very much injected and irritated showing unmistakable signs of acute peritonitis. It was at once seen that, though the appendix was curled and adherent to the posterior parietal peritoneum, it was not the cause of the trouble. Considerable difficulty was experienced in removing the appendix. One-half dozen curved clamps were required for the meso appendix alone. It was finally ligated, cut off with cautery and inverted with purse-string. Further exploration then revealed that the trouble must have been in the lower pelvis as the upper abdominal contents were normal, and the intensity of the peritoneal injection increased as the search went downward. A general pelvic peritonitis was evident as the rectum, uterus and coils of small intestine were matted together by plastic exudate. As there was a large cyst on the left side which could not be reached except by the finger tips through a right rectus incision, this was now closed and a median incision made with the patient in Trendelenburg position. This showed the sigmoid even more distended than the cecum. The cause of the trouble was found to be a ruptured hemorrhagic cyst the size of an orange, the contents of which had spilled and filled the pelvic cavity. This was all removed and the left ovary and left tube removed and bleeding points ligated. The raw surface of the broad ligament, posterior leaf, where the cyst had been adherent was controlled by suture and ligatures. The right tube was found to be very much enlarged and injected and was amputated. The right ovary which did not appear to have suffered much was left in. A rubber drainage tube, fenestrated, was inserted down to the bottom of the cul-de-sac and brought out through the anterior abdominal wound. The midline incision was closed in the

usual manner, excepting that the skin was closed with interrupted silk worm gut. Drainage was removed in 48 hours. Post operative recovery uneventful.

Report of the Pathological Laboratory: Right tube about 8 cm. in length, irregular in shape, about 1 cm. in diameter at the thickest portion, dark red color with many tags of adherent tissue. In one tube these is a mass about the size of a small walnut which is irregular in shape, firm in consistency, dark red color, shows marked congestion of vessels. This mass apparently ovarian tissue consisting of two small cystic areas which are filled with blood clot, and of a grayish dark red color, firm in consistency and has a few areas which are hard and nodular. Upon sectioning the tube, the lumen of the tube yields a small amount of bloody material and the walls are somewhat thickened and congested. There is also present a piece of tissue which has been sectioned and apparently a cyst. The inner wall is smooth, glistening and shows marked congestion of vessels. There are also present a few pieces of tissue of a dark brown and mottled in appearance. Not very firm in consistency and upon section shows nothing characteristic.

Left ovary and tube held together by many adhesions. The left measures 8 cm. in length, is for the most part small and shows evidence of much congestion. The fimbriated end is closed. The ovary which was apparently cystic has been opened. Outer surface is pale and white in some areas while others are dark and mottled. The inner surface of the organ which has been opened is very rough and granular, shows marked congestion of vessels. There are a few blackish areas disseminated throughout the entire inner surface. These areas are not definitely outlined. Upon section, the cystic areas yield a small amount of clear fluid while the wall of the cystic tissue is very rough and leathery in appearance. There is some evidence of congestion in the walls.

Appendix: 7 cm in length, dark red color, somewhat flaccid. Upon section shows the lumen yields a bloody exudative material among which are small fecoliths. Walls and mucosa are markedly congested and thickened.

*Diagnosis:*

Sub-acute appendicitis, Sub-acute-salpingitis. Cystic Ovary (Follicular) Case 2—Miss D. D., age 23, native of this city, had been complaining over a year with constant pains in the right side and dysmenorrhea. Appetite good. No digestive disturbances. Bowels constipated.

Nocturia for last two weeks. No frequency or urgency. No burning. No cardiac or respiratory symptoms.

She had retired and was asleep when awakened by violent pains and nausea. She had also had a chill and vomited several times, was given an opiate and has had no pain since. Abdomen is tender and rigid.

A diagnosis of ruptured hemorrhagic cyst on the right side was made and patient removed to Touro.

Operation—Midline incision. The parietal peritoneum was very dark as if the abdomen contained free blood. This however, was not found to be correct, but the coloring was due to the absorption by the omentum of the coloring matter contained in the ruptured cyst contents. In Trendelenberg position, all adhesions in the pelvis, which were numerous, were loosened and a right salpingo-oophorectomy done. The left tube and ovary were loosened up as they appeared to be only suffering from irritating contents in the pelvis. After securing 2 or 3 points in the broad ligaments by ligature, all oozing was practically checked. The appendix was removed. A rubber dam drain was introduced.

*Laboratory Findings:*

Appendix 7 cm. in length, dark red color, very granular and rough shows marked congestion of all vessels. Upon section the lumen is found to contain a large amount of bloody exudative material among which are small fecoliths. Walls and mucosa are markedly congested and thickened. Ovary and tube held together by many adhesions. The tube measured 8 cm. in length, is for the most part small and shows evidence of much congestion. The fimbriated end is closed. The ovary which was apparently cystic has been opened. Outer

surface pale and white in some areas while others are dark and mottled. The inner surface of the organ which has been opened is very rough and granular, shows marked congestion of vessels. There are a few blackish areas disseminated throughout the entire inner surface. These areas are not definitely outlined. Upon section the cystic areas yield a small amount of clear fluid while the wall of the cystic tissue is very tough and leathery in appearance. There is some evidence of congestion in the walls.

*Diagnosis:* Acute and chronic salpingitis and peri-salpingitis, organizing blood clot in ovary. Hemorrhagic corpus luteum of left ovary (ruptured).

*Dr. Dorrestein (closing):* These cases were presented this evening first of all as interesting from a standpoint of differential diagnosis between the acute conditions in the female pelvis. Both cases presented alarming symptoms and had to be promptly decided as to what course of action had to be pursued. As stated, neither one of these cases while they were perforated hemorrhagic cysts, were of the Sampson type. Sampson himself recognized the occurrence of other hematomas or hemorrhagic cysts of the ovary perforating occasionally, for while in his paper in the Archives of Surgery he used the term "perforating hemorrhagic cysts of the ovary" he writes in his monograph in the American Journal of Obstetrics and Gynecology as follows: I have discarded the terms "perforated hemorrhagic cysts as applied to this condition because perforations may occur in other varieties of ovarian hematomas. I now refer to them as hematomas or hemorrhagic cysts of endometrial type.

These two cases show that perforations do occur in other ovarian hematomas as one was of the follicular type and the other of the corpus luteum type. Both these patients were under thirty and single girls. Both these cysts were unilateral (one left sided and the other right sided) while Sampson states that the cysts described by him were nearly always bilateral and occurred almost exclusively in women about thirty years of age.



## NEWS AND COMMENT

Among those attending the A. M. A. Convention at San Francisco, from Louisiana:

Dr. Walter Brent.  
Dr. Willis P. Butler.  
Dr. W. F. Convillion.  
Dr. G. R. De Laoreal.  
Dr. Oscar Dowling.  
Dr. Charles R. Gowen.  
Dr. G. M. G. Stafford.

From New Orleans:

Dr. P. Graffagnino.  
Dr. Lucien Ledoux.  
Dr. William H. Block.  
Dr. Marcus Feingold.  
Dr. L. A. Fortier.  
Dr. B. C. Fry.  
Dr. Amedee Granger.  
Dr. Edmund Leckert.  
Dr. Urban Maes.  
Dr. Leonard C. Scott.  
Dr. William H. Seemann.  
Dr. Sidney K. Simon.  
Dr. S. M. Blackshear.  
Dr. T. J. Dimitry.  
Dr. C. V. Unsworth.

Dr. Amedee Granger, New Orleans, and Dr. Charles R. Gowan, Shreveport received favorable mention for their Scientific Exhibit.

Dr. Urban Maes, New Orleans was appointed one of the three judges of the Scientific Exhibit.

Dr. W. H. Block and Dr. W. H. Seemann, delegates of the Louisiana State Medical Society, took an active part in the deliberations of the House of Delegates and served on several important committees.

Dr. Urban Maes, Secretary of the Section on Surgery, was elected Chairman of this Section.

Dr. Sidney K. Simon, Secretary of the Section on Gastro-Enterology was re-elected Secretary of this Section.

Dr. Oscar Dowling, New Orleans, Chairman of the Board of Trustees, will continue to serve in this capacity.

A total of twenty-four members of the State Society attended the convention.

We regret to learn at this writing that Dr. W. T. Patton, New Orleans, is seriously ill.

Dr. Lionel Bienvenu, Tulane 1920, Charity Hospital 1922, has removed to Opelousas, Louisiana.

The following New Orleans doctors have returned from their vacation:

Dr. L. Fortier.  
Dr. T. J. Dimitry.  
Dr. C. V. Unsworth.  
Dr. S. M. Blackshear.  
Dr. L. A. Dedoux.  
Dr. D. N. Silverman.  
Dr. Etta McCormick.

The regular meeting of the Jefferson Davis Medical Society was held in Welsh, La., July 31st, at 7 p. m. An interesting paper on "Ileo-Colitis" was read by Dr. Kreeger of Lake Charles.

After the business and scientific meeting, the visiting Doctors, their wives, and the members of the society were entertained at a luncheon by the Doctors of Welsh at the residence of Dr. R. R. Arceneaux.

On Tuesday, July 2nd, at Natchitoches, the Eighth Congressional District Medical Society was organized. Dr. S. J. Couvillon, Moreauville, La., Councilor for the District was present for the purpose. The following officers were elected: Dr. Carson R. Reed, Natchitoches, President; Dr. Kirby A. Roy, Mansura, Vice President; Dr. M. H. Foster, Alexandria, Secretary-Treasurer. Dr. W. W. Knipmeyer, Secretary of the Natchitoches Parish Society, served as Secretary-Treasurer pro tem and some fifteen paid up memberships were promptly recorded. Alexandria was selected as the next meeting place and the third Monday in August—being the 20th day of that month—was the date, to be held at the Baptist Hospital at 7:30 p. m. There will be a formal program and refreshments. There has been a sustained demand for the district organization thruout the parishes of Avoyelles, Rapides and Natchitoches for some time and it is hoped that physicians from all parts of the district will be interested and that they will attend the August Meeting.

### "INSULIN."

Touro Infirmary, New Orleans, is one of the twelve hospitals in the United States among which has been distributed a recent gift from Mr. John D. Rockefeller, Jr., of \$150,000.00 for the purpose of extending the knowledge of Insulin and of increasing the hospital facilities for the treatment of patients with Insulin. Of this fund Touro's share is \$10,000.00. This amount is to be expended in such a length of time as is thought expedient by the recipient. The gift was made to Touro through Dr. C. C. Bass and the disbursement has been placed in the hands of a committee consisting of Dr. C. C. Bass, chairman; Dr. John D. Spelman, Superintendent of the Touro Infirmary, Secretary; Mr. Sim Weis, representing the Board of Trustees of the Touro Infirmary, and Dr. I. I. Lemann. In pursuance of the conditions of the gift a limited number of beds have been set aside for the reception of patients to be treated with Insulin. Necessarily these cases must be restricted to include only severe diabetics and with complications or diabetes in the young.

Before any patient is accepted for admission details must be sent as to the age and type of case and economic conditions of the patient. The Touro Infirmary cannot assume responsibilities for patients sent there without previous authorization.

Instruction for all doctors of this section of the country is provided free of all cost to them, and they are invited to come at any time and stay as long as they please, but it is considered that a week is the minimum time which should be divided to the purpose.

In addition to the in-door service, an out-door free clinic has been established to care for ambulatory cases.

Insulin is not to be sent either for pay or gratis to patients outside of the hospital or its clinic. Insulin will be furnished to patients under treatment for a limited period only when they are unable to pay for it.

All inquiries should be directed to Dr. Lemann, Director of Diabetic Clinic, Touro Infirmary.

New Orleans, La., June 28, 1923.

The semi-annual examination of the Louisiana Nurses Board of Examiners

was held in New Orleans and Shreveport, June 18th and 19th. Fifty-one applicants qualified as registered nurses.

The successful applicants are:

Misses Leona Anclin, Grace Bateman, Lucy Bryant, Catherine P. Carroll, Mrs. Phronia Carroll, Katherine Angeline Cleve, Bunnie Cooper, Madge Littleton Elliott, Mary Louise Ferrand, Eva Fletcher, Emma Floegel, Jeannette Margaret Fontan, Mrs. Gaynell McLellan Ford, Ethel B. Galloway, Francis Marguerite Gilmore, Minnie Elizabeth Gilmore, Angeline Rose Glaudi, Lela Hamiter, Mrs. Rose Belle Hodson, Camille A. Hyland, Sadie Johnson, Mrs. Viola M. Cancienne Key, Louise L. Landry, Agnes Hazel Lestage, Mrs. Anna E. Levine, Mrs. Helen Nason Lewis, Sadye Dorothy Lippman, Lillian Lee Lovejoy, Lilla McMillan, Mrs. Alma Sinclair Moak, Mrs. Jane Ory, Mary Ella Poe, Pearl Adeline Rook, Sister Calista, Sister Valeria Adelaide Kearney, Mrs. Laura Kee Slaughter, Ida Helen Smith, Rubie Smith, Nettie Clara Snyder, Minnie Louise Tolbert, Blanche Isabell Toups, Elizabeth M. Ummer, Mrs. Jesse E. Ward, Henrietta Warner, Mrs. Ethel M. Camp Yeates, Lois Marjorie Zear, E. Abercrombie Austin, Gertrude Noralie Baptiste, Thelma Athernears Scott, Verter Marea Siggers, Nanie Tarnsie Zeigler.

The Louisiana Nurses Board of Examiners is composed of the following doctors: John T. Crebbin, president; Joseph S. Hebert, secretary-treasurer; George S. Brown, New Orleans; Fred J. Frater, Shreveport; Robert W. Faulk, Monroe.

### MEDICAL NEWS.

On May 15th, 1923, one of the most interested and well-attended meetings of the Fourth District Medical Society was held at Shreveport Charity Hospital. Between 65 and 75 of the most prominent physicians of North Louisiana attended this meeting.

The following was the program for the occasion:

2:00 p. m.—Call to order by the President, Dr. J. G. Yearwood.

Invocation—Rev. W. W. Holmes.

Words of Welcome—B. F. Roberts, City Attorney; Dr. L. H. Pirkle, President, Shreveport Medical Society.



**SCIENTIFIC PROGRAMME.**

1. Some Observations in the Practice of Children's Diseases; Dr. R. T. Lucas, Shreveport, La.
  2. Report of Some Interesting and Unusual Cases; Dr. B. C. Garrett, Shreveport, La.
  3. The Safest Procedure in the Removal of Prostate Gland; Dr. Barron Johns, Shreveport, La.
  4. A Discussion of the Treatment of Diabetes Mellitus with Insulin; Dr. J. E. Knighton, Shreveport, La.
  5. Some Observations On Venereal Statistics in Louisiana; Dr. Leonard C. Scott, A. A. Surgeon, U. S. P. H. S., New Orleans, La.
  6. Vital Statistics From the Practitioner's Standpoint; Dr. J. Geo. Dempsey, State Registrar, New Orleans, La.
  7. Scientific Exhibits; Dr. Chas. R. Gowen, Shreveport, La.
- Announcements by the Secretary.  
Adjournment.

**EVENING SESSION.**

7:30 p. m.—Dinner.

1. Clinics-Pathological and X-Ray Demonstrations; Hospital Staff.
  2. Our District Medical Society; Dr. A.A. Herold, District Councilor, Shreveport, La.
- Adjournment.

**FOURTH CONGRESSIONAL DISTRICT.**

On Tuesday evening, August 7th., the Shreveport Medical Society held their annual social session; this year, it was set upon the Youree Hotel roof. The affair was well planned, with an excellent menu, music and dancing and reflected creditably upon the chairman of the committee, Dr. E. L. Sanderson.

Most of the members of the society were present, with their ladies and other guests. The feature of the evening, however, was the presence of our State society president, Dr. Lester J. Williams, who journeyed all the way from Baton Rouge for the occasion. The speech making was very brief, being confined to President L. H. Pirkle of the local society, President Williams and Dr. Oscar Dowling.

These affairs are always highly enjoyable, especially as they displace the scientific meeting in the hottest month of the year.

Among the forthcoming important meetings of special societies is the annual convention of the American Roentgen Ray Society. This is to be held in Chicago with headquarters at the Congress Hotel, the time of the meeting being from Sept. 18th to 21st. A number of eminent foreign contributors will appear on the program, and the announcements indicate that treatment by high voltage x-ray will have a prominent place on the program.

**REMOVALS**—Dr. George A. Mayer, from 1109 Maison Blanche Building, to 811 Whitney Building.

**DIED**—During July, Dr. E. S. Barry, of Grand Coteau, La., aged 77 years.

**STATISTICAL DATA FOR THE MONTH OF JUNE 1923, OBTAINED FROM THE RECORDS OF THE CITY BOARD OF HEALTH.**

Births: Male, white, 259; female, white, 227; by physicians, 415; male, colored, 114; Female, colored, 110; by midwives, 295.

Total, 710.		
Stillbirths, 48.		
Cases	White	Colored
Diphtheria .....	1	0
Typhoid .....	1	1
Malaria .....	0	0
Scarlet Fever .....	0	0
Whooping Cough .....	5	1
Influenza .....	4	1
Measles .....	19	1
C. S. Meningitis.....	1	0
Tuberculosis .....	32	28
Deaths	White	Colored
Cancer .....	27	9
Apoplexy .....	31	8
Endocarditis and Myocarditis .....	5	2
Angina Pectoris .....	7	1
Other Circulatory Diseases..	50	36
Bronchopneumonia .....	6	12
Lobar Pneumonia .....	3	5
Other respiratory diseases..	..	1
Diarrhoea and Enteritis....	12	15
Appendicitis .....	7	1
Other Digestive .....	7	6
Acute Nephritis .....	2	2
Chronic Nephritis .....	19	19
All other Genito-Urinary Diseases .....	4	10
Puerperal State .....	4	4
Malformations .....	3	3
External Causes .....	28	17

Death rate per 1,000 per annum for the month; non-residents excluded:

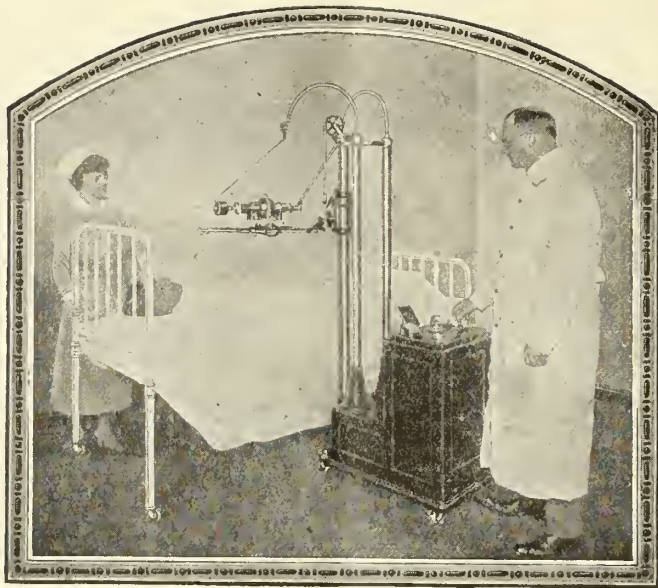
White .....	12.81	11.56
Colored .....	23.45	19.42

Total .....

15.68	13.68
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Deaths from premature births, violence, etc., are not excluded.

EMILE LOUIS,  
Statistician, City Board of Health.



## BRINGING THE X-RAYS TO THE PATIENT

A FEW YEARS AGO the best mobile X-Ray Unit was owned by the U.S. Army. The equipment comprised a motor truck on which a Delco generator and Victor X-Ray Unit with current controlling devices were mounted.

From this has evolved the Victor Stabilized Mobile X-Ray Unit of the present, the highest perfection yet attained in apparatus of this type.

It was Victor research and development work that made this astonishing result possible—research which culminated in the self-rectifying "Radiator" Type Coolidge Tube. The X-rays are now easily brought to the bedside of the patient too weak to be moved to the X-ray room.

This Victor Mobile Unit is more efficient than even the larger and heavier

apparatus of ten years ago. Its milliamperage is 30, which is a gauge of its powers. Moreover, it is provided with the Victor-Kearsley Stabilizer which insures uniformly good results in spite of current fluctuations in the line. Only Victor Mobile X-Ray Units are thus equipped.

A circuit breaker also incorporated in this unit guards against damage to the X-ray tube and apparatus, by automatically shutting off the current from the supply line in case of "over-load," i. e., current beyond the capacity of the tube, or in case of short circuit or ground. Obviously, this same device becomes important from the standpoint of safety to both operator and patient.

This Mobile Unit has been designed to meet every requirement for practical radiographic and fluoroscopic diagnosis.

*An exhaustive descriptive circular will be sent on request*

VICTOR X-RAY CORPORATION, Jackson Blvd. at Robey St., Chicago, Ill.

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Victor



# New Orleans Medical

and

## Surgical Journal

Vol. 76

OCTOBER, 1923

No. 4

### THE DIAGNOSIS AND TREATMENT OF TUMORS OF THE SPINAL CORD, INVOLVING THE CONUS AND CAUDA EQUINA.\*

WILLIAM O. OTT, M. D., and A. W. ADSON, M. D.  
Section on Neurologic Surgery, Mayo Clinic,  
Rochester, Minnesota.

The first tumor of the cauda equina was reported by Lachmann in 1882, when he described a glioma arising from the filum terminale found at post-mortem. Sir Victor Horsley successfully removed the first spinal cord tumor in 1887. Lacquer is credited by Schmoll with having removed the first tumor of the cauda equina in 1891, the patient recovering completely. Since then, many tumors in this region have been recognized, and removed surgically. Steinke, in 1918, reported thirty cases of caudal tumor in a series of 330 collected cases of tumor of the spinal cord. From 1910 to April 1, 1923, 112 verified tumors of the spinal cord have been operated on at the Mayo Clinic, and twenty-three (20 per cent) of these involved the cauda equina.

We shall discuss here twelve cases of tumor involving the conus and cauda equina, operated on at the Mayo Clinic since November 1, 1921. These cases are not considered with cases of spinal cord tumors in general, because of the difference in symptoms and surgical

management, and the difficulty of exact localization.

#### *Symptoms and Diagnosis.*

The chief symptom is somewhat characteristic pain, usually of long duration. In the twelve cases the shortest duration of symptoms was one year, and the longest, twenty years; the average being six and one-tenth years. The initial symptom is generally root pains, and these were present in all of the twelve cases. The pains usually begin as a lumbago or backache, radiating to the sacrum, hip, and sacro-iliac region, and later, down one or both sciatic nerves, so that quite a large percent of these patients had been treated for sciatica. However, the pain differs from that of sciatica in one important respect; it occurs when the patients are lying down, and they often obtain rest at night by sitting in a chair bending forward, or resting the body on a table, or on the edge of the bed. All of the twelve patients had root pains, which is a higher incidence than with cord tumors at various levels: in only 64 per cent of the eight-five cases previously reported was there a history of root pains.<sup>1</sup> With the pain, if the condition has been present long enough, there will be a slight loss of bladder and rectal control in some cases; in others, weakness in one or both of the lower extremities, and in some, a very marked flaccid paralysis of the lower extremities, with loss of control of the bladder and bowel.

The neurologic findings in this group

\*Read before the Louisiana State Medical Society, New Orleans, April 25, 1923.

of cases are notable for their meagerness except for the conus lesions. In the early cases, and even in certain long-standing ones, there were few positive neurologic findings. In ten of the twelve cases, there was some degree of anesthesia, varying from a slight loss of tactile and pain sensibility around the rectum (Fig. 1), perineum, or posterior surface of the thigh, to marked anesthesia, typical of complete conus and caudal lesions (Fig. 2). In five of the cases, there was slight loss of bladder and bowel control, and in five, slight flaccid paralysis of the lower extremities. The Achilles reflex was reduced or absent in seven; in five, it was normal or exaggerated. The patellar reflex was normal or exaggerated in seven, and reduced or absent in five. There was tenderness over the vertebra at the level of the lesion in seven. Information obtained by lumbar puncture is especially instructive in this type of case. In six of the twelve, there was either a dry tap or xanthochromia, and in nine, a positive None.

The diagnosis in this type of tumors is often difficult, and at times, in the early cases, a definite diagnosis is impossible. Many of the patients have been treated for sciatica for months or years. There are certain outstanding features, however, which always suggest the presence of tumor; pain, often originating as a lumbago, later radiating to the sacrum, and with sciatic distribution, often bilateral, with intervals between attacks, but recurring and growing progressively worse, and particularly the characteristic night pains, or pains exaggerated by the reclining position. If there is also slight anesthesia around the rectum, or slight loss of bladder and bowel control, or definite paralysis, usually first affecting the peroneal group of muscles, the diagnosis is of a cord tumor is justifiable. Slight anesthesia around the rectum and perineum is especially to be looked for, and a careful investigation should be made of a slight loss of sphincter control, as this often appears before muscular paralysis. A lumbar puncture will often determine the diagnosis by revealing a dry tap, although the canal has been entered, or a golden yellow fluid, or a fluid containing a

large amount of protein without pleocytosis.

After a positive or probable diagnosis of tumor has been made, the level of the tumor must be considered. The method of differentiation of caudal and of conus lesions, as outlined by Muller, is not usually of much practical value in determining the exact level of the tumor, as the findings do not correspond to a complete lesion at any level. Early in these cases, when operation should be performed, it is often impossible to determine the exact level of a tumor, except to decide that it is either at the conus, or involves the cauda equina lower down. For this reason it is usually necessary first to explore the region of the conus, and then to continue downward until the tumor is located.

There are several conditions from which tumors involving the cauda equina must be distinguished. Sciatica, which is most often confused with these tumors, is notable for the absence of positive neurologic findings, although the Achilles reflex is absent or reduced in 50 per cent of the cases. The history is usually short, not progressive, with an acute onset and gradual improvement; the spinal fluid is negative, and there is no anesthesia or motor paralysis. Early in cases of spinal cord tumors, it is not always possible to differentiate sciatica and tumors involving the conus and cauda equina. Pelvic tumors, especially anterior sacral tumors, or Middendorph tumors, are particularly likely to be taken for caudal tumors. In the last three years we have performed exploratory laminectomy in two cases for supposed tumors of the cauda equina, and later learned that the symptoms were due to anterior sacral tumors. The symptoms are often identical to those of caudal tumor, and unless the tumor can be palpated by rectum or vagina, a differential diagnosis is extremely difficult. Tumors and inflammations of the vertebra may produce the same symptoms as those of the cauda equina; they can usually be distinguished by palpation and the roentgen-ray findings. Myelodysplasia, first described by Fuchs, may present difficulties in differentiation, but if the outstanding features of this condition, as outlined by Spiller, are kept in mind, it can be recognized. These features are



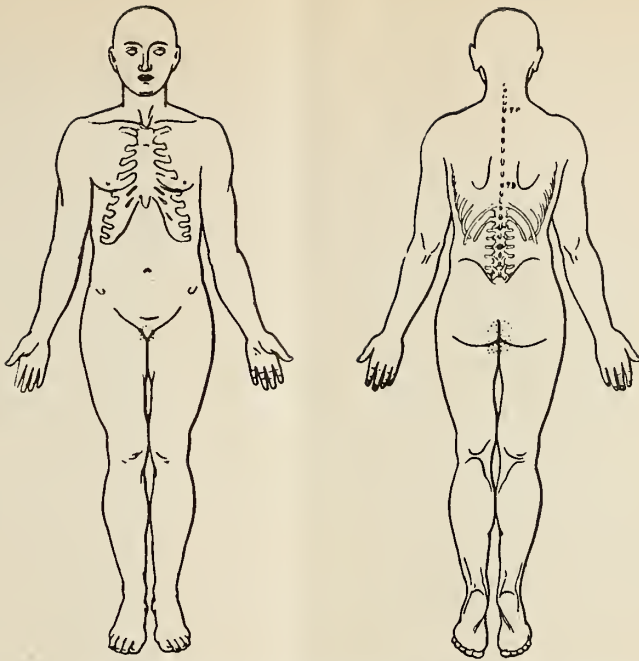


Fig. 1.—Slight loss of tactile and pain sense about the rectum. Tumor was an ependymal cell glioma arising from the filum terminale situated at the level of the third lumbar vertebra.

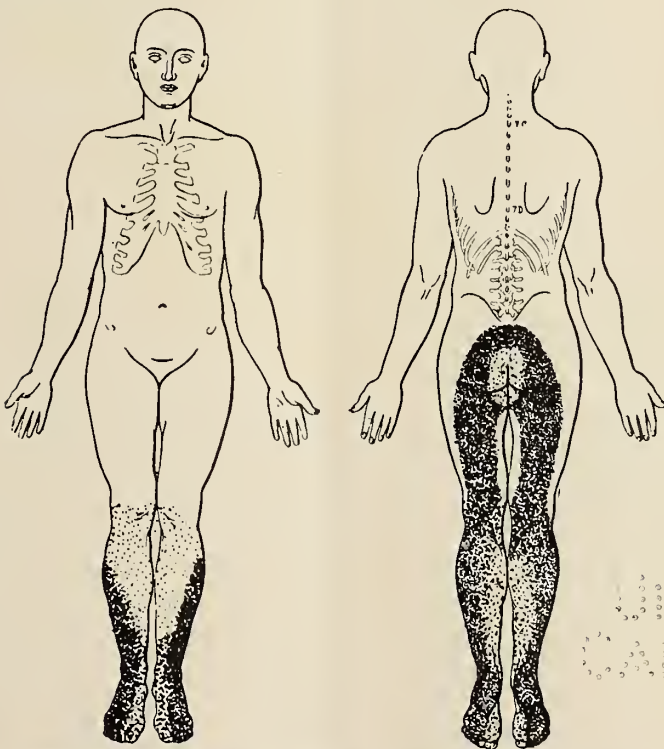


Fig. 2.—Anesthesia resulting from a tumor involving the conus.

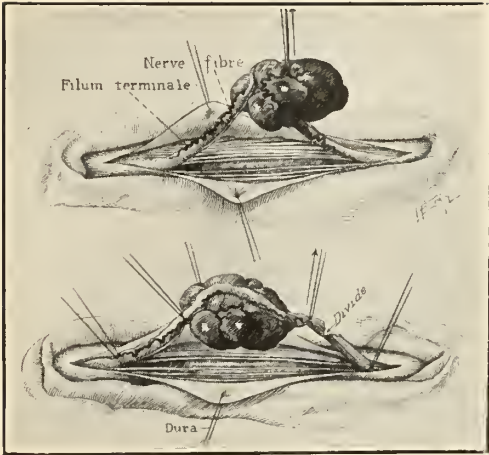


Fig. 3.—Neurofibroma at the level of the second lumbar vertebra.



Fig. 4.—Large ependymal cell glioma arising from filum terminale just below the conus, with an arachnoid cyst above.

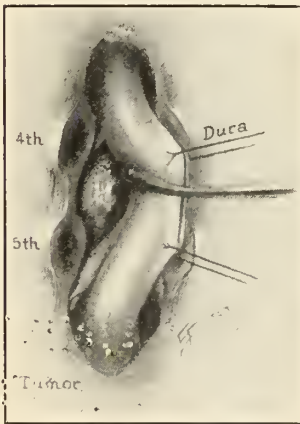


Fig. 5.—Fibrochondroma of intravertebral disc between the fourth and fifth lumbar vertebrae.

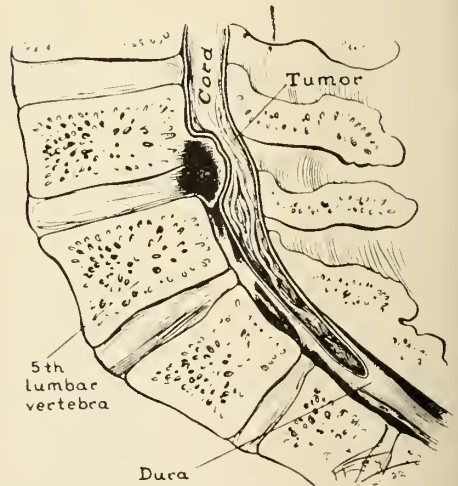


Fig. 6.—Same as Figure 4. Schematic section showing relation of tumor.



weakness of the sphincters and nocturnal enuresis persisting after puberty, syndactylism between the second and third toes, disturbances of sensation, chiefly of temperature sense, not strictly radicular in type, and more especially on the toes than on the foot, defect of sacral canal as shown by x-ray, abnormalities in the reflexes, defects in domes and lower extremities, defects in the feet, and other anomalies, such as hypertrichosis of the sacral region, lipoma in the coccygeal region, fovea coccygea, and so forth. *Tabes dorsalis* involving the cauda equina must also be considered, but this can be excluded by other signs of syphilis of the central nervous system.

#### *Pathology.*

Tumors found in this region of the spinal canal originate from the same tissues as they do higher up in the cord, and may be endothelioma, neurofibroma, glioma, and so forth. Of the twelve cases reported, five were neurofibromas (Fig. 3); two were apendymal cell gliomas, originating from the filum terminale (Fig. 4); two were fibrochondromas, originating from the intervertebral discs between the fourth and fifth lumbar, and fifth lumbar and first sacral vertebrae, respectively (Figs. 5 and 6); one was an endothelioma; one, a cyst, probably resulting from a degenerating glioma of the filum terminale, and in one case there was an intramedullary tumor of the conus; a specimen was not removed for diagnosis.

#### *Surgical Results.*

Tumors were removed in eleven of the twelve cases. While sufficient time has not elapsed to learn the final results in certain cases, the living patients have all been traced, and the results, so far as can now be determined, may be summarized as follows: One patient had an inoperable intramedullary glioma of the conus, and is helpless; one, who had a neurofibroma at the level of the second lumbar vertebra, which was removed, died from shock thirty-six hours after the operation; three had slight paralysis, but these are all improving, and seven are cured and are following their usual occupations.

The mortality rate in cases of this type has always been considered high. It was 46 per cent in thirty cases of caudal tumor collected by Steinke. In a series of sixty-seven cases of cord tumors, reported by Elsberg, in which operation was performed, eleven were of the conus and cauda; two of the eleven patients died following operation. In our series, the mortality rate is 9 per cent. We believe that three factors have contributed to lower our mortality rate: (1) earlier recognition of the condition, and hence earlier operation; (2) perivertebral anesthesia, which reduces bleeding and shock, and (3) dividing the operation into two stages in certain cases in which prolonged and extensive operation was necessary.

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## DISCUSSION.

**Dr. C. S. Holbrook (New Orleans):** I am sorry Doctor Parham is not here to discuss this paper, because he operated for us a low-grade tumor a year or so ago. The symptoms were very much those that have been described, although the location was not quite an equina tumor. The pain had been present for six or eight months and various diagnoses had been made. Finally the surgeon suspected the true condition and referred it to Doctor Van Wart for localization. The tumor was anucleated and the man made an excellent recovery as far as the operation was concerned, and now drives an automobile.

Since then I have seen a lower tumor, down around the second dorsal. This case had unfortunately been diagnosed sciatica for nine or ten months. The diagnosis was not at all tentative because there was marked paralysis, marked anaesthesia. Operation by Doctor Allen revealed a ——— cyst. Puncturing the cyst the fluid escaped with quite a gush, and after a tedious convalescence the patient is free from pain, except that, due to destruction of the cord, there is a certain amount of anaesthesia which will not be overcome. The patient is able to be about on crutches. The most striking thing was the length of time that he had gone along with a diagnosis of sciatica when examination showed that this should have been ruled out many months earlier.

I think we all feel very grateful for having Doctor Ott here, and to realize that in his early days he spent considerable time in New Orleans. He was interne in the Charity Hospital and from there went to the Mayo Clinic, where he has been for seven years. It has been a great pleasure to hear his excellent paper.

**Dr. L. L. Cazenavette (New Orleans):** The subject presented by Doctor Ott is one that naturally interests those of us who are doing neurological work. I believe that one point should be stressed, merely to emphasize again the point brought out by Doctor Ott, and a point that will be appreciated by most of us here. The most difficult point in these cases naturally is to make the diagnosis of the tumor cauda equina, and the first symptom that usually presents itself, as Doctor Ott has brought out, is the existence of pain. I feel that many of these cases that might be passed upon as sciatica or lumbro-sacro neuralgia leave our hands when possibly by further observation we might find more cases of tumor affecting that part of the nervous system than we would otherwise. In other words, I feel that if a case has persistent pain, especially of that character known as sciatica, they should have something else done besides having the teeth and gall bladder removed. I feel these cases should go to those who really do neurological examinations to determine the existence of any other symptoms that would be found in an affection of the lower part of the spinal cord or the cauda equina.

**Dr. W. O. Ott (closing):** I have nothing further to add, but I would like to stress the importance of doing lumbar puncture in any case where you feel the pain might possibly

come from a cord tumor, because in a considerable number of cases, especially in those that are early, operation should be done at once if you are going to get results. If you wait until the leg is paralyzed you increase your risk. If you do a lumbar puncture it will in many cases determine the diagnosis. If you get a dry tap the experienced man will go higher and go lower. If the tumor is blocking the fluid, the fluid that comes from below will be yellow. That will determine your diagnosis.

### RENAL LESIONS DUE TO URETERAL OBSTRUCTIONS OTHER THAN CALCULUS.\*

By H. W. E. WALTHER, M. D., A. C. S.  
New Orleans.

Obstructions in the ureter, with the resultant renal lesions they produce, furnish one of the most interesting chapters in urology. These impediments are either congenital or acquired and are dependent on intrinsic or extrinsic influences. Of the many factors, other than stone, that one must consider as retarding the free flow of urine from the kidney pelvis to the bladder, kink in a ureter (due to renal mobility, supernumerary blood-vessels, etc.), stricture, blood-clot, tumor, pressure from without (as in the case of the pregnant uterus), these are all factors commonly met with that produce obstruction.

Ureteral retention is, at times, found in so slight a degree as to cause but little urinary stasis. In some instances it is of an intermittent variety (as with the wandering kidney). And yet though slight and of intermittent character the condition may produce congestion of the kidney to such a degree as to occasion an infection from the circulating bacteria that might otherwise do no harm. For it is by a "congestive reaction" to back pressure in the urinary tract that retention (or stasis) ultimately damages kidneys.

For too long a time it has been the custom to group cases of this type purely from the standpoint of end-pathology resulting after years of progression of the lesion in question. Crabtree, in a recent contribution, dealing with the nature and significance of renal stasis, attempts, after painstaking clinical investigation, to classify these cases physiologically. His postu-

\*Read before the Orleans Parish Medical Society, Sept. 10th, 1923.



lates can only be briefly reviewed here. He speaks of: (I) acute stasis—which is met with in accidental ligation of a ureter, plugging of the ureter and renal pelvis by blood-clot, swelling of the ureteral mucosa (particularly at the uretero-pelvic juncture); (II) subacute stasis—of weeks' or months' duration, the outstanding class of cases in this group being the back pressure kidney associated with pregnancy; (III) intermittent stasis—the floating kidney group—where aberrant vessels and adhesive bands may influence the degree of pelvic stasis produced by renal mobility; and, (IV) relative obstruction—where one encounters pelvic dilatation without any apparent ureteral obstruction—usually this type is classed as congenital. Crabtree contrasts stasis against hydronephrosis and believes that the future will demonstrate that it is possible to recognize the "condition" without waiting for the "result."

Hill considers obstruction of the ureter the most frequent predisposing cause of the localization of bacteria in the pelvis of the kidney. He studied a series of cases in which appendectomy was to be done. The urines of 34 per cent of cases which were sterile before the appendix was removed produced cultures of *B. coli* within a few days after operation. Repeated cultures as controls on nonoperated cases produced no positive cultures. Stasis in some form was demonstrable in every instance where infection occurred.

Hunner contends that ureteral stricture is an important etiologic factor in the production of so-called essential hematuria. This matter deserves careful study. If there be any logic to this new theory as regards the causation of renal hemorrhage of unrecognizable origin, it behooves us to more assiduously investigate these cases in the future. Having had recently an unexplainable death following nephrectomy for intractable bleeding, and receiving later an autopsy report describing a marked ureteral stricture with ureteral dilatation above on the affected side, I am of an open mind on this most puzzling condition.

Although it may frequently be impossible to draw fixed lines between the various renal lesions (for one condition may blend into another almost imper-

ceptibly) yet obstruction in some form is unquestionably the main causative factor in the production of most infections of the kidney. Repeated animal experimentation has shown decisively the bearing of obstruction to these pathologic states. Pyelonephritis, pyonephrosis and hydronephrosis have commonly this factor as a basis of being. And stasis may play a part in producing, or at least intensifying, perinephritic lesions.

All these conditions have, more or less, a common symptomatology. Frequency of urination and burning during the act—with or without an increase in the normal output of urine; fever—either of a continuous or intermittent type, with or without rigors; palpable kidney—which may elicit tenderness on deep pressure and is not infrequently above normal size; and, leucocytosis—of twenty thousand or over, depending on acuteness or chronicity of case as well as type of lesion existent. With many patients, particularly those with long-standing conditions, concurrent symptoms noted are evaluated accordingly. Hypochromidria; loss of appetite, with loss of weight; indigestion, nausea, vomiting, intestinal upset; headaches;—these are but some of the symptoms complained of.

The most interesting phase of the subject is that dealing with the means by which a correct diagnosis can be made. The methods employed must fulfill two main prerequisites namely: (I) they must be non-injurious to the patient as well as to the pathological condition he is supposed to harbor; and (II) they must be so conclusive in results obtained as to leave little room for doubt.

This brings one almost abruptly to cystoscopy. I say abruptly because I consider it unnecessary to unduly accentuate the value which obviously must be placed at all times on a carefully compiled case-history, a painstaking physical examination which leaves nothing to the imagination, and a most careful urinalysis (not ignoring the importance of collecting the urine in a proper manner).

The indispensableness of the cystoscope and the ureteral catheter in diagnosing diseases of the kidney is established. It only remains to enumerate

briefly just what aid these instruments are to us here. No observer contends that ureteric meatoscopy, in itself, reveals obstructions higher up. Studying the ostia for the character of efflux might sometimes be of value, particularly after an intravenous injection of indigocarmine. Yet the only possible picture that might be associated with ureteral obstruction would be prolapse of the ureter—and even such an assumption might rightly be challenged. The ureteral catheter is truly our most faithful ally. Not only are obstructions in the ureter recognized by the attempted upward excursion of the catheter, but should there be found urinary stasis in either ureter or kidney pelvis, this instrument, serving as intermediary to dilated pocket and aspirating syringe, will give us the content of such a cavity. Where wax bulbs or acorn-tipped bougies are passed, ureteral strictures can be detected.

Urography, the term now used for outlining the urinary tract on the x-ray film, has been of the greatest value in demonstrating graphically the various types of renal lesions under discussion. Braasch, in 1915, published a monograph on this phase containing 296 pyelograms made of eighteen different pathological lesions in the kidney and ureter. The majority of his illustrations deal with conditions primarily due to obstructive factors. Much has been written relative to the dangers accompanying pyelography. After a wide experience in the technique, beginning in 1912, at which time I made the first pyelogram attempted at Charity Hospital, I have followed the work through a large array of opaque media advocated, until today we have, in sodium iodide a non-irritating substance which makes a clear solution and casts a denser shadow than the old silver suspensions formerly used.

I find myself at complete variance with some urologists who claim that they can determine, by mere injection of the renal pelvis with methylene blue solution and then noting its regurgitation around the catheter into the bladder, the degree of renal stasis. It is commonly observed that any muscular cavity contracts the moment it is emptied. Only where atony exists will this phenomena be absent. Further-

more, a catheter in the pelvis cannot possibly determine the amount of ureteral stasis lower down.

This brings us to the method of making pyelograms. If one will make a series of pictures by first plugging the lower end of the ureter with a Garceau catheter and then inject some 25 per cent sodium iodide solution into the ureter and kidney pelvis he will detect many interesting kinks, and in some instances strictures, which will be entirely missed where the catheter has first been introduced up to the kidney. Not infrequently the unusual excursion of the ureter, influenced by kinks, areas of dilatation, stricture narrowing, as well as the various positions a sagging kidney might assume, furnish interesting problems. We see, time and again, pyelograms which clearly demonstrate dilatation of the ureter or renal pelvis, but which do not tell us the cause of such a state of affairs. Legueu, in 1904, drew attention to abnormally placed blood-vessels, serving to compress the ureter, frequently caused pelvic dilatation. By dividing such vessels he cured his patients. Elkhorn, in 1907, further emphasized this condition, and W. J. Mayo has frequently alluded to it in his writings upon the kidney. High insertion of a ureter into a pelvis or its oblique entry may be a factor in producing obstruction. Howard A. Kelly has drawn attention to some rare conditions met with as tumor pressure from a cyst in the sinus renalis as well as an echinococcus cyst of the lower pole of the kidney. Surely the cystoscopist's lot is not one continuous bed of roses in arriving at definite conclusions in cases of this nature.

Reverting back to cystoscopy just for a moment, it is perfectly clear that in cases of this kind a comparative study of the two kidneys for pelvic content, separate urinalysis, and differential functional reading with 'phthalein or indigocarmine are all routinely employed. Such study of comparison not only furnishes means of accurate diagnosis, but often determines whether or no the case might be considered a good operative risk.

As regards the treatment, each lesion will require its individual care. Collectively one can consider the hygienic



rest (in the acute stage), keeping bowels regulated, increasing intake of fluids (water externally, internally and externally!), application of cold for fever, urinary antiseptics by mouth, sedatives for pain, and the local treatment (with the cystoscope, etc.).

Pyelonephritis, due to an obstruction, can be much benefitted and not infrequently cured by the combined, repeated dilatations to the ureter and lavages of the renal pelvis. The Garceau catheter and the Walther flexible metallic ureteral sound are the instruments most used for dilating the ureter. For lavage silver nitrate has no equal, being employed in from 1-4 to 2 per cent solutions. One per cent mercurochrome as alternate for the silver at times gives good results.

Where stasis accompanies the renal lesion prolonged drainage by means of the in-dwelling ureteral catheter gives uniformly good results. I speak here of conditions amenable to such therapy, realizing full well that many pyonephroses and hydronephroses are little influenced by the procedure. Then, too, the patient has to be considered. Some tolerate retention catheters well while others do not. I have kept catheters in kidneys as long as seven days, with excellent drainage all the while, with a fall in temperature to normal, with dropping of a 30 to 40 thousand white cell count to normal, with urine that changed from a consistency of cream to that exhibiting but a faint haze to the eye, and with general subjective improvement of patient. I must admit that such improvement does not always continue upon removal of the catheter, but even if only a fair number are relieved by this conservative plan, saving them the ordeal of a major surgical procedure, the reward is ample.

Many cases of pyonephrosis and hydronephrosis met with will require surgery. If, as has been pointed out, some remedial factor as an aberrant blood-vessel or band, a sagging kidney, a ureteral stricture, or some extrinsic agent exerting pressure can be relieved, then the kidney itself can be spared. Certain physical exercises, aimed at developing certain muscles, when combined with appropriate supportive mechanical appliances in the form of belts or corsets,

give many patients complete relief of all symptoms.

It is true that some of these conditions will only be brought to light at operation and it is only after the parts affected are exposed to inspection that matters can be definitely decided. Whether simply to drain, or to remove, or to attempt to fix the kidney presents another problem. Many experience disappointment in having a case do badly following an uneventful hospital convalescence and later find it necessary to go back and remove the kidney. The nicety in judgment displayed by the operator under such conditions is surely the most rigid test to which he can be subjected. I wish to make a plea here for conservatism in kidney surgery. Too many kidneys are being sacrificed needlessly. Unless expediency demands it, rest content with a nephrotomy. Reserving nephrectomy for the second-stage operation in instances where simple drainage fails.

The status of internal urinary antiseptics in urology remains indeterminate. Urotropin has had wide vogue with the profession. The fact that urotropin requires a urine strongly acid in reaction, in order that it split into formalin and ammonia, makes it ever of doubtful value. For it is most difficult to render, and maintain, the urine strongly acid. Neutral acriflavine, on the other hand, acts best in an alkaline media. It is easy to alkalize the urine. This new dye-antiseptic is still in the experimental stage. But the results so far reported with its use are encouraging.

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#### PRE-ECLAMPTIC TOXEMIA. L

By E. L. KING, M. D., and A. H. GLADDEN, Jr., M. D.  
New Orleans, La.

Pre-eclamptic toxemia occurs several times in every 100 pregnancies, generally in the last two to two and one-half months, and oftener in primiparae than in multiparae. Various classifications of this syndrome of toxemia, albuminuria, and hypertension are given by the authorities; e. g., Williams differentiates between the nephritic and the pre-eclamptic types; DeLee does the

\*Read before the Orleans Parish Medical Society, June 25, 1923.

same, but also stresses the "kidney of pregnancy," which is simply an early stage of pre-eclamptic toxemia. It is true that cases of chronic nephritis aggravated by pregnancy and encountered usually in elderly multiparae; in these patients the progress of the disease is slow, and convulsions, though at times a complication, do not occur as frequently as in the true toxemia of pregnancy. These cases are in the minority, so it is well, from a practical point of view, to consider every obstetrical patient with albuminuria and hypertension as a potential eclamptic, even though toxic symptoms may not have as yet developed.

The symptoms are well known, though their gravity is not always appreciated. Edema is common, and is especially important if it involves the hands and face; swelling of the lower extremities is often not of toxic origin, but the patient should be warned to report it as soon as it is noted. Epigastric pain, with or without nausea and vomiting, is an important danger signal. Headache is very significant. Dizziness, disturbances of vision (even total blindness), somnolence, an ill-defined feeling of malaise, and a lessened output of urine, are often noted. The most important symptoms are headache, epigastric pain, visual disturbances, and edema.

By carefully watching our patients, however, we will often detect albuminuria or hypertension before the patient complains of any symptoms, and this was our experience in many of our cases. It may be several days before the woman feels ill; in one of our patients, the systolic blood pressure rose from 168 to 220 in six hours, and she felt perfectly well throughout. The blood pressure is especially important, and will often begin to rise days in advance of the development of albuminuria. Any rise above the normal of the particular patient under observation is suspicious; thus, if the normal is 110 to 120, 130 to 140 is alarming, 150 is dangerous, and the danger increases as the pressure rises. As regards albumen, its presence is of more importance than the amount; it is not well to disregard even a trace, especially when it is associated with hypertension. As in the case of the blood pressure, a rapid rise in the

course of a few hours is often noted. Hence we feel that these two points should be carefully watched in every pregnancy, and that observations should be made weekly after the seventh month, instead of bi-monthly, as is the time-honored teaching.

It may be well to note that we occasionally see patients with a borderline condition; that is, a systolic pressure 20 to 40 points above normal, with or without edema, but with no albumen and no toxic symptoms. We class them as probably toxic, and watch them very closely, regulating their diets and habits carefully.

The treatment consists of rest in bed, starvation, and elimination. Many of these patients have been guilty of over-feeding, and they are often constipated. A mild pre-eclamptic state is often transformed into a serious condition by a hearty meal, just as an attack of true eclampsia in a pre-eclamptic is at times precipitated. So for 24 to 36 hours we give plenty of water by mouth, and nothing else. A brisk saline cathartic, occasionally preceded by calomel, is administered. If nauseated or very toxic, the stomach is washed, and a quart or so of water is given through the tube. The colon is flushed every eight hours with five gallons of a 2 1-2% solution of sodium bicarbonate, turning the patient on her side and using a rectal tube. She is kept warm, to promote the activity of the skin. Alkaline diuretic drinks may be administered, but their value is questionable. If the blood pressure persists at 175 or over, venesection and the removal of 400 to 500 c.c. of blood is advisable, especially if the patient complains of toxic symptoms. But if she is in labor or labor is to be induced, it is well to omit this bleeding, as the additional loss of blood during delivery may shock the patient; furthermore, improvement is the rule after delivery. The output of urine is carefully noted, as is the amount of albumen, and the diastatic activity of the urine is determined. This latter is thought to be of value in differentiating between pre-eclamptic and nephritic toxemia. The blood pressure is taken two or three times daily, and the non-protein nitrogen, urea, uric acid, and creatinin of the blood are estimated. These determinations have not



thus far been of material assistance to us, except that the findings are further evidence of nitrogenous retention, and thus aid in the diagnosis of toxemia.

If the patient is within four or five weeks of term, with the fundus 30 or more cm. from the symphysis, and the baby is alive, we do not feel justified in temporizing more than three or four days, unless the patient shows marked improvement. The baby shares in the toxemia, and often dies in utero, or soon after birth, especially if the maternal toxemia has extended over a considerable period. We have found that a healthy child at eight months has a better chance than a weak and toxic one at eight and one-half months. The nearer term, the more readily we interfere, especially as we know that a small percentage of albumen and a moderately high blood pressure do not necessarily imply a mild toxemia. One of our two fatal cases had 6 to 8 per cent of moist albumen and a systolic pressure of 150 to 160 until she developed fatal eclampsia. If the pressure is 170 or over, we temporize only in case the child is not viable, but we do this with fear and trembling, and if prompt improvement does not occur, labor is induced. Here again the intro-uterine fetal death rate is high, and if we wait a little too long and eclampsia supervenes, the baby will be lost and the mother's chances will be materially lessened. Finally, if the systolic pressure is 200 or over, we induce labor at once, irrespective of the period of pregnancy, except in the very occasional case of clear cut chronic nephritis with abundant urinary output and no toxic symptoms.

In case labor is induced, we try first the following method; Castor oil, one ounce; in one hour, a hot enema; one hour later, 10 grains of quinine hydrochloride, which is repeated every hour for three doses. This acts in many cases, especially if near term. If this treatment fails, or is slow in its action, we add pituitrin, m iii or iv, every hour for four doses, unless active labor supervenes. Occasionally, near term, pituitrin alone will suffice. Should these measures fail, the choice lies between pack, catheter, and bag, and of these we prefer the bag. The pack conduces to infection and the catheter

method has proved very slow and at times has failed entirely. We use the largest Voorhies bag that can be inserted, usually a No. 4, generally giving ether or gas in primiparae, while in multiparae an anesthetic is as a rule not required. Pituitrin is often administered in small doses in addition; labor usually begins in two to eight hours, and the uterus is often emptied in from six to twelve hours after the insertion of the bag. We have treated 24 cases along these lines in the past two years. Labor was induced 21 times, using the bag in 19 of these patients, and the catheter twice. Three patients were not treated by induction, as their toxemias were not serious, and they delivered normally. Two mothers developed eclampsia and died; one of these, as stated above, had 6 to 8 per cent of moist albumen, 150 to 160 pressure, and did not complain of toxic symptoms until just before the eclamptic attack developed. She was near term, and might have been saved had labor been induced a few days earlier. In the other patient, the toxemia was of short duration, and eclampsia developed after the insertion of catheters. Eight babies were lost; five of them were premature, weighing three to four pounds, while the others shared in the maternal toxemia. The morbidity rate was low, in spite of the fact that the use of the bag is stated to be followed by fever frequently. In this series, the majority had no fever; in four cases there was transient temperature of 101° or over; only one patient had 102°, and in her case it was hard to establish good uterine contractions (two bags were used and the labor lasted 48 hours).

In conclusion, we wish to stress the importance of prenatal care, especially emphasizing regular and frequent blood pressure observations in addition to the examination of the urine. We wish also to drive home the fact that pre-eclamptic toxemia is always serious, no matter whether the signs and symptoms are mild or marked, for *any* patient thus afflicted may at *any* time develop eclampsia. The best interests of both patients will usually be best served by emptying the uterus, unless the toxemia is very mild and improvement under treatment is marked.

## DISCUSSION.

**Dr. J. S. Hebert:** I think that, after all, we practice medicine to get results. I think the close study of pre-natal work is going to do away with pre-eclamptic toxemia. The only way we are going to prevent it is by making these close studies. It is hard to determine the best procedure at times, but some things are important. I have followed this rule in the last 10 years: the presence of albumin is always of significance, the quantity also, but, in conjunction with the presence and quantity of albumin we should watch the elimination of urea; we should combine the two. I know we should eliminate from 15 to 25 grams of urea per 24 hours. I think when we have a patient we should watch her closely, for when the total urea comes down to 10 or even lower, my percentage of albumin goes down to 2 or 3 grams per liter and blood pressure 280 to 300 I feel I have a very sick woman. If a patient presents this picture I think it is time to act—remember: quantity of albumin from 2 to 5 per cent—about 2 to 5 grams of albumin per liter—and percentage of urea down to 10 grams per 24 hours; this is the rule I have followed.

## DUODENAL DILATATION.

**Its Significance From Medical, Surgical and Radiological Standpoints. A Preliminary Report.**

By A. LEVIN, M. D.  
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Duodenal dilatation, in its various forms, according to some observers, is rare enough to merit our attention. Textbooks, for some reason, have failed to lay sufficient stress on this important phenomenon of abdominal pathology. When large quantities of duodenal biliary fluid are encountered in the stomach, we are prone to designate it as gastric dilatation. It is my belief that in a number of such cases, a largely dilated duodenum, the so-called giant duodenum, forms the background of such a condition, as will be demonstrated in the course of consideration of this subject. We often find duodenal biliary contents in the stomach. In rare instances, enormous quantities are regurgitated, forming a stagnant pool of fermented fluid in the stomach, harboring products of decomposition. The consequence, naturally, is a profound toxemia giving rise to symptoms which often mislead the radiologist, physician and surgeon. The condition is serious and requires a great

deal of consideration as to what steps to undertake.

Reviewing briefly the literature on the subject, we find the following statements, thus:

W. J. Tucker states that chronic dilatation of the duodenum is met with, not infrequently, in the course of surgical operations, but a true giant duodenum is a very rare clinical and surgical entity. The condition itself is interesting as it offers a program both for clinical diagnosis and therapeutics. Very little relief is offered by medical or surgical procedures. The condition may be nervous or reflex in origin as suggested by the finding of this condition in patients suffering from appendix and gall bladder syndroms. A fair percentage of cases were found to be due to constriction or kinking at the duodeno-jejunal angle, and by reason of peritoneal bands.

In some cases, no cause was found.

Lane believes it is due to ptosis of the entire intestinal tract, with accumulation of fecal matter in the cecum and ileum, resulting in a pull on the duodeno-jejunal angle and a consequent dilatation of the duodenum.

Christian contends that the condition is due to gastric atony and pyloric relaxation.

Ochsner thinks that it is due to a constriction of a sphincter muscle, which he states exists aboral to the common duct papilla.

Barber, in the annals of surgery, 1915, offers an interesting theory founded on animal experimentation. He found that incomplete obstruction of the terminal ileum gave rise to a dilated duodenum, while a complete obstruction caused no change or increased tonicity of the duodenum.

H. Shoemaker, in an article on chronic dilatation of the duodenum speaks of its causes as follows:

Dilatation of the duodenum must occur when an obstruction distal to that part of the gastrointestinal canal exists. It naturally occurs as a sequence to dilatation of the entire length of the small intestine. It is caused by congenital malformations, after an attack of infantile paralysis of the intestinal type, by obstructions due to dragging of the viscera sharply at the duodeno-jejunal

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angle and sometimes by an anomaly of the superior mesenteric artery.

H. Barclay presents his views on the subject as follows:

Chronic dilatation of the duodenum may be classified under two subdivisions:

1.—Those due to organic stenosis (a) in the duodenal wall as ulcer, (b) about the duodenum as adhesions, tumors, etc.

2.—Mechanical occlusion of the duodenum produced by traction on the root of the mesentery or constriction of congenital bands and adhesions.

#### *Causes.*

Some of the causes in the order of frequency are:

1—Ptosis of the transverse colon, particularly of the hepatic flexure with or without gastric ptosis.

2—A small intestine provided with only a short mesentery.

3—A jejunum which is dropped perpendicularly.

4—An old duodenal ulcer which has become attached to the gall bladder or liver, producing a sharp kink.

5—Bands in the upper abdomen, embryological or acquired.

Bloodgood classifies these cases as:

1—Dilatation associated with acute dilatation of the stomach, gastromesenteric ileus, as a postoperative complication, typhoid, pneumonia, rheumatism.

2—Chronic dilatation with a distended cecum, short mesentery of ileum pulls on the mesentery at the duodeno-jejunal angle causing a kinking and dilatation of the duodenum.

3—Dilatation of duodenum after gastro-enterostomy due to duodenum being closed at both ends.

Practically all authors agree that the condition is rarely, if ever, congenital—that it is post-natal and mechanical in its origin.

Reviewing the causes enumerated by the above observers, there is no mention made that fecaliths or enteroliths in the colon without any intervening pathology between it and the duodenum, can cause a marked dilatation of the duodenum. In the cases which I am to report here tonight, the factors of the duodenal dilatation evidently were fecaliths and enteroliths in the cecum and colon.

#### *Pathology.*

In the milder forms no demonstrable changes in the intestinal wall or in adjacent structures were found, and in 15 of the 26 cases at the Clinic of Dr. Tucker, no causes were found in the gall bladder and appendix, and patients were not relieved by operation.

In giant duodenum, however, definite pathology is found in the intestinal wall; extreme atrophy of the muscle structures with changes in the mucosa and glands. As a result of this gastric atony may develop and the acidity may be entirely lost.

#### *Laboratory Methods As Diagnostic Aids.*

In the milder forms, the gastric analysis reveals nothing characteristic, except a slight subacidity, if a slight amount of the bile is present in the gastric contents. In the severer forms, we may have a total achylia. The most characteristic finding, however, in the true giant duodenum, is the large accumulation of duodeno-biliary contents in the stomach. If the accumulation is of short duration, the color of the fluid is distinctly yellow, or yellowish-gray with a heavy sediment. If, however, the fluid has been stagnating in the stomach for a longer period, and has become oxidized, the color is dark green with a heavy accumulation of mucus and sediment.

The X-ray findings in these cases are very characteristic and diagnostic. H. M. Imboden gives the following X-ray findings in Dilatation of the Duodenum:

1—Reverse peristalsis.

2—Writhing and twisting of the duodenum due to its attempt to empty itself.

3—Accumulation of contents in the lowest part.

4—Dilatation.

5—Tenderness over the angle of Trietz.

The examination must be made fluoroscopically and not by plates. Peristaltic waves are frequently observed from right to left.

#### *Symptomatology.*

A definite symptomatology has been worked out following observation on cases reported in literature. It is mostly

gastric, although the early stage of hypertonicity of the stomach due to failure of the duodenum to pass along the bolus of food, will produce all the classical symptoms of duodenal ulcer, particularly the pain at the end of digestion and excessive acidity. Later on, an atony of the stomach follows, and the acidity may be entirely lost. Vomiting is an associated symptom of the later stage of dilatation of the upper portion of the gastrointestinal tract; it is large in amount and recurring; food eaten from one to three days before is regurgitated; there is marked abdominal distension and gas. In the more chronic types there is a distinct icteroid tinge to the skin and conjunctiva, toxic headaches are associated with it, marked constipation, loss of appetite, a general relaxation, slight temperature and pulse between 90 and 100, with a general picture of chronic biliary toxemia. The urine may contain very heavy Indican. Superficially observation of a patient of this type, lead us to make a quick diagnosis of chronic gall bladder disease.

### PROGNOSIS

Very little can be promised. Four of the eight patients seen by Tucker were relieved by operations and three died after operation. Gastro enterostomy was done in six, with occlusion of the pylorus in two cases. Duodenojejunostomy was done in one case on record at the clinic. In the more exaggerated forms, a direct operation on the duodenum itself, short-circuiting, is necessary before any relief can be expected. A prominent surgeon of New Orleans expressed his personal experience with such cases from a prognostic standpoint as follows: "Most of my operated cases died shortly after operations, probably due to profound intestinal toxemia. These patients lack resisting power and vitality to withstand operative shock."

In the two cases which recently came under my observation, the causative factors were fecaliths and enteroliths in the large bowel. One was operated when the diagnosis of duodenojejunal obstruction was made and confirmed by X-ray findings of a giant duodenum, with fatal results, death following six hours after operation. There were absolutely no adhesions or bands any-

where. The small intestines were perfectly normal in appearance and size, except for a giant duodenum, but the entire large bowel was filled with fecaliths. I cannot explain on a real scientific basis, how duodenal dilatation developed as a result of fecaliths, unless it caused a drag and pull on the duodenojejunal angle.

If the radiologist had completed the X-ray pictures of the entire gastrointestinal tract, and could have demonstrated the existence of fecaliths in the colon, medical measures to rid the colon of the offending obstacles would probably have saved the patient's life, as was demonstrated in the second case.

The histories of the cases are as follows:

### CASE I.

Mrs. M. L., age 60 (white) Teacher by occupation.—

In December, 1922 she began to complain of vomiting green fluid and of a dryness of tongue and mouth. No pain after meals, but heaviness, fullness and bloatedness. She also suffered from waterbrash; constant nausea. At first vomiting was off and on, loss of appetite, and constipation, later on a persistent vomiting set in with abdominal cramps. She began to lose in weight rapidly and the color of the conjunctiva and skin became distinctly icteroid. Involvement of the nervous system was manifested by a very marked general depression. Physical examination of the abdomen presented the only interesting feature; that is, a marked abdominal tympany over the left and lower abdomen, with a flat sound over the right upper abdomen, and much distension.

I introduced the stomach tube and obtained over a half gallon of dark green stagnant material of a very foul odor. I put her on a full diet for another 24 hours with the idea of determining whether there would again be a marked duodenal regurgitation. The following day I introduced the tube and found a similar quantity of fluid with a heavy residue. The color of the fluid obtained this time was not as dark green as the first, but rather a light yellow. The examination revealed that it was duodenal contents.

I diagnosed the case as one of obstruction at the duodenojejunal junction, and



advised an X-ray to corroborate my diagnosis. The X-ray showed a giant duodenum. We did not look further and were satisfied that our diagnosis of duodenojejunal obstruction was correct and operation was advised. The surgeon agreed with me in my opinion and also suggested surgical interference for relief of the above condition.

On the operating table, to our surprise, a very unusual condition was found. There was absolutely no obstruction at the duodenojejunal junction. The duodenum was markedly dilated. The intestines lower down were normal, but the entire large bowel from one end to the other was filled with hard fecal concretions. The surgeon could do nothing. The abdomen was closed, and shortly after the operation the patient began to sink very rapidly, and in spite of our efforts, died 6 hours later.

## CASE II.

In this case, no diagnosis of duodenal dilatation was made, but intestinal obstruction was suspected and surgical interference was contemplated. It is my firm belief, judging from the quantity and character of fluid found in the stomach, that we were dealing with a giant duodenum caused by a true enterolith which is composed of cholesterol, obstructing the ileo-cecal region. The size of the enterolith is too large to entertain a possibility of a common duct dilatation and the passage of that stone from the gall bladder. It is rather possible that a small gall stone passed the common duct and the stone was enlarged by cholesterol crystals from the intestinal tract. It is also possible that a rupture of the gall bladder took place some time ago, emptying its contents of a stone into the intestinal tract which later on caused intestinal obstruction with marked duodenal dilatation.

The history is as follows:

Mrs. B. F. R. age 64, white, female. Seen by me in consultation, while the patient was being prepared for laparotomy.

### PREVIOUS HISTORY

Subject to indigestion. Sudden spells of vomiting and purging from overeating. Habitually loose bowels. Bicarbonate of soda habit after heavy meals.

Operation 20 years ago for removal of fatty tumor under the breast. Vaginal lacerations in childbirth.

### HISTORY OF RECENT ILLNESS

When first seen by her physician, she gave a history of 4 days of persistent vomiting of bile and 11 days of elapsed interim since last bowel movement. On examination, her physician found that the right abdomen was more rigid than the left and that the entire abdomen was greatly distended. On questioning the patient more carefully, it was ascertained that there had been no flatus passed for over a week. Her family physician, recognizing the seriousness of the condition, and believing that he was dealing with an obstruction somewhere in the intestinal tract, resorted to the usual measures advocated in such conditions to bring about desired results, viz: bowel evacuation, but failed in his efforts. He admitted the case to a local hospital. A barium meal was given the patient by the radiologist who reported a marked stagnation in the stomach, almost a 16 hour retention. After a period of 12 hours, no barium was found in the large intestines, the meal apparently meeting with an obstruction about the ileo-cecal valve. The white blood count at this time was 16,500, with 78 neutrophiles; for a number of days there was no temperature, but later a slight rise in temperature developed. Patient was vomiting persistently everything taken by mouth. The vomitus was fluid containing some mucus, but mostly oxidized green fluid, evidently regurgitated duodenal contents due to reverse peristalsis. Over a period of 7 days, medication had been directed both by mouth and per rectum in an ineffectual effort to move the bowels; it had been practically agreed that the case was one of intestinal obstruction of unknown cause and was surgical in character. I was called in to see the case when it was being prepared to be taken to the operating room. On examining the patient carefully, I observed the following points of interest, viz: the general appearance of the patient was very good. She complained only of an upper abdominal fullness, constant nausea and the awful strain of persistent vomiting.

of green fluid. She expressed herself if her fullness and vomiting could be stopped, she would feel fine. Her pulse was of good volume, slightly rapid, there was hardly any elevation of temperature, but a very marked abdominal distention was present. On palpating the abdomen, a mass the size of a small fetal head could be felt over the right lower abdominal quadrant, definite rigidity, marked tympany over the opposite abdominal side and almost flatness over the upper portion on percussion. The general condition of the patient did not appear to me as alarming, and I discouraged the surgeon and attending physician from rushing her to the operating room; instead I advised first to introduce a stomach tube, believing that the upper abdominal distention was due to a large quantity of duodenal fluid regurgitated into the stomach. This was done and to our satisfaction, over half a gallon of dark green stagnant fluid without a fecal odor was removed. The patient felt relieved immediately; the size of the abdomen was greatly diminished and became softer on palpation. I then suggested the following with the idea of attempting to relieve a possible obstruction in the large bowel.

The possibility of enteroliths entered my mind, remembering my recent experience with case I, thus: One pint of warm olive oil was given by high rectal tube with the patient in the knee chest position; she was maintained in that position until sufficiently fatigued to require the dorsal position. Small doses of pituitrin were ordered every 4 hours for 2 or 3 doses. Two hours after the olive oil enema, an alum enema was administered by high tube, and this produced the first show of fecal material in over a week. Continuous warm saline flushes were then instituted with the result that the patient passed an enterolith covered with hardened fecal material about half the size of a small lemon, followed by large quantities of fecal material and gas. Considerable improvement in the general condition of the patient followed and 12 hours later, the blood count dropped to 8,500 white cells with 72 neutrophils. With careful alimentation by means of soluble diet, small doses of castor oil also mineral oil with gradual addition to the diet of

semi-solids, then solids as indicated, the patient made a rapid recovery.

I recollect several cases of marked duodenal dilatation, which I have seen in my clinic. In 3 cases a diagnosis of systemic lues was made, and in another case where a giant duodenum was demonstrated by the radiologist. There was a history of persistent vomiting of green fluid, the cause of the trouble was proven on the operating table to be due to a very large band of adhesions from the duodenum across the abdomen to the sigmoid. The band was released, but patient did not improve. She began to lose in weight rapidly and developed an afternoon temperature. A second exploratory revealed general millitary tuberculosis from which she finally died.

### CONCLUSIONS

After reviewing carefully the facts stated above and realizing that numerous causes can produce a reverse duodenal peristalsis, terminating in duodenal dilatation, we should always endeavor to weigh the evidence in a given case suspicious of duodenal dilatation before we decide definitely on any plan of treatment. I believe that in a number of cases of duodenal or pyloric ulcer, where a gastro-enterostomy was done and biliary regurgitation develops, we should not conclude that we are dealing with a vicious circle, but we should bear in mind a possibility of a kink at the gastro-enterostomy angle or a pull at the duodeno-jejunal angle producing thereby a reverse peristalsis, with a resulting duodenal dilatation. It is also possible that a late stage of a vicious circle will result eventually in duodenal dilatation. At any rate, I am convinced of the following:

1. That a giant duodenum is not a very rare clinical and surgical entity.
2. That fecaliths or enteroliths will cause marked duodenal dilatation resulting in gastric atony.
3. That the small intestines from the jejunum down to the lower end of the ileum may remain absolutely normal and still an offending obstacle in the colon will jump across this entire tract and attack the duodenum, causing a marked duodenal dilatation.
4. That large quantities of duodenal fluid, when found in the stomach, should



make us suspicious of a marked duodenal dilatation.

5. The surgeon before opening the abdomen for relief of intestinal obstruction, should ascertain the condition of the stomach.

6. That the radiologist in studying the gastro-intestinal tract of a case suspicious of duodenal dilatation, shall not limit his observations to the upper gastrointestinal tract alone, but conclude a series of observations on the lower tract as well.

7. That reverse peristalsis, even without marked evidence of duodenal dilatation, shall be looked upon as a condition requiring careful study and observation to determine the causative factor. In my opinion, reverse duodenal peristalsis is the primary cause of the so-called "heartburn", a study of which subject I am making at present and the results of which I shall report probably in a paper on that subject.

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Scientific Meeting.

June 25, 1923.

#### DISCUSSION:

**Dr. J. Holmes Smith:**—In a recent number of the *British Journal of Surgery* there were several articles bearing upon Duodenal Dilatation and referred to by one author as

Chronic Duodenal Ileus. Particular attention is paid by them to pressure of the superior mesenteric artery as a causative factor. One author lays particular stress upon undue mobility of the ascending colon. A mobile ascending colon at times pulling upon the mesentery and constricting the third part of the duodenum through the right colic artery. This condition is considered congenital, rather than acquired. In one series of 14 cases excellent results are reported from fastening the colon only.

In addition, I might cite a case under my own observation. The patient had had a gastro-enterostomy some months prior to coming under my observation. When first seen, the main symptom was vomiting after partaking all food, but little pain. Rest for a period of several weeks completely relieved the condition. The patient was again seen about eight months later, having a return of the vomiting and in addition pain over the gall bladder and in the interscapular region. Rest failed to give any relief and medical measures were of no avail. After several weeks she began to vomit large quantities of bile, which condition was unrelieved by duodenal drainage. An operation was finally performed. The duodenum seemed somewhat larger and possibly slightly rotated on its long axis. After liberating adhesions a duodeno-jejunosomy was performed. The patient was relieved of all symptoms and left the hospital apparently cured. Like Dr. Levin, I believe the condition is probably more frequent than supposed and looking back over several years of my cases I am inclined to think this condition was present rather than the gastric lesion that was suspected.

Closing: **Dr. A. L. Levin:** I wish to thank Drs. Danna and Smith for the interest they have shown in the subject presented in my paper. The subject should be of great interest to us for the reasons outlined in my paper. Our medical writers, so far, have failed to lay sufficient stress on Duodenal Dilatation either as a preoperative condition or as a postoperative complication. I am under the impression that in a number of cases with symptoms that point as evidence of gastric dilatation, that the duodenum is probably the cause of the trouble. A dilated duodenum, for some reason, will gush its contents back into the stomach, causing considerable distress, and often alarming symptoms.

A question has arisen in my mind, where for relief of gastric or duodenal pathology, a gastroenterostomy is made, and shortly afterward large quantities of duodenal contents accumulate in the stomach, as to whether this condition is due to a vicious circle, or the result of a duodenal kink, or postoperative adhesions causing duodenal dilatation resulting in biliary regurgitation. We can easily differentiate between a simple gastric dilatation and duodenal dilatation. As a rule, in gastric dilatation we will find large quantities of

gastric juice and food without definite biliary mixture, whereas in the duodenal dilatation, especially of the giant type, as described in this paper, there is always found large quantities of regurgitated bile.

I shall continue my observations on this most interesting subject.

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**SOME INTERESTING OBSERVATIONS  
FROM THE SERVICE OF THE NEWLY-  
BORN AT TOURO INFIRMARY.\***

L. R. DeBUYS, B. S., M. D.  
New Orleans, La.

(From the Newly Born Service of Touro Infirmary  
and the Department of Pediatrics, School of Medi-  
cine, Tulane University of Louisiana)

The newly-born service at Touro Infirmary which was inaugurated by me has now been in operation for about two years. This service which has been described as the "Newly-Born Service" (Southern Medical Journal Vol. XV No. 2, February 1922, pages 115-120) and its method of operation gone into detail in "The Management of the Newly-Born Service" (Archives of Pediatrics, April 1922) has already afforded the opportunity for several studies of scientific value. In May, 1922, the first investigation, "A study of the Shadows in the Thorax of the Newly-Born" was presented in Washington at the Congress of American Physicians and Surgeons before the American Pediatric Society. In May, 1922, before the Academy of Medicine at Kansas City my address was upon "Observations on the Breasts of the Mothers of the Newly-Born" (Annals of Clinical Medicine, Vol. 1. No. 3, November, 1922.) At the present time several pieces of investigational work are in progress, especially some upon rickets, one of which will be presented before the American Pediatric Society in French Lick next month. As it will be seen this service affords unusual opportunities for observation and study as it includes that period of life beginning from the time the cord is cut. In this service also conditions are recognized which otherwise would go unnoticed.

The subject of this paper was selected so as to demonstrate the value of the close observation of the newly born by presenting a few of these cases. As the time is limited I will present

only four cases which are of unusual interest.

*Case one.* Baby L. White male. It was noticed shortly after birth that there was present a jaundice which steadily became more marked. On the third day his temperature ranged from 101 to 102 degrees F. and he did not nurse well. His stools up to this time were apparently normal, though they had not changed the slightest in color. He weighed seven pounds and fourteen ounces at birth, was well nourished, and apparently well developed. On the second day his spleen was quite palpable and his liver was thought to have increased in size over that of the day previous, extending, on the third day to 1 inch and a half below the costal border. The gall bladder was not felt. The jaundice was becoming more pronounced. A blood Wasserman was found to be negative. The urine contained an unusual amount of bile, the diaper being stained a deep yellow. Stool examination showed the absence of bile. The blood picture was negative. Before the appearance of the mother's milk a lactose solution was given so as to assist in warding off an acute inanition. The physical examination was negative with the exception of the jaundice, the urine, the stools, and the temperature. From a diagnostic standpoint the case was of unusual interest. To determine the cause of jaundice it was necessary to consider, first, that jaundice which is found with the pyogenic infections; second, that jaundice which is found in connection with congenital malformations; third, that jaundice which is found with interstitial hepatitis (which is usually associated with congenital syphilis); and, fourth, the idiopathic jaundice of the newly born. The temperature in this case complicated the picture. It was explained by the acute inanition of the newly born. The pyogenic diseases of the newly born were excluded, first, by a thorough examination of the patient in which there could be found no lesion for the entrance of an infection, and second, because the blood count was negative and there was no growth upon culture. The urine also was excluded as being a source of infection as its chemical examination was negative and it contained no pus, and was sterile. The jaundice was an in-

\*Read Before the Louisiana State Medical Society,  
April 24-26, 1923.



tense and progressive one and was not of the type that is found in the pyogenic infections, which type is usually of a mild character. The jaundice due to an interstitial hepatitis was excluded first, because the baby showed no other lesions of congenital syphilis, and second, because the Wassermann was negative. The idiopathic jaundice which is found in 33 1-3 per cent of all infants born was excluded, first, because this jaundice began at birth and was progressive, second, because the urine contained much bile and, third, because there was an absence of bile in the stools. The above is the opposite to that seen in the idiopathic jaundice. Because of the foregoing reasons the condition was diagnosed as one of jaundice due to malformation of the biliary apparatus. The liver was enormous in size, increasing day by day and no gall bladder could be palpated, so for these reasons, the diagnosis was made of a congenital malformation of the hepatic duct. In congenital malformation of the biliary apparatus it is extremely interesting to make a differential diagnosis as to the site of the malformation. If the malformation be of the common bile duct there is present both an enlargement of the liver and a distention of the gall bladder. If the malformation be of the cystic duct it may go unnoticed, inasmuch as there is no enlargement of the gall bladder and no enlargement of the liver, and there is no jaundice. In malformations of the hepatic duct there is enlargement of the liver but as distention of the gall bladder. This was the observation made in this particular case. An autopsy was permitted and the diagnosis confirmed. This case was reported in more detail at a Touro Clinical staff meeting.

*Case two.* Baby R. white female, born December 21st, 1922, weight 6 lbs. 5 1-2 oz. Showed in the routine radiographic observation of the thorax an unusual shadow reported upon as follows:—"Radiographic examination of the chest shows the heart distinctly abnormal in outline, with the right side filling the upper portion of the right chest. It is impossible to classify the type of shadow." This report showed that the shadow could not be placed in any of the groups that we made in our

previous study. The patient showed no unusual symptoms and no disturbances of respiration nor of circulation. On December 28th, 1922, two days later, a control radiographic examination was made showing the following:—"Radiographic examination of the chest shows the shadow as described still present, though it is somewhat smaller." The baby's clinical progress was absolutely normal. She returned to the newly-born out-patient clinic at the usual time for the babies born in the service, namely, at her fourth week, when another examination was made with the following report:—"Radiographic examination of the chest shows a moderate enlargement of the heart and no evidence of a thymus." The last radiographic examination on March 15th, 1923 is as follows:—"Thymus apparently normal at this time. Moderate enlargement of the heart." This child has progressed in an uneventful manner. This case is of especial interest, inasmuch as it shows a shadow which can exist without any clinical manifestation, and because if abnormal clinical symptoms had presented themselves, these symptoms might have been attributed to this unusual condition existing in the thorax. This emphasizes the necessity in a negative way to not arrive at conclusions too rapidly. This baby today weighs fourteen pounds and twelve ounces at the age of three and one-half months.

*Case three.* Baby L. white, male, born December 24th, 1922. Birth weight 10 pounds and 10 1-2 ounces. Was born at full term with a normal labor and vertex presentation. Was the second child of apparently healthy parents. Physical examination showed an increased separation of the bones of the head making the sutures larger than usual. Head normal in shape, lungs were normal, heart showed slight systolic murmur, extremities were held fixed. Internal strabismus of left eye and ec-chymosis of both eyes, some slight rigidity of the neck. The temperature rose immediately following birth, reaching 105 degrees within 24 hours. He cried at intervals during the first day and swallowed with difficulty. He twitched considerably. He was given lactose solution which he only partially took owing to his inability to swallow. Blood examination showed a hemaglo-

bin of 95 per cent, total red cell count 5,825,000, total white cell count 18,250, small mononuclears 32 per cent, large mononuclears 2 per cent, neutrophiles 66 per cent, eosinophiles 0 per cent, basophiles 0 per cent, total 100 per cent.

His Wassermann was negative. His urine was negative with the exception of an occasional red blood cell. Suspecting the possibility of a hemorrhage a spinal puncture was done and it showed fluid under slight pressure otherwise nothing of any significance was noted—Wassermann and colloidal gold test were negative. Owing to a slight injury to a blood vessel in the spinal puncture the cell count and the globulin examinations were unable to be determined. Examination of the eye grounds by Dr. Feingold showed the fundi to be negative. The diagnosis was made of a cerebral contusion. The patient improved after the spinal puncture but continued unable to nurse, so that it was necessary to feed him through a tube. Temperature reached normal on the evening of the day following the spinal puncture and remained down from then on. On the morning of the 27th when the baby was three days old he had a cyanotic attack and then had two convulsions, also had severe choking spells. The symptoms were treated as they arose. The next day he had another convulsion. The temperature remained stationary during these convulsions. From then on he began to improve and on December 30th when he was six days old he was put to the breast. Gradually the breast was substituted for the tube feedings until all the feeding was by breast. He was discharged from the hospital on January 10th. This patient was returned to the out-patient newly-born clinic on his regular day when he was four weeks old weighing 10 pounds and 8 ounces. He now weighs 15 pounds and 7 ounces and is three and one-half months old.

*Case four.* Baby McC. white, male, born March 26th, 1922. Family history: Father, now 24 years of age and in good health. About two years ago he had attacks in which he became unconscious and which attacks lasted from a few minutes to an hour. Aside from a yellowish vaginal secretion for a number of years, the mother was healthy, now being 21 years old. During the preg-

nancy the mother was treated for arthritis. There were no previous pregnancies. Patient full term and weighed 6 pounds and 13 ounces at birth. The labor lasted 7 hours when the patient was delivered by low forceps. Physical examination of the baby at birth was negative. On the third day there was a slight odor at the umbilicus. On the fourth day the temperature rose to 105 degrees F. Physical examination at this time showed heart and lungs to be negative, liver somewhat enlarged, abdomen tense and distended, evidence of cellulitis around umbilicus, no other abnormalities noticed. Blood culture taken on the fifth day was negative. Culture from umbilical secretion on the same day showed the presence of staphylococci. Examination of the blood showed the following:—Total white cell count 34,500, neutrophiles 89 per cent, small mononuclears 7 per cent, large mononuclears 4 per cent.

A diagnosis was made of omphalitis. On the fifth day the child had two convulsions during the height of the fever. Lead and opium compresses were applied to the umbilicus, the symptoms of the patient were treated as they arose. The patient continued to run a septic temperature to as late as the tenth day when it reached 105 degrees F. in the afternoon. For the following four days the maximum for the day was between 101 to 102 degrees F., and from then on there was apparently no fever. He was fed with difficulty, refused to nurse and lay listless in his crib. He was fed by tube until the seventh day when he was able to take some breast. Complementary feedings were given to meet his requirements. During this period the baby's weight was fluctuating and was never higher than 7 pounds nor lower than 6 pounds and 6 ounces. The stools were frequent, watery, greenish brown and on several occasions contained blood in variable quantities. During this period the inflammation of the umbilical cord subsided and the size of the liver remained about the same, namely its lower border being on a level with the umbilicus. No fluctuation could be felt over the liver. The baby showed a jaundice of a moderate degree. A blood Wassermann on the 25th day after birth was negative. Upon my return from the meeting of the Congress in Wash-



ington after an absence of one week, on May 9th, when the patient was 1 month and 14 days old it was noticed that the liver had increased a little in size so that its lower border was slightly below the umbilicus. Some fluctuation was noticed over the liver. The abdomen was distended and tense and the jaundice had continued. The area of fluctuation was aspirated just below the costal border and 350 c. c. of brownish, foul smelling fluid were obtained. The fluid was removed with great care, the patient being closely watched for any bad symptom. None however, presented itself. The patient was rolled over on his side until the point of aspiration was so placed as to facilitate further aspiration with the assistance of gravity. The fluid was sent for examination and the report from the laboratory showed the following:—"Smear shows pus cells in various stages of degeneration. No other morphological elements found. Culture negative". After aspiration the distention disappeared and the abdomen became relaxed. The liver decreased in size. The stools became normal and the patient began to nurse more vigorously and to gain in weight. The abdomen was closely watched and there was no reaccumulation of the fluid. After the first great reduction in size of the liver it continued to diminish gradually. On May 29th he was discharged from the hospital having improved in every way. Patient returned to the clinic on June 1st., 1922. when he was 2 months old weighing 6 pounds and 14 ounces. There were slight evidences of rickets. The liver was palpable. On August 17th when 4 and 1-2 months old he weighed 10 pounds and 12 ounces. On October 5th when 6 months old he weighed 14 pounds and 14 ounces. Muscles were good, baby sat alone, spleen was palpable, liver 1 1-2 inch below costal border. At the age of 9 months the liver was palpable 1 1-2 inch below costal border and the spleen was palpable. Blood picture:—Hemaglobin 95 per cent, total red cells 4,990,000. Total white cells 8,050, small mononuclears 54 per cent, large mononuclears 6 per cent, neutrophils 41 per cent, color index .96. Urine examination was negative with the exception of a heavy trace

of indican, and the stool was negative. At the present time the baby is one year old and weighs 20 pounds and 8 ounces, and is perfectly healthy.

I have these four babies here for your inspection.

#### DISCUSSION.

**Dr. Robert A. Strong (Pass Christian, Mississippi):** Incredible as it may seem, that period from the time the child is born and the cord is cut, up to the sixth or eighth week, has been very much neglected up to a very few years ago. Furthermore, the Newly Born Clinic at Touro established by Doctor DeBuys is perhaps the first established in the country.

The subject that Dr. DeBuys has presented the Society today has more recently received a great deal of attention from pediatricists and from pediatric sections of various organizations throughout the country. I think one of the liveliest discussions I ever heard was at the Hot Springs meeting of the Southern Medical Association two years ago, when Doctor DeBuys read a paper on this subject. As one party very aptly put it—and I cannot help repeat it—the baby in the hands of the average obstetrician receives about as much attention as the placenta.

An examination of the statistics that Doctor Gallant has charted on the board will show you some startling things about the babies in New Orleans. In other words, the death rate in the first few days is compared with the next few weeks. An examination of the chart would be well worth while.

We know very little about many of the early conditions, but such clinics as have been established at Touro will give us an excellent opportunity to study these and there is one thing certain—you may say the pediatricians are to blame, and to a certain extent they may be—but if you expect anything from the pediatrician you must get the baby to him as soon as the cord is cut, and not three months after when the baby has a nutritional blow-up.

**Dr. L. von Meysenbug (New Orleans):** I wish to say that it has been my pleasure and privilege to have worked in this newly born clinic with Doctor DeBuys for the last year and a half, and I believe that the city owes a debt of gratitude to Doctor DeBuys for establishing this service. One of the important things he has done is to show the mothers themselves and others interested, that it is possible for 99.9 per cent of babies to be breast-fed, and that some diseases, such as rickets, are preventable, chiefly by the administration of cod liver oil as a prophylactic. Breast feeding has been practiced without exception, and only in a very few instances have babies been given formulas to the exclusion of breast feeding, and that was for some very definite indications. Otherwise, I cannot remember a baby that was not breast fed for nine or ten months and up to a year.

I think we ought to hear from our friends, the obstetricians, as to what they think of the newly born service.

**Dr. R. Crawford (New Orleans):** With reference to what can be done in looking after babies newly born, I wish to say that the Child Welfare Association of New Orleans has an obstetrical service in connection with its pediatric service. Within twenty-four hours after the birth of each of its babies, a pediatricist is sent to examine the child and to instruct the mother in its care. In the past year the death rate for babies under one year in New Orleans was between eight and nine out of every one hundred born. The death rate among the babies in care of Child Welfare was between two and three out of every one hundred born. The Welfare Association works in parts of the city where the people are most crowded, and hygienic conditions are worst, where one might expect the highest mortality.

**Dr. L. R. DeBuys (closing):** At the meeting at Hot Springs to which Doctor Strong referred we had obstetricians present from different parts of the country. They were inclined to look upon the service which I had developed, as something antagonistic to the obstetrician. In my paper I stated emphatically the reverse, and that what I wanted to do was to cooperate with them—to develop a more cooperative spirit between the pediatricist and obstetrician; and that all I was pleading for was an opportunity to take care of the baby immediately after it is born. A study of the institutions throughout the country which I made before that meeting showed that in most institutions the baby after birth was not even admitted into the institution as a patient, but was looked upon more as a by-product and usually it was not even known whether it was a boy or a girl. At the meeting we had quite a heated discussion, at the end of which I was approached by some of the obstetricians who were opposed to the plan, had frank discussions with them and when they left they were thoroughly converted and were in favor of the idea. In New Orleans, at the Touro Infirmary, we have a most cooperative spirit between the pediatric and obstetric services. As a result of the address at Hot Springs I was invited to speak before the Academy of Medicine of Kansas City, where there had been quite a little friction between the pediatricists and the obstetricians, and I am glad to say that a short time ago I received a communication from one of my friends there who said that the result of the meeting was very satisfactory to both pediatricists and obstetricians, that they are working in harmony and that those who were opposed had been thoroughly converted and were enthusiastic about the new born service.

This service has grown to a large size. We have a follow-up service in which the cases come every fourth week. The maximum attendance was reached last Thursday morning, when we had 91. Every one of them was thoroughly cared for. That is a big crowd. We would be glad to have any of you visit us while in the city.

## THE CHARITY HOSPITAL OF LOUISIANA.

By ALBERT E. FOSSIER, A. M., M. D.

(Continued from last issue.)

The correction of the hospitalism then existing through the modernization of the Charity Hospital gradually dispelled the dread and reluctance of the afflicted to seek treatment from the institution. This fact is attested even as early as the year 1896 by House Surgeon Bloom, who remarks as follows: "The Hospital statistics present direct attention to the enlarging field of work and to the confidence reposed by the unfortunate poor in the expediency of its service. The once popular fallacy so prejudicial to the interest of those in need of hospital care, namely, the dread of hospital confinement is being rapidly dissipated; and this, together with the manner in which their entrance into the institution is facilitated, succinctly explains the increasing number of admissions, and in all conditions of diseases, that was noticeably the fact during the year 1895. This prudent awakening of the value of scientific hospital attention will, I believe, become more markedly discernible from year to year, and must, in its proportionate increase, materially add to the running hospital expense."

The year 1895 records the completion of the A. B. Miles Amphitheatre. This magnificent operating room with all the necessary accessories established modern surgery on its present high pinnacle in the Charity Hospital. The old germ-laden Amphitheatre the stage of so many autopsies and lectures on pathology, and in which our predecessors had once displayed their surgical skill, became a matter of history. To our younger surgeons this comparatively recent crime of asepsis will appear medieval; yet, the time is within the memory of many of our confreres when operations followed autopsies not alone in the same room, but even on the same table. There were many strenuous objections and expressions of displeasure were rife, and the attention of the Board was directed to such antiquated proceedings, however, the march of progress is slow, though certain, and the belated construction of the present

\*The author is not responsible for phraseology of quotations, as they are taken verbatim from text.



Amphitheatre was the realization of the visiting surgeons' most ambitious hopes.

In 1897 the square of ground adjacent to the Hospital having a frontage of 247 feet on Tulane Avenue (not including the width of the street and the side walks on South Robertson street, which the Hospital acquired), and a depth of 430 feet to Gravier street, between parallel lines, was expropriated by the Charity Hospital. The cost amounting to \$58,000.00. The acquisition of this large portion of ground was the beginning of the present "Greater Charity Hospital."

The long expressed hope of former House Surgeons and Boards of Administrators was realized May 28th, 1898, when the cornerstone of the "Children's Hospital," the Richard Milliken Memorial was laid. It was dedicated on May 4th, 1899. In the Hospital Report of 1897 is found the following appropriate words of appreciation: "For this work the State will owe a debt of gratitude to the philanthropy of a noble woman, Mrs. Richard Milliken, who in furnishing means for the erection of this grand monument to the memory of a beloved husband, becomes a benefactress to the afflicted children of our State and a blessing to the poor, whose sorrows will be lightened and lives made happier in the knowledge that whatever betides, their precious ones may be cared for with equal facilities, comfort and skill, as those of their more fortunate brethren. As administrators of the Hospital and as citizens of Louisiana, we return our sincere thanks for the munificent gift and great charity, the value of which is incalculable."

The Hutchinson Memorial Home for Nurses followed in 1901. Mr. Hutchinson munificently donated the sum of \$50,000.00 for the erection of this magnificent structure, and dedicated it to the memory of his wife. On April 21st, 1909, the Delgado was opened for occupancy and the patients were transferred thereto from the main building. This building was erected from funds donated by Mr. Isaac Delgado, and was a tribute of affection to the memory of his deceased uncle and aunt, Mr. and Mrs. Samuel Delgado. Its approximate cost was \$200,000. It has three large operating rooms and a capacity of 140 beds.

This important addition to the Hospital Plant, greatly relieved the surgical congestion then existing in the Miles Amphitheatre.

The Pasteur Institution was established in the Hospital in the year 1903, in charge of Drs. Pothier and Couret.

In 1906, House Surgeon Batchelor reports to the Board of Administrators thusly: "For the first time in the History of this Hospital, during the past year, a complete medical history of every patient entering the Institution has been written and placed on file in the Registration Bureau. Most of the efficiency of the Bureau is due to the enthusiasm and splendid work of the Registrar, Dr. G. Farrar Patton."

In 1910, Doctor Geo. S. Bel, Chairman of the Medical Committee, and House Surgeon J. A. Danna, proposed many improvements, which would have resulted in the highest standard of hospital efficiency. Unfortunately the ever present deterrent "insufficient funds" deferred the inauguration of these essential changes and additions to the Hospital plant.

A movement of political reform swept the State in 1912, resulting in the election of Governor Luther E. Hall. His administration marked a new period in the history of the Hospital. Immediately plans were on foot for the depoliticization of that Institution, and vital changes contemplated in its management. The Governor appointed to membership on the Board of Administrators men without the pale of politics, who were actuated only by the laudable ambition of placing the Charity on the highest pinnacle of efficiency. This Board merits praise for some of the most radical and likewise beneficial reforms and changes ever effected in the existence of the Institution. For in the first time in its history a Board was attentive to the just criticisms of a discouraged and demoralized visiting staff, and consulted with them concerning the changes necessary for the modernization of the Hospital. For the purpose of securing an unbiased judgment, Dr. S. S. Goldwater, an expert on Hospital management was requested to make a survey of the Hospital and to report his recommendations to the Board of Administrators. The Doctor's report begins thus: "On December 19th, 1912, in pur-

suance of a resolution previously adopted by your Board, you invited me to visit the Charity Hospital, to familiarize myself with local conditions, and the present organization or system of administrations, and then to report upon the present conditions and system of management, and to suggest such changes, if any, in the organization or system of management in all department, as might appear to be advisable."

The outstanding recommendation proposed by the Doctor was the substitution of the House Surgeon by a Superintendent, which recommendation he embodies in the following: "Of fundamental importance is the appointment of an Executive Officer, who should be charged by the Board of Administrators with the responsibility for the management of the Hospital, and answerable to the Board for the maintenance of order and enforcement of the laws and rule of the institution. This officer should be free from all the duties in connection with the actual treatment of patients."

Next in importance was the reorganization of the Visiting Staff. These recommendations were accepted and adopted and remain in force to the present day.

Dr. Goldwater also severely criticised the management of the Pathological Department, and was supported by the Board of Administrators according to its report, thus expressed: "The Board has made radical changes in this Department, and I think in a short time, not only will the statistical returns of the work of the Pathological Laboratory be a great credit to the Hospital but a benefit to medical science."

Another perplexing matter confronting Dr. Goldwater was the one of inadequate sleeping accommodations provided employees. This problem was solved by the Board of Administrators leasing for a term of five years the Polyclinic Building on Tulane Avenue. This building was used for the Outdoor Clinics, and the space they vacated afforded suitable living accommodations for the help. The occupying by employees of beds in sick wards was thus remedied. Among many other recommendations by Dr. Goldwater was that of establishing a social service department which would direct its attention to the proper

disposition of patients chronically ill, or of convalescents who no longer required care of a hospital. At the suggestion of the Board of Administrators, Dr. Goldwater introduced the name of Dr. C. D. Wilkins of Wilkes Barre, Pa., for the superintendency. Dr. Wilkins took charge of the Institution October 1, 1913.

Vice-President Hayne in his 1914 report expressed his satisfaction at the progress made under the new regime, remarks as follows: "After an experience of eighteen months the Board is convinced that the management of the Hospital by a Superintendent is an absolute necessity, and we consider that we were fortunate in having obtained services of the present superintendent, Dr. C. D. Wilkins, whose indefatigable energy, and the deep interest he takes in his work, have enabled us to make such great improvements, which have added so materially to the comfort of the employees and the welfare of the patients."

A uniform system of Hospital accounting was inaugurated on January 1, 1914, by Secretary and Treasurer Fred W. Mathews. His report of that date contains the following: "By this system comparison with other hospitals can be made on a fair and intelligent basis; for instance, the Presbyterian Hospital, New York City. These comparisons are of much value and interest not only to officials of the Institution, but also to the public who may be interested in the work and results obtained. In former years this Institution's accounts were kept in a manner peculiar to itself, and my predecessors followed each other along the same lines. I have endeavored to compile a comprehensive statement showing expenditures made, revenues received, assets and liabilities." Mr. Mathews officially assumed office July 1, 1913, succeeding Captain L. P. Delahoussaye who died June 3, 1913.

In the annual report, 1914, of Frank B. Hayne, Vice-President of the Board of Administrators, is the following illuminating chapter as to the cost of dispensing the service rendered by the Charity Hospital.

"The income of the Hospital from State appropriation, \$217,000; from authorized fees, etc, (subject to fluc-



tuation), \$44,713.78; sundry donations, \$3,397.33; old buildings sold, \$455.00; from trustees, Isaac Delgado Memorial Fund, \$5,733.32; sundry refunds, \$597.22. Income from all sources for maintenance, \$271,806.64.

Total operating expenses ...  
for the year .....\$302,784.32  
Last receipts ..... 271,806.64

Deficit to date.....\$30,977.66

With the patients remaining over January 1, 1914, and the admissions, there were treated during the year 17,449, or 2,393 more than in 1913.

Of the admissions, 9700 were white, and 7042 colored. Of white adults there were, males 5,157; females 2,823; boys 966; girls 749. Of the colored adults were, males, 3,476; females, 2,989 boys 314; girls, 263. The deaths numbered 1,867, more by 101 than in 1913. The gross death rate was 10.69 percent. and the net, leaving out subjects for Coroner's inquest, of which were 202, and other deaths within 24 or 36 hours, reduces the percentage to 8.06 percent. In the white and colored maternity service there were 521 obstetrical cases, with a maternal mortality of 1,034 percent. The ambulance calls numbered 2,832. The total number of accident cases, 14,276. Operations performed in Miles Amphitheatre, 3,198; in Delgado Memorial, 3,579; total number during the year, 6,786. In the Out Clinics, 30,547 were treated, and 127,559 consultations given. Prescriptions filled by the Chemist, 68,463. In the Pathological Department, 8,355 specimens were examined, and 453 necropsies were made. In the Pasteur Institute 975 applied, of whom 353 were treated with no deaths recorded. The Registrar reports 16,867 tabulated histories.

The Training School for Nurses shows a total enrollment of 109 during the year. Of this number there were graduated 33. The Senior class of 1915 will comprise 25 pupils and the total number on December 31st was 84. The total admissions for the year 1914 were 23 percent. greater than for the year 1912, which shows that the increased appropriation granted us by the Legislature was an absolute necessity."

At the present time the Hospital has a capacity of one thousand one hundred

and forty-two beds. The total number of patients hospitalized in 1922 was 18,104, of which 1,677 died, making a gross death rate of 9.19 per cent. There were 1,008 births in the Obstetrical Department. The Pathological Department reported that 37,664 examinations were made, and that 377 autopsies were performed during the year. Two hundred and eighteen suspected cases of rabies were treated by the Pasteur Institution. The large increase in the work of X-ray Department from 5,065 skiagraphs in 1916 to 18,257 in 1922, indicates the fast growing importance of that great discovery in the diagnosis of medical as well as surgical diseases. In the Pharmacy, 114,478 prescriptions were filled and 11,220 packages of serum distributed. There were 14,006 surgical operations performed in the Hospital, which approximates about 39 daily.

The following tableau taken from the Treasurer's Report is illuminating as to the resources of revenue of this great Institution for the past two years.

#### COMPARATIVE STATEMENT OF CURRENT REVENUES

For Years Ending Dec. 31st, 1922

##### GENERAL FUND RECEIPTS.

Appropriations, State of Louisiana—	
For Support and Maintenance, Act 75 of 1920.....	\$215,000.00
For Improvements, Act 75 of 1920 .....	10,000.00
For Support, Maintenance and Improvements, Act 119 of 1921 .....	100,000.00
For Support and Maintenance, Act 12 of 1922.....	285,000.00
Appropriation, City of New Orleans—	
For Social Service Department	1,916.59
Total .....	\$611,916.59
Legal Fees, Authorized by Legislature—	
Live Stock Inspector, City....	\$ 12,853.45
Licenses, City .....	15,873.00
Auctioneers, State .....	8,853.37
Total .....	\$ 37,579.82
Hospital Fees, Administrative—	
Official Undertaker .....	\$ 2,000.00
Legal and Burial Certificates.	843.10
Ambulance Service .....	1,083.00
Serum .....	257.90
X-Ray Examinations .....	543.50
Total .....	\$ 4,727.50
Hospital Income—	
Notes Receivable, Rent.....	\$ 585.36
Gate Donation Box.....	648.81
Swill Sold .....	25.00
Sundry Sales .....	251.63

Suspense Account .....	
Patients Deceased .....	25.30
Patients, Pay (Workmen's Compensation) .....	3,806.00
Delgado Fund for Trustees...	4,500.00
Milliken Fund Interest.....	2,484.90
Interest on Deposits.....	1,983.26
Interest on Bonds.....	6.98
Rent on Properties.....	4,561.48
Donations—Unrestricted .....	3,434.27
Social Service Department Donations .....	3,452.41
Social Service Department Re-funds .....	2,566.89
<b>Total .....</b>	<b>\$ 28,332.29</b>
<b>Total General Fund.....</b>	<b>\$682,556.20</b>

SPECIAL FUNDS.	
Donations .....	\$ 50.00
Legacies .....	2,616.15
Interest on Deposits.....	637.68
Interest on Investments.....	4,054.32
Investments, Matured or Sold...	55,061.47
Sr. Stanislaur Fund.....	87.00
Transferred from General Fund	20,878.01
<b>Total Special Funds.....</b>	<b>\$ 83,384.63</b>

GRAND TOTAL RECEIPTS....\$765,940.83

The following report of operating expenses of the Treasurer for the year ending December 31, 1922, gives an excellent idea of how so much had been accomplished on so small a revenue:

REPORT OF THE TREASURER

THE CHARITY HOSPITAL OF LOUISIANA, NEW ORLEANS

Statement Showing Method of Figuring "Cost Per Patient Per Day," for Year Ending December 31, 1922.

OPERATING EXPENSES

	Ward Patients	Out-Patient Department	Total
Administration Expenses .....	\$ 38,537.14	[ 1% 389.26 ]	\$ 38,926.40
Nursing .....	40,282.24	.....	40,282.24
Physicians .....	9,625.00	.....	9,625.00
Orderlies and Ward Employees.....	32,415.53	.....	32,415.53
Drug Store, Salaries.....	2,242.50	[ 25% 747.50 ]	2,990.00
Medical and Surgical Supplies.....	36,223.75	[ 10% 4,024.86 ]	40,248.61
Apparatus and Instruments.....	8,407.21	[ 5% 442.48 ]	8,849.69
X-Ray Department .....	16,727.84	[ 10% 1,858.64 ]	18,586.48
Registration Bureau .....	2,198.29	.....	2,198.29
Clinic Salaries .....	.....	[ Actual 7,678.27 ]	7,678.27
Social Service Department.....	1,585.42	[ 20% 396.36 ]	1,981.78
Miscellaneous .....	1,260.52	.....	1,260.52
Ambulance Service .....	5,099.74	.....	5,099.74
Pathological Department .....	14,742.14	[ 10% 1,638.01 ]	16,380.15
Housekeeping Department .....	74,065.54	[ 2% 1,511.54 ]	75,577.08
Kitchen Department .....	13,227.39	.....	13,227.39
Laundry Department .....	17,033.59	[ 2% 347.64 ]	17,381.23
Stewards' Department .....	126,207.86	.....	126,207.86
General House and Property.....	105,267.66	[ 1% ..... ]	106,330.97
<b>Total Net Operating Expenses.....</b>	<b>\$545,149.36</b>	<b>\$20,097.87</b>	<b>\$565,247.23</b>
Total Patient Days Treatment.....	354,633	.....	.....
New Cases Out-Patient Department.....	.....	40,640	.....
Visits Out-Patient Department.....	.....	93,090	.....
<b>COST .....</b>	<b>1.537</b>	<b>1,063.31</b>	<b>.15</b>



The care of these patients was entrusted to a staff of 164 nurses, and of over 40 internes. The treatment was directed by a Visiting Staff of approximately 250 doctors.

Thus is shown the phenomenal growth of our Hospital, not only during the past hundred years but even during the last few years. If the past is a criterion as to what is to be expected in the future, necessary funds must be obtained to provide for the greatly increasing cost of hospital maintenance, and the enlarging of this now overcrowded quarter of the Institution. The present Board of Administrators has recognized and has called the attention of the public and of the Legislatures of this state to these needs. Their appeal for alleviation and the comfort and the proper care of the worthy sick poor of this community demands consideration. It is devoutly to be hoped that these untiring efforts will be rewarded, and that their good and faithful stewardship will mark another epoch in the history of the growth of the Charity Hospital.

This Institution, throughout its existence, was handicapped by three deplorable disadvantages; to wit: insufficient funds, over-crowding and the abuse of Charity by patients fully able to pay for medical attention. All succeeding Boards bewailed this fact, but have never been able to remedy this condition and eradicate the abuse. It was rampant in the past as it is today. The author throughout the course of this history has noted many references by Boards of Administrators pertaining to these drawbacks to the economic management of the Hospital.

The provision of sufficient funds for the proper support of this magnificent institution rests with the Legislature of the State. This burden has increased from year to year, and it may not be amiss to mention that the cost of maintenance of a modern hospital is rapidly increasing, and unless these expenses are met with ample appropriations the patients are bound to suffer neglect therefrom.

Today we bewail the overcrowded condition of the Charity. Beds only large enough to accommodate one person are shared by two, to the extreme discomfort and torture of these feverish suffering patients. It was broad-

casted that additional buildings are absolutely necessary to provide more room for the patients as well as for the help, and to make necessary improvements. An appeal was made to the people by the Board to liberally subscribe in order to supply these grievous deficiencies. The prevailing opinion of the medical profession of today on this all important subject of hospital abuse is well expressed by Dr. Paul Gelpi, President of the Louisiana State Medical Society, in his annual report to the Society. Hear what he says: "The question of hospital abuse is receiving the attention of physicians in this section and elsewhere. The benefits provided for the poor are wantonly and increasingly abused and deliberate impositions are heaped on the medical profession. I recommend that the Hospital Abuse Committee be instructed to get together with similar committees of the Orleans Parish Medical Society and Charity Hospital Staff with a view of taking complete survey of the Institution and prepare suitable laws to correct the evil now for enactment of the next Legislature." And again, Dr. H. W. Kostmayer, President of the Orleans Parish Medical Society, in his inaugural Address strikes the following keynote on this vital issue: "The trouble is the Hospital serves by far too many. It has long been the boast of this community that Charity Hospital asks no questions, but serves rich and poor alike. Think what folly this boast contains: The daily average number of patients is about 885 at a daily per capita of \$1.60. I am convinced that this daily average should be reduced by at least 100, a daily saving of \$160.00 and a yearly reduction of \$57,000! Apply this same principal to the Outpatient Department and it is readily discernible how much more efficient the Hospital could become for those actually entitled to its benefits. In this matter we certainly should not stop at Charity Hospital, but we should regulate the Charity done by each and every medical and surgical institution in the City. This not simply to increase the income of the profession, which it most certainly would do, naturally, but primarily to protect the worthy and needy poor against the impositions of the unscrupulous well-to-do. Social Service seems

the logical stepping stone to this end, but the Hospital Abuse Committee may devise more direct means. We certainly ask your serious consideration of this age-old problem and especially assign its active development to the Hospital Abuse Committee."

Dr. Goldwater in his Charity Hospital survey recommends that: "An effort should be made to exclude from the Hospital persons able to pay for private care." Overcrowding could be relieved by the elimination of this misuse of charity and violation of hospital privileges, and it is devoutly hoped that some means will eventually be devised whereby a refuge can be denied to all but the eligible poor. The State has no greater duty than the care of its indigent sick, and it should strive to provide amply for their needs.

The cry of reform and expressions of dissatisfaction are echoing through the realms of time, and to this very day, nearly two centuries since the birth of our great Hospital, we hear the self same pleas and complaints similarly followed by varied suggestions for betterment; yet, step by step, and year by year, it has grown from a hovel housing a few indigent poor, to the present magnificent institution, one of the largest in the country.

On four occasions the Hospital was forced to appeal to the public for funds to make urgent improvements, and to properly care for its patients. The first of these drives was made in 1884. It was to provide funds for necessary additions and improvements in the Hospital.

The following report made by Edwin Marks, Secretary and Treasurer of the Building and Sewerage Fund in January 1884, records this important event:—"The Governor recommended "An appeal to the citizens of New Orleans and the Parishes for voluntary donations for the good work, the remote meeting of the General Assembly and constitutional limitation of appropriations rendering it doubtful for the obtaining of State aid." Upon receipt of the Governor's letter, the Board of Administrators, at their meeting of February 16th, appointed a committee of five to prepare a plan of action whereby the suggestions of his Excellency could be carried out. In due

course and after proper publication the citizens of New Orleans were invited to assemble in the Mayor's parlor with a view towards devising ways and means to carry out the project, and a meeting was held at which several of the leading merchants were present, such as Messrs. A. H. May, His Honor, Mayor Behan, Albert Baldwin, W. B. Schmidt, E. J. Hart, Adam Thompson, I. L. Lyons C. H. Hyams, Isidore Newman, Edward Booth and others, as well as the Board of Administrators. An organization was at once entered into, with A. H. May, Esq. as Chairman, and proceedings at once instituted by the appointment of committees on the different callings, trades and professions, for the purpose of soliciting contributions." The work progressed under these auspices. The magnificent sum of \$32,000.00 was the result.

The centenary of the Charity Hospital as a State Institution was celebrated on the Hospital grounds with appropriate ceremonies on December 8, 1911. This was followed by a fair held from December 11th to 16th, inclusively, the purpose of which was to raise money to meet the demands of the Hospital. The efforts of the public spirited ladies and gentlemen were rewarded by the realization of the splendid sum of \$34,200.00.

At a special meeting of the Board of Administrators August 25th, 1915, the following resolution was passed:

WHEREAS the Charity Hospital of Louisiana is in urgent need of funds in order to maintain the treatment of its patients on the same standard which has prevailed in the past;

Resolved, That the Board of Administrators of the Charity Hospital of Louisiana invoke the aid of the public of all the entire State in raising a sum of money adequate to its needs by means of the Charity Hospital International Fair, which it has prevailed on a number of prominent citizens to undertake in its behalf.

Pursuant of these resolutions "C. H. I. F." Charity Hospital International Fair was given at the Washington Artillery Hall, October 3rd, to 11th, 1915, inclusive, under the auspices of the New Orleans Press Club. There was a general response from the public and the magnificent sum of \$53,114.42 was realized. The great success of the Fair



was due to the indefatigable efforts of the following committee: Harold W. Newman, Chairman, Chas. Weinberger, Vice-chairman, Chas. A. Farwell, Treasurer, Emile V. Stier, Secretary.

These drives are of especial interest today in view of the magnificent efforts of the present Board of Administrators and of Superintendent, Dr. Wm. W. Leake. Their appeal has met generous response not only in the City but in the Parishes as well. These gentlemen may be justly elated and gratified at their success as the amount collected will approximate tenfold that of the two first efforts.

A revision of the inscription on the marble tablet in the main hall of the Hospital is necessary. It is generally acknowledged by students of the history of this great Institution that it was founded by Jean Louis in the year 1737, during the French Domination shortly after the founding of this City by Bienville. Documentary evidence has been produced by the writer in the beginning of this sketch and opinions have been quoted by him which prove beyond any doubt the origin of the Charity Hospital of Louisiana. No mention on that tablet is made of this "hospital des pauvres de la Charité" which administered during forty-two years to the indigent sick pioneers of this great State. Almonester rebuilt that Institution on the original site after its destruction by the historical hurricane which devastated the small village, the original City of New Orleans, during the Spanish regime. In recognition of his philanthropy, he was proclaimed founder by his Monarch, King Charles III of Spain. Again, this community was not indebted to the State of Pennsylvania for the means of erecting the edifice built in 1832, as the \$10,000 given by that State was in answer to an appeal from the State of Louisiana in which the claim was justly made that the burden of the care of the sick citizens of other states should be shared by those states and not entirely by Louisiana. This claim was ignored by all other states with the exception of Pennsylvania. Due credit for its liberality may be given in the column of names of generous benefactors. The following quotation from the Hospital Legislature Committee re-

port of the year 1832 authenticates this statement:

"Here, your Committee cannot forbear to express their surprise, that the peculiar situation of this Institution, and the unlimited dispensation of its charities have not attracted the attention and enlisted the interest and generosity of other states. The liberality of Pennsylvania, which, we are always happy to acknowledge, furnishes a proud example which, it is devoutly to be wished, might be imitated by others. We doubt not that the generous spirit of that philanthropic State reap a rich reward from the reflection that during the last year her liberality contributed to the relief and comfort of 111 of their unfortunate fellow-citizens, whom circumstances had removed far from their homes and their friends." The justice of this claim made by the State of Louisiana One Hundred years ago is more apparent today in view of the recently adopted regulations of eastern hospitals. According to Goldwater in his Report of an Inquiry into the Administration of the Charity Hospital, particular emphasis is laid upon the duty of non-residents in the city of Boston to pay the nominal ward rates stipulated by the Boston City Hospital. It has long been the practice of this Institution to exact from outlying towns and municipalities, payment for the care of patients having a legal domicile in such cities or towns, also, in 1911, the Boston City Hospital received from various cities and towns in this way the sum of \$25,165.00 and from the Commonwealth of Massachusetts, \$26,334.00 and in New York City a special effort is made at Bellevue Hospital to collect maintenance costs for non-residents of the City or State, who enter the Hospital for treatment. Besides, in principle, the theory of the responsibility of sister states seems to have been recognized by Louisiana, inasmuch as an annual contribution has been collected from Mississippi for the care of citizens of that State who entered Louisiana for the purpose of seeking treatment in the Charity Hospital. The above is merely quoted to prove that the Charity only asked what rightfully should have been given to her, and that our gratitude to the State of Pennsylvania

is greatly exaggerated and historically misleading.

All honor and credit for the founding of the Charity Hospital must be given to Jean Louis; it is only just that at this belated day that the memory of this great benefactor should be perpetuated by the erection of a fitting memorial in the Hospital he founded nearly Two Hundred Years ago.

Although he was not proclaimed its founder by a friendly king, nor did he enjoy the influence of wealth and nobility, and no honors and no dignities were heaped upon his memory; none the less, it should be acknowledged that his modest legacy was the seed from which sprung the present Institution. Although there is not a cathedral for his sepulchre, not a monument erected to his glory, nor even an inscription perpetuating his memory, this humble sailor, buried in an unknown grave, could have with all humility, repeated these words of the ancient bard:

“Exegi monumentum aere perennius  
Regalique situ pyramidum altius,  
Quod non imber edax, non Aquilo impotens

*The End.*

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#### DIGITALIS IN HEART FAILURE.

J. BIRNEY GUTHRIE, M. D.  
New Orleans, La.

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The term “heart failure” up to comparatively recently has been accepted by the profession and by the laity as indicating an absolute cessation of function on the part of the heart and death. To-day the term has a more relative application and is taken as implying that condition in which the heart is found unable to perform in a satisfactory manner its daily and accustomed task. The term has found its way into the literature largely through its adoption by Mackenzie. Mackenzie uses it in preference to the term “decompensation”; and observers who are careful of their use of words have rejected the term “decompensation” excepting as indicating a secondary failure after the heart has adjusted to some structural impairment or to an added task. Manifestly decompensation cannot be used with ac-

curacy as applied to a first attack of failure.

“Heart failure” as we use the term today, implies the condition of cardiac break-down observed in various grades from that hardly noticeable to the patient, to the absolute cessation of heart function and death. The physicians are in the treatment of heart cases today, is directed toward the early recognition of the lighter grades of failure; to their correction by suitable measures tending to restore proper function by building up a “reserve”; and to the elimination, if possible, of the causative factor in the production of the failure. We are concerned chiefly with this factor in heart diagnosis today. In the cases we see in various stages of heart failure, the necessity for an accurate estimate of the grade of failure is much more important from the standpoint of treatment and prognosis than the exact knowledge of the lesions which have entered into the production of the failure. Of course, this knowledge goes far as a help in the management of a particular case; but is secondary in importance to an estimate of the heart function. We see heart failure in valvular disease where disease of the myocardium has made impossible the preservation of normal function as measured by the output of the heart in a given time. We see heart failure as a result of pathologic change in the heart muscle, and we see it as the result of disturbances of rate and rhythm though the operation of extrinsic or intrinsic causes.

It seems almost trite to call attention to the necessary resting period of the heart cycle. Yet this concept is most essential in considering the subject of proper cardiac nutrition. For a long time the greatest stress was laid on the phenomenon of slowing of the heart observed in laboratory animals when the minimal lethal dose of digitalis was approached and also observed in man under certain pathological conditions with a dosage considerably under the minimal lethal dose. This therapeutic slowing effect of the drug occurs most strikingly at times. In our series of cases 140 observed during twelve months in Medical Service No. 4 of Charity Hospital, it was of strikingly low incidence. Reduction of rate of

\*Read Before Louisiana State Medical Society, April 24-26, 1923.



over 20 beats was of infrequent occurrence. Notwithstanding this, the improvement was often most pronounced. It is in auricular fibrillation that improvement is most easy to prophesy and slowing, most frequent after digitalis. Again we must acknowledge a debt to Mackenzie for pointing out the mode of action of digitalis in this, the most frequent of rate and rhythm disturbances occurring in heart failure. The digitalis effect that is in operation here is chiefly the effect on the auriculo-ventricular bundle. The conduction time may be increased by the giving of the drug in relatively large dosage even to the extent of complete dissociation of auricle and ventricle and the production in the ventricle of an independent rhythm. The effect of vagus stimulation by digitalis seems of less importance in the treatment of auricular fibrillation than that in its effect on the conduction apparatus of the heart muscle. The effects of vagus stimulation by digitalis are today regarded as of secondary importance, therapeutically speaking, to the effect on the heart muscle and its conductive mechanism. Some observers even go so far as to consider the effect of digitalis in auricular fibrillation through the cardio-inhibitory apparatus as *nil*. We are quite certain that the slowing which here is of such prime advantage comes not from the cardio-inhibitory apparatus. Indeed late slowing through sinus inhibition or A-V. block is a toxic effect and constitutes a signal for stopping the drug.

A dog's heart in which fibrillation is induced by direct faradization of the auricle fibrillation, can be checked by faradization of the left vagus. This degree of vagus stimulation is probably far above that which any possible dosage of digitalis that could be borne by the patient would bring about.

We are still far from being able to foretell with exactness which cases of fibrillation will be relieved by digitalis through ventricular rest and increase of recovery-time. However, the identification of auricular fibrillation by Mackenzie by means of polygraph tracings marked an epoch in the study of this most interesting drug. The later advent of the electrocardiograph has still further cleared up the subject.

Thanks to light thrown on the subject by the electrocardiograph, we are able to study the hearts of cases with diseased heart muscle with an accuracy that equals that which was not even possible in the laboratory upon an animal before its use. The clinic has through this apparatus, far outstripped the laboratory in these studies. The reactions of the diseased heart-muscle can only be obtained in the clinic. Such conditions can best be found by examining patients suffering with heart failure of varying grades. Examination of tissues post mortem has never yielded anything comparable to the richness of data obtained, without harm to the patient, by these tracings. The physiologist and the pathologist have laid the foundation; but today light on the subject of heart failure and its treatment comes chiefly from clinical data collected and studied.

We are in a position today to identify by ordinary means of investigation (eye, finger and stethoscope) very many of the arrhythmias which occur; but it is because of their being originally identified by means of chronologically recorded curves of the heart cycle. There still remains a field of rhythmic disorder which can only be studied by the electrocardiograph. There are cases of fibrillation which are not identified because of the lack of such records. The response of these hearts to full doses of digitalis is perhaps responsible for some of the drug's prestige outside this class of cases. Lewis has emphasized this point and he goes so far as to advance the view that there is little to be expected from the drug outside of this field. This view is not accepted by the workers in general and my own experience with digitalis is certainly not in accord with this dictum. Lewis has advanced the view that other disturbances of mechanism (auricular flutter) heretofore, etc., regarded a separate and distinct phenomena are due to the same cause, and alteration in the length of the refractory period and in the conduction time. Digitalis has been observed to convert auricular flutter into fibrillation and fibrillation finally to normal mechanism. In auricular tachycardia, digitalis fails usually to bring relief. In the cases reported where relief has come from digitalis, Lewis is inclined to be-

leave that flutter may have existed which has yielded as above described.

More or less blocking in the conduction bundles may be the underlying cause of the failure to function. This type of abnormal mechanism varies in a most interesting way in response to digitalis therapy. The block which concerns us most clinically, consists in abnormal increase in the auriculo-ventricular conduction-time. This may be partial, in which occasional impulses only are lost, or *complete* in which auricle and ventricle are contracting with an independent rhythm.

Incomplete block accompanied by heart failure is regarded as a contra-indication to digitalis because of the likelihood of converting it into a complete block and with a further subsequent slowing. However, this conversion may be rather desirable than to be avoided. Cases have been reported where the heart rate has been actually increased as complete block occurred through freeing of the ventricle and the establishment of an independent ventricular rhythm. In complete block, digitalis can do no harm for it is without influence excepting for a beneficial one in its effect on contractility and possibly also by improving the tonus of the heart muscle.

Heart failure, we see where the mechanism is, without doubt, perfectly normal. Dilatation may not be present and the failure may be manifested by pain on exertion, edema, or by shortness of breath, orthopnea, by cyanosis. Often no demonstrable pathology is present either in the heart muscle or in the valves, to account for the clinical picture as we see it. Digitalis helps some of these cases without alteration in pulse rate, especially those with edema, when diuresis occurs. In others, on the contrary, no benefit can be obtained even from large doses pushed to the limit of tolerance. We have come to regard prompt response to digitalis as a prognostic factor of no little value. In the conditions above mentioned it is impossible to foretell with any degree of certainty which cases will respond and which cases will resist the drug. We have come to believe that such cases should be given a thorough digitalization to the point of saturation within

the margin of safety under careful and continuous observation.

Always we must bear in mind that there is nothing which digitalis can do in altering the conditions in the valves. Valvular lesions are uninfluenced by the drug. If we admit a possible effect on tonus a debatable question, and upon contractility which is now quite generally admitted, we can perhaps understand an influence on the mitral valve through the papillary muscles. Formerly it was believed that the lengthened ventricular diastole produced in digitalis therapy was a contra-indication to its use in aortic regurgitation. This view is no longer held by those whose experience and opportunity for study is greatest. A theoretic, but not practical, contra-indication in aortic regurgitation, the lengthening of diastole, becomes of decided help in mitral stenosis where the filling time of the ventricle is lengthened by A-V conduction delay.

Today there is no valvular lesion in which we regard digitalis as contra-indicated. The rapid heart due to accelerator stimulation external to it or due to a toxic substance (*hyperthyroidism*) reaching it in the blood is not slowed by digitalis and no benefit from its use in this direction can be expected.

From the clinician's standpoint the most important consideration is the question of dosage. Formerly, we gave digitalis in relatively small doses and awaited the advent of its full action sometimes for days and even weeks. Today we have much more definite data upon which to base our therapy. We know that little can be expected of digitalis until a certain dosage has been reached. The size of this dose has been determined by animal experiment and careful observation of the effects of the drug at the bedside. It is very definitely known just how much of a standard digitalis preparation will produce death in the cat. The so-called cat unit is the proportionate amount of the drug necessary per kilogram of body weight to kill the animal. Following this method practically all reliable manufacturers are putting out standardized tinctures of strength of one cal-unit to the c. c. of tincture.



Since the finding of Cohn, Frazier and Jamieson a change in the T-wave in electrocardiograph tracings occurring with the advent of moderate digitalis effect, it has been possible to identify other and later phenomena by this means. Unlike T-wave change, fortunately these other changes can be identified by the simpler and ordinary bedside observations. Various observers have watched these effects and have calculated and reported the percentage of the minimal lethal dose after which they usually occurred. As a result of their work we know that T-wave alteration occurs when 20 to 30 per cent of the minimal lethal dose (M. L. D.) has been given. Many observers believe that the advent of this phenomenon should serve as a warning that the full dosage is being approached. However, we have frequently to pass this phase in the matter of dosage and very often utilize therapeutically for maximum therapeutics effect 30 to 40 per cent of the M. L. D.

The therapeutic dose lies frequently uncomfortably near the toxic one, with a relatively small margin of safety. From the clinical standpoint the advent of nausea or vomiting following one or two days of anorexia is important. Hatcher and Weiss have shown that vomiting is a true cardiac reflex and not a central stimulation as was formerly supposed. The initial point of this reflex is in the heart itself. Acceptance of this apparently well-proven point makes doubly important the occurrence of the nausea or vomiting as a warning of the advent of toxic effect. In a heart case vomiting is a misfortune and should be avoided if possible. The preliminary anorexia may replace the nausea in giving warning.

Coupling usually a later manifestation of premature ventricular contraction and sudden slowing indicating and auriculo-ventricular block are indications for immediate stopping of the medication. Effect on the bowels (purgation) is of comparatively rare occurrence and, notwithstanding, Withering warns that it is a signal to stop the medication, we can consider it only as of secondary importance. I have records of several cases in my series which show that the occurrence of diarrhea has possibly prevented a lethal

result in the patient, so large was the dosage employed. In this connection I should like to emphasize the importance of the effect of giving saline cathartics daily or 3 or 4 times a week, on digitalis absorption. Macht has shown the very great hindrance that this produces to all absorption in the intestines. This applies to food as well as to medication and furnishes an additional argument for their sparing use in the edematous case of heart failure during digitalis treatment extending through a period of days.

The calculation of the dose is of prime importance. There can be no doubt that an approximate saturation of the patient is necessary in most of the cases we are called upon to treat. The basis of this calculation at present used by all who have studied the question minutely, is body-weight and the minimal lethal dose for animals. Eggleston has done more than anyone else to give us a co-efficient expressed in terms of pharmacologic activity of various digitalis preparations. Eggleston has endeavored to determine a quantity of digitalis which shall represent that which will give a full therapeutic effect and which will lie well within the *margin of safety*. His figure is 0.146 of a cat-unit (representing .146 c. c. of a standard tincture) per pound of body-weight. The dosage is given as follows: approximately 1-3 to 1-2 of the total calculated dose is administered at once and the remainder at 6 hour intervals thereafter, watching for the advent of the signals of toxic feet. Six hours is taken as the period which is required to develop the effect of a dose of digitalis.

There is little doubt to-day that the therapeutic effect of digitalis in heart failure can be maintained only by keeping up the "saturation" of the patient with the drug. This we can do by knowing approximating the rate of excretion. This also has been studied. Pardee has determined by electrocardiographic study of T-wave phenomenon that the average rate of excretion is about 20 minims a day for a standard tincture in a patient of 150 pounds body-weight. It will be necessary, therefore, to maintain such a dosage in order to keep up the desired therapeutic effect, having previously administered the full thera-

peutic dose calculated by the Eggleston method.

In the preparation of this paper the writer undertook a tabulation of all cases now under treatment and all cases discharged from Medical Service No. 4 in New Orleans Charity Hospital. The cases were, all of them, under his management. There were 140 in all during the last year. Of these 84 showed heart failure and these received digitalis at some time during their hospital sojourn. It is a matter for regret that no electrocardiograph tracings were available and the polygraph was used where possible in its stead. The polygraph tracings are often disappointing on account of limitations of the instrument. The cases all occurred in colored females ranging in age between 9 and 69 years. In the colored female service, the patients come to the hospital in a much more advanced stage of cardiac failure than in the colored male service, and the high death rate per cent may be in part thereby accounted for. The age, weight, the condition of patient admitted and weighing were recorded and tabulated; diagnosis; dates of admission and discharge; number of days' duration of digitalis treatment; total digitalis given and the daily average calculated. Dr. J. T. Halsey very kindly undertook to determine the potency in cat-units of the tincture of digitalis in use in the Charity Hospital and found that it represented .70 of a cat-unit per c. c. In the table studied it was desirable to express the dosage in the terms of a standard tincture, and the corrected totals and averages are so expressed.

Working without the guide of electrocardiograph tracings it is necessary to watch most carefully for clinical evidence of toxic effect so as to keep the dosage well within the *margin of safety*. Of chief importance were the advent of anorexia, nausea or vomiting, slowing of the heart to the neighborhood of 50, the occurrence of premature ventricular contractions, heart block, or well marked diuresis. The importance of measuring the daily urinary output is of very great value in watching a case under treatment. It is in hospital practice quite difficult to obtain. The patient is most unaccustomed to the idea of treating the urine as some-

thing of value to be preserved, perhaps at considerable inconvenience. Unless there is an adequate nursing personnel this is often not done. Our records have suffered in many instances from this omission.

Limitations in our ability to watch carefully our cases call for added conservatism in the matter of dosage. The more closely we can watch for signs of toxic manifestations, the more daring may we become with this powerful drug. All of our digitalis has been given by mouth in our heart series and no strophanthin, intravenous or otherwise has been used. We have in a number of cases, greatly exceeded the dosage laid down by Eggleston and apparently with advantage to the patient. In studying these cases we are impressed with the desirability of getting in more or less promptly (usually during the first 24 hours of admission) a considerable portion of the calculated total amount. Patients thus treated are frequently comfortable on the second night and need less morphine.

In considering the advisability of doses exceeding the calculated amount we have in mind the very great variability of absorption found in different tinctures of digitalis all of which may possess the same biologic potency when given intravenously to a laboratory animal. This variability has been examined most carefully by Hatcher and we find a factor of absorption variability which is uncomfortably large. This factor is not so great as that which prevents us using strophanthin, but enough surely to make us eager for some more uniform preparation. It may be that the extraction of the chloroform-soluble constituents of the drug may be demanded as the basis of our standard tincture of the future; for this has been found many times more uniform of absorption by the intestinal tract.

Our series shows that out of 84 patients with heart failure taking digitalis 29 died, 34 per cent.

The average total quantity taken daily was equivalent to 49 c. c. of standard tincture. The duration of treatment counted in number of days between first dose and discontinuance was 18.



*Series Summary.*

Average days .....	18.7
Average daily dose.....	2.7
Average total dose.....	49.1cc
Maximum age .....	69
Minimum age .....	9
Largest total dose, equivalent in c. c. Standard .....	175.
Smallest total dose .....	5.2
Recovered .....	55
Died .....	29
Mortality in series.....	34.5%

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DISCUSSION.

**Dr. Randolph Lyons (New Orleans):** I think that Doctor Guthrie has brought out some very important points in the use of digitalis in heart conditions. He has shown, first of all, that it is very hard to say in every individual case whether or not digitalis will be of any benefit. You know in certain types of cardiac conditions it is generally very helpful and most especially in fibrillation. Digitalis is also of great prognostic value, when it is properly given. The difficulty comes in the practice of most of us, that we do not know enough about the digitalis we are using. There are many preparations put out by drug firms, most of which are good, but it is not always possible to know whether they are up to standard. We have found in the Charity Hospital that a good deal of the digitalis is somewhat under par and hence there is no use talking about the exact dosage required. You must push it until you get the effects you are trying to obtain. You may use the single dose method, which in most instances is not necessary; or else give fairly large doses evenly distributed, e. g., a dram every four hours. In those cases the patient must be watched carefully and the drug cut down when we get the digitalis effect.

In the past I think we have been afraid of giving too much digitalis, but if we bear in mind what the early symptoms of intoxication are, we may avoid all such dangers.

**THE DETECTION OF PULSUS ALTERNANS BY THE AUSCULTATORY BLOOD PRESSURE METHOD, WITH AN ANALYSIS OF 14 CASES.\***

By RANDOLPH LYONS, M. D.  
New Orleans

In November, 1920, I<sup>1</sup> reported five cases of pulsus alternans before the Southern Medical Association in Hot Springs. Since this time it has been my good fortune to observe eight new cases of this interesting cardiac arrhythmia and to add another case from my records which occurred in 1918. Owing to limitation of time it will not be possible for me to take up in detail

the new cases; this will be done at a later date. It will be necessary, for the present, to limit this report to a brief summary of the 14 cases observed.

*Pulsus Alternans and Its Frequency.*

Alternation of the pulse may be defined as a condition in which strong and weak beats alternate, but in which the cardiac rhythm is normal. Alternation may be constant, transient, intermittent or found only after premature beats. It is a sign of serious impairment of the muscular organisms of the heart, which has lost the capacity to respond with maximum contraction to every stimulus;<sup>2</sup> the contracting capacity is diminished. Depression of contractility is then the most evident impairment of the function in alternating pulse, although there may be other elements entering into its production. This arrhythmia is classed by some cardiologists as second in frequency of the cardiac arrhythmias, yet among clinicians and practitioners it is astonishingly infrequent. Why should such a state of affairs exist? Presumably because (1) cardiologists take graphic tracings of all cardio-vascular-renal cases. (2) Because practitioners still believe pulsus alternans to be a rare condition and do not appear to appreciate the fact that it can be detected while taking the blood pressure by the auscultatory method (preferably). (3) Because the pulse is often regular and within normal speed limits, hence no suspicions are aroused as to its presence. (4) Because of careless and hurried blood pressure readings. (5) Because of a faulty blood pressure instrument in which through leakage, the pressure cannot be very gradually and slowly released. It seems hardly necessary to add any further reasons, but if the physician will keep in mind the possibility of pulsus alternans in all cases of hypertension, arteriosclerosis, myocarditis and nephritis, when taking the blood pressure, this condition would rarely be overlooked.

*Blood Pressure Method.*

The auscultatory blood pressure method is by far the most delicate method of detecting alternation of the pulse. Either the air or mercury sphygmomanometer may be employed,

\*Read Before the Louisiana State Medical Society, April 24-26, 1923.

although the oscillations of the needle in the air-manometer may aid in focusing attention on the presence of an alternation. It may be of interest to state here, that the recognition of *pulsus alternans* in the 14 cases that are reported, was made while taking the blood pressure. In some of the more uncertain cases, or as a control, tracings were made; furthermore, it was found in some instances that graphic records failed to reveal the alternating pulse even when Hawthorne's<sup>3</sup> method was used to reinforce it, although the blood pressure method detected it quite easily and later, tracings demonstrated its presence beyond any doubt. It is noteworthy that the electrocardiograph is practically useless for determining alternation of the pulse; not infrequently the sphygmograph fails us in early cases, but the sphygmomanometer is our mainstay and it is fortunately an instrument that all practicing physicians possess.

The technic of the blood pressure method for detecting alternation of the pulse has been admirably described by MacKenzie<sup>4</sup> as follows: "The armlet is distended until the artery is obliterated. On listening with the stethoscope at the bend of the elbow, the returning blood wave in artery under the stethoscope shows its presence by a sound. When *pulsus alternans* is present this sound is only half the rate of the heart at first, when pressure falls another 5 to 10 mm. Hg., the weaker beat comes through, and one can detect then a sound accompanying each beat of the heart. At first the beats will be unequal in volume, but as the pressure falls lower they become equal." It may be of interest to record here, that in 5 of the 14 cases, the sounds did not become equal in intensity in many instances, thus permitting a separate determination of the diastolic pressure of weak and strong beats. This observation was reported in a previous paper on two of the cases.

Chart I illustrates what I have described. It shows not only alternation of systolic pressures of weak and strong beats, but also what might be termed the "the alternating diastolic pressure" of the weak and strong beats. It should be noted that the diastolic pressure of the strong beat is always

lower (in such instances) than that of the weaker beat, giving it a greater pulse pressure. This is, of course, to be expected as a greater volume of blood is expelled with each stronger contraction of the ventricle. In my earlier observations it appeared that the diastolic pressures of each alternate beat could only be obtained where the difference in systolic pressure of strong and weak beats exceeded 20 mm. of Hg. This conclusion was found to be erroneous for in Case 12, 7 and 10, there were only differences in systolic pressure of strong and weak beats of 5, 6 and 10 mm. of Hg. respectively. It is quite possible the sounds seldom become quite equal in volume only our ears are not sufficiently keen to detect any difference in the diastolic pressures of strong and weak beats, hence they apparently merge and one figure represents the diastolic level of both beats.

The diagnosis of *pulsus alternans* by the blood pressure method is usually not difficult, but must be differentiated from pseudo-alternation or the occurrence of regular late extra systoles (*pulsus bigeminus*). This source of error will be reduced to a minimum if we bear in mind (1) that in *pulsus alternans*, in listening over the bend of the elbow at the time when all the beats are heard, the sounds are perfectly regular, whereas, according to Mackenzie, in the case of *pulsus bigeminus* there is always a delay after the weaker beat. (2) In *pulsus alternans*, on auscultating at the apex of the heart, it is rare to note any difference in intensity of the strong and weaker beats, while in the cases of regular extra systoles, the premature beats are generally less intense. Here creeps in an interesting problem for the physiologist. We have been taught that two main factors enter into the production of the first sound of the heart; namely, the closure of the auriculo-ventricular valves and the muscle sound. From observations on cases of *pulsus alternans* it would appear that the muscle sound plays a very small part, clinically speaking, for how can we explain the fact that the sounds at the apex remain equal in intensity when the ventricles are contracting strongly with one beat and weakly with the next. There is still another condition which, according to White and



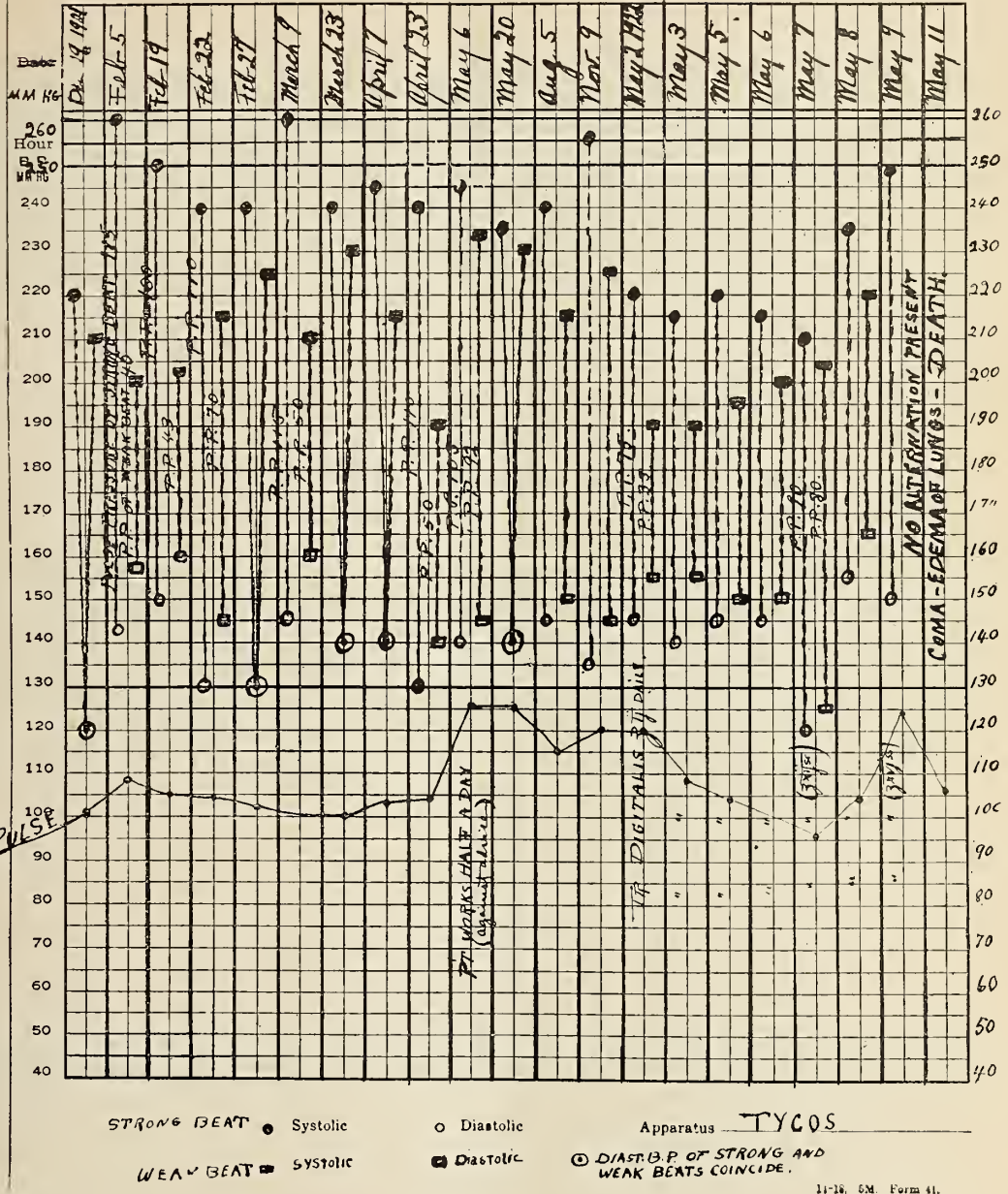


Chart 1.—(Case 2.) Graphically illustrates the alternation of systolic pressures of strong and weak beats. The circle represents the strong beats and the rectangles the weaker beats. The circle, with enclosed dot, represents the diastolic pressure where both strong and weak beats coincided. It will be noted that on many dates the diastolic pressures of strong and weak beats did not coincide and could be obtained separately. Thus on February 5th the strong beat had a systolic pressure of 260 with a diastolic pressure of 145 whereas the weak beat had a systolic pressure of 200 and a diastolic pressure of 145. Thus the pulse pressure of the strong beat was 15 and the weak beat 45. This was the highest degree of alternation noted among the 14 cases observed. The influence of digitalis can be observed during the last nine days of the patient's life—the alternation was diminished and the pulse slowed.

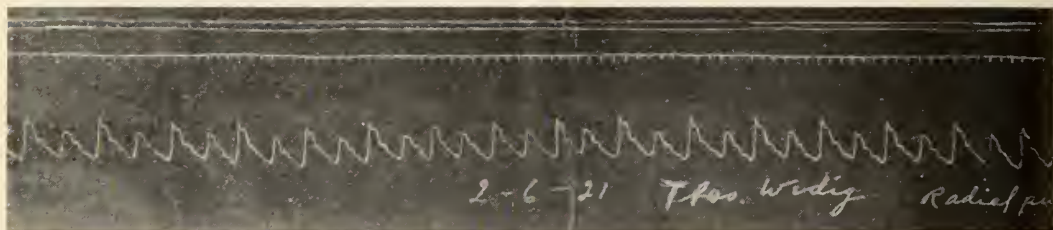


Figure 1.—Case 2. Mr. T. W., 43 years. February 6, 1921. Marked alternation of the pulse.

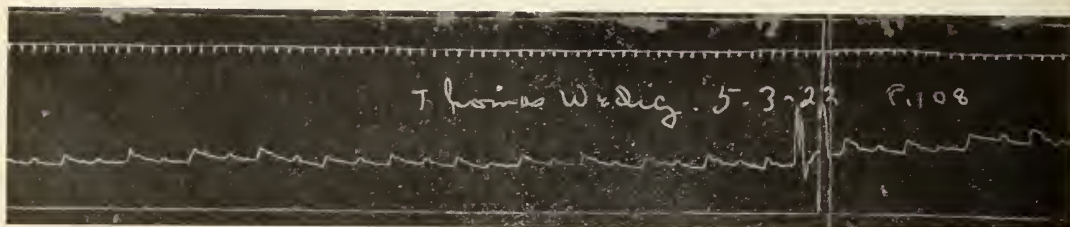


Figure 2.—Case 2. Taken on May 3, 1922, shows alternation less marked. Pulse 108. B. P. Strong beats 215/140, weak beats 204/145. Patient had had Tincture digitalis 3 drachms.

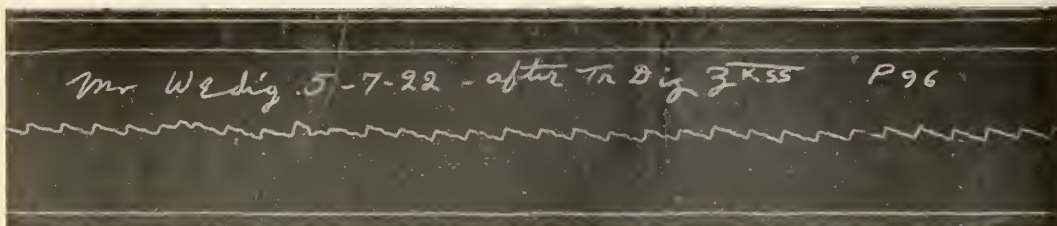


Figure 3.—Case 2. Shows alternation difficult to make out. Pulse 96. Alternation easily discernible by blood pressure method. B. P. Strong beat 210/120, weak beat 204/125. Patient had had 10.5 drachms Tincture digitalis. Tracing made May 7, 1922. Patient died on May 11, 1922



# TABLE I

CASE NO.	SEX.	OCCUPATION	AGE.	DATE	DURATION OF ILLNESS	TYPE OF ALTERATION	DURATION OF ALTERATION	PULSE RATE.	BLOOD PRESSURE	HEART	ARTERIES	KIDNEYS	DIED.	STATIONARY	IMPROVED	REMARKS
1	♂	Baker	66	Nov. 24 1918	1 MONTH	TRANSIENT OVER WORK	1 DAY (?)	80	S. 120	SIZE NORMAL ANG. VAL PAINS	SCLEROTIC	NORMAL			X	PHYSICALLY WELL IN SANATORIUM SENILE PSYCHOSIS
2	♂	T.W.	43	NOV. 24 1920	1 YEAR	PERMANENT	16 MONTHS 7-14 DAYS	96	220/120	ENLARGED AORTA DILATED	SCLEROTIC	CHRONIC NEPHRITIS 35-40 5-H-23	X			DIED 6 MONTHS + 14 DAYS AFTER ONSET OF P.A.
3	♀	TEACHER MISS G.P.	62	APRIL 2 1921	8 YEARS	TRANS. TOXIC GRIP	FEW DAYS	120	190/100	MOD. LARGE	SCLER.	CHRONIC NEPHRITIS 35-40 2-6-23	X			HAD UREMIC CONVULSIONS 3 MONTHS PRIOR TO DEATH.
4	♂	WORKER	75	FEB 1921	15 YEARS	TRANS. UREMIC TOXIC	2 DAYS	100	220/110	MUCH ENLARGED HEART	MARKED SCLEROSIS	UREMIA	X			DIED 4 MONTHS + 2 DAYS AFTER ONSET OF P.A.
5	♀	MRS. J.M.	52	APRIL 11 1921	25 YEARS	TRANS. UREMIC	1 DAY	84	220/120	MUCH ENLARGED TO LEFT AORTA DILATED	SCLER.	UREMIA	X			DIED 9 DAYS AFTER P.A. ON ADMISSION B.C. PA. 310/170 HEMATURIA
6	♂	G.P.L.	58	MAY 24 1920	2 YEARS	TRANS.	1 DAY (?)	94	215/120	MOD. ENLARGED TO LEFT	MARKED SCLER.	NORMAL	X			DIED 14 MONTHS + 12 DAYS AFTER ONSET OF P.A.
7	♂	A.R.	49	NOV. 25 1921	2 MONTHS (?)	PERMANENT ORG. SYSTOLE	17 MONTHS	100	150/110	DILATED AORTA DILATED	SCLER.	CHRONIC NEPHRITIS 45-50 W.P.N. 311 11/24		X		
8	♂	MILL OWNER A.W.S.	59	MAY 5 1921	1 1/2 YEARS	TRANS.	1 DAY (?)	100	155/100	MOD. ENLARGED AORTA DILATED	SCLER.	NORMAL	X			DIED 5 MONTHS + 17 DAYS AFTER P.A.
9	♀	MRS. C.E.K.	67	DEC. 5 1921	1 YEAR	TRANS. OVER EXERCISE	2 DAYS	84	275/105	MOD. ENLARGED AORTA DILATED	SCLER.	NORMAL 2 SPECS.		X		LOUD SYSTOLIC BLOW OVER AORTA ALTERNATE IN INTENSITY
10	♀	MRS. W.H.	22	OCT. 11 1922	2 WEEKS	PERMANENT (?)	22 DAYS	102	125/100	MUCH DILATED AORTA SL. ENLARGED	NORMAL	NORMAL LATER PASSIVE CONGESTION	X			DIED 1 MONTH + 27 DAYS AFTER P.A.
11	♂	ELA	52	DEC. 11 1922	2 YEARS	PERMANENT (?)	84 DAYS	84	175/120	MUCH ENLARGED AORTA DILATED	SCLER.	CHRONIC NEPHRITIS			X	
12	♀	MRS. J.W.L.	79	JUNE 29 1922	2 YEARS	TRANS. (?)	14 DAYS (?)	90	160/90	MOD. ENLARGED AORTA MOD. DILATED	SCLER.	FUNCTIONALLY NEGATIVE		X		ANGINA PECTORIS
13	♀	MISS. L.F.	68	JAN. 9 1922	2 YEARS	PERMANENT EXTRA-SYSTOLE	11 DAYS	80	160/92	MARKED ENLARGED AORTA DILATED	MARKED SCLER.	CHRONIC NEPHRITIS	X			DIED 11 DAYS AFTER P.A.
14	♀	MISS P.F.	27	DEC. 31 1922	2 1/2 MONTHS	TRANS. UREMIC	17 DAYS	104	196/120	SLIGHTLY ENLARGED TO LEFT ENDOCARDITIS.	SLIGHT SCLER.	CHRONIC NEPHRITIS		X		ENDOCARDITIS

ANALYSIS OF 14 CASES OF PULSUS ALTERNANS

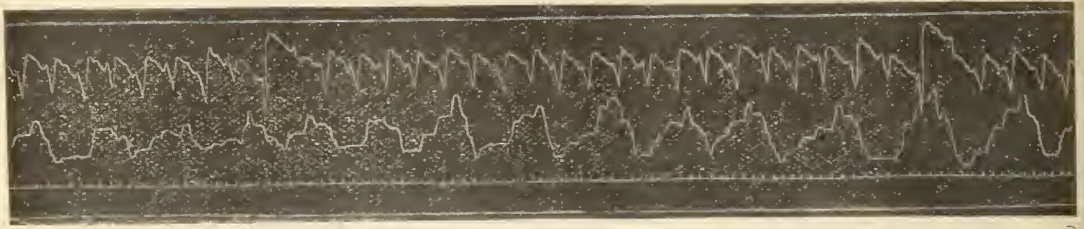


Figure 4.—Case 7. Mr. A. R., 49 years. Shows moderate alteration best observer after extra systoles. B. P. Strong beat 170/120, weak beat 165/120.

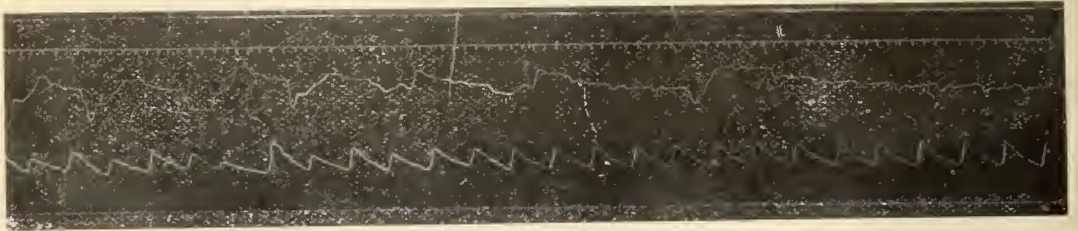


Figure 5.—Case 13. Miss L. F., 68 years. Tracing shows slight alteration only after extra systoles. Pulse 88. B. P. Strong beat 176/88, weak beat 168/88. Patient died nine days later.

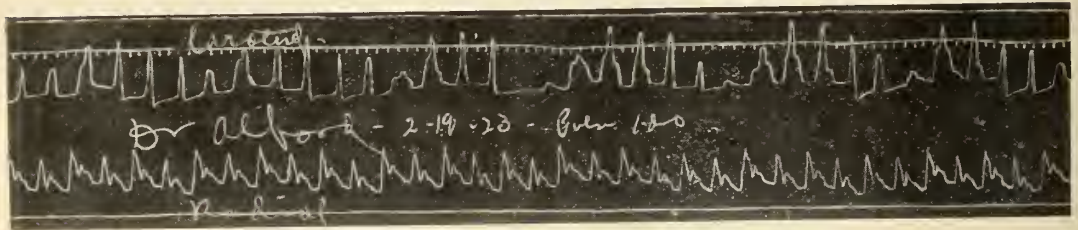


Figure 6.—Case 11. Mrs. E. L. A., 52 years. Alteration can be detected by measuring radial curves. Rate 100. B. P. strong beat 175/140, weak beat 165/140.

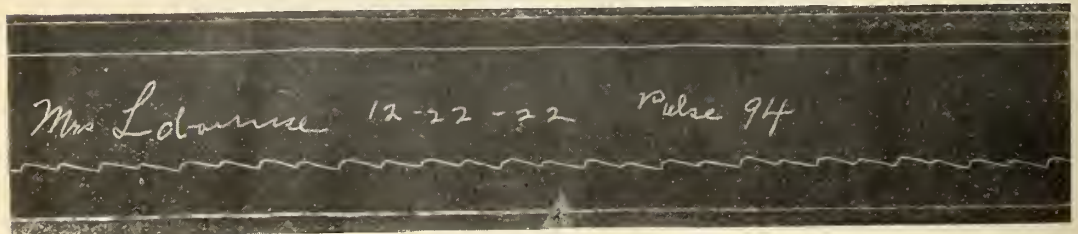


Figure 7.—Case 12. Mrs. J. W. L., 80 years. Alteration easily detected by blood pressure method. Can be detected in tracing only after careful measuring of alternate beats. Pulse 94. B. P. Strong beats 155/80, weak beats 145/90.



Lunt,<sup>5</sup> may produce a pulse which seems to be constantly alternating; this is a rapid respiratory rate which is one-half, or almost one-half, of the pulse rate. This pseudo-alternation is readily recognized by having the patient hold the breath for a few seconds.

#### *Summary of 14 Cases.*

Table I. Is an analysis of the more important features of the 14 patients. Cases II to VI have already been reported. In glancing over the table we note that the sexes are evenly distributed; furthermore, we find that it is a condition seldom observed under 40 years. Twelve of the fourteen cases occurred after 40 years of age (85.7%). The majority of patients (71%) fell between the ages of 50 and 80 years.

#### *Types of Pulsus Alternans.*

Permanent alternation was found in 5 cases (35.7%); transient alternation in 9 cases (64%). In two of the permanent types the alternation was noted chiefly after extra systoles (Cases 7, 11).

#### *Pulse and Blood Pressure.*

The pulse rate varied in the 14 cases from 80 to 120, giving us an average for the series of 94.1 beats per minute. In 9 of the cases the pulse was regular, which is one of the reasons that alternation is so frequently overlooked. In the remaining five cases there was some irregularity present in the form of occasional extra systoles. Hypertension is almost the rule. 86% of the patients had high blood pressure. You will note that the only two exceptions were cases 1 and 10. Case 1 might be said to have had a hypotension as he was 68 years of age with a systolic pressure of 120. He was an old arteriosclerotic with myocardial weakness, no apparent cardiac enlargement, feeble apex sounds and angina pectoris. Overwork and worry were the chief factors in the production of his alternation and anginal pains. A complete rest and giving up of business has resulted in his remaining physically well up to the present time (just 5 years.) The second exception to the rule was Case 10, a young woman of 22 years, with a systolic pressure of 125. She had enormous dilatation of a flabby heart muscle. The alternation appeared during her second

attack of decompensation and she died. These two cases illustrate the small heart with fibrosis and the enormously dilated flabby heart muscle both giving rise to alternation of the pulse with low or normal blood pressure. The remaining twelve cases showed hypertension with systolic pressures ranging from 150 to 310 mm. Hg.

#### *Heart and Blood Vessels.*

The heart was moderately to markedly enlarged in all but one case (Case 1). Case 1, however, only showed a very slight enlargement of the left heart. Various degrees of aortic dilatation were noted in 9 cases or 64%. Arteriosclerosis was present in varying degrees in all the series except Case 10 (92.8%).

#### *Kidneys.*

The kidneys were involved in 9 out of 14 cases (64%). Three of the cases had uremia. Case 4, a man of 75 years, was uremic when seen, but under rest in bed, digitalis and diet, the alternation and uremic symptoms rapidly subsided. At the end of ten days he was able to travel home and died four months later.

#### *Mortality.*

Of the 14 patients observed, 8, or 57%, are dead. Case 12 is not expected to live more than a few weeks. Of the 8 fatal cases, 3 had permanent alternation and 5 transient alternation. The duration of life after the detection of alternation varied in the 8 fatal cases from 22 days to a little over two years.

#### *Prognosis.*

When *pulsus alternans* is found there is reason to believe, according to Lewis<sup>5</sup> "either that the heart muscle has been damaged, or that a sound, or relatively sound muscle is meeting an extraordinary demand for work. It is seen only when the muscle is laboring and in difficulty." The outlook in the permanent type of alternation, other conditions being equal, is necessarily more grave than in the transient types, because this signifies that the heart muscle has been so seriously impaired that it has permanently lost the capacity to respond with maximum contraction to every stimulus. The prognosis in the

transient types depends upon the degree of associated pathological conditions. Case 3 developed an alternation during the course of an influenza which subsided after convalescence. Apparently the addition of the influenza poisons to an already overburdened heart were sufficient to depress the function of contractility. The patient died over a year later of uremia. Over-exertion (climbing stairs) produced a marked *pulsus alternans* in Case 9, which lasted for two days. This patient had a dilated heart and aorta with marked arteriosclerosis. She is still living one year and a half after the onset of the alternation. The best outlook is found in alternation produced by paroxysmal tachycardia or extraordinary physical effort where the heart muscle is apparently healthy. I have had no experience with this type.

#### *Treatment.*

When alternation of the pulse is found absolute rest is the first essential in treatment. All our measures are directed towards lightening the load of an overburdened heart muscle. Where the heart rate is accelerated, digitalis is of great benefit and under its influence, even in the permanent types, the alternation may be greatly reduced. As many of the cases have renal involvement attention must be given to the kidneys. A diminution in the salt and nitrogen in the diet will aid in reducing this toxic factor. The removal of infections where possible may assist in lessening the cardiac strain. Hypertension is usually present in these cases, but it is no contra-indication to the use of digitalis even where the pulse is relatively slow. In selected cases where the pressure is very high, venesection has produced some temporary improvement.

#### *Conclusions.*

1. Fourteen cases of alternation of the pulse are reported. Five of the cases showed permanent alternation and nine transient alternation.

2. All the cases were detected by the auscultatory blood pressure method.

3. The auscultatory blood pressure method was found to be the most delicate procedure for recognizing alternation of the pulse. Where the alternation was slight it could be detected by

this method where graphic records failed to show it at first.

4. By the auscultatory blood pressure method it is frequently possible to detect not only the systolic pressure of each alternate strong and weak beat, but also a separate diastolic pressure for each alternate strong and weak beat. In such cases the diastolic pressure of the strong beat is always lower than that of the weaker. The pulse pressure of the strong beat is always greater than that of the weaker beat.

5. All the cases reported, except one, showed varying degrees of cardiac enlargement. Arteriosclerosis was present in 13 out of 14 cases. All had hypertension except two cases. Nine of the 14 cases showed dilatation of the aorta and an equal number had associated renal disease. Two cases had angina pectoris.

6. The prognosis of the permanent type of alternation of the pulse is much graver than the transient type, other conditions being equal. In the transient type the outlook depends upon the severity of the associated pathological conditions and the possibility of removing exciting causes as physical strain, infections, toxemias.

7. Treatment consists essentially in lightening the burden of an overworked organ, prolonged and absolute rest in bed, reduction of salt and nitrogen in diet, digitalis, and the removal of infections, toxemias, where possible.

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#### DISCUSSION.

**Dr. J. Birney Guthrie (New Orleans):** Doctor Lyons has made a valuable contribution which is in line with what we teachers are trying to do, that is, to put a method of observation within the reach of the men who do not have all the apparatus for making polygraphic or electrocardiograph tracings. He has very nicely illustrated the difference



between *pulsus alternans* and the coupled beats which we call the bigeminal pulse. *Pulsus alternans* is considered a very grave prognostic sign if it is not induced from poisoning.

Digitalis does bring about the coupling which is so familiar and which represents about 75 per cent of the minimal lethal dose, and it is the one thing we should watch in the matter of digitalis administration. I do not feel we should go farther in pushing digitalis than the occurrence of this coupling. I am not speaking of mistaken diagnosis, but the true condition of *pulsus alternans*. The explanation of the cause of this phenomenon is somewhat vague. It is supposed to be a variation in the coronary circulation induced by digitalis. Doctor Lyons has not attempted any explanation of why this *pulsus alternans* exists, but we should recognize it, and recognize it as one of the grave disturbances of the mechanism of the heart which carries with it a bad prognosis.

**Dr. Randolph Lyons (closing):** You will notice in the charts I showed you that there is very little acceleration of the pulse. As a matter of fact, in my experience with alternation of the pulse, if you get a rate above 130 you cannot make it out.

I think in these cases the essential thing is rest. You would be surprised to see people walk into the office—I have had two or three—with alternating pulses, not thinking they were very ill. They have shortness of breath on exertion and perhaps some slight oedema, but their doctor did not tell

them they were very sick because the pulse was regular and around 90. They have hypertension and some renal involvement as a rule. Putting them to bed and giving the heart a rest accomplishes an enormous amount of good. Digitalis does them good; especially if the pulse is a little accelerated. Digitalis will diminish the alternation in the permanent types and in the transient types it may eliminate it entirely. Cases with renal involvement have to be put on a low salt and low protein diet. In the transient types we should get rid of any other toxic factor, such as infection. I have had the experience of one case of *pulsus alternans* after influenza. As soon as she recovered from the influenza the alternation disappeared. In another case the alternation appeared after climbing stairs and subsided after two days rest in bed.

The prognosis is bad in the permanent types because there you have a condition of such serious muscle impairment that the ventricle has lost the power of reacting equally to each stimulus and nothing will get it back. They rarely live more than two years. In the transient types the outlook is better. If you can get them rid of the alternation and treat them properly they may live for many years. I have one case living five years after the alternation was found. He was an old man about 66 years of age, and the alternation was brought about chiefly by overwork and worry. He also had angina pectoris. Taking him away from his work helped him and he is still alive after five years.

# New Orleans Medical and Surgical Journal

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## A NEW DEPARTURE.

It has been the policy in the past with editors of this Journal to personally attend to the correction of all proof material contributed to its pages. This method has proven unsatisfactory. Our foremost contemporary medical journals have discontinued this practice. The advantages derived from the plan of having an author correct his own manuscript proof are too many to enumerate. Co-operation on the part of contributors obviously become imperative. We know we can do it. Efficiency will characterize our efforts only if our professional confreres will demonstrate the "team-work" necessary in making this new departure a success.

## NOURISH YOUR TYPHOIDS.

When many of the present "younger men" of the profession were serving hospital internships, the method of feeding (?) typhoid fever cases with liquids, only, was still in vogue. Something over a decade has passed since a revolt against this system took place and then—as often happens in medicine—some went too far to the other extreme and fed their patients almost, ad libitum; of course, the reaction had to come from this, also, and, as a result, many doctors have gone back to the old menu; we oft-times hearing, now, something like "I believe that liquid diet is best, after all."

We feel that, to write, editorially, on this subject, would not be fair, without referring to the excellent paper, read

before our state society, at Alexandria, by Dr. Geo. S. Bel. This article, published in the April issue of our JOURNAL, is what might be termed "the last word on treatment of typhoid"; anyone treating a case of this disease would do well to refresh his memory by re-reading this excellent address.

The points which we would emphasize, however, are:

1st. Don't restrict your patients to liquids, but don't give them everything to eat; 2nd. In an uncomplicated case, the caloric value of the food should be rather high—say from 2,500 to 3,000 calories daily; 3rd. Remember that broths are filling, have little food value and are excellent culture media; 4th. If sweet milk is utilized, it should usually be in combination with other foods, as milk, alone, causes many annoying and dangerous intestinal symptoms and the large majority of patients will not tolerate it in any appreciable amount.

The main object of this editorial, however, is to urge the medical men to be progressive, but cautious, in the dietary of the typhoid fever cases; do not starve them with liquids only; gruels, gelatines, custards, eggs, crackers, toast and potatoes have their place; "temper zealously with common sense"; and, finally, keep Dr. Bel's article, close at hand.

## REPORTING VENEREAL AND OTHER DISEASES.

The Director of the Bureau of Venereal Diseases for New York State has just compiled a tabulation showing the



ports for the entire country as far as this was possible.

However much the figures may be deceptive in giving the exact number of cases, it is undoubtedly of value in pointing out where the deficiency lies.

The statistics which are those of 1922, about forty States replied to the questionnaire. It is shown that 14,492 practitioners reported a total of 303,914 cases of venereal disease. This is made up of 154,054 cases of syphilis, 147,551 of gonorrhoea and 2,309 cases of chancroid, or an average of about 21 cases per physician.

Of all the doctors estimated to be practising in the States replying to Lawrence on average of 22.1 per cent reported one or more venereal cases in 1922. The lowest percentage viz. 4 per cent reporting is that of Delaware, the highest, 57 per cent from Minnesota. Louisiana records 197 or 11 per cent of physicians reporting one or more cases in 1922.

Another point of some interest is that the syphilis outnumber the gonorrhoea cases by more than six thousand five hundred. It is not stated by Lawrence whether this figure means a reversal of the position of syphilis and gonorrhoea as compared with previous years. As a matter of fact the statistics of Louisiana for the past three years indicate this to have taken place. For instance in 1920 the gonorrhoea in proportion to the syphilis cases were 4,436 to 2,856 according to report card data. In 1921 they were equal i. e. there were 4,184 gonorrhoea and 4,178 syphilis reported. In 1922 the order is reversed with 4,040 syphilis to 3,194 gonorrhoea cases.

It is difficult to account for this transition except on the ground that a better knowledge of the gravity of a syphilitic infection is gradually permeating the masses, and it is believed that this information is disseminated chiefly by the free venereal clinics. The comparative ease with which the treat-

ment can be taken and absence of fee is an inducement to the poorest classes who would otherwise hesitate.

Our statistics are incomplete. A number of parishes with eight or twelve thousand inhabitants in some years have failed to return more than from two to four cases, and one with over eleven thousand suffered—according to reports—from not one single case of venereal disease in 1922.

The venereal rate for the entire State of Louisiana varied between 458 per 100,000 in 1920 to 418 in 1921, with a rise to 504 in 1922.

While it must be conceded that venereal reporting is very defective, the relative rate variations can be regarded as correct. This would indicate a decline in the venereal diseases, an assumption which has received partial corroboration by a similar decline in one other State. According to Dr. W. F. Cogswell of Montana there is no other explanation for the data which he has received.

The difficulty in obtaining reports on the prevalence of other communicable infections is only exceeded by that of obtaining an accurate report of the venereal diseases. In both cases it must be charitably assumed that the average practitioner has no appreciation of the value of statistics. He cannot or will not understand that they represent an index to the health conditions of a community or locality and which serves a two-fold purpose. In the first place they are an important guide to the health officer whose duty it is to supervise the health of the public. In the second instance they are read and followed carefully by commercial interests upon which the prosperity of the people is dependent. It is quite probable that if doctors actually knew how valuable their reports were, they would not consider the filling in of report cards a mere waste of valuable time and energy as often appears to be the case.

The semi-annual meeting of the Fourth District Medical Society will be held in Shreveport on the 16th of October, 1923. A large attendance is expected, as it is the intention of those in charge to thoroughly advertise this meeting. Dr. W. S. Kerlin, Merchants' Building, Shreveport, is secretary and ex-officio chairman of the program committee.

The Shreveport Medical Society held its regular monthly meeting at the Charity Hospital on September 4th., Dr. J. M. Bodenheimer read a paper, in which he made a defense of the use of pituitary extracts in the second stage of labor; he deplored the swinging of the pendulum back against this preparation and insisted that, if properly and cautiously used, it is of incalculable benefit. Dr. J. E. Knighton made a talk on Medical Ethics, which was well received and provoked considerable discussion; a committee was appointed to redraft the local code, so as to cover conditions which have arisen in the last few years especially in relation to the Harrison and Volstead acts.

Several interesting case reports were made, after which the society adjourned and the next regular meeting of Oct. 2d.

As a result of agitation over the need of extermination of the mosquito, especially as a precaution against possibility of a recurrence of Dengue, this fall, City Health Officer Health has been supplied with many additional inspectors and now a "fight to the finish" is on against the pest, in Shreveport.

Tri-State District Medical Association. Iowa, Illinois, Wisconsin and Minnesota.

The annual assembly of this association is to be held at Des Moines, Iowa October 29 to November 1st inclusive. Members of the Louisiana State Medical Society are cordially invited to attend and take part in the program. This association is a purely post graduate organization. The entire time of the annual assembly to be taken up by scientific study.

The American Public Health Association extends to the public health profession and others interested, a cordial invitation to attend its Fifty-Second

Annual Meeting, in Boston, Massachusetts, October 8-11. Headquarters will be at the Copley-Plaza Hotel.

The annual meetings of this Association are always important events in the public health world, but the meeting this year is of more than usual interest since it ends the first twelve months of the new program adopted as a result of the Association's reorganization in 1922. Two General Sessions and twenty-six meetings of the scientific sessions will be held this year. In addition, many trips of technical and general interest have been planned around historic old Boston as part of the entertainment and educational program.

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. October 8, 1923.

At Chicago, Ill., October 8, 1923.

At San Francisco, Calif., October 8, 1923.

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.

### ST. LUKE'S SANITARIUM.

Dr. B. F. Gallant's Sanitarium has been sold to Mrs. L. N. Soniat. Dr. Gallant is perfecting plans to erect another hospital to be known as Dr. Gallant's Neurological Hospital.

### NEW CHARITY HOSPITAL.

From press reports, Mrs. L. N. Soniat, as a memorium to her husband, has purchased from Dr. B. F. Gallant, the St. Luke's Sanitarium. It is to be conducted as the Charity Hospital, and the Sisters of Mercy will be in charge.



The Mississippi Valley Association will hold its 48th Annual session at Hot Springs, Arkansas, October 9th, 10th, and 11th. A program of outstanding merit and appeal has been arranged. The individual papers carefully chosen comprise pertinent topics with the maximum instructive value.

A special attraction will be a tour of the reservation with its wonderful natural phenomena and the session of the famous Government Clinic. Headquarters will be at the Eastman Hotel. Railroad facilities are ample to the gateways of St. Louis and Memphis.

During the meeting of the Southern Medical Association, it is hoped that the Alumni of each of the Medical Schools represented will meet together at dinner. The evening of Wednesday, November 14th, has been set apart for that purpose and dining rooms have been already engaged. The committee desires to know approximately the number of diners to be expected at each of these reunions.

The American Society for the Control of Cancer is planning a campaign which lends itself much more readily to the stimulation of the medical publication. Instead of a single National Cancer week, there will be a series of six cancer campaigns, one month being devoted to the subject in each of six regions in the United States and Canada.

The plan is to devote three weeks in each region to making ready for the campaign, the fourth to be devoted to carrying out the activities. As in the past, they expect many medical societies to conduct symposia on the subject, and it is urged that the papers delivered on such occasions be assembled and perhaps published as a unit in a "Cancer Number" of the journal during the month when the campaign is being carried out in that part of the country where that particular periodical has its widest circulation.

The regular meeting of the Lafourche Valley Medical Society was held at the Elks home in Donaldsonville, Tuesday, August 14th, with a good attendance. Besides routine business, scientific papers were read by Dr. Charles Roger of

Napoleonville and Drs. L. R. DeBuys and E. Denegre Martin both of New Orleans. Dr. Maurice Gelpi of New Orleans was also present and took part in the discussions. After the business session the members of the Society were guests at a dinner at the Martins Sanitarium. Drs. D. T. and A. W. Martin acting as hosts. The next quarterly meeting of the society will be held in November at Houma, La.

The ninth annual meeting of the Medical Women's National Association was held in San Francisco, June 25 and 26, in conjunction with the American Medical Association meetings, Dr. Grace N. Kimball, president; Dr. Kate Campbell Mead, president-elect. At the open session Dr. Ray Lyman Wilbur, president-elect, A. M. A., delivered an eloquent and inspiring address on the "Power of the Minority." At the open session a five-year program was presented by the Executive Committee and Council, and was adopted.

#### MONTHLY BULLETIN SHREVEPORT MEDICAL SOCIETY FOR SEPTEMBER

##### Scientific Program.

**Pituitrin in the Second Stage of Labor.**

**Dr. J. M. Bodenheimer.**

**Medical Ethics.**

**Dr. J. E. Knighton.**

Charity Hospital, July 3, 1923.

The regular monthly meeting of the Shreveport Medical Society was called to order at eight-fifteen by President Pirkle. The following twenty members were present: Bodenheimer, Cassity, Hamner, J. A. Hendrick, Herold, Johns, W. S. Kerlin, Knighton, Lloyd, Lucas, Pirkle, Prothro, Ragan, Rigby, Rutledge, Sentell, Stamper, Sandidge, Yearwood, Young.

There was no report of the secretary, treasurer, or from any committee.

##### Scientific Program.

Dr. J. A. Hendrick read an interesting paper on Autogenous Bone Grafts of the Skull, illustrating some of his cases with roentgenograms. Discussion by Drs. Herold, Ragan, Rutledge, Johns, Bodenheimer.

Dr. W. J. Sandidge read a paper, "Outline of Parish Health Work," in

which he told of the health work being done in the parish, how it is being done and what is hoped to be accomplished in the future. Discussion by Drs. Herold, Lloyd, Knighton, Yearwood, Bodenheimer.

There were no clinical cases.

Written communications. A letter from Paul W. Geddes, D. O., was read calling attention to Jim O'Connell's Spine Massage Parlors. Discussion by Drs. Bodenheimer, Lloyd, Knighton, Morrell. A motion was passed that the secretary be instructed to write to Dr. Geddes that the president of the Louisiana State Board of Medical Examiners is the proper person to report this matter to.

A letter was read from Dr. P. T. Talbot secretary of the Louisiana State Medical Society calling attention to the fact that the Executive Committee does not feel that Dr. L. E. Litton is practicing non-sectarian medicine. A motion was made seconded and passed that the secretary be instructed to write to Dr. Litton that if he is practicing the Abrams method of diagnosis and treatment he is not practicing non-sectarian medicine and therefore he is no eligible to membership in the Louisiana State Medical Society which of itself means his ineligibility to membership in the Shreveport Medical Society.

#### *New Business.*

A motion was made, seconded and passed that the Society hold a social meeting in August and that the arrangements be left to the Entertainment Committee, consisting of Dr. Sanderson, Blackman and I. H. Smith.

Dr. Cassity made a motion, which was seconded and passed that the social meeting in August be held on the Youree Roof.

On motion the Society adjourned.

ROBT. T. LUCAS, Secretary.

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#### NEW MEDICAL BUILDING.

The new Medical Building opposite Touro Infirmary is completed, and will be ready for occupancy October 1st. Many physicians located in offices in the downtown section of the city will move into this building in the next few weeks.

Removals—Dr. J. D. Gladney, from El Paso, Texas, to Homer, La.

Dr. F. E. Lamothe moved from 1226 Maison Blanche Building to 402 Nola Building.

Died—Dr. William T. Patton of New Orleans, La., September 5th, 1923, at Rochester, Minn.

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#### AUGUSTUS McSHANE, M. D., 1862-1893.

Editor and Publisher of the New Orleans Medical and Surgical Journal, July, 1891-July, 1896.

Friday, September 14, 1923, the daily press announced that after a prolonged illness, Dr. Augustus McShane, aged 62 years, had passed away to eternal rest, in the early hours of the morning. On Saturday, September 15, his mortal remains were buried in the family vault at Greenwood Cemetery. The mortuary casket was covered with beautiful floral offerings from many sorrowing friends, among whom were the leading representatives of the medical profession, the New Orleans Medical and Surgical Journal, Orleans Parish, State Medical and other organizations, social and political, of which he was on honored member. All had assembled at his home and at the grave to testify to the grief of the community and to express their deep sympathy to the bereaved family.

The funeral services were presided over by the Rev. Francis Moore assistant rector of the Trinity Episcopal Church of which Dr. McShane had been a communicant for over twenty-five years.

Dr. McShane is survived by his widow (nee Miss Harriet Butler, of New Orleans) and five children—Edward, Edith, Rudolph, Nealy and Kathryn.

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#### PROCEEDINGS AVOYELLES PARISH MEDICAL SOCIETY.

The Avoyelles Parish Medical Society met in regular session in the Merchants and Planters' Bank Building, Bunkie, Thursday, August 9th, 1923, at 8:30 p. m. Previous to the meeting the society was tendered a sumptuous repast at the Paramount Cafe, under the



auspices of the local medical profession.

The following members answered the roll call: Drs. Beridon, de Nux, S. J. Couvillon, Ducote, Roy, Fox, Plauche, W. F. Couvillon, Chatelain, Poret, Quirk, Jeansonne, Jones, Matthews. Absentees: Drs. Barbin, Tarleton, Buck, Lafargue. Guests: Drs. Caldwell, Haas and V. E. Miller, State Director of Health Units.

Dr. E. S. Matthews, essayist, read a very interesting paper on "Burns" and recommended the Ambrine treatment as a sheet anchor in the handling of burns in its various degrees. The discussion was opened by Dr. K. A. Roy, who in addition to Dr. Matthews' treatment, recommended the prophylactic treatment of tetanus with serum. Dr. Fox suggested the use of unguentine as a medicament for burns and the application of zinc oxide adhesive plasters as a means to hasten granulation. Dr. S. J. Couvillon and Dr. Caldwell discussed the pathology and complications following burns. Dr. Beridon recommended that in addition to burns, ambrine was a splendid local treatment for herpes.

Dr. W. F. Couvillon presented very valuable notes on "Our errors in diagnosis". The subject was interesting and the discussions proved to be a veritable symposium indulged by all members present.

Dr. V. E. Miller, State Director of Parish health units and Louisiana representative of the Rockefeller Foundation fund delivered a very interesting talk along his line of work. His points were well taken, but owing to the financial depression of Avoyelles parish at this time, the matter of forming a health unit for Avoyelles was deferred.

A committee composed of Dr. G. R. Fox, S. J. Couvillon and Dr. S. De Nux were appointed to draft resolutions of respect on the death of President Warren G. Harding, whose remains at the time of this meeting, are lying in state in the rotunda of the National Capitol, and present them at the next meeting.

Owing to a double duty incumbent upon him as Councillor of the Eighth District and co-editor of the New Orleans Surgical and Medical Journal, Dr. S. J. Couvillon, who for the last nine

years has been Secretary-Treasurer of the Avoyelles Parish Medical Society, tendered his resignation to take place at once. After some objection, the society reluctantly accepted the resignation and Dr. G. R. Fox of Moreauville was elected in his stead to fill the unexpired term.

As per invitation tendered by the local profession of Moreauville, the next meeting of the society will be held there, October 11th, at 7 p. m.

Dr. R. G. Ducote will present a paper on "Rheumatism, Cause and Treatment." Dr. L. Chatelain will open discussion.

**STATISTICAL DATA FOR THE MONTH OF AUGUST 1923, OBTAINED FROM THE RECORDS OF THE CITY BOARD OF HEALTH.**

Births, male, white, 328; female, white, 319; by physicians, 566; male colored, 154; female colored 134; by midwives, 369.

Total,	935.	
Stillbirths:	55.	
Cases	White	Colored
Diphtheria .....	1	0
Typhoid .....	0	0
Malaria .....	0	0
Scarlet Fever .....	0	0
Whooping Cough .....	0	4
Influenza .....	0	1
Measles .....	0	0
C. S. Meningitis .....	1	0
Tuberculosis .....	29	22
Deaths	White	Colored
Cancer .....	27	16
Apoplexy .....	26	15
Endocarditis & Myocarditis .....	3	6
Angina Pectoris .....	7	0
Other Circulatory Diseases ..	59	60
Bronchopneumonia .....	5	8
Lobar Pneumonia .....	3	10
Other respiratory diseases..	0	2
Diarrhoea, and Enteritis....	6	8
Appendicitis .....	4	2
Other Digestive .....	16	8
Acute Nephritis .....	3	6
Chr. Nephritis .....	10	10
All other Genito-Urinary Diseases .....	2	3
Puerperal State .....	6	4
Malformations .....	20	13
External Causes .....	23	20

Death rate per 1,000 per annum for the month; non-residents excluded:  
 White ..... 11.72      9.86  
 Colored ..... 26.62      23.01

Total ..... 15.95      13.41  
 Deaths from premature births, violence, etc., are not excluded.

EMILE LOUIS,  
 Statistician, City Board of Health.

### CHIROPRACTIC STUPIDITY.

"Chiropractic teaches that small pox is the result of poisons accumulating in the body because the organs of elimination are not functioning properly... We teach that the reason the bowels and kidneys do not work right is because the functional impulse does not reach these organ, due to the fact that a vertebra in the spine is misaligned..... This adjustment of the vertebrae is the chiropractor's work"... and so on and so forth.

The above quotations are taken from a full page advertisement of the Universal Chiropractors' Association, which appeared in the October 1923 number of the Photoplay Magazine. This advertisement is an attack on vaccination which seeks support of the art or humbug of chiropractic by citing misleading information from authoritative and doubtful sources.

The first of these citations emanates from Dr. Walter Hadwen M. D., M. R., C. S., of Gloucester, England, whose doctrine purports to have been expounded before a public meeting in Los Angeles, Calif., June 16, 1922.

This illustrious but erring colleague is reported to have told his audience, whom he calls his "friends", that "the whole wretched vaccination and inoculation system is based upon superstition" and further he renders public thanks to God that "we have carried a law in my country that no one need be vaccinated", and accordingly 75 per cent of the children ARE NOT vaccinated. Never in history has there been so little small pox in England. "It is practically non existant" and yet this man comes from a city in which but a few short years ago 279 unvaccinated children as against one in 8,000 vaccinated were sacrificed to public stupidity. Similar experience, though not so extensive, has been recorded from Glasgow. We do know that Dr. Hadwen speaks the truth, at least regarding popular disapproval of vaccination.

Paget says in remarking about this opposition to vaccination in England that: "The majority of Englishmen and Englishwomen regard it (vaccination) as they usually look upon the emergency

doors in a theatre, well to have around but not to be used until necessity arises." And after discussing the Gloucester catastrophe, Paget further dolefully remarks: "We are taking the risk of disaster, and are taking it with our eyes open...." As he sums up the situation, England with its closely packed teeming masses is gambling with destiny. It is a gamble in which the people and especially the congested population is likely to lose. It is taking a chance that a mild unrecognized case of small pox may start an epidemic which would endanger great cities and spread throughout the country. We are astonished to learn that in the country of Jenner where, if in any country, the advantages of vaccination should be most thoroughly understood and appreciated by the people there is an active resistance prevalent which makes compulsory vaccination a condition impossible of execution.

Then there are facts published by the Advertisers Protective Bureau of the Kansas City Advertising Club, the secretary of which is George M. Husser 801 Graphic Arts Bldg., Kansas City, Mo.

The main disturbance in the mind of Mr. Husser centers around the facts that of 200,000 estimated vaccinations which are said to have been made in 1921, the fees charged varied from 25 cents to \$5.00 and the public is believed to have parted with nigh onto \$500,000. Furthermore some people suffered severely from the after effects of the vaccination, though, be it said no deaths are claimed. Worst of all this vaccination furor caused numbers to imagine they were suffering from symptoms of the dread disease "and desired medical advice, which added to the cost."

There are no comments necessary on these statements. They are simply puerile vaporings which in no way controvert accepted medical facts.

A little more startling, though by no means convincing, are the statements purporting to have been derived from the Masonic Observer of Minneapolis of December 17, 1921 and January 14, 1922 from a special mission of investigation in the Philippine Islands under the leadership of General Wood and finally a quotation from "Physical Culture" June



1922 on the small pox condition in those misguided islands.

The Masonic Observer is said to have observed that there were 60,612 cases and 43,294 deaths from small pox in the Philippines in 1919. We are told that this is the worst of three epidemics which have visited the island since 1905.

During the latter epidemic the mortality is stated as having been 65 per cent whereas in the previous ones it ranged between 16 and 50 per cent. All this since the occupation by the United States and after universal vaccination is supposed to have been introduced.

This report which furnished new ammunition for anti vaccinationists and the reply to it by Victor Heisser, one time Health Officer of the Philippines, is not entirely unknown to us. Let us see what Heisser has to say on the subject.

The fact that the deaths occurred is not contested by Heisser, but that vaccination proved powerless to prevent them is strenuously denied.

It is claimed by Heisser that during the Spanish regime there were more than 40,000 deaths annually in the Philippines, but later where the vaccination was properly carried out the disease disappeared.

As an example of the beneficial results following the vaccination campaign Heisser and his co-worker, Leach, point to the reduction in the death list for the provinces surrounding Manila. Prior to vaccination 6,000 persons died every year. Afterward the rate declined to almost zero. While the deaths that formerly reached nearly 40,000 were reduced to a few hundred.

The difficulties which attend vaccination in the Philippines are great. In the first place the temperature which ranges from 90-100° F the year round soon brings about a deterioration of imported vaccine. Another difficulty and, doubtless one upon which the antis pounced with great glee, is the record of thousands of vaccinations WHICH NEVER TOOK PLACE. The vaccinators and health officials frequently reported thousands of vaccinations in excess of the population. Vaccine was not infrequently found in the waste paper baskets.

Tabulations show that the percentage

of deaths among the unvaccinated was 93 per cent, while only 7 per cent of the vaccinated died of small pox.

As Heisser and Leach remark it is regrettable that such half truths should reach the United States and be utilized in an irresponsible manner in order to discourage vaccination.

The following conclusions of Heisser and Leach are worthy of quotation:

"Vaccination is the greatest safeguard against small pox.

"In countries like the Philippines tremendous catastrophies occur unless the entire population is thoroughly vaccinated against small pox.

"Millions of vaccinations have been made in the Philippines without loss of life or limb or any observable effect on health.

In the past those who have advocated the abolition of vaccination have been the cause of many deaths among the unvaccinated. In view of the frightful loss of life that may occur in small pox epidemics they are assuming a grave responsibility if they continue their campaign."

When we note the effect of compulsory vaccination on the morbidity and mortality statistics of this disease in Germany and Austria and compare this data with that emanating from other countries of the world, we are at an utter loss to grasp the mental process by which the anti-vaccinationist arrives at his conclusion.

Still more curious the fact that his rapid arguments prevail among law makers over the scientific and rational judgment of men who ought to know.

The pseudo sentiments of the chiropractor cult as set forth in the advertisement alluded to, would not be worthy of a second thought were it not for the fact that they appear in a journal which has a wide circulation among the general public and the contents is devoured by a class not overburdened with a surplus of critical sense. It is very likely to prove a real danger to those whose warped judgment does not permit them to distinguish between the true and the false.

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Removal—Dr. I. E. Siess, from Alco, La., to Alexandria, La.

## PUBLICATIONS RECEIVED

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W. B. Saunders Company, Philadelphia and London: *Excursions into Surgical Subjects*, by John B. Deaver, M. D., Sc. D., LL. D., F. A. C. S., and Stanley P. Reimann, M. D.

C. V. Mosby, Company, St. Louis: *Chemistry for Nurses*, by Fredus N. Peters, A. M., Ph. D. *Principles of Bacteriology*, by Arthur A. Eisenburg, A. B., M. D. *Obstetrics for Nurses*, by Charles B. Reed, M. D.

P. Blakiston's Son & Company, Philadelphia: *Ophthalmic Surgery*, by Dr. Josef Meller, edited by Dr. William M. Sweet. *The Development of the Human Body*, by J. Playfair McMurrich, A. M., Ph. D., LL. D.

Rebman Company, New York: *A Clinical Guide to Bedside Examination*, by Dr. H. Elias, Dr. N. Jagic, Dr. A. Luger, arranged and translated by Wm. A. Brams, M. D.

A. F. Pattee, Mount Vernon, New York: *Practical Dietetics-Diet in Health and Disease*, and *Teacher's Dietetic Guide*, by Alida Frances Pattee.

The Year Book Publishers, Chicago: *Practical Medicine Series, Vol. 1, 1923. General Medicine*, by Charles L. Mix, A. M., M. D.

Ophthalmic Publishing Company, Chicago: *Ophthalmic Year Book, Vol. XIX*, Edited by Edward Jackson and William H. Crisp.



# New Orleans Medical

and

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In Memory of  
DR. AUGUSTUS McSHANE,  
(1862-1923).

Editor and Publisher of the New Orleans  
Medical and Surgical Journal (July  
1891—July, 1896).

(A brief notice of the death and funeral of Dr. Augustus McShane appeared in the last issue of the Journal. But apart from the sympathy and condolence expressed to the bereaved family, the Editor felt that something more than a passing notice was due to the memory of one who, for nearly four decades of loyal service to the profession, during which he had participated in many of the movements which have marked the progress of medicine in this community and state,—should be honored by a more personal tribute of his sterling worth. The readers of this Journal (which he owned and edited during five years), among whom are so many of Dr. McShane's pupils, associates and personal friends will no doubt share our pleasure in the publication of the following biographic sketch by Prof. Matas which reflects in many ways the warmth of friendship and affection that Dr. McShane inspired in those whom he held close to his heart.—The Editor.)

"I know thy works and  
charity, and service."  
Rev. 2, 19.

Dr. McShane was born in New Orleans on January 31, 1861, and was approaching his sixty-third year at the time of his death. He was of direct Irish descent on the paternal side. His father, Edward McShane, was born in Liverpool, England, in 1824. He became a permanent resident of New Orleans in 1848; was naturalized as an American citizen in 1853, and died in 1886, four years after Dr. McShane's graduation. Edward McShane had been a contractor and real estate agent, but soon entered the service of the Illinois Central Railroad and remained an official of this road until his death. He was an unpretentious man of modest educational attainments, but possessed of an unusual intelligence and common sense. He was universally re-

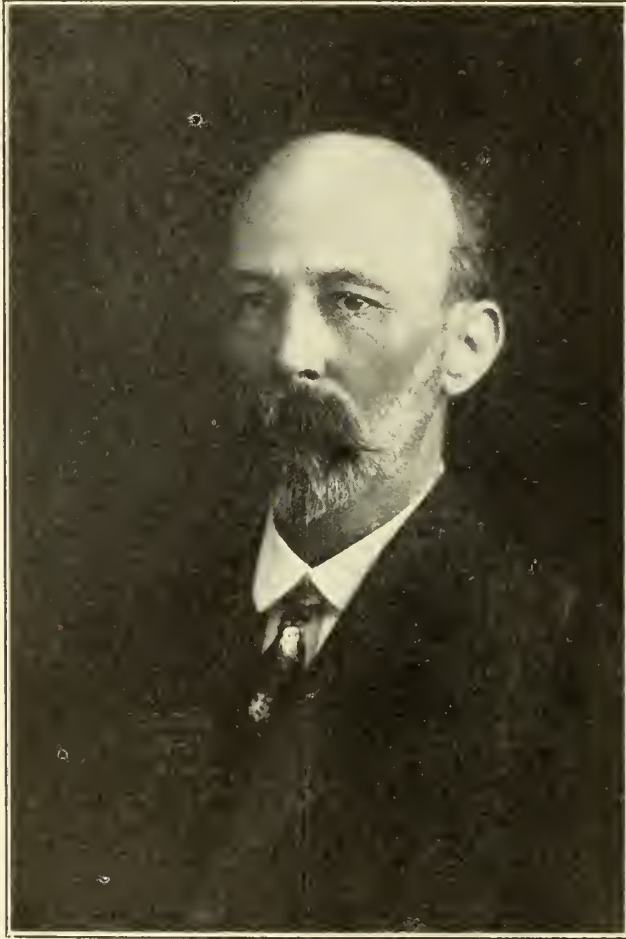
cognized as a man of absolute integrity and exemplary habits. Dr. McShane regarded his father as his wisest counselor, and his death, at the very inception of his professional career, as a veritable calamity which he never ceased to deplore throughout his life.

As is told in Fortier's Louisiana Biographies, Edward McShane traced his lineage to Shane O'Neill of Shane Castle, County Antrim in the north of Ireland. Dr. McShane's mother, Lydia Ann Chapman, was of English stock. She died in 1875, when Dr. McShane was scarcely 14 years old. Her ancestors came to this country from Hull, England, in 1639. They settled in Massachusetts, where the Chapman family had been intimately associated with the history of that state. Dr. McShane's great grandfather, Daniel Chapman (1740-1779) served as a soldier in the Revolutionary Army. He located at Boxford, Mass., in 1864, and there resided until the time of his death. He twice represented his district in the Massachusetts legislature. Several of the members of the Chapman family served in the Revolutionary Army, and it was through this connection that Dr. McShane was a member of the sons of the American Revolution.

Dr. McShane was educated in the public schools of New Orleans and finished in the Boys' High School. His medical education began in 1879 when he entered the medical department of the University of Louisiana (now Tulane). He was graduated M. D., in 1882, after serving an internship at the Charity Hospital for two years. He was quarantine officer of the Louisiana State Board of Health at Port Eads in

1884 and at Pass a l'Outre for the following two summers. In the meantime he was preparing himself for the specialty of the Ear, Nose and Throat, which was beginning to receive recognition as a distinct specialty through the pioneer efforts of Dr. de Roaldes—the recognized father of the specialty in New Orleans. When through the personal efforts of this extraordinary

he was appointed assistant demonstrator of Anatomy in the Medical Department of the University of Louisiana and served in this capacity for nearly ten years (April, 1885-September 28, 1894). He resigned in order to devote himself to his growing practice, when the writer, then demonstrator in charge of the anatomical laboratory, was promoted to the Chair of Surgery.



**AUGUSTUS McSHANE, M. D., 1862-1923**

Editor and Publisher of the *New Orleans Medical and Surgical Journal*, July, 1891-July, 1896.

leader, the first Eye, Ear, Nose and Throat Hospital was established in this city on December 5th, 1889, Dr. McShane was ready to co-operate with his chief as his first assistant. He served faithfully and gratuitously in this institution for twelve consecutive years. In late years he served as visiting laryngologist to the Charity Hospital, six years (1909-1915). In April, 1885,

While still an interne at Charity Hospital, Dr. McShane had identified himself as one of the small circle of young medical friends who circled about the home life of Dr. H. D. Schmidt, for over fifteen years the pathologist of the Charity Hospital, and for over a quarter of a century known all over the country as a histologist and pathologist of rare ability. Though



scarcely known to the men of the present generation, Dr. Schmidt was the most conspicuous and, in fact, a unique figure in Louisiana and the South, as the only specialist exclusively devoted to microscopy, pathology and bacteriology in his day. Stricken by a most virulent type of arthritis deformans, which had crippled practically every joint and left him an invalid for many years, he was literally pinned to his laboratory chair with no power of locomotion other than that which was furnished by the wheels of the rolling chair in which he moved from the Charity Hospital to his home near the hospital. Notwithstanding these seemingly invincible obstacles, Dr. Schmidt was cheerful, resigned, and adapted himself with marvellous ingenuity to his handicaps and by working incessantly and enthusiastically, poured a steady stream of original contributions in hematology, neurology, comparative anatomy, embryology and gross pathology, which were unexcelled in the literature of his time and gave him a well deserved national and international reputation. In consequence of his infirmities it was impossible for Dr. Schmidt to attend medical meetings, but his yearning for sympathetic companionship led him to encourage the formation of a little coterie of young medical men whom he rewarded for their loyalty by admitting them to his inner sanctum. It was at his home, not far from the Hospital, that he, aided by his good and devoted wife, dispensed and retailed to us his vast store of lore in pathology and allied subjects, especially in the domain of evolution and positivistic philosophy in which he had unalterable convictions. In this way, a small, but congenial club was formed by his favorite internes who, after their graduation, continued to frequent his hospitable home. Thus it happened that Dr. Schmidt's home became the regular meeting place for the internes and ex-internes of the Charity Hospital, who in the 80's kept up their interest in microscopy and pathology through Dr. Schmidt's encouragement and hospitality. This informal nucleus of a club was dubbed the New Orleans Pathologic Society with Dr. Schmidt as perpetual presi-

dent, and Drs. P. E. Archinard, F. W. Parham, A. McShane, H. William Blanc, Ernest Laplace (now of Philadelphia), Henry D. Bruns, George B. Lawrason, and the writer, were the most faithful members. The club met periodically and was continued until the last illness of the venerable president which ended his life in January, 1889.

It was to the inspiration and experience gathered by this close contact with an exceptionally competent and enthusiastic teacher that the group of men above mentioned obtained their first knowledge of practical microscopy and pathology and which served as a foundation to many of these in their later professional activities.

It was through Dr. Schmidt's example and influence that Dr. McShane developed a strong taste for, and ability in clinical microscopy for which he retained a decided leaning throughout his life. He taught clinical microscopy in the quiz class which was organized in the medical department in 1886-1887 by the same group of ambitious young teachers.

It was on August 28, 1890, while Dr. McShane was assistant pathologist at the Charity Hospital (Dr. H. D. Bruns having succeeded Dr. Schmidt as Pathologist) that the first case of infestation with the *Filaria Sanguinis Hominis* was recognized in Louisiana. A young Cuban cigar maker, suffering with a chylocele of the tunica vaginalis testis, was admitted to the writer's surgical service at the Charity Hospital. The disease had been contracted in Cuba, and the parasitic nature of the chylocele was strongly suspected. The presence of the *filaria sanguinis* in the United States had been previously discovered by Dr. John Guiteras at Charleston, S. C., in 1886, and its endemic prevalence in the South Atlantic States had been demonstrated by De Saussure of Charleston, in residents of that city in a series of observations from 1886 and 1890. Dr. William H. Mastin, of Mobile, had also reported in 1889 a case of Filariasis in which the parent and embryo parasite had been identified in a chylocele of the scrotum. These discoveries in quick succession had developed in the South a keen interest in the lymphatic lesions and diseases caused by

this extraordinary tropical parasite and its intermediary host, the mosquitoes. Therefore when this patient was admitted to the writer's service at the Hospital his mind was well prepared for the discovery of the filarial embryo in the fluid of the chylocele and in the blood of the patient by Dr. McShane, to whom the microscopic search for the parasite had been entrusted. Dr. McShane's very lucid and complete report of his most interesting finding of embryo filariae in the blood of the patient in a series of observations made at night is a most interesting document. It is quoted in full in the writer's essay on filarial disease as illustrated by this case, which was published in the *New for January, 1891*. This incident is cited to show not only Dr. McShane's Orleans Medical and Surgical Journal thorough competence and ability as a microscopist and laboratory worker, but to give him just credit for his participation in a discovery which is important in the history of parasitology in Louisiana.

A year after the New Orleans Polyclinic (now graduate school of Tulane) was organized and in its rise and development, Dr. McShane took a very active part.

He first taught in the laboratory of clinical microscopy and he subsequently limited his teaching to otology, laryngology and rhinology in association with Dr. de Roaldes at the Senses Hospital and continued to serve in the latter capacity for twelve years when he was compelled to resign on account of ill health.

He became sole editor and publisher of the *New Orleans Medical and Surgical Journal* in 1891, and continued in charge of the *Journal* until July, 1896, when the ownership was transferred to Drs. Chassaignac and Dyer. He was for three years Secretary of the Orleans Parish Medical Society and by reason of his connection with the *Journal* and the Medical Society was able to very considerably increase the membership of the latter.

In the midst of these numerous occupations he found time to cultivate his tastes for medical literature by writing frequent reviews and translations from German, French, Spanish and Italian

journals, a reading knowledge of which he had acquired with wonderful facility and through his own auto-didactic efforts while still an undergraduate interne at Charity Hospital. After he had acquired a good working knowledge of the more familiar European languages he seemed to amuse himself by making translations from the Dutch and Scandinavian authors—Swedish, Norwegian and Danish. He often said that if he could only have spared the time he would have expanded his translating capacity to the Russian and Chinese which he had investigated sufficiently to satisfy him that he could acquire enough readily for practical medical purposes. No one who knew his genius for languages could doubt for an instant his perfect ability to make good any claim that he might make in this direction. He was a born philologist and the mastery of foreign languages was all play for him, and his numerous contributions, which are embodied in the columns of this journal for nearly forty years following his graduation in medicine, attest to his omnivorous reading as well as to his polyglot versatility. Apart from his translations and editorials, his original contributions to medicine, while not voluminous, comprise a wide range of subjects which make up a diversified bibliography and show that though a specialist in his chosen field—Laryngology and Rhinology,—his inquiring mind had surveyed the whole field of medicine.

When he became editor of the *Journal* he was a young man full of enthusiasm, energy and ambition, but like so many medical editors—with practically no experience in journalism and still less in its financial problems. However, he brought to the editorial chair a fine brain, a progressive spirit and an independent mind free from partisan bias or prejudice, bent solely upon service to the medical profession of this city and state. He was always ready to champion any cause or measure that he thought 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, attest to his courage and his fidelity to 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. He took a great interest in public affairs and, though not a politician, he showed the same independent spirit that he did in his profession. He enthusiastically entered into every reform movement organized to improve the administration of the city. He never thought of the sacrifice and cost of his devotion. He knew nothing of craft, cunning or intrigue to gain a point or to favor his private ends and, in this sense, he was no diplomat. He gave his time and talent without stint and without thought of material compensation, and, in this way, again he was quixotic, improvident and failed to cultivate a plethoric bank account. This disinterested and idealistic attitude he displayed in his practice. He treated a daily throng of patients gratuitously to the detriment of a paying clientele solely because of his deep sympathy with the poor and the working classes and the love of the work itself. He found sufficient reward in the solution of the many varied and technical problems that his clients brought to him. He loved his work passionately, very much as a clubman loves his cards, a golfer his links, a sportsman his gun and dogs, or a fisherman his rod and fishing tackle. His diversions were chiefly found in the periodical literature and his favorite authors. After marriage, in 1903, he found his greatest comfort and solace in the bosom of his family.

His splendid memory which served him so well in his philologic acquisitions was also displayed to advantage in many other ways. During the three

years that he was secretary of the Orleans Parish Medical Society (1893-95) there were no paid official stenographers to report the proceedings as at present. His reports, however, were remarkable for their fidelity and completeness. Diphtheria and its treatment with antitoxin was at that time the one subject that dominated all other discussions at the Orleans Parish Medical Society, and Dr. McShane's reports which appeared in the *Journal* at the time, are a fair example of his extraordinary reportorial ability. And yet he took but few notes, only headings; the rest he did from memory and with a detail that was amazing to those who had listened or participated in the animated and intricate debates that held us for many long hours at the meeting place.

As demonstrator of anatomy during the ten years that he was assistant to the writer in teaching the dissecting classes in the old building on Common street,— which is now occupied by the Tulane and Crescent Theaters—his exceptional capacity for acquiring and storing knowledge was also characteristically displayed.

When he first came to the dissecting room he was so thoroughly prepared and "loaded" with the knowledge that he had acquired by arduous preparation, that in going over a dissection his recapitulation of the anatomy of the parts sounded like a perfect barrage fired in a series of quick volleys with so much profusion and detail that the students held their breath in sheer amazement at his extraordinary accomplishments. To them he was a ambulant, living "Gray." It was only after a longer experience that he learned to curb his impetuosity and to retail his large stock of information in smaller quantities so that the students might digest and absorb them. He always spoke in short, quick, staccato sentences; all pithy and with definite meaning. When he delivered his messages to the students he spoke fast and copiously, not through any pedantic desire to impress his audience with his learning, but merely that he was all aquiver with the very exuberance of his knowledge. His absolute honesty, which would never allow him to evade a diffi-

cult question with a "bluff", or with subterfuge (not an unknown refuge to embarrassed teachers) led him to immediately investigate any doubtful question with the aid of all the authorities that he could put his hand on. His gentleness and patience in helping men over difficult pieces of work, together with his ready wit and genial good fellowship, won the universal affection and respect of the student body. It was during these nearly ten years of almost daily contact, during the winter sessions of the Medical School, when Dr. McShane was associated with the writer in the teaching of practical anatomy on the cadaver that he had ample opportunity to become intimately acquainted with him and to appreciate his many lovable qualities. We would work with the classes from 7 p. m. to 10 p. m. every night, except Saturdays. At the close of the exercises we would wander out together for a refreshing stroll, usually stopping at some neighboring restaurant for a light supper, where we enjoyed the greatest relaxation after the hard work of the evening in our talks over the coffee cup. And I say coffee cup advisedly for while "Mac", as he was affectionately called by his nearest friends, was a good eater, he was not a drinker; in fact when it comes to spirits, he was sobriety itself. We were both young, enthusiastic and thoroughly in love with our work. His unflinching cheerfulness, optimism and good humor were contagious and with a liberal sprinkling of his Irish wit no other stimulant was needed to give zest to the amenities of the evening. There was no end to the variety of topics that we discussed, but his hereditary love of Ireland showed itself in his frequent excursions into Irish history and in his quotations from the Gaelic literature, in which he revelled with the fervor of an impassioned devotee.

We often parted at midnight and more than once had to be politely reminded that it was time to close the shop, before we parted. The delightful comradeship of those early days remains a treasured memory. The chill and the frost of ten gray winters is forgotten and only the warmth of the glow of that loyal friendship which sprang

by the fireside of our mutual sympathies and aspirations endures as bright and sweet as the sunlit morning of a Southern Spring Day.

As time went on, Dr. McShane's numerous and constantly increasing activities kept his sensitive and responsive brain in a state of sleepless tension and this together with the financial disabilities which logically followed in the prodigal abuse of his physical and mental energies in the pursuit of his endless charities, led to a neurasthenic "break-down," which threw him into a state of invalidism. This threatened his usefulness for many long, weary years, and compelled him to resign from the official positions which he had filled with great efficiency and distinction. Thanks to the faithful nursing and loving care of his devoted wife he was restored sufficiently in health to partially resume the practice of his specialty and to teach in 1915 and subsequently, in the laboratory of hygiene and tropical medicine, at the medical school.

Unfortunately, just as the dawn of a new day had brightened his hopes and of those dearest to him, with a promise of a clear and cloudless sky, he was stricken in 1918 with a grippal endocarditis which permanently crippled his heart and blasted the hope of his friends for a return to his former activities. For five years he was conscious of the great uncertainty that hung over his fate, but in spite of the constant forebodings of an approaching end he bore his sufferings and trials with his accustomed cheerfulness and optimism. The end came suddenly, but not unexpectedly, in an attack of angina in the early hours of the morning of Friday, September 15th.

"He had been comrade long;  
We fain would hold him still;  
But, though our will be strong,  
There is a stronger Will."

"Beyond the solemn night  
He will find morning-dream,  
The Summer's kindly light  
Beyond the snow's chill gleam."

RUDOLPH MATAS.



CICATRICAL STENOSIS OF ESOPHAGUS FOLLOWING SWALLOWING OF CAUSTIC ACID.

BY WILLIAM BEVERLY WHITE, M.D.,  
SHREVEPORT, LA.

During the past few years there has been considerable agitation on this subject fostered by a few physicians who are interested in this line of work, but due to a lack of adequate co-operation on part of the profession, very little has been acutally accomplished. At the last meeting of the A. M. A. a committee reported on an investigation as to probable lye legislation, and advocated in their report "publicity"; in other words: bring this subject to the people appraise them of the everlurking danger of various "concentrated lye", and show them the sequallae and fatal results which follow the ingestion of caustic alkali.

We know that concentrated lye con-

How many times utensils are used to measure and dissolve the powders, then carelessly left about the house without rinsing. The contents are swallowed by mistake for water or milk. Or they may be left within reach of children who pick up the tin and drink some of the contents. These are not theoretical conditions, but actual cases as are exemplified in the case reports.

The children of the poorer class are the unfortunate sufferers in nearly all of these cases, inasmuch as families have these lye compounds around for cleaning purposes or making of soap; not knowing the dangerousness of the contents, cans are left around the house within easy reach of children. Less of these accidents would happen if they were conspicuously labeled—"POISON".

The druggist cannot dispense a poison without placing a prominent label on same, but the lye preparations with their inadequate labels are found in the kitchen openly inviting calamity.



Fig. 1.—Note placing of the Inadequate Poison Label.

tains about 94 per cent sodium hydroxide, a most destructive corrosive. Various cleansers range from 8 to 50 per cent of caustic alkali. Powerful alkali can be purchased at any grocery store and the label on the package may not give any warning of its poisonous contents, but if perchance it does, it is so placed that it does not impress the purchaser of its dangerous contents. Just read some of the labels: "will not injure the most delicate fabrics", "will not injure the hands."

The most prominent men in this line of work have exercised their agencies with the packers as to proper labeling, but it came to naught. Manufacturers of cleansers or concentrated lye preparations claim their preparations are harmless, therefore do not need any warning, but the data on this subject shows that the committee sent out 1,448 inquiries to esophascopists and surgeons and obtained from them report of 490 cases. Continuing along this same line of reasoning, if you consider that but 1 per cent of the medical profession was reached, it is immediately

apparent how frequently this calamity actually happens.

Another difficulty which prevents legislative action is due to the interpretation of "poison" in the laws at present in force. Here in Louisiana the statute states: all poisons must be labeled with skull and crossbones, but the crux of the situation is—what is a "poison?"

The Pennsylvania statute defines "poison", as any substances which will cause death when used in quantities of 60 grains or less, and this has been suggested as lethal dose.

The suggestion that the public be appraised of the ill results of these various compounds, will in due time cause the people to press their legislature to have the necessary laws made to protect their welfare.

The symptoms of these distressing conditions are very apparent. Have the usual history of swallowing concentrated lye. In the first stage have acute symptoms, as dysphagia, regurgitation.

Swelling and sloughing of the mucous membrane, as these ulcerated surfaces heal cicatricial tissue forms which as it contracts varying degree of stenosis results; the loss of weight varies with degree of obstruction. The esophagitis which follows in the wake of some of these conditions, is due to stagnation and fermentation of food in the esophagus. May have considerable swelling, thereby adding more difficulty to the already small lumen stricture. It may be imperative to perform a gastrostomy, thereby putting the esophagus at rest, dilation being resumed in a few days.

The prognosis depends on the calibre of the stricture. In small lumen and untreated the mortality is very high, but much can be offered as to ultimate restoring of the esophageal wall to a functioning organ, if same is treated early before extensive fibrous changes manifest themselves.

In the treatment, blind methods of dilation should be discarded for the more accurate esophagoscopical dilation, as per method of Jackson.

The following cases will serve to emphasize the seriousness of this situation, which we are endeavoring to impress upon the medical profession:

**Case 1, H. A. (col) age 2 yrs.**—On the day previous to patient's being brought to the hospital, mother was doing the family washing and left a can of **Rex Concentrated Lye** on a chair. The patient reached and obtained the can of lye and before the mother could get same away from it, had put the can to its mouth and drank some of the contents. On admittance, mouth, tongue, and pharynx were very red, swollen and bleeding at places. Patient experienced great pain. Very restless. T. 100, 6, P. 20, R. 24. The parents of the child took him home on third day against advice of authorities.

This case shows the acute symptoms of these cases. If this child was fortunate enough **not to have swallowed** any of this substance, then we may expect no further trouble; but, **if he did**, he will sooner or later fall in a category of the previously mentioned cases.



Fig. 2.—Case 2.

**Case 2, O. W. age 20 months.**—About four months ago swallowed some **Eagle Lye**. Usual symptoms following this, later sent to a distant city for treatment. Returned home after a sojourn of one month, as improved. During last two weeks patient had more or less regurgitation of liquid diet, but has not taken and retained any nourishment or liquid for about **48 hours**.

Endeavored to pass bougie but unable to do so. Patient given water per rectum for ten hours to assist in relieving the water hunger. Gastrostomy performed about 60 hours after last nourishment was taken.

Following usual treatment of dilation, we have been able to get No. 20 French through stricture. Nourishment per orum.

**Case 3, M. B. (col) age 4 years.**—Patient accidentally swallowed lye about 8 months ago. Usual symptoms of stricture of esophagus followed.

**X-ray report.**—Slight collection of barium at level with upper part of sternum. Passage to stomach free. Esophagus clear 30 seconds.



Notes—Vomiting daily. Unable to retain solid food, at times unable to retain fluids. On examination noted just about at aorta crossing web-like adhesion extending from ant, right middle line directly back to posterior right border of esophagus. Same was pouch-like in formation. At this seance we were able to get a No. 9 through with difficulty. Patient had relief from vomiting for several days. Dilatation was repeated in five days. Gradually increased in size until inserted No. 14. Vomiting lessened. Dilated again using No. 14. Patient has increased in weight during the months stay at the hospital, and is improved, but not cured. Left hospital to return at later date.

**Case 4, J. H. (158218) age 5 years.**—Three years ago accidentally swallowed some lye. Usual symptoms followed. Vomited at intervals. Following eating, complains of something in throat. Puts fingers to back of tongue, point of inconvenience has suffered but little from malnutrition due to this condition.

**X-ray Report.**—Fluoroscope and plate show a marked irregularity in the esophagus in upper retro cardiac with only a slight stoppage of barium at cardiac. Stenosis very incomplete.

**Examination.**—Esophagosopic met obstruction at crico-pharyngeal constriction, with a decided narrowing of lumen about 1-8 inch in diameter. Usual dilatation, (twice to date). Decided improvement. Patient is on semi-liquid diet and has not vomited in ten days. Patient removed from institution by parents and has not returned for treatment.

**Case 5, A. B. age 12 years.**—Eleven months previous to entrance to hospital, patient, while reaching up to shelf, accidentally spilt can of lye on himself, and having mouth open at time swallowed some of the lye—Eagle Lye.

Had usual symptoms following this. After acute symptoms subsided, he was able to swallow fine granulated foods and liquids, but for last few months he has been having more difficulty in retaining his food. At times fluids will pass through the stricture; at other times will not. He will then regurgitate his food.

On admittance, (sent in as T. B. patient), patient who is 12 years old was so emaciated and weak he was unable to stand without assistance. He was put in bed, water and nourishment given per rectum. Reacted favorably. He was unable to retain any nourishment per orum. Decided to have a gastrostomy performed.

**X-ray 7537.**—Stricture of Esophagus on level with 4th rib. With Dilatation above this point, another stricture lower down with dilatation, very small amount barium entering stomach. Patient was put on a forced diet and in two weeks there was a decided change. Usual esophagus examination, and noted a stricture just above the crossing of the aorta, and dilation and second stricture above the crossing bronchus, which occluded the esophagus. Usual treatment by filiform was instituted—treated once or twice per week for six weeks.

He increased in weight and strength markedly, and when last seen the gastrostomy was removed, as patient was able to take fluids and semi-solid food in usual manner. He left the hospital while I was out of the city last summer, but was instructed to return for further treatments. Mother informed us he was sent to a distant city, and is continuing under the usual treatment and is progressing satisfactorily.



Fig. 3.—Case 6.

**Case 6, M. J. age 10 years.**—Noticed a glass containing a milk-like substance. He drank some of it, thinking it was milk. This was concentrated lye. Had usual symptoms following the ingestion of this fluid. Finally came to the hospital six months later. He was emaciated, weak and unable to retain semi-solids or fluids. Due to the extreme condition of the patient, it was necessary to perform a gastrostomy in order to sustain him. During the next two weeks on a regulated diet. Patient improved considerably in physical condition.

**X-Ray Report.** Complete stenosis about 6th dorsal. Very large dilation above extending to the cervical region.

**Esophageal Examination.** Noted Stenosis. About able to insert No. 1 French through with difficulty at following seances. Finally got No. 4 through, but stricture did not maintain the forced lumen. Upon resumption of treatment at later date, noted a marked enlargement of esophagus (dilatation) and unable to find any place in the stenosis which would warrant undue pressure to force an opening. Upon further examination several times, find conditions as previously mentioned, that is—absolute stenosis. Now endeavoring to use the retrograde method, (i. e., through gastrostomy opening), but so far unsuccessful in obtaining opening.

While this appears like a hopeless case, we are not abandoning all hope, regardless of the fact that he has been obtaining all his nourishment through gastrostomy tube for one year.

**Conclusions**—All these cases have come under the observation of the writer during the last nine months. Since presenting these cases, three (3) more cases have been reported. You can readily comprehend, if all the cases in the state were reported, the immense number of these sad conditions we have around us.

Some of these cases can be improved markedly, but at the best, these children are crippled for life. We, therefore, owe it to the community at large, that proper means be taken to protect them.

*Let us have the necessary legislation.*

### ARTHROPLASTY.\*

BY HERMANN B. GESSNER, A.M., M.D.,

F.A.C.S., NEW ORLEANS.

*A contribution from the Surgical Department of the Tulane School of Medicine.*

In this paper it is my purpose to report the cases of arthroplasty that have been under my care, with special reference to the technique and the end results. I shall depart from this purpose only to say that of the surgeons of our generation the one who most merited our gratitude for the development of arthroplasty was the late John B. Murphy of Chicago.

**Case 1. Elbow Arthroplasty.**—E. M., white female, 25 years old, came under observation Oct. 14, 1907. July 14, 1905, she had been shot in the right elbow; ankylosis followed. In 1907, over a period of six months, there had been as many attempts at passive motion under general anesthesia, without any improvement. There was almost complete extension of the elbow, with absolutely no range of motion; pronation was good, supination very limited. Skiagram showed an old fracture of the olecranon process, with a firm fibrous ankylosis. Oct. 17th., under general anesthesia I did a complete excision of the joint, leaving a gap of 1 1-2 inches. The incision was the posterior median. No soft parts were interposed. Passive motion was begun at the end of ten days. Long disuse of the flexor and extensor muscles (over two years) had resulted in considerable atrophy, so that recovery of function was slow; electric stimulation was used to promote this. (It is well before doing an arthroplasty to test the muscles electrically to make sure that they are capable of development. It is possible that after many years muscles may be so far atro-

phied as to offer no hope of adequate recovery.) In this case the end result has been an excellent functioning joint.

According to a report from a relative, received in Feb., 1923, 15 years after operation, the limb is still a very useful one.

**Case 2. Elbow Arthroplasty.**—H. M. D., White Male, 21 years old. A gonorrhoea contracted 4 1-2 months previously had been complicated with a severe arthritis of the right elbow. Mixed vaccines, baking, passive hyperemia had failed to give relief; finally the joint had been opened and curetted; the infection was cured, healing followed, but the patient was left with an elbow ankylosed in the right-angled position, having about ten degrees of motion. He was operated on Sept. 14, 1912 at Touro Infirmary; posterior median incision; humerus left intact, olecranon and radial head removed. A pedunculated fatty fascia flap was used to cover the sawn bones; it was tacked in place with plain catgut. I was able to follow the case for two years after operation. At that time extension was complete; flexion was good enough to permit the patient to place his thumb between the shoulderblades; he was employed as a chauffeur. April 24th, 1923, after ten years, I received the following telegraphic answer to an inquiry "Entirely satisfactory; fine range of action; slightly weaker than before operation."



**Case 3. Jaw Arthroplasty.**—C. G., white, female, aged 13 years, was admitted to the Charity Hospital, February 1, 1916. She presented a considerable degree of ankylosis of the jaw. In fig. 1 it can be seen that her teeth overlapped instead of presenting an interval. The etiology appeared to have been an abscess about the jaw, cause unknown, for which an incision had been made along the ramus some 9 years previously. As the left side showed some motion, the right was selected for arthroplasty. Incision made along zygoma and from the outer end down vertically. The temporal and the mandible (condyle) were so thoroughly

\*Read before the Louisiana State Medical Society, April 24-26, 1923.



fused as to be continuous like one bone, with no cleavage line distinguishable. Sufficient bone was removed with Gigli saw and rongeur to permit the interposition of a finger. Toward the end of the operation the internal maxillary vessels were torn with a so-called blunt hook; the external carotid artery was tied and the wound packed with gauze to control the maxillary vein. Four days later the pack was removed, a fatty fascia flap turned in and tacked along the edges with plain catgut. Recovery followed with an excellent result as shown by fig. 2. A letter from her physician, dated Dec. 1922, reports the mouth in excellent functional condition nearly 7 years after operation.



**Case 4. Hip Arthroplasty.**—B. A., white male aged 22 years. There was complete ankylosis of the right hip, with flexion to about 135 per cent with the trunk. Etiology lay in an attack of typhoid fever 5 years previously, during which infection developed about the joint. Incision had been resorted to several times and small bits of necrotic bone had been removed. Operation at Touro Infirmary Oct. 15, 1919. The steps of the technique as outlined by Murphy were followed out. A large U shaped flap was marked out, base up, convexity down. When it came to separating the skin and subcutaneous fascia from the tensor fascia latae the latter was found extremely atrophic and scarcely distinguishable. The writer intentionally erred in the direction of favoring the deep layer, on which he depended for mobilization of the joint. The result was that a considerable portion of the thin skin flap sloughed. The femoral head was chiseled away from the acetabulum with a curved chisel, after sawing of the tip of the great trochanter with a Gigli saw for exposure of the joint area. When the bony surfaces had been shaped, the tensor flap was placed in position and tacked with plain catgut. Recovery was uneventful except for the skin flap slough above referred to. In a letter dated Jan. 1923, about 3 1-4 years after operation, the patient reports in

detail on present function. He can now do a hard day's work on his cotton farm; can dance, which was impossible before. The motions at present observed are adduction and abduction, and rotation inward and outward, both of these being limited, to a few degrees. It is said that arthroplasty of the lower extremity is apt to give motion of a temporary character, weight bearing on the affected joints causing a return of the ankylosis. I am hopeful that the degree of motion now present 3 years after operation will continue to be observed. The restricted motion I attribute in some measure to the fact that the outline of the head and socket secured by me was oval rather than spherical; perhaps the thin and unsatisfactory cushion provided by the tensor fascia latae contributed to this limitation. It should be added that much of the improvement in this case is due to correction of the flexion deformity.

**Case 5. Jaw Arthroplasty; 2 Elbow Arthroplasties.**—A. A. white female, aged 31 years, when seen in Aug. 1920, gave an unusual history of joint pathology. In June, 1906, at the age of 17 years, she fell ill with typhoid attack, which with relapses lasted 3 months. At the end of that time she had a greater or less degree of ankylosis in practically every joint in the body. When admitted to the Touro Infirmary Aug. 24, 1920, her principal trouble was with the ankylosis of the jaws, which not only made eating difficult, but also interfered with the extraction of some painful carious teeth. Finding quite a degree of motion in the left temporo-maxillary joint, I proceeded to mobilize the right. This was done Sept. 17, 1920, using one half per cent novocain for infiltration. I found the temporal fused with the mandibular condyle, but the outline of the joint preserved. The incision, begun as the typical transverse cut along the zygoma with a limb running vertically down in front of the ear, was modified by adding a vertical cut above the zygoma. Chisel and mallet were used to remove enough bone to permit the width of my index finger to be interposed. A pedunculated fatty fascia flap was turned down between the bony surfaces and tacked along the edges with plain catgut. Recovery was uneventful except for a partial paralysis of the orbicularis palpebrarum which has disappeared in the course of time. The functional result has been very satisfactory. The patient before long was able to do two things that previously had been impossible: stick out her tongue, and chew gum. In Jan. 1923, she was able to have a number of carious teeth extracted under gas anesthesia. The space between the jaws has increased slightly in the two and a half years since operation.

Nov. 29, 1920, I did an arthroplasty of the left elbow following the technique of Case 2, except that the skin incision marked out a rectangular flap. The anesthesia used was infiltration with one half per cent novocain, following an unsuccessful attempt at brachial plexus anesthesia with two per cent novocain. The ankylosis was bony, the bones markedly porotic. As this was her writing limb, and the muscles very weak, I did a very economical resection, for fear of a flail limb. The

result has been only a moderate range of motion, about 15 degrees, but a much more useful limb. July 25, 1922, I mobilized the right elbow, removing a large block of fused bone, about 2 1-2 inches in length, with brachial plexus anesthesia (10 c. c. of 2 per cent novocain with 4 gtt. of 1-1000 adrenalin to the fl. oz.) A triceps flap was substituted for the fatty fascia of the previous operation. A good result was obtained in this case, with a wide range of passive motion and greatly increased usefulness, though active motion is limited by muscular weakness.

#### Case 6. Partial Arthroplasty of the Elbow.

—E. C., white female, aged 40, suffered a fracture of the tip of the olecranon Aug. 10, 1922. Non-operative treatment by extension and passive motion resulted in fibrous union with limitation of motion to between 90 degrees and 135 degrees, Jan., 1923, I removed the tip of the olecranon and turned in a flap of fatty fascia, using a rectangular skin incision; the humero-radial joint was not disturbed. The result has been an increased range of motion, extension being still at 135 per cent, while flexion goes up to about 45 per cent. In this case I observed for the first time the pain on motion which is reported by some authors as due to pinching of the fascial flap between the bone surfaces.

**Case 7. Knee Arthroplasty.**—I have only incomplete data of this case. The patient was a negro male, aged about 17 years, who had had a compound fracture of the femur extending into the knee joint. There was severe infection with a final fibrous ankylosis; considerable scarring of the adjacent skin had resulted from repeated incisions. Operation at the Charity Hospital consisted in dividing the fibrous bands and interposing a fascia lata free transplant, following the technique advocated by McAusland of Boston. The skin closure was unsatisfactory, there was saprophytic infection, the transplant was lost. However the patient, who cannot now be traced, left the service with a slight degree of motion, about 10 degrees, which made his limb much more serviceable. In this connection it is interesting to recall that some writers believe a free transplant survives only a short time, serving to keep the bony surfaces apart while surface cicatrization is accomplished.

**Comment:**—It will thus be seen that my experience covers 9 arthroplasties in 7 patients, 4 complete and 1 partial elbow arthroplasties, 2 of the jaw and one each of the hip and knee. The etiology of the ankylosis was typhoid fever in two, joint fracture in two, abscess, gonorrhea and gunshot wound in one each. The technique employed was that utilizing a pedunculated fascia flap in six cases, a pedunculated musculo-aponeurotic flap in one, a free fascia transplant in one, and in one no soft tissue interposition. Since I did the second jaw operation a technique without soft tissue interposition has been recommended for this joint; I have had no occasion to apply this. The results may be summed up by saying that of the 9 operations 5 have given excellent results (two jaws and 3 elbows), one a good result (elbow) and three have shown enough improvement to justify the

surgical intervention (hip, knee, elbow). There was no mortality.

In conclusion I may say that the mobilization of an ankylosed joint is one of the non-life-saving operations that make life much more attractive to the patient and win his gratitude if he has any in his psychic make-up.

#### DISCUSSION.

**Dr. J. M. Batchelor (New Orleans):** It is not necessary, for the purposes of this discussion, to consider lines of incision or anatomic descriptions, because these operations are now classics and have their place in surgery. It seems to me this discussion now should have for its object a consideration of certain essentials necessary in order to insure the result that the surgeon contemplates. In the first place, the consideration of the joint involved. We know that the joints that give the most gratifying results are the non-weight bearing joints—the joints of the arm, the elbow, the shoulder, and also the temporal maxillary joint. When confronted with an ankylosed joint the question naturally arises as to whether it were better to endeavor to create a mobile joint, or to accept the condition as presented. If the joint be found to be ankylosed in position, particularly a weight-bearing joint, that does not interfere with the usefulness of that member, it is frequently preferable to allow the condition to persist. However, if the joint is ankylosed in a position that interferes with usefulness, then there are certain considerations. In the first place, the musculature. It would be obviously unwise to attempt arthroplasty for a joint which would not be controlled by the muscles after a good joint was secured.

In the second place, the selection of material to be interposed. Numerous tissues have been used, preferably a tissue such as fascia or periosteum, as more adapted to such an operation.

But the success of the operation depends upon the thoroughness with which it is done at the time. Certain things must be secured at the time of operation. In the first place, the proper thickness of flap. If the flap be too thin, if pressure be continued, if there be muscle pulling or insufficient correction of shortening, then we may expect necrosis of the flap and failure of operation. After the completion of the operation, feeling perfectly sure that asepsis has been maintained—which is absolutely essential—then comes the question as to the time for future treatment, the time at which to institute passive motion, and as much depends upon the continuance of motion as upon anything that may be done in the way of arthroplasty. If after a certain length of time, usually thirteen days to two weeks, passive motion be instituted, and if for any reason it is discontinued you may be sure the operation will be a failure. This motion must be continued constantly and for a considerable length of time. Baking and the usual routine treatment to restore the function of any muscle or joint would be the completion of the treatment.

**Dr. Paul A. McIlhenny (New Orleans):**—Personally, I am not an advocate of arthro-



plasty in general. One factor that we must absolutely consider before even attempting to advise a patient in regard to arthroplasty in this: Arthroplasty demands special treatment and prolonged treatment. Primarily we have to consider the patient's ability to take that treatment. The patient must either be so poor that he must go into a Charity Hospital, or be so rich that he can go into a private institution for an almost unlimited time. Intermediate cases are not subjects for arthroplasty.

Arthroplasty in non-weight bearing joints gives almost universally good results, no matter what method you use, and, in many cases, no matter how little post operative treatment they receive. Arthroplasty in weight-bearing joints, in the majority of cases, does not give good results. Five years or less after operation trouble begins. In most cases they come back with either an ankylosis or a deformed position of the joint, the joint is not sufficiently stable to allow them to do any amount of hard work, or it has become painful again.

Personally, I believe in hip cases in the excision of the head, and the placing of the neck in the acetabulum instead of attempting a true arthroplasty with re-shaped head. At the knee, various operations have been devised calculated to give a stable joint. Few are thoroughly satisfactory. If you have a deformity, correct it and give the person a good weight-bearing, non-painful, stiff joint, and you will have greater satisfaction than if you produced a mobile joint which is possibly painful and at best not stable.

**Dr. J. T. O'Ferrall (New Orleans):**—I hesitate to discuss this paper because my opinion differs considerably from some of the discussants. I have to report about twelve cases where I did arthroplasty on various joints, and those giving the best results were arthroplasties of the knee, a weightbearing joint. Where I have done an arthroplasty on non-weight bearing joints it has been universally unsatisfactory—a somewhat diametrically opposed opinion to some of those who have discussed the paper. I have as a support in this contention, V. Putti of Bologna, Italy, who has probably done more arthroplasties of the knee joint than any other man. Two years ago he reported at the American Orthopedic Association 110 cases of arthroplasty of the knees, and showed moving pictures. None had less than 100° of very active motion. Campbell, of Memphis, has done 50 cases of the knee, and none have less than 90° of motion. Putti's technique, has been recently described by Lovett of Boston and Jones of Liverpool in their new book. He uses a free graft of fascia. This fascia in the five cases I have done, after six months has not been lost in any case. However, one has had slight infection and therefore some sloughing of the skin. McCausland of Boston has reported 70 cases of the elbow, all of which have been satisfactory.

One or two points in regard to the after treatment seem to me to be important, and one is the early motion. I think that is one of the most important things that can be done. In ar-

throplasties of knee I have followed Putti's advice and have begun motion at the end of the first week. This motion is effected by the patient himself rather than having some person who cannot feel the effect of the motion in the joint. This applies also to the elbow. It should be done early and should not be done by a second party. It should be done by the patient himself.

**Dr. E. Denegre Martin (New Orleans):**—The report of Doctor O'Ferrall surprises me. What I want to know is how long it has been since these patients were operated upon. My personal experience is that they do well for six months, and then the ligaments contract about the joint, the motion is limited, and in many cases there is ankylosis. I wish he would show us these cases. It would be a wonderful demonstration.

**Dr. O'Ferrall:**—Doctor Putti's oldest cases are about 5 years. The oldest case I have is two years. One is a girl who is working in my office, and I will send her to Doctor Martin's office tomorrow. She has 110° motion and walks without the least difficulty.

**Dr. Hermann B. Gessner (closing):** I had Doctor Parham in consultation in the case of the hip arthroplasty. I hesitated about doing it, but after seeing the case with me he approved of my making the attempt.

I may say that I have used early passive motion and active motion in all my cases. In the case of hip arthroplasty I made some traction on the femur to keep from having pressure on the flap. It is a good thing in those cases to prevent early pressure between the bones on the fascial transplant.

## STATUS OF CERTAIN CARDIO VASCULAR CONDITIONS WITH TREATMENT ILLUSTRATED.

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The writing of this paper has been prompted by the occurrence in my private practice of an unusual number of cases of Aortitis and Aneurysm that had been diagnosed as simple cases of heart disease, cardio, renal syndrome, arterio-sclerosis, or not diagnosed at all.

A large number of these cases had been through the hands of competent throat specialists, who treated their intractable coughs and hoarseness with local application to the vocal cords, or sprays, cough mixtures, etc. Some of these cases had never been examined, except with a head mirror. There were nineteen of these cases coming under my observation during the year 1922.

One of those cases was sent to Cov-

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ington with a diagnosis of tubercular-laryngitis, when in reality he had a recurrent laryngeal paralysis, the result of an aneurysm. See Case 405.

There is nothing that I have done in diagnosing these cases correctly for the first time that could not have been done by any competent man who would have taken the time and trouble to make a careful and complete physical examination and had done an irreducible minimum of clinical laboratory work.

This irreducible minimum is a complete blood picture, total red, total white, and differential count, examination for plasmodia thermoglobin and color index. Blood Chemical work where indicated. Blood Wasserman, and if necessary spinal fluid examination, sputum, urine and Feces examination, fluroscopic examination of chest and six (6) foot radiograph (teleroentgenogram). Radiographs for focal inspection of teeth and head, when indicated.

It is my invariable custom to make my history, complete physical examination and tentative diagnosis in writing before sending patient to the laboratories, because I desire to keep "on my toes, as it were"; to keep myself from becoming lazy and dependent to too great an extent upon the clinical laboratory means at hand, particularly the X-Ray, and besides I enjoy the interest and excitement of the check. I am so fortunately situated that it is not necessary for me to have the patient leave the Clinic building to have any of this work done.

I have made a number of Basal Metabolic readings on about eight (8) of these cases and have found them to be normal. Syphilis doesn't seem to influence the Basal Metabolic rate per se.

Of the 19 cases—

14 gave a positive Wasserman.

10 positively denied all venereal infection.

9 admitted previous infection and treatment more or less intense for syphilis.

The systolic blood pressure ranged from 165 to 250.

The diastolic blood pressure ranged from 100 to 130.

The pulse pressure averaging considerably higher than normal.

7 had no apparent kidney involvement.

5 had definite nephritis with Albuminuria.

7 had definite nephritis without albuminuria.

2 had no murmurs.

6 Mitral murmurs only.

2 Aortic murmurs only.

9 had two or more murmurs or a multiplicity of them.

4 only gave an aneurysmal bruit.

The treatment consisted in all of these cases of two (2) phases, of course, necessarily to a degree interdependent and correlated, but pursued each, more or less, as a separate concept and entity, and each administered as the demands of the case indicated; and they were:

First—General.

Regulation of work and rest, diet, fluid and salt intake. The administration of drugs, such as Digitalis, Morphia, Alkalies and Purgatives, as needed.

Second—

The antisyphilitic treatment which consisted of, in all cases, the intravenous administration of one or more courses of Neo-Salvarsan. Each dose, for six doses, being given one week apart with a rest period, between courses, of from four to eight weeks, with breaks in the series, if the kidneys did not stand the strain.

The first dose was .15 gm.; 2nd, .30 gm.; 3rd, .45 gm.; 4th, .6 gm.; 5th, .75 gm.; 6th, 9 gm., at the conclusion of these series, Mercury by inunction and Iodide of Soda was given by mouth. Sometime mixed treatment was given by mouth.

Naturally the closest watch was kept upon the urine and kidney function.

Pain in the chest usually developed after the Neo-Salvarsan injections, probably a focal reaction, the so-called Herxheimer reaction. I regard this reaction as an indication that the drug is having its proper effect on the structures specially hoped to be reached.

All of these treatments, except in two cases, were given in my office. I have only time to show you a few of the X-ray films and slides and a method of graphically and accurately visualizing what is the actual condition of the heart and large blood vessels devised by my-



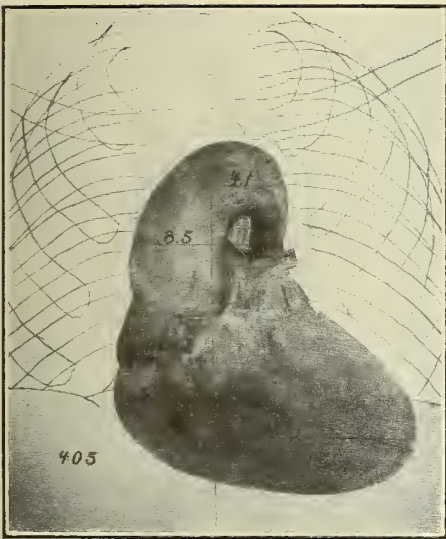


Fig. 1.—(Right) Case 405. Aneurism with paralysis of recurrent-laryngeal nerve. Treated for tuberculous laryngitis. Sent to Covington, La. Has four plus Wasserman, also cardiac decompensation with attacks of angina-pectoris, during one of which he died. There was a whispering voice and constant difficulty of breathing. (Left) Case 496 Normal.

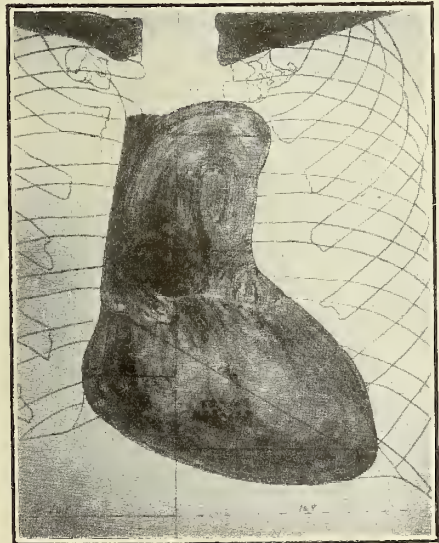
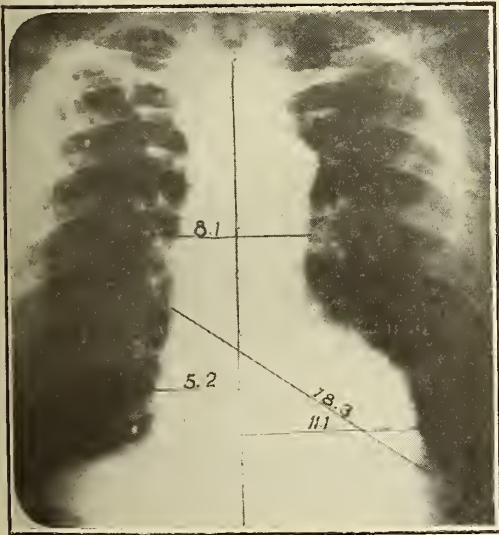


Fig. 2. Case 781. Aneurism. Had been treated for nephritis and arterio-sclerosis only. 8 per cent albumin, many casts. B. P. 220-130. Four plus Wasserman. Improved B. P. 170-190.

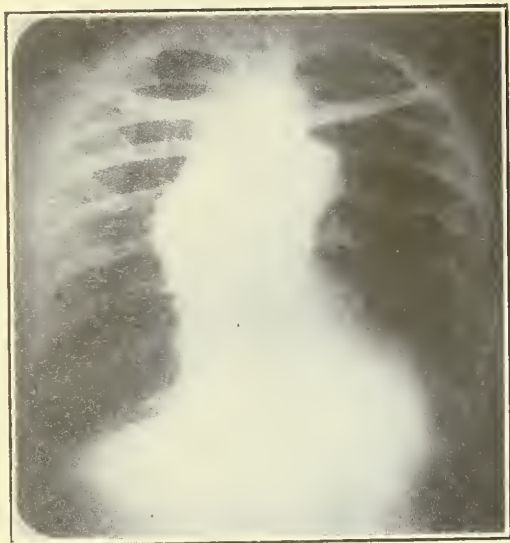


Fig. 3. Case 483. Aneurism. Treated for severe cough. Had nephritis with albuminuria. Four plus Wasserman

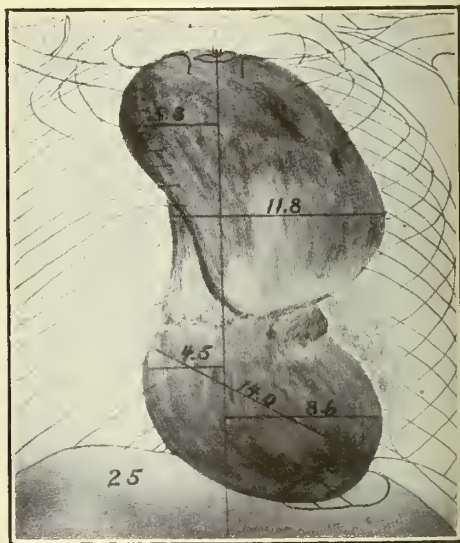


Fig. 4. Case 25. Aneurism. Case treated for two years for laryngitis and attacks of hoarseness. No nephritis. Four plus Wasserman. Wife gave history of repeated abortions. She also has a four plus Wasserman. No children. This man was a railway local express and freight agent, lifting bags of pecans, coffee, sugar, etc.



self, Dr. Nicolle and Mr. J. H. Farpuhar. They will suffice to demonstrate the condition, and the value of this method of study and observation.

4th—Hope of relief and stoppage of progress in this disease rests upon the treatment of the syphilitic basis.

5th—No ill effects resulted from the

Case Number	Aortic Notch	Aorta	Medium Right	Medium Left	Longitudinal Diameter
	Normal 4.5	4.5	3.25	7.4	12.5
405	4.1—.4	8.5+4.	4.6+1.35	13.4+6.	18.4+5.9
*496	3.7	5.0			
781	5.1+.6	8.1+3.6	5.5+1.25	11.2 3.8	17.0+4.5
483	4.9+.4	10.4+5.9	2.9	8.7	12.5
25	**	11.8+7.3	5.2+2	11.1+3.7	17.3+4.8
305	4.6+.1	8.0+3.5	4.6+23.	10.8+3.4	18.9+6.4
842	4.4—.1	7.5+3.	4.5+1.25	8.6+1.2	14.0+1.5
609	4.5—	8.0+3.5	4.9+1.65	10.0+2.6	15.4+2.9
756	4.7+.2	6.8+2.3	6.0+2.75	10.9+3.5	16.5+4.0
439	4.4—.1	9.0+4.5	4.1+.85	10.9+3.5	16.0+3.5
595	4.5—	7.9+3.4	6.4+3.15	11.5+4.1	19.0+6.5
65 }			26" T. P. D.		
42 }					

\*Normal

\*\*Aortic Notch—obliterated

In reference to the above measurements it may be well to say that the normal heart size has been determined in a large number of healthy individuals, from which Bardeen and others have formulated standard tables, covering averages for weight, height, sex, age.

In the examination of the recorded findings in these cases, type of build plays a very important part. For instance the type of heart found in the fat chunky man would be abnormal in the long lean fellow, just as the type of heart found in the long lean fellow would be abnormal in the fat chunky one.

The normal heart shown above is that of an active man of 35, weighing 135 pounds, and 5 feet 7 inches, whose measurements almost correspond to those given on page 413. Figures 188 and 189. United States Army X-Ray Manual. 1919.

Conclusions:

1st—Aneurism of the Aorta and Aortitis is far more common than it is generally believed to be.

2nd.—That the teleroentgenogram is of the greatest importance in accurately keeping track of the progress of the case and in enabling the comparison of one case with another.

3rd.—Syphilis is the basic cause of this condition, certainly where there has been no traumatic injury to the blood vessels.

graduated doses of Neo-Salvarsan administered intravenously.

6th—Very severe chest pains after Neo-Salvarsan administration may indicate a reduction of the size of the next dose.

7th—As Nephritis is frequently syphilitic in origin its presence has not deterred in the pursuit of this line of treatment. Of course under absolute observation.

8th—Full Anti-Syphilitic treatment other than Neo-Salvarsan is used in addition.

9th—No deaths have been attributable to the treatment; which has given more satisfactory results and the patients more comfort than any other plan yet followed.

DISCUSSION.

Dr. A. E. Fossier (New Orleans): The diagnosis of aortitis, enlargement of the aorta, aneurism is frequently very difficult to make. Errors are very common, and we must acknowledge that many such cases are found on the autopsy table that were not recognized ante mortem. And again many diagnoses were erroneously made of aortitis, etc., and the patient doomed by his doctor to an early death, who lived and are still living in robust health many years after the verdict was rendered. I have known men in their early forties who were advised to lessen their activities, and to abstain from all physical efforts, and even to retire from their business, who were normal in so far as their great blood vessels were concerned. They are living today without any sign or symptom of dilated aorta, aortitis and what not.

Now errors are frequently permissible, and the X-ray frequently leads us into a wrong diagnosis. It is an impossibility to determine

the size of the great blood vessels as well as any other organ in a definite way.

The size of the great blood vessels as well as of the heart depend upon the stature of the individual; and also in the aorta upon the age. These facts have been confirmed especially by the French, who predominate in this work, and I refer you to the works of Vaquez, Bordet, Lutembacher and Sorel.

Take the two types of men: first, those with large chests, short neck and with a high diaphragm, in them are found organs showing their bulk in the horizontal position. The horizontal diameter of the heart is widened, and rests more obliquely; the area of the great blood vessels is increased in its horizontal and decreased in its longitudinal diameter. In other type of mankind, the visceropototics or those who have a long narrow elongated thorax and in whom the bulk of their organs appear in their longitudinal diameter instead of the horizontal, give a reverse picture compared to the other type. The area of great blood vessels is very much elongated in its longitudinal diameter and greatly reduced in its horizontal diameter, the heart is downward displaced and it is also elongated. The diaphragm is sagged, and this lessened support to the heart and its great blood vessels in the cause of the narrowing of their longitudinal diameter.

Considering the difference existing in the normal size of the area of great blood vessels and of the heart between the two types of individuals, it is an impossibility to make a diagnosis unless this all important factor is seriously considered.

An absolute dependence on the X-ray, and the making of a diagnosis by means of a rule, will very frequently mislead the doctor, unless all factors are considered.

**Dr. J. E. Knighton (Shreveport):** I shall confine my remarks to the question of aneurysm, as most of these cases deal with aneurysm.

Referring to the point brought out by the doctor that these cases had passed through the hands of numerous physicians without a diagnosis having been made—this simply brings home to us the old problem of more careful examination of our patients as a means leading to more accurate diagnosis. So many of us fall into the habit of running casually over patients, taking too much for granted, not giving them the serious, careful examination that every patient is entitled to.

It is not the throat specialist or any other particular line that fails to make a diagnosis of aneurysm. I recall a number of patients with aneurysm of the aorta in which there was not present the usual symptoms of pain. As a rule we look upon pain as being one of the most pronounced and constant symptoms of aneurysm of the aorta; but that is not always true. It is not always present to the extent that the attention of the patient would be attracted to it, and, as brought out in this paper, the bruit is not always present.

In the course of some work in the Charity Hospital at Shreveport we had occasion to observe a number of cases of aneurysm of the aorta in which the diagnosis was made only after X-ray examination had been made.

In a majority of cases this is inexcusable, for the simple reason that examination had not been done carefully. But in a few cases it seems as though it might have been passed over by anyone, for the reason that after the X-ray examination is made you can check the patient over and it is hard to find any bruit, and it is hard on percussion to outline the enlargement, particularly in the absence of pain.

With reference to the treatment of this condition as suggested by the essayist, we have had occasion to observe cases in the same institution treated by means of neosalvarsan, under a line of procedure somewhat as suggested by Doctor Jones. I recall one or two cases in which the symptoms of cough, etc., were materially relieved under the administration of neosalvarsan. I believe we need not hesitate, particularly in aneurysm of the aorta where we have good reason to believe it is luetic in origin, to give them the usual antisiphilitic treatment.

**Dr. J. Birney Guthrie (New Orleans):** There are so many points in which I differ from the essayist that I hesitate about getting up to discuss the paper at all. For example, we see here a case that has been taken by the X-ray. I have had considerable experience in the examination of radiographs and in making radiographs, I have measured hundreds of aortas. I heard the essayist very distinctly say that the normal aorta is 4.5 cm in transverse diameter, which is untrue. The normal aorta in a white man is over 7 cm, and a range of 1 cm is of no significance at all. He showed one that measured 8.5, and that is within the normal range of dilatation. An aorta spread of 8.5 should not be called an aneurysm. Aorta dilatation is not necessarily an aneurysm.

As regards the giving of salvarsan in all cases of aortitis, I do not believe we are justified in that course. There are other causes of aneurysm than syphilis that would produce changes which might lead to aneurysm. I think we are going too far to treat them all as syphilitics, although a large percentage are certainly of syphilitic origin.

Again, the matter of giving small doses is one which not only immunizes the patient but the infecting treperulurata as well.

The only method of using salvarsan we are justified in using in the presence of nephritis is with a greatly reduced dose. We have a rule in the ward that where a patient presents symptoms of heart failure, we put him to bed, build up the heart reserve, try to get him to the stage where there is some compensation of the heart, and then we give neosalvarsan under a dosage beginning with 4 1-2 grams usually. It is very hazardous where nephritis exists to give these cardiorenals anything like what we term an adequate dose unless we have done a phthalein test and investigated as thoroughly as possible the function of the kidneys.

The question of pain seems again to be confused. There is a pain in aortitis, that we know; but clinically it is different from that which we call angina pectoris. The pain of aortic aneurysm is either a pressure pain or an aortitis which is responsible for the pain



and is not strictly speaking an angina pectoris.

I have used benzyl benzoate in handling these cases with striking results. We use it in one dram doses given in the usual way, and the patients get along beautifully. It tides them over to the point where the pain subsides, with rest in bed and treatment for heart failure. Morphine and codein are of course necessary where the pain is more severe and not amenable to the Benzyl Benzoate.

**Dr. J. G. Dempsey (New Orleans):** I want to bring before the organization the statistical end of cardio-vascular disease. I do not mean those complicated with nephritis or any disease of the kidneys. I looked up the statistics, and in 1921, 2,385 deaths occurred from cardiovascular disease. In 1922, 2,503. 218 more people died in Louisiana from cardio-vascular disease in 1922 than in 1921. In the City of New Orleans, 1,104 in 1921, 1,136 in 1922.

I think these figures ought to go into the records because they can be substantiated and have their influence, and in the future if the Society should have such a paper it would be well to take into consideration whether we are doing anything for this disease or not.

**Dr. Homer Dupuy (New Orleans):** The essayist spoke of the pressure on the recurrent nerve, and I wish to speak of that phase.

Pressure on the recurrent nerve is among the first symptoms of aortic aneurysm. Let me remind you that the left pneumogastric is longer than the right, and that after coursing over the arch of the aorta, it sends the left recurrent from under the arch, and beyond the arch to the Larynx therefore in aortitis or pressure unquestionably may extend the left recurrent nerve. We expect a great loss of voice aphonia—but pressure on the left recurrent nerve gives voice disturbances. There is merely a dysphonia. Therefore in our examination for aortitis aneurysm the X-ray is not infallible, pain is not always present, we should always inspect the larynx.

Remember again that in the recurrent nerve we have this remarkable phenomenon—one nerve in which there are two sets of fibres, the abductor fibres and the adductor fibres—those that open the larynx and those that close it. If pressure on the left recurrent nerve is slight in the beginning the nerve fibres first pressed upon are the abductor fibres. Therefore there would then be no disturbance of the voice. But the laryngoscope will tell us absolutely that the vocal cord remains on the middle line. This unquestionably means beginning pressure on left recurrent nerve. As the pressure continues the deeper abductor fibres become involved. The vocal cord on left side then assumes the position it assumes after death, namely a position it assumes between abduction and adduction. The laryngoscope gives us valuable information relative to aneurysm of the arch of the aorta.

**Dr. H. P. Jones (closing):** I laid aside my paper, and perhaps I did not make myself understood. I did not bring forward the fact that this picture is of a normal chest.

These cases are not necessarily all aneurysms but cases of aortitis and of aneurysm. Some are aortitis and some are aneurysm. These pictures are teleoroentgenograms and are taken at a distance of six feet, and the result is the measurements are not so large as those made at the ordinary 26-inch distance. The measurement of a great many men of the same size—weight, stature and physique, rather tends to the lower measurement which I have given you than to 7.5 cm.

I mentioned in my paper that Bordeau had probably done more work on this subject than any other known man. There is also a valuable contribution to this study in the work published for the Army in the control of their X-ray work. It is a manual and costs about \$1.50, and is very valuable to have.

I do not wish Doctor Guthrie to feel that I mind his differing from me. If we all agreed it would not be interesting. I rather welcome criticism than not to have any at all.

## ABRUPTIO PLACENTAE.\*

BY H. E. BERNADAS, M.D.,  
NEW ORLEANS.

Classified by Rigby as Accidental Uterine Hemorrhage occurring in the latter months of pregnancy, in contradistinction to unavoidable hemorrhage or Placenta Previa.

Paul Portal in 1664, Gottleib in 1709, Goodel in 1869, Holmes in 1901, down to Kerr and Shears, have dealt with this condition under varying titles; such as Accidental Uterine Hemorrhage in later months pregnancy. *Ablatia Placentae*, *Abruptio Placentae*, etc., not only the nomenclature and pathology, as well as the mechanism of causation in this condition, but also the treatment, have been the cause of numerous and varied articles and treatises.

The purpose of this paper, therefore, is not to bring out any radical departure in these, but instead, to ask that you report all such cases coming under your observation, so that the ratio of occurrence of this condition in pregnancy, and the ratio of mortality, may be brought to an intelligent interpretation.

To show you the vast disparity in the ratio of occurrence relative to this condition in all cases of pregnancy, I will quote the following figures:

Lobenstine and Harrar, 47 times in 42,000 cases at New York Lying-in-Hospital;

Chicago Lying-in-Hospital, 6 cases in 3,600, only two required treatment;

Dublin Rotunda, 70 cases in 6,453;

Holmes estimates that about one case in

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200 is of pathologic interest, and one case in 500 of clinical interest.

The condition is one which occurs in the later months of pregnancy when the foetus is viable. The causes are either pathological or accidental. A number of authorities are of the opinion that accident alone is rarely a causative factor, but is nearly always superimposed upon a pathological condition of the uterus, such as, endometritis in Multipara, increased blood pressure, fibroids, nephritis, leus, etc. This opinion is not universal as an equally large number of authorities believe that trauma, prolonged mental shock, coughing, straining, fainting, vomiting, falls, blows, unskilled manipulation in twin labors, traction on cord in ordinary labor, as well as forceps operation and version.

The case being reported was caused by trauma due to straining, as the patient was a primipara, not leuitic, and in normal health, free from fibroids, with no history of endometritis.

*Diagnosis:* This condition occurs after the six and one-half or seven month of pregnancy, either following traumatism or otherwise. The patient who was otherwise normal, within 24 to 48 hours or even 72 hours following an accident, develops a severe pain in the upper abdomen, sometimes accompanied by nausea and emesis, and sometimes by a showing of blood either in large or small quantities "per vagina." Upon examination, the patient presents the evidences of marked anemia and shock, accompanied with thirst. Examination of abdomen reveals a round (in contradistinction to the normal oval shape of uterus in pregnancy) hard tense and sensitive uterus. This uterus has a hard woody feeling and has been styled on account of this "*Uterus de Bois*." Vaginal examination reveals a normal firm cervix with about one or two fingers dilatation with presenting parts easily examined either within or without the cervix, through vaginal vault.

*Physical Aspect:* This differentiates it from Placenta Previa, where we have the soft boggy, dilatable cervix, with the presenting portion of the placenta preventing an examination and diagnosis of the presenting part of foetus.

The reason for this difference in appearance and feeling of parts in vagina

is the physical difference of the two conditions. In Placenta Previa we have a low implantation of the placenta, at, near, or over the Internal Os, which does not give as the Internal Os dilates, and as a result is torn off and separated, causing the hemorrhage. In the condition being reported, we have a placental implantation in the fundus. In over 50% of the cases, this is a posterior implantation.

*Mechanical Aspect:* The bleeding occurs as a rule in the center of the placental implantation where the separation first occurs. As the bleeding accumulates in this small cul-de-sac formed by the central raw surface of the placenta and the uterine wall, by hydraulic pressure, frequently assisted by uterine contraction, the placenta is torn away more and more towards its edges or periphery. Quite a large quantity of blood may accumulate in this Cul-de-sac, sufficient to cause pronounced and alarming anemia and shock. If the periphery of the placenta remains attached we have then a concealed hemorrhage. Should any part of the marginal attachment be torn away, the blood thus released finds its way between the membranes and uterus and may still be confined to the body of the uterus by the membranous attachment below, and still remain concealed. The presenting head may also press sufficiently hard against the Internal Os to prevent the blood from escaping and we will again have concealed hemorrhage, or the blood may rupture through a weakend place in the membrane into the general uterine cavity and commingle with the amniotic fluid, and the hemorrhage will still be concealed. However, in a large proportion of the cases, the blood having freed itself from the placento-uterine cul-de-sac finds its way to the vagina by the membrano-uterine way.

*Pathological Aspect:* The blood which presents at the vaginal orifice as a rule is red blood, although it may be accompanied by black clots. The blood which is delivered with the Placenta and membranes at the completion of the labor is as a rule black, sticky, grumous and organized clots, sometimes totally infiltrating the whole body of the placenta and becoming organized



The pathologic examination of the placenta in the case now being reported was:

"Hemorrhage behind entire placenta, beginning organization of clot extending as far as surface of Placenta. Beginning Organization of Clot in Placental Vessels as far as surface of Placenta. Hyaline Degeneration of Placental tissues. Umbilical cord vessels show no change. Necrosis of placenta and cord, no evidence of any acute or chronic infection."

I have taken up these different aspects with the diagnosis as they clarify the difference between placenta previa and abruptio placenta.

*Treatment:* Treatment has been as moot as the nomenclature, due largely to the stage and degree of the conditions, the condition of the patient, and the individual preference of the operator. Where the bleeding, either concealed or occult, has been slight, the pregnancy has not advanced to the stage where the foetus is viable, (i. e., where the fundus reaches above, midway between umbilicus and ensiform cartilage and the patient is comfortable and presents no evidence of anemia, no pains, and the foetal sounds are audible; the treatment here is absolute rest, morphia and constant observation, until recovery and all danger is past, with caution to the patient to do nothing strenuous until normal delivery. This all authorities agree upon.

However, when the bleeding continues, and evidences of anemia, shock and pain progress rapidly, the authorities disagree upon how to do that which all agree must be done. Some advise rupturing the membranes, tightly bandaging the abdomen, giving 15-30 Mms. of Fld. Ext. of Ergot every four hours and waiting; others plug the vagina and cervix with gauze combined with the above method.

Holmes and others advocate the use of the metreunyter introduced into the cervix and dilated, with or without the use of bandage over the abdomen, Ergot and Pituitrin.

Dilatation (not forcible) of the Cervix, with application of forceps or version.

Vaginal Caesarian Section (Dur-

hesen) and abdominal Caesarian Section.

In the case reported, I used the vaginal Caesarian Section after separation of the bladder wall from the anterior surface of uterus, with application of forceps, and completed the labor in a very few minutes without shock to the patient.

The selection of means for rapid delivery must be guided by existing conditions. If vagina is dilatable by digital manipulation, use version or forceps, perforating foetal head if necessary, because foetus as a rule is dead. If cervix is not dilatable and patient is a primipara with a dead foetus and no pelvic deformity, the vaginal Caesarian Section is the operation of choice as it is followed by less danger from bleeding and sepsis than the abdominal route. Most authorities recommend when the abdominal route is selected, to do a Poro or Hysterectomy immediately after emptying uterus because of the disassociation of the uterine muscular fibers brought on by hemorrhagic infiltration of same at the time of accidental placental separation.

The blood under pressure penetrates the muscular fibre bundles and disassociates them. Their vitality and resistance having been thus lowered they do not contract during or after labor and are subject to attack from septic invasion, where the abdominal section is made, owing to the lowered resistance of the uterine body. This does not hold true in a vaginal section as the incision is in the lower part of the uterus, far distant from the seat of the traumatic lesion.

#### CASE HISTORY.

Mrs. J. L. D., age 24; Primipara. Has had measles and tonsilitis.

With exception of father who died of Tuberculosis, family history negative.

On April 23, 1921, was called by a colleague to see Mrs. D. She gave history of having last menstruated on September 22nd, 1920, of having during all of this time been robust, full-blooded and healthy. On Wednesday, April 20th, at 9 a. m., she caught her arm between door and door frame tried to release herself and became greatly frightened and highly hysterical. After considerable effort and struggle she succeeded in freeing her arm. Except for being nervous, she experienced no ill effects until Thursday, next day, at 10:20 a. m., when she complained of marked pain in back, followed by

abdominal pains. She was examined by her physician who found about one finger dilatation. At 3:30 p. m. she had a hemorrhage, saturating sheet and mattress. Gradually diminishing until it subsided at 7 p. m. The physician decided to observe developments as hemorrhage had stopped. Patient continued to complain of pain in upper abdomen. On the 22nd p. m. she had temperature 103 degrees. When called in on the 23rd found temperature 100 degrees; patient very pale and anemic, rapid pulse (130) small volume, uterus round, hard and woody. Cervix about two fingers dilatation, head presenting easily discernible, internally and externally in vaginal vault. Made a diagnosis of *Abruptio Placentae*. Auscultation revealed no foetal heart sounds, palpation showed no evidence of foetal life, I advised immediate emptying of uterus. Patient was transferred to French Hospital in ambulance.

Under ether anesthesia, after futile attempts at gentle digital dilatation, an ampule of Pituitrin was given hypodermatically a self-retainer was inserted in vagina, cervix brought down by vulsella. Two traction sutures were inserted firmly in anterior lip of cervix, about  $\frac{1}{4}$  inch away, on each side of proposed line of incision. With cervix well drawn down, a transverse incision was made through mucous membrane over anterior surface of vagina, and bladder pushed back, a longitudinal incision was then made extending up through wall of cervix. This allowed ample room for the immediate application of forceps to foetal head, which was promptly followed by delivery of foetus, dead about three days. The placenta and membranes were delivered by gentle pressure over body of uterus. Then an enormous quantity of black grumous sticky blood and blood clots followed, in quantities about equal to size of placenta. Following this, the vagina was swabbed out, vaginal traction guides were drawn down and incision in cervix sutured with No. 3 Chronic Gut, bladder drawn down and vaginal surface sutured back with No. 2 Gut. A drain was inserted in Cervical Canal, small pack placed in vaginal canal, patient given another hypodermic of pituitrin and put to bed with a Murphy Drip of normal salt solution and black coffee. Pack and drain were removed next day and patient made uneventful recovery. She returned home and was in bed all told about 12 days from date of delivery. Lochial discharge stopped completely on 21st day.

*Conclusions:* 1. This case was apparently purely traumatic in origin, as findings and history were negative.

2. Small central separation happened at time of accident due to straining. Pain began next day at 10:30 a. m., due to accumulation of blood in placental-uterine Cul-de-sac. At 3:30 p. m. margin of placenta and membranes were separated by large accumulation of blood causing visible hemorrhage. Pains then forced head down causing it

to act as a plug, hence stoppage of bleeding.

3. Findings in placenta showed hemorrhage had occurred behind whole placenta, causing immediate death of foetus. Organization of clot showed this had happened before visible signs of hemorrhage.

4. Because she was a primipara, with a dead foetus, and a hysterectomy following abdominal delivery, would have prevented her from future conception. The operation of selection was vaginal Caesarian Section,—1st, because following this, the patient retained a normal functioning uterus capable of future conceptions; second, because of lessened risk from shock, hemorrhage and sepsis to the mother.

#### DISCUSSION.

**Dr. H. E. Miller:** I wish to thank Dr. Bernadas for the privilege of discussing his paper and to congratulate him on his method of handling this case of accidental hemorrhage. The procedures that are usually recommended are, I believe, too drastic for the majority of cases of concealed and visible accidental hemorrhage. If we stop to analyse the actual existing mechanical conditions in either type of premature separation of the placenta, we are forced to realize that there are other treatments which are much more conservative and which minimize the fetal and maternal risk.

Concealed hemorrhage is, with the single exception of acute sepsis, the most serious accident which can happen to a pregnant woman. This is largely due to the fact that early diagnosis is difficult and that the uterus, for some reason which we cannot explain, is not healthy in muscular tone. In this type the blood collects in the uterus because it dilates so easily that the intrauterine pressure is never sufficiently great to overcome the slight resistance offered to the outflow of blood through the cervix, while in the external type the uterine muscle prompts a reaction which raises the intrauterine pressure and almost immediately forces the blood through the cervix. In concealed hemorrhage, therefore we have to deal with a uterus the muscle of which has for some reason lost its normal contractile tone, and whose elasticity is as a result impaired. It is quite obvious that a ruptured vessel in a closed cavity can bleed only so long as the pressure inside the cavity is less than the blood pressure. Once the intrauterine pressure is equal to the blood pressure, bleeding ceases. If the blood can escape from the cervix as rapidly as it flows from behind the placenta, then such equalization never takes place. If the uterus is healthy in tone and the outflow from the cervix is prevented, the two pressures rapidly become equal and bleeding ceases. If, however, the uterine fiber has lost its tone and the uterus dilates, then the intrauterine



pressure can never equal the blood pressure and as a consequence the hemorrhage is never checked.

It is obvious from these deductions that packing the vagina will be a most satisfactory treatment in external hemorrhage, but will be of little or no avail in the internal type unless the condition is recognized early and a vaginal pack introduced with the hope of inducing labor pains. At the same time small, repeated doses of pituitrin may stimulate uterine contractions and assist in raising the intrauterine pressure and inducing labor. Once the patient begins to have strong labor pains, a great deal of the risk in this type of hemorrhage disappears. Unfortunately, however, a fair percentage of the cases of concealed hemorrhage occur before labor pains begin, and the case assumes such a serious character that temporizing measures are out of the question. In such conditions, accouchement forcé with forceps, or version and breech extraction, or vaginal Caesarean section are to be resorted to.

Like the internal variety, the outcome of the case of external accidental hemorrhage depends largely on whether or not the patient is in labor. If she is not in labor when the hemorrhage starts, there are two indications which must be met immediately: checking the hemorrhage and inducing labor. If the bleeding can be satisfactorily stopped for the time necessary to bring on uterine contractions, the condition resolves itself into a comparatively simple one. With the uterus in a healthy state, as is evidenced by external hemorrhage and uterine contractions, the hemorrhage can be checked by packing the vagina, which will permit of an equalization of the intrauterine and the blood pressure, and will also induce labor. The success of this treatment, however, depends upon three points: the uterus must be in good tone, the ovum must be intact, and the vaginal plug must be tightly applied. If this treatment fails, we can again fall back on accouchement forcé with version or forceps, and vaginal Caesarean section.

None of the last named methods of treatment, however, should be used except as a last resort, and when the seriousness of the case outweighs the risk to which you are subjecting the patient. Unfortunately these patients are as a rule markedly shocked, and anything approaching an extensive surgical procedure superimposes sufficient additional shock to cause a mortality ranging from 35% to 60%. No consideration is to be given the baby, as about 70% die at the onset of the hemorrhage. I would strongly urge conservative treatment by packs, small doses of pituitrin, abdominal binders, and occasional rupture of the membranes in the external variety, in view of this frightful mortality as a result of any radical attempt to relieve the condition.

**Dr. E. L. King (New Orleans):** I have had three cases in the Charity Hospital of *abruptio placentae*. The first case was a multi-

para with an undilated cervix, with a systolic blood pressure of 50, so the first thing we did was to give her a saline infusion and then a transfusion of blood. On account of the undilated cervix and the fact that the patient was not in very good condition, I did a Caesarean section followed by hysterectomy. The baby, of course, was dead, but the mother made a fairly uneventful recovery and is still living. The etiology in that case was obscure. We did not find any sign of toxemia or of chronic nephritis, and there was no history of trauma.

In the second case the woman came in well advanced in labor, and was delivered normally. I do not remember whether we transfused her or not, but she needed it. She came around fairly well, but had a violent nephritis with high blood pressure and lots of albumin, and she finally died of anuria about three weeks later.

The third patient was also admitted in labor, the cervix dilated slowly, and finally when she was pretty well advanced we did a version and saved her.

In the last two cases I think the favorable obstetrical outcome was due to the fact that there was not much infiltration of the uterus. We must bear in mind that we have two different types of this condition, one in which there is considerable infiltration of the uterine wall with blood and one in which there is not. In the former type the uterus is liable not to contract and delivery will be followed by fatal hemorrhage. That was the condition in the first case, a typical *abruptio placentae* with so-called "utero-placental apoplexy."

One of the French writers has recently reported over seventy cases, and he is not in favor of rupturing the membranes or of vaginal Caesarian section. All of these cases treated simply by rupturing the membranes died, and of the six vaginal Caesarean sections his mortality was five out of six. He leans to the abdominal Caesarian section, with occasional hysterectomy, according to indications; but his paper deals with that type known as *abruptio placentae* with "utero-placental apoplexy," where there is hemorrhage into the uterine wall. In other cases where there is no hemorrhage we can succeed with a less formidable line of treatment. The great difficulty is in knowing what is happening in that uterine wall when you cannot see it. If we can tell which one has a non-contractile uterine wall and which one has not, then the treatment can be selected. Otherwise, we are still somewhat in the dark.

**Dr. H. E. Bernadas (closing):** The point I wish to bring out is that the vaginal route is preferable, because if you use the abdominal route you will have to do a hysterectomy. You are opening the uterus at the point of least resistance and you have a spot which will give way to sepsis or infection and you are apt to lose the patient. This case was delivered by vaginal section and she went home in ten days. She is perfectly well today.

## CONGENITAL ARTHRITIS WITH ANKYLOSIS OF VARIOUS JOINTS.\*

BY PAUL A. MCLHENNY, M.D., F.A.C.S.,  
NEW ORLEANS.

In a rather extensive search through the literature no mention of Congenital Arthritis has been found, never-the-less it seems hardly possible that the affection has not been encountered by a number of observers, especially as several cases of Congenital Ankylosis, though extremely rare, have been reported. It is not my intention to enter into a lengthy discussion of the various forms of arthritis, their etiology, pathology, treatment, etc., but simply to report this one case that has come under my observation, and its probable causative factor.

J. M. White, male, aged 11 years, a native of Louisiana, was referred to me by my friend Dr. J. G. Martin, of Lake Charles, La., on April 29th, 1922. F. H. Father living and well. Wassermann negative. Mother living and well. Wassermann negative, but up to five years ago she had suffered for years from bad teeth, sore throat, and frequent attacks of rheumatism; during the year previous to, and while pregnant with this child, she had suffered greatly with attacks of multiple arthritis which at one time confined her to bed for several weeks. A brother two years older, and a sister three years younger than the patient are strong and healthy. The family are farmers, and there is no history of deformity in any other member of the family.

P. H. The child was born with the legs flexed on the body, and the ankles, knees and left elbow were stiff, both wrists and the right elbow were swollen; soon after birth the swelling in the wrists and right elbow disappeared, and when he was six months old he could move the knees a little; he has always been healthy and has never developed the usual diseases of childhood. He began walking at two years and has always walked on the externe-dorsal aspect of the right foot and the dorsal aspect of the left foot with the toes flexed, and the ankles and knees stiff.

Examination showed a well nourished, though poorly developed boy, much below the average size for his age. He is of average intelligence, but has a decided speech defect. There is a complete bilateral Ankylosis of the tarsal and medio-tarsal joints; the right foot is in a position of marked varus with slight equinus and a large callosity is on the externe-dorsal aspect; the left foot being in a position of extreme equinus with large callosities on the dorsum of the toes. There is almost a complete ankylosis of the left elbow in full extension, and supination and pronation are absent; there is a bilateral congenital dislocation of the hips, and the thighs are rotated outward. There is limited motion in the wrists, jaws, and knees, the internal condyles present anteriorly causing the knees to flex laterally. There is a balanitic hypospadias, bilateral undescended testicle, rudimentary scrotum, and a web between the thighs extending one and one-half inch below the perineum. He walks with the legs stiff, and runs sidewise in order to flex the knees. Wassermann negative.

X-Ray examinations show Bilateral Superior dislocation of the hip, with well developed secondary acetabula; there is a backward torsion of both femoral necks, and the cartilages of the femoral heads and original acetabula show evidence of an arthritis at some time; there is fusion of the radio-ulnar articulation and articular changes in the left elbow; there is a fusion or ankylosis of the tarsal and medio-tarsal bones of both feet. No X-Ray pictures were made of the other joints.

It was decided to attempt a correction of the deformities of the feet first, and on May 1st a cuneiform estectomy was performed on the left foot through the medio-tarsals with the base at the externe-dorsal aspect, enough bone being removed to allow the foot to be forced into a position at a right angle to the leg, thereby correcting the marked equinus; the same procedure was carried out on the right foot, except that the base of the wedge was at the external aspect which allowed the varus to be corrected; plaster of Paris casts were applied from toes to knees with fenestrae over the wounds to allow in-

\*Read before the Louisiana State Medical Society, April 24-26, 1923.



spection and dressing. As soon as the wounds were healed the fenestrae were closed and the patient encouraged to try to walk with crutches, this he learned to do in a short time. The casts were removed on June 2nd., when he was allowed to begin wearing ordinary shoes. About two months later, on July 25th., we decided to attempt the correction of the malposition of the legs and thighs. It was not deemed advisable to attempt either a bloodless or an open reduction of the dislocated hips, first, because of the age, and second, because the new acetabula were immediately above the normal position, and the stability in weight bearing was excellent. The greatest hinderance to normal function seemed to be caused by the outward rotation of the thighs which was due to the posterior bending of the femoral necks causing the patellae to present laterally; it was therefore decided to attack the femora, and produce a rotation in the shaft. Through a lateral incision just at the level of the lesser trochanter a linea sub-trochanteric osteotomy was performed on each thigh, and while the proximal fragment was held stationery by a long iron screw the distal fragment was rotated inward until the patella presented anteriorly, and the femoral condyles were in their normal position; a double plaster of Paris spica of the hips was applied from ankles to umbilicus with the thighs in a position of slight abduction, and the patient kept in recumbancy for six weeks, he was then allowed to stand up, until he got tired, several times a day; three months after the operation the casts were removed, and massage and active motions allowed. He can now flex his knees to almost a right angle in the antero-posterior position, and and walks on the soles of his feet. The wrists and jaws have been manipulated and active and passive motion encouraged which has resulted in a marked in-

crease in their range of motion. It is planned to attempt a restoration of motion in the left elbow at a later date. As mentioned Congenital Arthritis is conspicuously absent in medical literature, and even congenital ankylosis has received scant attention, it's existence in most reports, being a simple mention of a clinical entity. Two factors in this case, however, to my mind, prove it to be purely a case of Pre-natal Arthritis, the etiological factor being the Chronic Infectuous Arthritis, of the secondary type, in the mother. First, the fact that just after birth it was found that there was ankylosis in several joints; that other joints showed a limitation of motion, and still others were swollen; since there was ankylosis in some and an inflammation in other joints, it is reasonable to conclude that there must have been an arthritis which proceeded the ankylosis. Second the fact that there was a congenital dislocation of the hips; pre-natal arthritis must have existed if we are to give credence to the theory that joint hydrops is one of the etiological factors in such deformities; another point is that the swelling which existed about some of the points subsided shortly after birth.

Personally I am convinced that the developmental defect, as evidenced by the hypospadias, was caused by the general toxic condition of the mother previous to and during pregnancy, and that the arthritic conditions were produced by the same cause.

**Dr. E. Denegre Martin (New Orleans):** I had the pleasure of seeing this case before and after operation. The doctor had a very difficult problem to deal with. This boy was distorted in every direction. I do not know anything about the etiology, of the discon, but I am sure that this is one case of arthritis that cannot be blamed on the teeth. It may be the tonsils, but it is a rather curious and interesting condition. The Doctor has accomplished a great deal so far and I believe will make his patient a pretty fair and comfortable subject for the future.

## NOSEBLEED-EPISTAXIS.\*

BY W. MARVYN JOHNSON, M.D.,  
NEW ORLEANS.

Bleeding from the interior of the nose is due to a variety of both local and constitutional conditions. It is common in children between the ages of five and fourteen, rare during middle life. In old age it usually occurs as a result of some constitutional disease or local neoplasm. As a rule, properly managed nasal hemorrhage is not of serious import, except in haemophiliacs, malignancy or arterio-sclerosis. The seat of nasal hemorrhage in 90% of the cases, according to Castleberry, is in the anterior portion of the nasal septum. There are three anatomical reasons for the frequency of hemorrhage in this region:

1. The nasal vessels are not supported by a muscular cushion into which they may be crushed by a blow, but lie in more or less intimate contact with bone or cartilage and are protected only by an extremely delicate mucous membrane. The proximity of bone or cartilage prevents the ends of the injured vessels from contracting as readily as if embedded in soft tissue.

2. At this point scabs and crusts from ulceration follow weakening the thin walled arteries.

3. Passing through this region is an arterial anastomosis with one blood current flowing directly against the other.

*Blood Supply:* The naso or sphenopalatine passes through the sphenopalatine foramen into the cavity of the nose, at the back part of the superior meatus, and divides into two branches; one the internal, the naso-palatine or artery of the septum, passes obliquely downward and forward along the septum nasi, supplies the mucous membrane, and anastomosis with the terminal branches of the descending palatine and the superior artery of the septum, which is a branch of the superior coronary.

The usual site of bleeding, as stated above, is on the anterior superior angle of the triangular cartilage, a spot where the bleeding is easily seen. At this spot which is known as Little's area, a small anastomotic vessel runs which is liable

to be wounded in the detaching by the finger nail of the fine mucous crusts that tend to adhere about this point; or the vessel may be broached by a shallow simple ulceration that readily forms here; or it may rupture and bleeding break out spontaneously. The amount of blood that can be lost from such a minute vessel is surprising, and when, actually confronted with a lively epistaxis, the patient bleeding and apparently from both nares, it seems absurd to suppose that only this small vessel should be the sole source of the flow, never-the-less, in more than 90% of the cases of nasal hemorrhage this is the site of bleeding and here it may be stopped if skilfully treated.

*Etiology:* Under causes due to local conditions within the nose may be mentioned:

1. Traumatism from intra-nasal operations, injuries both direct and indirect, falls, blows and stab-wounds.

2. Defects of the Septum: Contact of the dust laden insipid air upon its convex surface, which in turn produces irritation and finally erosions and hemorrhage.

3. Atrophic Rhinitis: Attempts to remove crusts and scabs in this disease, by picking the nose, are prone to produce erosions upon the septum and terminals and subsequent hemorrhage.

4. Acute Rhinitis: Several cases of acute inflammation of the nasal mucosa, hemorrhage is induced as a result of excessive blowing of the nose.

5. The presence of a foreign body and sequestra in the nasal cavities is attended with varying degrees of hemorrhage.

6. Tuberculosis, or luetic ulceration, and leprosy, malignant neoplasms, sarcomata and carcinomata, benign neoplasms, nasal polypi and fibromata.

Under constitutional causes or general origin of epistaxis may be mentioned:

1. Febrile diseases: At the onset of acute infectious diseases hemorrhage which is usually slight results from the rupture of the engorged thin walled vessels on the anterior part of the septum as in typhoid, typhus, scarlet and malarial fevers, nasal diphtheria, pneumonia and influenza.

2. Blood diseases: Anemia, purpura,

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hemophelia, leukaemia, cholrosis, scarbutus and chronic malaria.

3. Cardiac conditions in which there is an increase in arterial tension; valvular lesions, cardiac hypertrophy, Bright's disease, pulmonary emphysema.

4. Cirrhosis of the liver.

5. Pressure of tumors on the blood vessels of the neck.

6. Violent exertion or exercise.

7. High altitude.

8. Vicarious menstruation.

We have been impressed by the very evident correlation existing in domestic animals between the nose and sexual organs in certain seasons. Similar phenomena may be occasionally observed in the human race. Erectile tissue is found in but three parts of the body; nose and throat, the nipples and the sexual organs.

In the male puberty is accompanied by a change in the voice and nose bleed is common. Recurrent nasal hemorrhage is said to be aggravated by masturbation.

*Diagnosis:* Specifically depends upon the discovery of the actual seat of the point of bleeding within the nasal cavity or cavities and with the exception of those cases where hemorrhage arises from the lungs, pharynx or larynx or from a fracture of the cranial bones, is based upon the appearance of a flow of blood from the anterior nares.

*Treatment:* In a majority of simpler cases sudden epistaxis is self limited and requires no treatment. This is especially true in young robust children. In cases of this type the sudden attack is almost immediately followed by an equally sudden cessation of the flow of blood. Hence the loss of blood is immaterial though the patient may be pale from fright.

Prolonged nasal hemorrhage without evidence of constitutional disease or tumors is amenable to pressure applied to the bleeding point. This condition is similar to varicose veins pressure is most effective over bleeding point and useless over distal or proximal end of vessels.

The patient should sit upright and a basin should be held under chin (not nose). This position aids the formation of a clot and avoids the trickling

down into the throat. Packing absolutely useless unless evenly distributed and applied to the entire area, is of little value. The membrane of the nose is very sensitive the higher up the more sensitive it becomes.

The possession of a working knowledge of the anatomy of the nose, a developed technic, gentle touch and dexterity will enable the operator to mop out the blood, find the bleeding point and apply pressure with very little discomfort to the patient.

When due to a rupture of a septal blood vessel and the attacks of hemorrhage are both frequent and prolonged the bleeding vessels should be destroyed by means of actual cautery or application of chromic or trichloroacetic acid. Great care must be exercised lest too much cautery be used and the condition aggravated or perforation of septum be produced. Operations: "Sub Mucus Pesentisus," Removal of Spurs.

Hypodermics of human or horse serum are used for the control of persistent hemorrhage especially in hemophilic.

Severe hemorrhage following intranasal operations which do not subside in response to local applications require the use of continued pressure. Here a Simpson splint may be inserted or a tape gauze.

Following severe or prolonged attacks of nasal hemorrhage where the loss of blood has been sufficient to cause weakness and anemia an enema or an intravenous injection of a warm saline solution should be administered and the patient kept in bed for several days. When due to grave constitutional disease or tumor special measures must be employed.

*Hemostatic Serum:* Hemostatic Serum is a mixture of three organic substances, each of which has a definite role in bringing about blood coagulation. Two of them are normally present in the body, while one is produced in the blood but is not normally present.

When blood flows from a wound of an otherwise normal person the equilibrium is destroyed and certain combinations take place, resulting ultimately in the formation of a clot which more or less completely closes the wound. From the edges of the wound

the tissue juices exude, and from the blood plates which quickly disintegrate when exposed to the air similar substances are set free. These two sets of fluids mix with the blood and start the process of coagulation, which consists essentially in liberating the prothrombin from its antithrombin binding and in promoting the reaction, first between prothrombin, thrombokinase, and calcium by which thrombin is produced, then second between the thrombin and fibrinogen by which fibrin is produced and the clot formed.

There are two classes of persons who occasionally should have the coagulation time of the blood shortened. First, those who expect to undergo an operation in which the bleeding may be a serious factor. Second, those abnormal persons known as hemophiliacs, who bleed profusely on the slightest provocation, due to a want of equilibrium in the system, prothrombin being lacking or antithrombin being in excess.

Various substances have been prepared to counteract such a condition as the latter and to assist the former class—substances such as thrombin which appears in Coagulose, a soluble precipitate from blood serum, and others prepared from brain extract, such as Thromboplastin and Kephalin, which are essential kinases. Another type of coagulant is Coagulen, a powder prepared from blood platelets by centrifuging and desiccating. Blood serum, and euglobulin which is said to be the coagulative element, have also been used. There are objections to all these substances, although many good results have been reported. Extracts of brain substance and of blood plates are not safe for intravenous injections on account of possible intravascular clotting. They are recommended for local application. Blood serum and euglobulin do not long retain their effectiveness and are, therefore, short-lived.

Hemostatic Serum is shown in the diagram below, which also graphically illustrates in part what happens when this product is introduced into the circulatory system. The blood does not clot any more readily in the vascular system, but acquires the property of coagulating much more promptly than before when it escapes from the vessels.

### Blood Coagulation.

The blood clot is the mass which results when the fibrin enmeshes the formed elements of the blood.

- (1) Fibrinogen+Thrombin=Fibrin.
- (2) Prothrombin + Thrombokinase + Calcium=Thrombin.
- (3) Prothrombin + Antithrombin = Equilibrium.
- (4) Antithrombin+Anti-antithrombin =Equilibrium.

This maintains the fluidity of the blood.

- (2).

This permits the interaction in (2).

### DISCUSSION.

**Dr. M. P. Boebinger (New Orleans):** Nose bleed is quite an interesting subject. We can have nose bleed from almost anything, but the background must always be thought of. Surgical interference within the nose, for instance, submucous work, sinus work, even removing a polyp sometimes gives one quite a bit of trouble, even alarming.

One of the simplest methods is to pack. The length of time the pack should be permitted to remain in the nose should never be more than twenty-four hours. In removing an adenoid you sometimes find that the vault is not smooth and round—on the contrary, you sometimes find a little prominence. Taking a curette and making a circular sweep will strike these prominences, hence hemorrhage. What shall we do? To control the hemorrhage in this particular region is very easy—passing a small metal catheter to the end of which is attached about No. 15 silk, and a very large pack to the end of the silk. The catheter is withdrawn, the thread is made tense, with the index finger of your left hand pass it up behind the soft palate, usually having the pack larger than the space it will occupy, because as soon as the blood strikes the pack, like it would with a McBurney splint, it is smaller.

Then we have hemorrhage following submucous resection, and some from intranasal work. Quite a number of my colleagues say that in ethmoid and sphenoid work they do not pack. Be that as it may, gentlemen, as far as I am concerned I always pack. Then I can stay in bed the next morning. I allow the pack to remain in twenty-four hours. Many a time one is called to remove one pack and introduce another. A very simple method is to use long gauze like that used in packing following a mastoidectomy, and then use an ordinary Simpson-McBurney splint. Sometimes silver nitrate does good work, and a little pressure with your finger with a little adrenalin will go good work. Other times one is forced to use trichloroacetic acid, or better still, cocaine each part, use adrenalin, and then use the actual cautery and thereby obliterate the troublesome vessel. In sinus work it is sometimes necessary to use some force and pack from the posterior almost to tip of the nose.



## INTESTINAL INFECTION WITH ENTAMOEBIA HISTOLYTICA AS A FACTOR IN ARTHRITIS DE- FORMANS.

BY SIDNEY K. SIMON, A.B., M.D.,  
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In California States Journal of Medicine, of February, 1922, Kofoid and Swezy present a brief report of a case of arthritis deformans, in which the protozoal organism, entamoeba histolytica, was found, in the bony structures of the hip joints, removed at operation, by Professor L. W. Ely, of Stanford University. No claim is made in the report, of a comprehensive study of this interesting finding, though the authors promise further research, and assurance is given, of the publication of section photomicrographs in a later communication. A plea is likewise put forth, by the authors, for a more general examination of specimens of feces in all cases of arthritis deformans, with the view of detecting the possible presence of an entamoeba histolytica infestation of the intestinal tract. Since the publication of this article, I have had the opportunity of observing a case of advanced arthritis deformans, of the atrophic type, in a patient, in whom an active intestinal entamoebiasis has been demonstrated. It is needless to say, that the confirmation of a direct causal relationship, existing between an entamebic infection and the destructive lesions of arthritis deformans, would present possibilities of great importance in clinical medicine. The essential lesion of arthritis deformans, has been described by Ely, in previous communications, as consisting of a primary necrosis, of the bone marrow in the region of the joint. Subsequent changes involve a hyperplasia of the bone and cartilagenous tissue around the necrosed area, which eventually degenerates, and wears away thus leaving an articular surface of dense, eburnated bone. This constitutes the type described by Goldwaite as hypertrophic or osteo-arthritis. In the atrophic form, often spoken of as rheumatoid arthritis, inflammatory proliferation occurs principally in the joint capsule and especially in its synovial lining. The pathological process,

presented by both types differ in many respects from the arthritides produced by such organisms as the streptococcus, the tubercle bacillus or the *Treponema pallida*. Attempts have frequently been made in the past to obtain cultures from the synovial fluid and from the necrotic bone or cartilage in cases of arthritis deformans, without success. The diseased areas in fact have been found consistently sterile, though the supposition is that the original infectious bacterium has become attenuated or has been killed off entirely as a result of subsequent pathological changes. In the absence of a demonstrable organism, the etiology of the disease has always remained cloudy, though various hypotheses have been advanced, including remote foci of bacterial infection in teeth, gums, tonsils, and other organs, indeterminate intestinal toxemias, as also the contributing effect of certain atmospheric changes. The discovery of the *Entamoeba histolytica*, in the region of the necrosed area of the bone in the case reported by Kofoid and Swezy brings forward a new conception of the etiology of the disease. Barrow was the first to suggest the possibility of this relationship, the idea occurring to him as a result of finding pathogenic entamoeba in the stools of one of Ely's cases.

It is interesting to note, however, that as far back as 1916, Moorhead discussed the occurrence of arthritis as a complication or sequel of amebic dysentery. This author reported in detail, 6 cases of progressive polyarthritis, in connection with chronic dysentery, in 4 of which typical forms of entamoeba histolytica were present in the feces. He likewise, suggested that in all cases of arthritis, a history of dysentery should be inquired into, and, if obtained, advised that a course of emetin therapy be instituted at once. Moorhead did not attempt to demonstrate the presence of the organisms, either in the synovial fluid, or in sections of the joint tissue, removed by operation. In a recent case, reported by Kofoid and Swezy, this further and more definite proof of the direct invasion of the joint structures by the entamoebae, was apparently demonstrated. In this instance, a portion of the head of the femur was removed at operation, fixed in formalin

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solution, decalcified, and sections stained in iron hematoxylin. The entamoebae were found on the outer circumference of the areas of necrosis, in greatest numbers, around the peripheral capillaries. The stained organisms presented the typical nuclear structure of the *entamoeba histolytica*. In some instances, even the characteristic pseudopodia could be made out. The nuclear arrangement was distinct from that presented by other forms of parasitic entamoeba or of tissue cells, either normal or pathological. The organisms confirmed in every respect, to the type previously described by Councilman and Lafleur as present in the tissues surrounding entamoebic ulcerations of the intestinal tract. While the pathological evidence in this case, of a remote infection of the joint structures with *entamoeba histolytica* would appear convincing, it must not be overlooked that, in the past, with the exception of Moorhead's observation, mention of a clinical relationship between the two conditions, has rarely been recorded. Garrod, for example, writing, in *The Allbut System of Medicine*, claims that while arthritis is undoubtedly frequently met with in bacillary dysentery, he was unable to find any definite evidence as to its occurrence in the amebic form. Such well known authorities on entamoebiasis as Brown, Manson, Strong or Rogers, fail to make mention of arthritis as a complication of the disease. On the other hand, numerous references to arthritic complication in bacillary dysentery is by no means infrequent. In 400 cases of arthritis, recently studied by Pembroke, based on experiences in the Army, dysentery was given as the causative factor in 33 or 8.25. The type of dysentery was not stated, though presumably it was of bacillary origin. This author is credited further, with the significant statement, that arthritis may follow infection with yeast and fungus growths, and also with the *entamoeba buccalis* though the later has not been confirmed.

A further interesting problem in connection with the invasion of the bone marrow by *entamoeba histolytica*, is involved in the route which the organism traverses. Infection with the *En-*

*tamoeba histolytica* occurs primarily in the intestinal tract. Invasion of the liver, which constitutes the most frequent form of secondary complication in entamoebiasis follows the path of the portal vein. In some few instances the organism has been known to reach the brain, 35 cases in all this remote complication having been reported, in the literature to date. Invasion of the spleen is of even less frequency, and arises most probably from contact with lesions in the transverse and descending colon. Cases of pulmonary amebic abscess can always be traced to the liver. In the case of cerebral involvement, the entamoebae probably travel from a focus of infection in the liver through the vena cava into the pulmonary artery, finally reaching the brain through the arterial system. A similar mode of arterial distribution must occur in the event that the entamoebae find lodgment in the bone marrow. In the case reported by Kofoid and Swezy it is interesting to note, that no mention is made of clinical complications other than the arthritis.

In the following case of chronic arthritis deformans, complicated by an intractable type of dysentery, the presence of the vegetative *entamoeba histolytica* was demonstrated in the feces.

T. S. male, aged 27, married, auto salesman by occupation, a native of Texas, was admitted to Touro Infirmary April 18, 1921. The past history of the patient had been uneventful. Outside of the usual diseases of childhood, his health had always remained good. During the world war, he served in the airplane service, in his native state of Texas, for a period of one and one-half years. During this time, he claims to have lived mostly in the open, and was exposed to all types of weather changes. To this, he attributes the onset of his troubles. The arthritis appeared in definite form, however, eight months previous to his admission to the Infirmary while the patient was sojourning in Cuba. The disease attacked the knee joints first, spreading rapidly to the ankles, toes, wrists, elbows, fingers, shoulders, hips. The course pursued, was that of a subacute infection. The inflammatory process and temperature changes followed in the beginning only a mild course. The treatment at this time, consisted of thermal baths and salicylate medication, which brought little relief. Within two months, the patient became bedridden. In January, 1921, he came under observation in a local hospital, and at that time, all sources of possible focal infection were carefully sought for. The tonsils were subsequently removed, and autogenous vaccines



prepared therefrom, five injections in all having been administered. The teeth and gums were likewise reviewed by a competent dentist, and a number of teeth with infected pulp canals were extracted. Slight improvement followed these procedures, but proved only temporary. He was admitted into Dr. Matas' service at Touro Infirmary approximately one year ago, and though he has received the benefit of most painstaking treatment, involving various well established methods, no improvement has been noted. His present status, is one of extreme emaciation with, a marked degree of anemia present. The weight registers 45 pounds under the normal weight (165 pounds.) Blood picture, red count 2,950,000. No special abnormalities have been noted in the urine. The joints present the characteristic appearance of the atrophic type of arthritis deformans. Marked deformity with ankylosis is present with diffuse infiltration of the entire joint tissues and degeneration and erosion of the cartilage.

The skeletal muscles are markedly atrophied. The joints are tender to touch, and the patient experiences keen pain on the slightest movement. The dysenteric complication in the case began about four months following the onset of joint symptoms. Prior to that time, the bowel functioning had been normal. The number of daily dysenteric bowel evacuations have varied, but average about four in twenty four hours. The character of the stool is distinctly dysenteric, being composed largely of blood, mucus and pus. Considerable tenesmus accompanies each evacuation, and in recent months a tendency to spontaneous evacuation has been shown. The entamoeba histolytica in active form was discovered in the stools in February 1922. A course of ipecac medication by mouth and of emetine hydrochloride hypodermatically was immediately instituted. Because of the patient's generally unsatisfactory condition, full dosage with these drugs was deemed inadvisable. The use of the specific medication, however, has removed all evidence of the protozoal infection in the feces at the present time. Nevertheless, in spite of this, the dysenteric stools have continued and large amounts of pus and blood are still present in the stools. Proctoscopic examination has been persistently refused by the patient, though presumably an extensive ulceration of the large bowel exists. No change in the condition of the joints was noted following the administration of the ipecac and emetine. We have likewise been unable to obtain any of the synovial fluid or joint tissue for examination for the possible presence of the protozoal organism.

I wish to acknowledge my indebtedness to Dr. Rudolph Matas for the privilege of studying and reporting the interesting findings in this case.

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### ETIOLOGY OF PELLAGRA.

BY B. W. PAGE, A.B., M.D.,  
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This brief paper is intended as a summary of an investigation made of this important disease in the last ten or twelve years.

While making some eleven thousand examinations of feces I observed in many of them a peculiarity, because of the large number of bacteria present, which seemed so different from the usual that I began to investigate and found them to be associated in some way with pellagra.

When cultivated from feces on the usual media the colonies of the invading organism are identified by the use of a serum obtained from natural blisters occurring on severe cases of the disease, from animal inoculation, and from cultural characteristics later mentioned.

The organism shows the following characteristics: A Gram-positive sporulating, actively motile bacillus; aerobic and slightly facultative anaerobic; non-gas producing; grows at 37°C. and at room temperature; pellicle formation on bouillon; liquifies gelatine; digests Loeffler's blood serum does not ferment dextrose, lactose, saccharose, or maltose; peptonizes milk; conforms somewhat to those of organisms of the *Subtilis Mesentericus* group.

Some cultural characteristics of the organism, worked out with the assistance of Prof. B. F. Kaupp, Pathologist and Bacteriologist of the N. C. Agricultural and Mechanical College, are as follows: Corn Agar Plate. A twenty-four hour colony measures from 1 to 2 millimeters in diameter. The surface is convex. The borders are smooth.

The color is whitish gray. Forty-eight hour colonies are umbonate and measure 3 millimeters in diameter.

**Corn Agar Slant.** At twenty-four hours the growth is abundant. Form, aborescent; elevation, raised; luster, glistening; topography, smooth; optical characters, opaque; chromogenesis, grayish with age, odor, slight and apparently characteristic of the organism; consistency, a tendency to be slimy; medium not affected.

**Corn Agar Stab.**—At the end of twenty-four hours there is apparently no growth along stab line. Surface growth abundant and same as for corn agar slant.

**Potato.**—The twenty-four hour growth is abundant. Surface rough and pitted. At the end of three days at incubator temperature the surface takes on a light tan color and growth covering surface has an areolate appearance. Luster, dull.

**Bouillon.**—Scum on surface. Bouillon not clouded at end of forty-eight hours. Heavy precipitate in bottom of old cultures. Scum wrinkled in old cultures.

**Two Per Cent. Dextrose Agar Slant.**—The twenty-four hour surface growth is abundant with tendency to spread over entire surface. Edges, smooth. Line of puncture not closed and growth moderate and echinulate.

**Milk Inoculation.**—At the end of twenty-four hours the milk is not coagulated. Slight separation of surface whey. Cultures of forty-eight hours and older show digestion of casein. Delicate membranous surface growth. Contents of tube examined after one week's time and no acid present. Medium at end of week still neutral to slightly alkaline.

**Gelatin, Plain**—Stab, where the stab lines closes there is no growth below the surface. At the end of twenty-four hours at a temperature from 85 degrees to 90 degrees Fahr., there was a slight whitish growth at the surface, but none along the needle tract. Growth continues till entire surface is covered, which is about three or four days. There is slow liquefaction of stratiform character and finally after ten days a scum-like growth.

**Two Per Cent. Each, Beef Extract.**

**Dextrose, Corn, Potato.**—Twenty-four hour growth, no scum on surface. Bouillon clouded. Heavy precipitate in bottom. Scum appears on surface in two to three days and becomes wrinkled in older cultures.

**Two Per Cent. Beef Extract, Dextrose, Corn, Potato, Agar Slant.**—Twenty-four hour growth very abundant, covering entire surface and extending more deeply into medium.

**Two Per Cent. Dextrose Bouillon.**—Fermentation tube, growth abundant at end of twenty-four hours in unclosed arm. No gas formed nor growth in closed arm. Apparently aerobic as there was a plain line of demarcation at commencement of closed portion.

**Two Per Cent. Lactose Bouillon.**—Fermentation Tube.—Same results as in bouillon fermentation tube.

**Two Per Cent. Saccharose Bouillon Fermentation Tube.**—Same results as dextrose fermentation tube.

**One Per Cent. Saccharose Agar Stab.** Needle tract did not close entirely and at the end of twenty-four hours showed a slight echinulate growth along the needle tract. Abundant surface growth spreading over entire surface.

**One Per Cent. Saccharose Agar Slant.**—A twenty-four hour growth was spread over entire surface. Tendency to be aborescent. Otherwise the same as corn agar slant.

**One Per Cent Lactose Agar Stab.**—Same as corn agar stab.

**One Per Cent. Lactose Agar Slant.**—Same as corn agar slant.

All cultures present a similar appearance, that is, a deep cream to light tan with similar appearing surface. The light tan is more typical when grown on potato and the cream when grown on agar and a skum on liquid media as bouillon.

In old cultures there is spore formation, the spore apparently forming near one end of the bacillus. These bacilli appear twice to four times in length as compared to diameter. The ends of the bacilli are apparently slightly rounded.

**Search for the Organism in Normal Stools.**—Only ten normal stools have been plated out for search, for this organism, but the organism was not found.

The organism seems to be pathogenic



for the following reasons: First, it proves to be constant in the stool while definite symptoms of pellagra exist. It has been isolated from stools of three pellagrins three different times. It has been isolated from one specimen from each of twenty-three other patients suffering from pellagra.

Second, the organism in pure culture when fed to mice produces a toxin that causes death in twenty-four to ninety-six hours. Those that die early seem to die of septicemia. Those that live three to four days seem to die from general weakness and emaciation. The organisms are found in all the organs after death. Pure cultures have been obtained.

Third, blood serum from pellagrins as a rule has very little effect on the organism. In very severe cases with high fever the blood serum occasionally gives a positive widal reaction. Serum from natural blisters occurring on pellagrins and serum from blisters produced from cantharides plasters renders the organism non-motile and agglutinates them in three to thirty minutes in a mixture of the serum with an active culture in proportion of 1 to 5, or 1 to 10, or even 1 to 50. Similar tests were made with typhoid and colon bacilli with negative results. Serum from blisters of healthy individuals gives negative reactions with all these organisms. Serum from the blisters of a pellagrin agglutinates the organism from the same patient and other pellagrins also.

Fourth, one of the several healthy persons previously examined with negative results, after accidental exposure in a laboratory, developed symptoms of grippe which later proved to be pellagra. The organism was isolated from the stool on the third day after symptoms developed.

The organism was again isolated from the stool eight and twelve months later.

For the treatment of pellagra it seems that Ichthyol, grains 5, in pills or peppermint water, or Copper arsenite grains 1-100th three or four times a day gives best results. Other drugs are occasionally indicated as various symptoms arise. An immunity or cure seems to be established in most cases within a few weeks.

## FOCAL INFECTION A CAUSE OF ERYTHEMA MULTIFORME.\*

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The subject I am about to present to you is one which should prove of interest to the General Practitioner as well as to the Dermatologist. You have all heard about this skin disease called Erythema Multiforme. It constitutes about 1% of Dermatological conditions and is to be found everywhere and among all classes of individuals. I do not think there is another skin disease which has so many etiological factors.

The exact causes of Erythema Multiforme are obscure and still to be discovered. I have listed below a number of these causes, placing the most important one at the head of the list, and that is the formation of intestinal Toxines.

The use of stale foods and the eating of oysters, fish, crabs, and all forms of sea food are also causative. On the other hand in these very severe cases there seems to be an infectious background, according to some writers as Vidal, Leloir, and others, epidemics have been reported by some observers and other observers have reported the findings of bacteria in these cases, but they are not agreed on the same organisms. Seasons of the year appear to have an effect as they are more frequent in the spring. It is found in conjunction with rheumatic conditions. Both sexes are subject to this disease, but women are more frequently afflicted than men, and it is supposed to be more frequent during early adult life, but from my experience it would appear to be more frequent amongst the middle aged. Changes in surroundings, modes of living, and in foods are also causative. This is borne out by the fact that we find it in immigrants and in people who are accustomed to country life and move to the city to live. Many drugs are supposed to be causes such

\*Read before the Louisiana State Medical Society, April 24-26, 1923.

as iodides, copabia, and the coal tar preparations. Urethral irritation in men and menstrual disturbances in women are very often causative. Antitoxins produced this disease in some instances.

I have enumerated the various causes of *Erythema Multiforme*, but I will now add another cause which from my experience is a very important one and that is Focal Infection. In the Journal of A. M. A. of October, 1918, there is a very interesting article by Dr. Ravitch and Steinberg, on "Focal Infections as a cause in certain Dermatoses" amongst which we find *Erythema Multiforme*. I make this rule in my practice that whenever I get a case of *Multiforme Erythema* I always eliminate the possibility of an infective Foci before instituting other methods of treatment, the mouth, teeth, tonsils and nose being given the most attention as it is here that we often find the source of trouble. When a patient comes to me with *Erythema Multiforme* and I find any evidences of infection such as ulcers, cuts, and vesicular eruption that have become postular my mode of treatment is directed principally to clearing up these foci and as you will see from the following reports of cases with beneficial results.

#### CASE I.

A young doctor, aged 29 years, who was treated by me about three to four years ago. When I first saw this patient he had a rather extensive eruption of Pompholyx on hands and feet. He was treated for this about one week when in some unaccountable way (all aseptic precautions having been taken) the lesions became infected and in about two or three days he was covered by an eruption of *Erythema Multiforme*, every part of his body being affected. This condition persisted for about three months. It was one of the most stubborn cases of this disease that I have ever seen. There is no doubt in my mind that the formation of pus in vesicules produced a toxine which reacted on the system causing this general eruption.

#### CASE II.

Mr. E. P., age 46, Longshoreman, well nourished individual, was working on river front when he was struck on the leg by a piece of wood causing an ugly cut in leg. This then became infected, causing a great deal of pain, but he paid no attention to this until he woke up one morning to find his arms, leg, abdomen and back and face covered by an eruption. He sent for his family physician, who called me in consultation. On my arrival I found him with an eruption of Multi-

forme *Erythema*, but also found that the wound on leg was badly infected. From his history the eruption on body developed about four to seven days after injury. In this case my measures of treatment were centered at clearing up infection of leg. General treatment for *Multiforme Erythema* was also instituted. As ulcer on leg became better and better a marked improvement was noted in the other condition. In this case the *Multiforme Erythema* cleared up at about the same time as ulcer on leg healed. That is in about two to three weeks. This man has up to now never had a recurrence and remained completely well.

#### CASE III.

Mr. R. H., age 45, from the country, came to New Orleans for treatment. He came to see me at one of the hospital's free clinics covered with an eruption of *Multiforme Erythema* from head to foot. He claimed to have had this condition for a period of two and one-half years. Never at any time completely free, sometimes worse, sometimes better. The regular treatment measures were given, but after innumerable treatment with various drugs our man showed no improvement. I then decided to look around for a possible source of infection, and all that I could find was a set of very bad teeth. I then advised him to see a dentist and have his mouth placed in first-class shape, which he did. I lost trace of my man for about three months, as he returned to the country. At the end of that time he came back to New Orleans, dropped in to see me and he did not appear to be the same man at all, as he was completely well. He said that all the teeth in his mouth had been removed, and he was wearing false teeth. He said that about three weeks after teeth had been removed he began to feel much better and gradually as his mouth was placed in better condition he began to get better and better, and that in about two months from time the dentist began to work on his mouth he was completely cured and has remained so up to the present time.

#### CASE IV.

This was a lady, Mrs. R. D., age 38, with a severe eczema of the hands and feet. She had endeavored to treat herself, but as in most of these cases it was unsatisfactory and the eczema lesions became infected and very painful, but did not think it was necessary to see a physician and that she could cure herself. But when she awoke a few mornings later she was covered with an eruption over her chest and arms which frightened her and caused her to send for me. She was suffering from two distinct conditions. One an eczema and the other a *Multiforme Erythema*. Here again the *Multiforme Erythema* only developed four to six days after the infection of hands has taken place, and by treating the infection was able in a short time to cure her of the *Erythema* entirely.

I have presented you with four cases and in each one it is evident that a focus of infection was present. Now



some may say that this is only a coincidence, but that the Erythema would have developed just the same. But to me there is no doubt that the Infective Foci were the cause of these cases of Erythema Multiforme. Now I do not mean to say that Multiforme Erythema are due solely to infection because that is not my idea and as I have already said in the beginning of this paper there are very many other causes of Erythema Multiforme, but I think that if we remember Focal Infection as one of the causes of Erythema Multiforme we will be able to clear up many a stubborn case.

#### DISCUSSION.

**Dr. Ralph Hopkins (New Orleans):** We have all listened with a great deal of interest to Dr. Oriol's able presentation of one of the important problems frequently presented for solution to both the general practitioner and the specialist.

If I may be permitted to depart a little from the subject of Dr. Oriol's paper, I would say that the same etiologic factor of infection may often be found in other diseases of the skin more or less closely allied with the

group of erythema multiforme, notably the urticarias, certain eczemas, and a large group that may be called toxic dermatoses.

The focus of infection in these groups is not always easy of determination. A focus suspected as the causative factor may be removed without relief of the skin symptoms. Some other less obvious focus may exist elsewhere and be the responsible cause. In late years the teeth have been much under suspicion and we have all been rather in the habit of expecting that the extraction of teeth with abscessed roots will remove the cause of such diseases as erythema multiforme. I think we may frankly admit, however, that we are frequently disappointed. It is in this latter contingency that I wish to emphasize the point made by Dr. Oriol, that the logical search for the cause should not be abandoned. In illustration of this point I might mention a case at present under treatment who has had several abscessed teeth removed without relief, and whose urinary bladder must now be regarded as the next most probable focus of infection.

A second unusual case is a rather typical erythema multiforme following an exposure to poison oak. This cleared up, then there was a second eruption without new exposure. The question was, was the erythema multiforme due to toxicodendron poison absorbed into the circulation, or to pus products in lesions?

# New Orleans Medical and Surgical Journal

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### THE S. M. A.

At a recent meeting of the Orleans Parish Medical Society, a resolution to extend an invitation to the Southern Medical Association to hold their 1924 meeting in New Orleans was unanimously adopted. It has been over fifteen years since this body has honored New Orleans with its presence. At that time the membership was not large, but those who did compose the vanguard were the salt of Southern medicine. This is demonstrated by the fact that the S. M. A. now encompasses sixteen States below Mason and Dixon's Line and in size and influence ranks second only to the American Medical Association. Let us hope that the association will look upon our invitation with favor. The Second Port in the U. S. A. stands with arms extended.

### CHARITY HOSPITAL.

At the annual meeting of the Charity Hospital Staff, held last month, following the annual report of the president, Dr. John F. Oechsner, the body adopted unanimously a resolution to address the various candidates in the coming gubernatorial primary, directing them to give expression as to their attitude on taking the Hospital out of politics. This is the first time, in the history of the Institution, that a Staff has ever had the courage to take such a stand. The Charity Hospital has always been considered legitimate spoil by the in-

coming political administration and because of this the entire hospital organization suffers change every four years—to the detriment of patients and staff alike. It is earnestly hoped by every loyal citizen of Louisiana that this abomination soon will be but a memory of something departed never to return.

### A CENTENARY.

The *London Lancet*, founded in 1823, Great Britain's oldest medical weekly, will soon celebrate its 100th birthday. It is at this day one of the leading medical journals of the world. Since its founding anaesthetics, antiseptics, and bacteriology, as well as many other fundamental contributions to medicine, have been made. Truly, this journal has something to celebrate, and we extend to our brother across the seas, our heartiest congratulations and best wishes for a life indefinite.

### IS SCIENCE INCOMPATIBLE WITH RELIGION?

There has been much discussion in the lay press, of late, relative to this subject, but, especially whether or not one can be an evolutionist and, at the same time, be sincerely a believer in God and the Bible; in other words, can we be Darwinians or modified-Darwinians and still respect the narrative of the creation of the earth, as it was taught to us in Sunday school?



We should preface our answer by stating that, to the scientific mind, the process of human evolution is no longer a theory, but a fact; we do not necessarily have to agree, in toto, with Darwin's ideas, but whether we be Christian, Jew, Mohammedan, Pagan, atheist or agnostic, we accept the essential point. The most interesting dissertation on this subject that has been published of late is a small volume by that venerable and esteemed surgeon, Professor Wm. W. Keen of Philadelphia (Lippincott, 1923); the booklet, which is an enlargement of a commencement address delivered by him to a Theological Seminary, last year, is thus dedicated: "To all sincere seekers after truth; who revere the Bible as the word of God; who revere Nature as the work of God; who believe that, rightly interpreted, they must surely agree." In this work, Dr. Keen goes on to show, by anatomical, surgical, physiological and pathological facts, the unity of the animal kingdom, including man; he dwells on well-known ancestral vestiges, heredity, evidences from fossil man, etc., and then concludes with a chapter on "Evolution of Culture and Civilization." Dr. Keen's book might not convince a skeptic, like a well known man in the political life of our country, who considers evolutionary beliefs sacriligious, but it will appeal, very strongly, to the "everyday man on the fence" or one open to conviction.

We should all be missionaries on these facts; honor and respect the Bible, rightly interpreted, but, at the same time, not shutting our eyes to science and scientific research.

#### RATIONALE OF A SANITARY CODE.

By the term "Code" is understood a series of rules and regulations by which our actions along certain lines of conduct are guided. The legislative machinery of many lands, notably those of continental countries is very frequently divided into two classes, which are termed respectively the Civil and Criminal Codes and which in printed forms contain a digest of the principal laws pertaining to civil and criminal delinquencies. These codes

are for the direction of the legal profession in the prosecution of cases; they are in effect the spirit in contradistinction to the letter of the law converted into terse but comprehensive statements and committed to print.

The Sanitary Code is a similar institution. It is primarily written for the guidance of the health officer of the state. It may be regarded as a series of rules and regulations based upon existing laws, sometimes even the exact wording of the statutes where such is deemed advisable, always constructed with the idea of clarity of interpretation as the main issue. The regulations promulgated by municipal and parish bodies in order to meet the peculiarities of situation, environment or otherwise, must be regarded as auxiliaries to the State code which cannot cover all possible conditions.

The Code embodies within itself both the legal aspect of sanitary principles, as well as the fundamentals of Preventive Medicine and Public Health. It attempts to explain these in language readily understood as well as the law and its practical application to public benefit in terms of medical science. It is a guide and mentor to those whose duties are the prevention of disease, and of unsanitary nuisances which are the forerunners of disease. While it is not in itself the law it interprets the law and therefore has the backing of the legal power of the State in the enforcement of its requirements.

The New Louisiana Code which has just been issued is arranged in a series of chapters each one of which pertains to some subject of vital importance from the sanitary or health standpoint. Each chapter is again subdivided into articles which handle the phases of the chapter title. Inasmuch as it is impossible to anticipate all possible contingencies the articles are, in general, not devoted to specific instances, except in those cases where minute directions are of paramount importance.

To the most important phases of Public Health belong the Communicable Diseases. These must, therefore of necessity be treated in extenso. Then too the Quarantine regulations which are those adopted by the United

States Public Health Service receive special attention.

The rules regarding Food Products and Drugs, their preservation, the manner of purveying, the marketing conditions and a host of other points including rules for inspection are fully covered in the appropriate chapter on Food Products regulations.

The sanitation of cities, towns and private dwellings as a part of Public Health activities receives attention in so far as such matters are likely to prove detrimental to public welfare, or play a part in the spread of disease.

There is a division for miscellaneous regulations on subjects which do not appropriately fall within the categories already mentioned. These include the inspections of weights and measures and oil.

These in a very few words are the main features of the information which the Sanitary Code provides for our guidance. Each and every point is in principle covered by legal enactment, or at least in minor detail received the approval of the State Board of Health. You will immediately perceive that the Sanitary Code provides you with a model upon which to base your parish and municipal health regulations, and in default or failure of the latter it provides you with prescribed course of action in periods of emergency.

It is not to be assumed that the Code represents a course of action which is infallible and susceptible of changes. Even though it is presumably clear as to just what should be done under certain conditions, it is yet sufficiently elastic to admit of different interpretations excepting, of course, where fundamental principles are involved. Then, too, changes are obligatory when alterations in custom or popular demand, or the advancement of medical and scientific knowledge seem to demand them. These changes are termed amendments

and are promulgated from time to time according to the necessities of the times and judgment of the Board. Each health officer receives a copy of the amendment, which he is expected to attach to the appropriate page in his Code.

Just as we use our reference works in medicine when we come upon difficult or obscure cases in our practice, or when we want to accumulate additional knowledge on some cases which though we may be able to diagnose, we are not too well assured of all the possibilities in just such a capacity we employ the Sanitary Code. It is in fact a vade mecum of the accumulated knowledge of how to handle difficult epidemic situations; and it tells just how far our authority extends in combating sanitary evils. It is intended to be a work of reference for the sanitarian, the health officer, the municipal councils and the police juries. It is not claimed that the last degree of perfection has been reached in framing it; no doubt there are many articles which could be subjected to revision and improvement.

But neither are the laws of the land the acme of legal perspicacity and justice and of righteousness. The reason is clear. Both are the works of the human mind open alike to the fallibilities of personal prejudice, imperfections of judgment and limited knowledge. Still it would appear that the Code which we now have and which has been completely revised, extended, subjected to a critical examination, and entirely rearranged is, to say the least, an improvement over the previous one. It is sincerely to be hoped that it will receive the trust and consideration which its predecessor received and which the immense amount of work expended on its revision and compilation justly merits.



## NEWS AND COMMENT

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The Southern Medical Association will hold its seventeenth annual meeting at Washington, D. C., Monday, Tuesday, Wednesday and Thursday, November 12-15, 1923. Dr. W. S. Leathers, Executive Officer, Mississippi State Board of Health, Jackson, Miss., is President.

This meeting will be made up of twenty sections and conjoint meetings. The programs of these meetings will cover every phase of scientific medicine and surgery.

The President of the United States will receive informally the members of the Southern Medical Association and their wives, Thursday, November 15th, at 12:30 p. m. at the White House. Of special interest to the ladies will be the reception at the Washington Club on Tuesday afternoon, where Mrs. Woodrow Wilson will be the guest of honor. The usual reception to the President of the Southern Medical Association will be held on Tuesday night at the New National Museum, one of the most beautiful public buildings of Washington, a detachment of the Marine Band furnishing the music. Other special entertainments being received.

At the first general session on Monday night, in addition to the address of the President, Dr. Leathers, there will be an address by Dr. Geo. E. Vincent, President of the Rockefeller Foundation, New York, N. Y.; "Oration on Public Health" by Dr. W. S. Rankin, State Health Officer of North Carolina; "Oration on Medicine" by Dr. Stewart R. Roberts, Atlanta, Ga., and "Oration on Surgery" by Dr. J. W. Barksdale, Jackson, Miss.

A joint dinner by the Section on Surgery and the Section on Radiology, as well as a number of section dinners, will be interesting features of Tuesday evening. The Alumni Reunions which promise to be an outstanding feature of this meeting will be held on Wednesday night and it is expected that there will be large groups present from all of the leading medical schools.

Physicians who golf are urged to bring their clubs. There will be a golf tournament at which the usual prizes

will be offered. Play will be over the championship course of the Columbia Country Club.

The University of Virginia Hospital, Charlottesville, have already announced special clinics for Friday and Saturday following the meeting. While no definite announcement has been made yet, it is anticipated that John Hopkins and the University of Maryland will arrange clinic programs for Friday and Saturday following the Washington sessions.

Washington has many splendid hotels and every one is assured of comfortable accommodations this year. Special reduced rates have been granted by railroads on the certificate plan. Each member of the Southern Medical Association will receive a certificate without application for it. Any physician who is a member of his state and county medical society, although not a member of the Southern Medical Association, who desires to attend this meeting, can have the benefit of these reduced rates by requesting a certificate from the association office.

New Orleans is honored in having Dr. Allen Eustis, Chairman of Section on Medicine; Dr. H. W. E. Walther, Chairman of Section on Urology, and Dr. F. M. Johns, Vice-chairman of Section on Pathology.

The National Malarial Committee (Conference on Malaria) meets in Washington, D. C., November 12, 1923, conjointly with the S. M. A., the officers being Dr. H. R. Carter, Assistant Surgeon-General, U. S. P. H. S., Honorary Chairman, Washington, D. C.; Dr. S. W. Welch, Chairman, Montgomery, Ala., and Dr. L. D. Fricks, Surgeon, U. S. P. H. S., Secretary, Memphis, Tenn.

The Conference on Medical Education in the South meets in Washington, D. C., November 13, 1923, with the following officers: Dr. M. L. Graves, Chairman, Galveston, Tex.; Dr. W. McKim Marriott, Vice-Chairman, St. Louis, Mo., and Dr. C. C. Bass, Secretary, New Orleans, La.

A Conference of Presidents and Secretaries of State Medical Associations and State Health Officers will be held in Washington, D. C., November 13, 1923, with the following officers: Dr. E. A. Hines, Chairman, Seneca, S. C., and Dr. Graham E. Henson, Secretary, Jacksonville, Fla.

The Medical Directors of Southern Life Insurance Companies will meet in Washington, D. C., November 13, 1923, officers of the association being: Dr. J. B. Steele, Medical Director, Volunteer State Life Insurance Company, Chairman, Chattanooga, Tenn.; Dr. J. W. Handley, Medical Director, Independent Life Insurance Company, Vice-Chairman, Nashville, Tenn., and Dr. R. C. Maddox, Assistant Medical Director, Volunteer State Life Insurance Company, Secretary, Chattanooga, Tenn.

Conference of Southern State Statisticians meets in Washington, D. C., November 12, 1923, with Dr. W. A. Davis, Atlanta, Ga., as president and Dr. R. W. Hall, Jackson, Miss., as secretary.

Women Physicians of the Southern Medical Association meet with S. M. A., November 13, 1923. The officers being: Dr. Elizabeth Kane, President, Memphis, Tenn.; Dr. Flo Brandeis, 1st Vice-President, Louisville, Ky.; Dr. Iva Youmans, 2nd Vice-President, Miami, Fla., and Dr. Josephine Hunt, Secretary-Treasurer, Lexington, Ky.

The Southern Association of Anesthetists meets in Washington, D. C., November 12-13, 1923, with the following officers for this year: Dr. Ansel M. Caine, President, New Orleans, La.; Dr. Olin W. Rogers, 1st Vice-President, Knoxville, Tenn.; Dr. Nettie Klein, 2nd Vice-President, Texarkana, Ark., and Dr. W. Hamilton Long, Secretary, Louisville, Ky.

Dr. C. A. Bahn attended the meeting of the American Academy of Ophthalmology and Oto-Laryngology held in Washington, D. C., October 15th to 20th, inclusive.

The owner of the Medical Building, 124 Baronne street, Mr. J. A. Legendre, Pharmacists, has announced that the policy of restricting the use of the building to doctors, as now in force is to be continued. Many improvements have been made in this building.

The regular semi-annual meeting of the Fourth District Medical Society was held in Shreveport, La., Tuesday, October 16th, 1923.

9:00 A. M.—Medical and Surgical Clinics—Shreveport Charity Hospital Staff.

Afternoon and Evening Session—Shreveport Charity Hospital.

2:00 P. M.—Call to order by the President Dr. J. G. Yearwood, Invocation Rev. M. E. Dodd.

Words of Welcome—Mayor L. E. Thomas. Dr. L. H. Pirkle, President Shreveport Medical Society.

#### SCIENTIFIC PROGRAMME.

1. Preparation and Post-operative Management of Abdominal Surgical Cases .....  
.....Dr. R. O. Simmons, Alexandria, La.
2. Gonorrhoea in Women.....  
.....Dr. C. M. Baker, Minden, La.
3. Syphilis of the Stomach with Report of Cases .....  
.....Dr. D. L. Kerlin, Shreveport, La.
4. Post-operative Pulmonary Embolism .....  
.....Dr. J. E. Heard, Shreveport, La.
5. Eczema in Infancy and Childhood.  
.....Dr. M. S. Picard, Shreveport, La.
6. Orthopedic Conditions Among the Colored Race with Presentation of Cases .....  
.....Dr. Guy A. Caldwell, Shreveport, La.

Election of Officers.  
Announcements by the Secretary.  
Adjournment.

#### EVENING SESSION

7:30 P. M.—Dinner.

1. Charity Hospital Staff Meeting in Conjunction with Fourth District.  
Informal Discussions.  
Adjournment.

The Third Quarterly Meeting Seventh District Medical Society was held at Oakdale, La., Tuesday, October 2, 1923.

A delightful banquet was tendered by the Allen Parish Medical Society after which the meeting was called to order at the American Legion Home at 8 P. M.



Minutes of the previous meeting were read and approved. Thirty three doctors answered to roll call.

Miss Marion Dickson, a five year old, gave the address of welcome. The following Scientific Program was rendered.

1. "The Value of Cystoscopy in Diagnosis To The Clinician." With lantern slide demonstration, . . . . .  
 . . . . .Dr. H. W. E. Walther, New Orleans, La
2. "The Significance of Uterine Hemorrhage." With lantern slide demonstration, . . . . .  
 . . . . .Dr. R. O. Simmons, Alexandria, La.
3. "The Value of X-Ray Examination To The Clinician in The Diagnosis of Gastro-Intestinal Diseases." With lantern slide demonstration, . . . . .  
 . . . . .Dr. G. C. McKinney, Lake Charles, La.

Four new members were admitted to the Society. The next meeting place and date were postponed, to be decided on later. Motion to adjourn.

The New Orleans Hospital for Women and Children and better known as the Women's Dispensary, announces that in the future the name will be changed to Women's Hospital. The staff is composed as follows: Eye, Ear, Nose and Throat, Dr. M. Earl Brown, Dr. J. R. Hume, Dr. Z. T. Young; Surgery, Dr. R. E. Stone, Dr. O. F. Ernst, Dr. A. F. Hebert; Gynecology and Obstetrics, Dr. Sara T. Mayo, Dr. Etta P. McCormick; Medical, Dr. P. L. Querens, Dr. D. A. Palmisano; Orthopedics, Dr. J. T. O'Ferrall, Dr. H. L. Simmons, Neurologist, Dr. W. J. Otis; Radiologists, Dr. L. A. Fortier, Dr. Edna Brown; Gynecologist, Dr. R. J. Maihles; Skin, Dr. R. A. Oriol; Pathologist, Dr. J. A. Landford; Interns, Dr. Sara E. Huckaby; Dentist, Dr. H. T. Price.

Dr. P. J. Gelpi has been appointed to present to the Southern Medical Association the merits of the Louisiana plan for the care of Indigent Physicians.

The October meeting of Shreveport Medical Society was featured by a paper on "Middle Ear Diseases in Children" by Dr. T. D. Boaz, who has recently returned from a Post Graduate trip abroad. In addition, several interest-

ing clinical case reports were received. Announcement was made of the forthcoming meeting of Fourth District Medical Society, the evening session of which will be held jointly with the Shreveport Charity Hospital Staff.

Died—Dr. Silas Youree Alexander (Tulane, 1903) died in Shreveport, September 25th, of complications following a serious operation about two weeks before. Dr. Alexander had been in unsatisfactory health for several years, but his death was a shock to his friends and associates.

Monthly Bulletin of the Shreveport Medical Society, October 1923.

SCIENTIFIC PROGRAM.

Middle Ear Infections in Children, by Dr. T. D. Boaz. Uterine Hemorrhages, by Dr. R. H. Blackman.

The regular monthly meeting of the Shreveport Medical Society was called to order by acting President Butler, at 8:10 p. m. The following twenty-four members were present: Drs. Barrow, Boaz, Bodenheimer, Boyce, Butler, Cassity, Caldwell, Dickson, Garrett, Gorton, Heath, Herold, Heard, W. S. Kerlin, D. L. Kerlin, Knighton, Lucas, Paine Paul, Rigby, Sanderson, Sims, I. Henry Smith, Young, Visitors: Drs. Gilmer, Barker, and members of the Charity House Staff.

There was no report from the treasurer or secretary. Dr. Sanderson reported for the Entertainment Committee on the social meeting of the Society held in August. Dr. Bodenheimer made a motion, which was seconded and passed, that the treasurer be authorized to reimburse the committee for the amount of the deficit incurred, \$71.50, that the report be accepted, the committee thanked and discharged.

A letter was read from Dr. Litton stating that he had practiced the Abrams methods of treatment, but had found them to be without value, and that he does not intend to use them in the future. He declared his honesty of purpose and his desire to remain a member of the Shreveport Medical Society and of the Louisiana State Medical Society.

A letter was read from Dr. Dowling concerning Dr. E. R. Watters, Harlingen, Texas, a member, or former member of this society. The Society records

indicate that 1914 was the last year Dr. Watters' dues were paid.

Applications for membership in the Shreveport Medical Society from Drs. P. R. Gilmer and Don S. Marsailles were read out.

A motion was made by Dr. Bodenheimer that the check for this year's dues for Dr. Watters be accepted in order to enable Dr. Watters to get reciprocity with Texas. Motion passed.

The Secretary was instructed to write to Dr. Litton that in view of his conclusions as to the worthlessness of the Abrams methods of treatment and his decision to not practice them in the future the Society is glad to have him remain a member.

Drs. Quinn, Paine, D. L. Kerlin were appointed a committee on the application of Dr. P. R. Gilmer. Drs. Garrett, Rigby, Willis, Jr., were appointed a committee on the application of Dr. Don. S. Marsailles.

#### SCIENTIFIC PROGRAM.

Dr. J. M. Bodenheimer read an interesting paper on Pituitrin in the Second Stage of Labor. Discussion by Drs. Dickson, Butler.

Dr. J. E. Knighton gave an instructive talk on medical ethics and read extracts from the Code of Ethics of the Shreveport Medical Society. Discussion by Drs. Cassity, Rigby, Sanderson, Herold, Young, Bodenheimer.

Dr. Sanderson made a motion that a committee be appointed to go over the Code of Ethics, By-Laws, and Constitution of the Society, revise, bring up to date, and have printed. The motion was seconded by Dr. Rigby and was passed. Appointed on this committee were Drs. Knighton, Herold, Barrow, Sanderson, Bodenheimer.

#### CLINICAL CASES

Dr. D. L. Kerlin presented a very complete case history of a case of Paratyphoid. Discussion by Drs. Knighton and Pauls. Dr. Cassity and Dr. Bodenheimer told of interesting cases.

Dr. T. D. Boaz who has recently returned after studying abroad was called upon and told about his trip. Among other things he called attention to the fact that in Vienna they are putting less reliance on Salvarsan than formerly as a sole agent in the treatment of

syphilis and are using the old remedies more than heretofore.

On motion the Society adjourned at 9:55.

Robert T. Lucas, Secretary.

The Lederle Antitoxin Laboratories have moved to 205 New Medical Building, Prytania and Aline streets.

Washington, D. C., October 9, 1923. The Department of Commerce announces that provisional birth figures for the first three months of 1923 indicate slightly lower birth rates than for the corresponding three months of 1922. For the states compared the birth rate for the first three months was 22.4 in 1923 against 23.6 in 1922. The highest birth rate for the three months is shown for North Carolina (27.6) and the lowest for Vermont (15.8).

The hospitals of the United States and Canada spend over \$500,000,000 a year for supplies and equipment. The expenditure of this huge sum calls for considerable planning and forethought as to varieties, types, and kinds selected, for not only are many new hospitals being built, but many of the present ones expanding their facilities to meet the needs of our growing population.

An event which may be fraught with far-reaching consequences for world health is the Third General Interchange of Health Officers arranged by the Health Section of the League of Nations which is now taking place in the United States.

Representatives from France, England, Italy, Russia, Poland, Spain, Holland, Belgium, Greece, Jugoslavia, Germany, Switzerland, Norway, Mexico, San Salvador, Brazil, Chile, and Canada, delegated by their respective governments to participate in a course of study and observation, arrived in America the first week in September and will remain for approximately three months.

Milwaukee, Wis., Oct. 9 (Special)—Chemical authorities in the universities have decided that the American people must be taught how to wash their faces



and their family linen scientifically.

For the first time in history, a concerted effort to experiment with the detergent action of soaps will be launched this autumn in the great laboratories of Cornell University, as the result of the announcement of the winner in the First "Palmolive Fellowship" by a group of leading scientists and chemical authorities here today.

Paul H. Fall, 5600 Drexel Boulevard, Chicago, has just been awarded the \$2,000 fellowship, to be given annually by the Palmolive Company, so that he may devote himself to the purely scientific study of the chemistry, physics and colloid principles affecting soaps. Mr. Fall, himself a college professor, has decided to make his experiments at Cornell University.

#### BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By Dr. P. T. Talbot, Secretary-Treasurer.

We are just completing one of the most successful years of the Louisiana State Medical Society. Up to date we have enrolled 1,151 active members, which is the largest enrollment the State Society has ever enjoyed, with the exception of the year in which the American Medical Association held their annual meeting in New Orleans. Not only have we increased our numerical strength, but judging from the activities of the various District Medical Societies, the by-Parish Medical Societies, Parish Medical Societies, and the re-organization of various Parish Medical Societies, we have every reason to believe that there has been a decisive stimulus in medical activities throughout the State. The reports from these various meetings show a full attendance of its component members in conjunction with unusual Scientific Programs which is a credit to them and to our Society. Unusual requests have come to us for assistance in formulating a Scientific Program which we have always given gladly. We will be only too glad to aid any of the Secretaries or members of Scientific Committees in formulating their program.

I wish to take the advantage of this opportunity to call attention to the various Parish Societies and to all

members of the State Society, that as far as membership in the organization is concerned, the fiscal year for 1923 will be completed by December 1st. According to the by-laws, dues for the fiscal year for 1924 are due in advance, and are therefore payable any time during the month of December. The Secretaries of the various Parish Societies should begin at once after December 1st to collect the annual State dues from its members for 1924, and remit as promptly as possible to the Secretary-Treasurer at 1551 Canal street. In this regard it would be wise to call your attention to the fact that the protection under the Medical Defense of the State Society is covered from the time that each individual due is 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.

The following Chairmen of the Sections for the Scientific Program of the Louisiana State Medical Society, to be held in Opelousas, April 22nd to 24th, 1924, have been appointed by the President, Dr. Lester J. Williams, and accepted:

Medicine and Therapeutics—Dr. George S. Bel.

Nervous Diseases—Dr. John N. Thomas.

Health and Sanitation—Dr. E. M. Ellis.

General Surgery—Dr. R. C. Kemp.

Gynecology and Obstetrics—Dr. Maurice Gelpi.

Urology—Dr. Paul J. Gelpi.

Others will be announced as soon as completed. All the members of the State Society desirous of reading papers at our next annual session, would find it expedient to communicate at once with the respective chairmen for a place on the program. I am sure that our Scientific Program will be completed very early, as arrangements are in formation for same a few months earlier than we have ever been able in the past to do. The Secretary-Treasurer's office will be very glad to assist in this work, and as Chairman of the Scientific Essay Committee, I would respectively solicit your prompt

attention to this important detail. It is only by co-operation in this regard that we will be able to formulate the Scientific Program and get it out in proper form for our next annual meeting. Plans are beginning to develop for an unusual annual meeting at Opelousas, and we have every reason to believe that each and every one of us may look forward to a great deal of pleasure to our meeting again.

So let's get our membership in early and send in our scientific request promptly, and in every way assist the officers and Arrangement Committee to perfect their plans early.

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#### REMOVALS.

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- Adiger, David—From 630 Maison Blanche Building, to 514 Medical Building, 124 Baronne street.
- Davis, R. A.—From 508 Medical Building, to 507 Medical Building.
- Dicks, John F.—From 830 Whitney Central Building, to 815 Whitney Central Building.
- Fenner, E. D.—From 1915 St. Charles Avenue, to 1820 St. Charles avenue.
- Jacobs, A.—From 630 Maison Blanche Building, to 514 Medical Building.
- Kearney, H. L.—From 1101 Maison Blanche Building, to 517 New Medical Building, Prytania and Aline.
- Leake, J. P.—From 1101 Maison Blanche Building, to 517 New Medical Building, Prytania and Aline.
- Ledoux, Lucien A.—From 2117 Tulane avenue, to 810 Maison Blanche Annex.
- Lewis, E. S.—From 203 Medical Building, to 1625 Louisiana avenue.
- Lewis, J. L.—From 421 Macheca Building, to 1216 Maison Blanche Building.
- Loeber, Maud—From 1424 Milan street, to 307 New Medical Building, Prytania and Aline.
- Metz, W. R.—From 9 Rosa Park, to Cusachs Building.
- McCormack, E. P.—From 513 Macheca Building, to 810 Maison Blanche Annex.
- Pollock, J. E.—From 627 Olivier street, to New Medical Building, Prytania and Aline.
- Pothier, O. L.—From 610 South Carrollton avenue, to 210 Medical Building.
- Smith, J. W. A.—From 636 Common street, to 3435 Prytania street.
- Socola, Edwin A.—From Charity Hospital, to U. S. Marine Hospital.
- Stumpf, Louis J.—From 303 Maison Blanche Annex, to 1410 Hibernia Building.
- Goorwich, Mary—From Touro Infirmary, to 1522 Aline street.
- Robbins, I. L.—From Charity Hospital, to 2207 Baronne street.
- Faivre, G. W.—From 1226 Maison Blanche Building, to 1124 Maison Blanche Building.
- Fuchs, V. H.—From 1116 Maison Blanche Building, to 1207 Maison Blanche Building.
- Cocker, G. F.—From 1105 Maison Blanche Building, to 5941 Magazine street.
- Batchelor, J. M.—From 1210 Maison Blanche Building, to Presbyterian Hospital.
- Maxwell, T. A.—From 1210 Maison Blanche Building, to Presbyterian Hospital.
- Warren, J. W.—From Houma, La., to 503 New Medical Building.
- Bohne, P. W.—From 620 Maison Blanche Building, to 1232 Maison Blanche Building.
- Wymer, J. J.—From 620 Maison Blanche Building, to 840 Gravier street.
- Lopez, L. V.—From 421 Godchaux Building, to 611 Godchaux Building.
- Fenno, F. L.—From 407 Old Medical Building, to 411 New Medical Building, Prytania and Aline streets.
- Daspit, H.—From 415 Old Medical Building, to 411 New Medical Building, Prytania and Aline streets.
- Silverman, D. N.—From 624 Maison Blanche Building, to 419 New Medical Building.
- Ragan, Thos.—From Hutchinson Building, to 500-02 Giddens Lane Building, Shreveport, La.
- Moss, Edmund—From Old Medical Building, to 411 New Medical Building.
- Clark, S. M. D.—From Cusachs Building, to New Medical Building.
- Durel, W. J.—From 312 Medical Building, to Covington, La.
- Allen, C. W.—From 509 Macheca Build-



ing to 409 Physicians and Surgeons' Building, New Orleans.  
 Querens, P. L.—From 1109 to 1116 Maison Blanche Building.  
 Lewis, J. L.—From 421 Machecha Building to 1216 Maison Blanche Building.  
 DeReyna, Geo. J.—From 3529 Prytania street, to 312 Machecha Building.  
 Crebbin, John T.—From 1207 Maison Blanche Building, to 1210 Maison Blanche Building.

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#### PUBLICATIONS RECEIVED.

Washington Government Printing Office, Washington, D. C.; *U. S. Naval Medical Bulletin*, Vol, 19, No. 3, September, 1923.

*Public Health Reports*, Vol. 38, Nos. 33, 37, 38, 39.

Miscellaneous: *Manual on Ship Sanitation and First Aid for Merchant Seamen*, by Robert W. Hart, Second edition. *Colonic and Duodenal Lavage With a Suggested Improvement in the Plombieres Treatment*, by Capt. J. T. Ainslie Walker, R. A. M. C. (T. F.).

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#### REPRINTS.

*Investigations on the Control of Hookworm Disease. XXII. Experiments on the Factors Determining the Length of Life On Infective Hookworm Larvae*, by Donald L. Augustine; XXIV. *Hookworm Cultures with Humus, Sand, Loam, and Clay*, by Norman R. Stoll,

M. S.; XXV. *The Use of the Egg-Counting Method in an Intensive Campaign*, by Rolla B. Hill, M. D.; XXVII. *The Study of An Area in the Mountains of Porto Rico, Which Had Been Influenced For Twenty Years by Hookworm Control Measures*, by William W. Cort, Ph. D., William A. Riley, Ph. D., and George C. Payne, M. D.; XXIX. *A Study of the Relation of Coffee Cultivation to the Spread of Hookworm Disease. Value of Carbon Tetrachlorid As An Anthelmintic*, by J. F. Docherty, B. A., M. B. (Tor.). *The Intensive Radiotherapy of Cancer, Is It a New Method?*, by A. Joseph Riviere, M. D., Paris. *An Unusual and Fatal Case of Undulant Fever Contracted in Khar-toum*, by R. G. Archibald, D. S. O., M. D. *Lung Compression by Heavy Liquid Paraffin in the Treatment of Lung Tuberculosis, Bronchiectasis and Lung Abscess*, by F. W. McGuire, M. D., F. A. C. S. *Lichen Planus Hypertrophicus in the Sudan*, by R. G. Archibald, D. S. O., M. D. *Erythrodermia Congenitale Ichthyosiforme In An Arab Child*, by R. G. Archibald, D. S. O., M. D. *A Case of Paget's Disease Associated With Carcinomatus Infiltration of the Breast of a Male Native of the Sudan*, by R. G. Archibald. *An Unusual Type of Nodular Leprosy in the Sudan*, by R. G. Archibald, D. S. O., M. D. *Some Investigations Connected With the Spread of Bilharziasis in the Dongola Province of the Sudan*, by R. G. Archibald, D. S. O., M. D.



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# New Orleans Medical and Surgical Journal

Vol. 76

DECEMBER, 1923

No. 6

## DIAGNOSIS OF STRICTURES OF THE ESOPHAGUS.\*

BY R. C. LYNCH, M.D.,  
NEW ORLEANS.

If the road to a man's heart is by way of his stomach, then it is no wonder that any interruption in the normal work of this part of his anatomy is fraught with so much concern. While some of its trouble may come from within the tract itself by far the greatest disturbances to which it is heir, come from without and this, not strange to relate, because of his greed of appetite or inquisitiveness about food.

There are some few points which should be common information, namely, the esophagus is ten inches long when measured from the upper teeth to the level of the diaphragm; it is not sensitive to pain and but very slightly to heat and cold; it functions entirely by reflex stimuli and is not at any time under conscious control; it will not tolerate, except under unusual circumstances, the presence of fluids and will eject these from its lumen in one direction or the other, namely into the stomach or the mouth. On the other hand when some foreign body finds lodgement within its boundary it may harbor this with but little protest and make no effort to rid itself of the stranger other than the interference with food or drink, and if the body be of proper type and in proper place it may find a safe abode for many years.

Its gateway at the level of the cricoid is the narrowest part which is closed by the sphincter like action of the crico-

pharyngeus. Three other points of narrowing occur at the crossing of the aorta, fourth dorsal vertebra, the crossing of the left bronchus, fifth dorsal vertebra, as its passage through the diaphragm, tenth dorsal vertebra. As would be in keeping these four points represent the most frequent levels of disease, likewise the lodgment of foreign bodies.

It may be compressed in the cervical region by thyroid enlargements, glandular involvements either malignant or not and phlegmonous swellings. In the thorax-mediastinal lesions, spinal curvatures, aneurism, heart, hypertrophies and displacements, pericardial and pleural adhesions, peribronchial, glandular swellings and malignancies of lung or neighboring parts. Sub-diaphragmatically the left crus of the diaphragm makes a marked indentation on the left margin and back wall of the oesophagus, and the Spigelian Lobe of the liver hugs the right side. The left lobe is in front and often circles around below the diaphragm—the oesophagus rests on the abdominal aorta. Mosher is convinced that the liver determines the form and position of this portion of the oesophagus.

Viewed from within the entrance to and exit from the stomach are the same in size and bear a definite relation to each other. Since the axis of the lumen of the lower end is at first transverse and because of the flattening as above described becomes anterior-posterior, thus making a pleat or fold, which Mosher shows in addition to the sharp turn to the left or kink. These two factors are concerned in maintaining both fluids and gasses in the stomach.

\*Read Before the Louisiana State Medical Society,  
on April 24-26, 1923.

As a mucous membrane lined tube and the upper part of the food way it is subject to the same inflammations, infiltrations, indurations, ulcerations, simple, luetic and tubercular, tumor formations both benign and malignant, strictures and dilatations and neurosis as are other mucous lined tubes in other localities of the body. And the treatment in this locality is as in other localities, except for total removal, which while having been accomplished a few times is yet too formidable to be recommended.

Since the Oesophagoscope has come into use this whole pathway, including the left two-thirds of the stomach and in some few cases the pyloric third can be seen and studied and practically all of the foregoing situations, diagnosed and treated under the direct view of the operator. In the hands of the trained operator, and only he should operate, there are practically no contra-indications to its use unless the patient be moribund or the road be so twisted out of shape by deformity as not to permit the passage of a straight tube.

Any patient who complains of symptoms referable to the oesophagus, difficult or painful swallowing, regurgitation or vomiting, globus or other sensation should be oesophagoscoped as it is only by this means that we can learn the cause and bring about either a cure or relief in the earlier phases of the disease. With a history of having choked on a foreign body the patient should never be advised to let it alone until X-ray, physical examination and oesophagoscopy have proven negative. If you would but heed this one point, much would be gained for the patient's welfare.

Never attempt the removal of a foreign body with the finger. Besides producing much harmful traumatism one can only push it down and thus do more harm. Probangs—nickle catches of the basket-type usually do more harm than good and at best are very dangerous.

After swallowing lye, the sale of which cannot be too strongly condemned because of the enormous toll of life it has taken, to say nothing of the months of pain and anguish entailed during the treatment of its results, early oesophagoscopy can be carefully done and the

lesions treated locally and probable stricture prevented. But in the event of stricture I caution you to watch for water hunger with its dry brash skin, sunken eyes, thready pulse, listlessness and constant regurgitation. Such a patient is a bad surgical risk and will not recover when the occlusion is complete for from three to six days. Under such circumstances a gastrostomy becomes a crying necessity; for proctoclysis, hypodermoclysis or infusion while valuable aids for bridging over a crisis when water hunger is developing, these methods are dismal failures for feeding purposes.

Since by far the greatest number of strictures observed are the result of the injection of some corrosive, as lye, the etiology is quite clear and the history usually makes clear the diagnosis.

I have had the opportunity to see but three cases within a week after swallowing lye. In these I found no difficulty in using the oesophagoscope and of treating the lesions locally in the same manner and with the same drugs used externally and at the same time careful passing of the bougie under sight prevented contraction so that early cure without loss of weight ensued.

In the cases seen where the stricture is fully developed, most of these have come when the child was in dire distress from loss of weight and water hunger. With the development of this stricture there usually occurs dilatation to the point of sacculation of the oesophagus. In this state nothing but the greatest good fortune will save a patient from blind passage of a bougie—soft pliable bougies will not pass and the stiff ones will go through the wall into the mediastinum.

Such strictures are to be dilated gradually by aid of oesophagoscopy—once the stricture is dilated to a number 5 french, swallowing of liquids will be accomplished and when determined by oesophagoscopy that there is no sacculation, a semi-stiff bougie can be passed without the aid of the tube. Daily treatments at first to establish a lumen then tri-weekly then three times in two weeks and so on until once a month. This should be maintained with gradually increasing sizes until solid foods can be



taken, and the bouginage contained for about a year.

I have used rather successfully for the past three years the electrically heated bougie of German make—the idea being that the heat produces an edema of the mucous membrane which edema produces a softening and absorption of scar tissue and observation borrowed from the G. U. department.

Sippy's string swallowing and this guide used—for dilatation has been used but I much prefer the visual method of oesophagoscopy.

#### DISCUSSION.

Dr. W. T. Patton (New Orleans): I want to emphasize what Dr. Lynch has said about labeling lye. This matter has been taken up by the American Medical Association, but the people who manufacture lye are so suspicious—each one is afraid the other fellow will put something over on him. To see these little children come into the hospital is pitiful. Some states have a law that lye must be labeled with the poison label, but the print is so fine you can hardly read it. But if there was a large skull and crossbones on each can it might do some good.

I wish Dr. Lynch in closing would say how soon he thinks a case should be dilated after the ingestion of lye or other escavofigs substances. Recently someone said you should go in at once before erosion takes place. I would say wait about six weeks. I would like to have his opinion.

But do not wait too long to operate, until the child has gone to pieces, for water hunger comes on and we have to give him an anaesthetic, and he dies on the table from shock.

The doctor spoke about leaving the bougie in the esophagus. We leave it in for ten minutes if possible, and get beautiful results.

Dr. D. N. Silverman (New Orleans): Diseases of the esophagus are not infrequent conditions. We quite often see patients who complain of difficulty in swallowing, and I believe that this is the first sign of trouble in the esophagus. Certainly pain is very late.

As regards stricture formation, I think in such cases the X-ray is of inestimable value. Certainly the X-ray localizes the stricture and gives us an idea as to the dilatation of the esophagus and whether there is diverticula formation as a result of this dilatation. However, the esophagoscope takes precedence in the early diagnosis of ulceration which subsequently may cicatrize as well as in the treatment of the stricture.

Drs. Lynch and Patton spoke of restricting the sale of lye. That would be excellent legislation, but who is going to restrict the sale of poisoned liquor? Moonshine whiskey, as we have been told, very often contains lye. I have here a patient that I would like to show you.

This boy is twenty years of age, and he states that in November, 1922, he had typhoid fever—or that is what the doctor told him. After four weeks of illness he developed diffi-

culty in swallowing, and the condition gradually grew worse until at the present time he is able to take only liquid food. Going back of the history of typhoid, he said he drank a good deal of moonshine whiskey—all he could get—and it made him feel badly, burning his mouth; but there was no burning of the esophagus before six weeks after taking this whiskey, or immediately following the typhoid fever. The question of diagnosis is—is it due to the most probable cause, lye, or is it due to typhoid fever. Williamson of Chicago quotes Keen as reporting two cases of stricture of the esophagus following typhoid fever.

This radiogram was taken about five or six weeks ago, and as you see we have a definite stricture at the level of the sixth and seventh ribs posteriorly. I attempted to place a very small olive in the esophagus but found it gave him a great deal of distress, and he expectorated a small amount of blood. That is as far as we have gone in the treatment.

Dr. L. H. Landry (New Orleans): Before the advent of the esophagoscope, we were able to treat stricture of the oesophagus and cardiospasm and have had uniformly good results. I wish to emphasize one feature of the treatment which has been of great help, even where there is considerable sacculcation of the oesophagus; that is, making the patient swallow string; it makes no difference how much pouching may be present in the oesophagus, if water can find its way through into the stomach, the string will eventually follow; we have had no case in which the string was unable to get into the stomach. Once the string is through, we have an excellent and safe guide over which dilatations can be done with little inconvenience to the patient.

Dr. R. C. Lynch (closing): In regard to the time of dilatation after the ingestion of lye, it has been my good fortune to see two such cases, and in those we started it at once. Contrary to the usual idea that it is dangerous, we found no trouble in passing the esophagoscope and treating the lesion, and practically prevented stricture formation. Those cases came to complete convalescence and retained the tube a much shorter time than if we had allowed the stricture to occur. In the hands of a trained operator I would advise beginning local treatment immediately of the lesions.

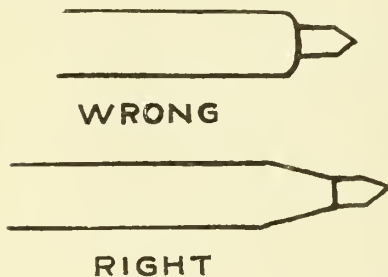
We left the hot bougie in for twenty minutes, heated to 120° F.

The X-ray diagnosis of lesions of the esophagus is well known and extremely useful. We have passed the time when we have to make a diagnosis of stricture of the esophagus by the process of deduction, because the esophagoscope shows the stricture. However, the swallowing of a bismuth capsule will help in showing the point of stricture formation. The swallowing of string in the process of dilatation is a method which is practically beyond discussion. It is as justifiable as any other means we have, and where those who use the dilators are not using the esophagoscope, then the string offers a fairly safe guide. However, in case you have complete stricture the string will float and not go down into the stomach, and then it is a failure.

## SOME SUGGESTIONS AS TO THE REMOVAL OF PLEURAL EFFUSIONS.\*

By O. W. BETHEA, M.D.,  
NEW ORLEANS.

The object of this paper is to urge the use of a properly made trocar and canula, instead of the needle, for aspiration of the chest, and to present for consideration an assembled outfit that seems to meet all requirements. This outfit consists of a 20 mil Luer syringe and a Potain aspirating outfit. This Potain aspirator is made with a connection to fit the regular Luer type of needle. Also, the outfit includes a trocar and canula, the canula being of a type to fit the regular Luer syringe. This also fits, of course, the connection of the Potain apparatus. This canula is about a 16 gauge. The particular feature of the trocar and canula is the gradually sloping shoulder coming back from the point of the trocar onto the canula, as shown in the enlarged exaggerated illustrations below:



This feature facilitates the introduction of the instrument.

Before beginning the operation the entire equipment should be carefully prepared for use. The trocar and canula is introduced, the trocar removed, and, if thin fluid flows out, the Potain suction apparatus is attached. If fluid does not come from the canula when the trocar is withdrawn, the Luer syringe is attached and suction made. The advantages of being able to change from one to the other are:

1st. Thick fluid usually cannot be removed by the Potain outfit, while all necessary force can be exerted with the Luer syringe.

2nd. If, during the removal of fluid with the vacuum bottle, the canula is stopped, the Luer syringe containing a small amount of air can be attached and the canula opened by forcing the air through it.

It is certainly an advantage, whenever aspiration is done even for diagnostic purposes, to remove the proper amount of any material found and to do it through the original instrument introduced.

My urging of the trocar and canula instead of the needle is based on the following reasons:

(a) A needle is more apt to become plugged in being introduced.

(b) A needle is more apt to injure a blood vessel in being introduced.

(c) A needle is more apt to enter the lung when it is being introduced, just as it would be more apt to injure the intestines if used in removing ascitic fluid.

(d) The needle can not be manipulated after introduction, when in search of fluids, with the same freedom from danger.

(e) The needle is more apt to injure the visceral pleura, or even cut into the lung towards the close of the process. If the needle is introduced ever so well into the fluid, it still must project beyond the chest wall and when the fluid has been removed to the extent that the lung again approaches the chest wall, the lung then begins to drag against the sharp point of the needle during the respiratory movements and damage is apt to be done. The visceral pleura may be damaged to the extent of forming a site of lowered resistance and favor infectious processes, or the needle may cut into the lung substance, letting in organisms from the bronchial passages. A pneumo-thorax may be produced. I can remember when pain and blood-tinged fluid were rather expected toward the close of the operation and the subsequent aspirations were rather expected to show pus.

The trocar and canula shown here, if it is kept highly polished, can be introduced with almost as much ease as can a needle of sufficient calibre to meet all requirements.

The danger of letting in air and producing a pneumo-thorax when remov-

\*Read before the Orleans Parish Medical Society, on October 27, 1923.



ing the trocar and making or changing connections has been suggested. In my own experience this has not been a factor. The small amount of air that could enter through a canula of this size during the short periods required to carry out these measures would have no disadvantages. In many cases there is rather a tendency for fluid to spurt out rather than for air to be sucked in, and this will always be the case if the canula is only opened when the patient forcibly exhales and then waits until the connection is made.

I wish to make acknowledgments to Messrs. Becton, Dickinson & Company for their cheerful co-operation in carrying out my suggestions in arranging this outfit.

## DISTURBANCES OF THE THYMUS GLAND IN CHILDREN.

By C. J. BLOOM, M.D.,  
NEW ORLEANS.

Diseases of the thymus gland have occupied but a minor place in the literature of clinical medicine. Although as yet no definite endocrine function has been accredited to it, there are conclusive deductions regarding the important functions exercised during the period of greatest development—namely, in infancy.

Through omission, many of us have overlooked instances where clear cut clinical syndromes were absent merely because a closer knowledge of the various pathological pictures were wanting.

An added desire to thoroughly discuss the more radical usages of X-ray and radium in the future treatment of thymic diseases, and a plea for an X-ray exposure of all cases having thymic disturbances and tendencies and who are future surgical prospects, have been responsible for the presentation of this paper today.

Since the days of <sup>39</sup>Plater in 1614 up to the present day, the medical profession as a whole has been interested in the subject of the various entities associated with thymic disturbances. In order to give one a proper conception of the various pictures associated in

pathological thymic syndromes, the writer shall endeavor to briefly include a short explanation of the anatomy, histology, physiology, and pathology of the thymus gland.

### *Anatomy: Gross Morphology and Relations.*

The thymus is a soft, white, fusiform mass in which two lobes can easily be distinguished, the left often being the



Figure No. 1  
Position of Thymus

larger, and are in contact for a certain distance along their inner margin. It is situated chiefly in the thorax, although at times it may extend into the region of the neck to a variable extent—usually not more than two centimeters.

The fourth costal cartilage generally marks its caudal extremity, but at times it can extend as far down as the diaphragm. Ventrally, it is in relation with the sternum, the origin of the sternothyroid muscles;—the sterno costal and the sterno clavicular articulation, and the internal mammary arte-

\*Read Before the Louisiana State Medical Society, on April 24-26, 1923.



Figure No. 2

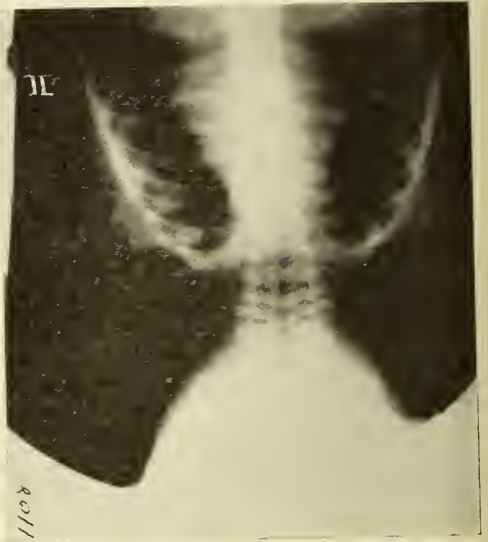


Figure No. 4



Figure No. 3

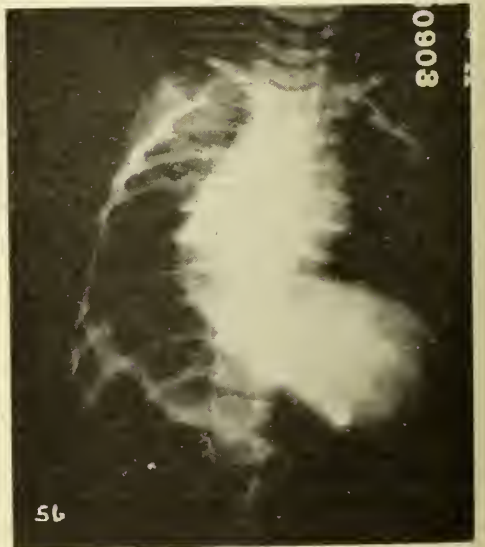


Figure No. 5



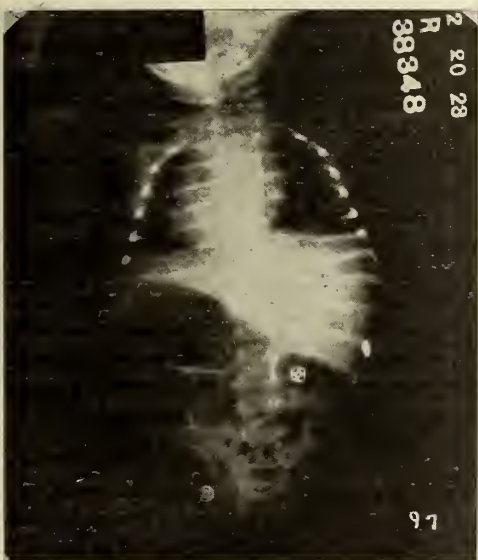


Figure No. 6



Figure No. 8

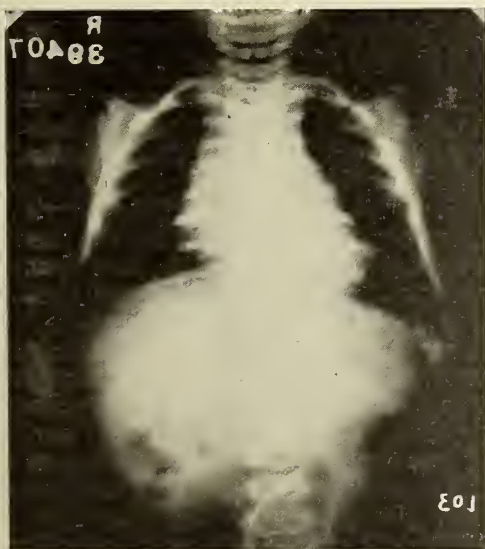


Figure No. 7

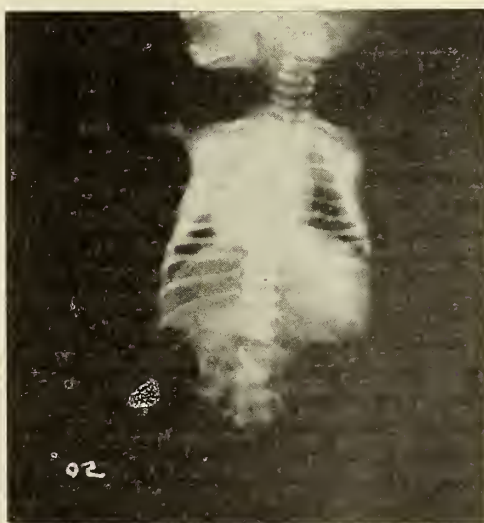


Figure No. 9

ries. Dorsally, it comes in contact with the aorta, superior vena cava and their branches, the pulmonary artery and the pericardium. Laterally, it is bounded by the pleural sacs and phrenic nerves.

A dense capsule surrounds the glands, portions of which penetrate in between the lobules dividing the glands into cortical and medullary portions. Occasionally, small fragments of thyroid and para thyroid masses can be noted.

*Blood Supply and Lymphatics.*

Lymphatic plexuses enclose the lobules and accompany the artery. The pre-laryngeal and cervical lymph glands drain these lymphatics.

*Anatomy—Tables of Weights of Thy-mus Glands.*

HARDESTY  
(Fresh Gland Tissue)

1 to 5 years	23 grtms
6 to 10 years	23 grams
11 to 15 years	38 grams
16 to 20 years	26 grams
21 to 35 years	20 grams
26 to 35 years	20 grams
36 to 45 years	16 grams
46 to 55 years	13 grams
56 to 65 years	10 grams
66 to 75 years	6 grams

FRIEDLEBEN.

Birth	14.3 grams
1 to 9 months	20.7 grams
2 to 24 months	27.3 grams
2 to 14 years	27 grams
15 to 25 years	22.1 grams
25 to 35 years	3.1 grams

OLIVIER.

Birth	4 grams
1 year	6 grams
2 years	8 grams
3 years	10 grams

HOSKINS—SLIGHTLY MODIFIED.

	Thymic Weight	Thymic Parenchyma	Thymic Pct. Body	Lymphocytes in Blood Pct.
Birth	13.3 gms.	12.33 gms.	.04	61
2-6 yrs.	23 gms.	19.26 gms.	.01	55.5
9 yrs.	26 gms.	22.08 gms.	.009	36
14-18 yrs.	37.5 gms.	25.18 gms.	.008	25
18-20 yrs.	25.6 gms.	12.71 gms.	.004	23

*Size*—The size varies within wide margins mainly because the weight of the gland includes also the fat and connective tissues surrounding it. The weight increases up to puberty when involution takes place—although occasionally this may occur prior to the subsequent period. The absolute weight of the gland as a whole is not greatly altered because the loss of the lymphatic tissue and parenchyma is compensated by the increased amount of fatty tissue. The average width is from 2 to 3 cm. and the longitudinal diameter may reach 11 1-2 cm.

*Variations in Size.*

1. In lower animals—maintenance diet reduces weight.
2. Starvation in man reduces the size of the thymus.
3. Castration increases the size of the thymus and delays involution.
4. Thyroid fed to pregnant animals increases the development of the thymus in the fetus.
5. Aplasia or complete lack of development of the thymus has been recorded.
6. A small thymus situated in the superior thoracic inlet—where the esophagus and trachea pass through an inflexible medium can produce death <sup>22</sup>(Bruce and Graves.)

*Innervation.*

The branches of the cervical sympathetic and the vagus penetrate the organ with the blood vessels, and small branches of the phrenic and decendens hyperglossi enter the capsule.

*Histology.*

The glands are divisible into primary and secondary lobules and the latter into cortical and medullary portions. Connective tissue occupies the space between the portions mentioned. The cortex is densely packed with cells indistinguishable from lymphocytes, and the medulla includes the corpuscles of Hassal, formed of epithelial cells and in turn reticular cells formed from them.

*Physiology and Experimental Pathology of the Thymus Gland.*

1. Restelli in 1845 in experimenting on sheep, dogs and calves, found that practically all of the animals died after thymic extirpation.
2. Friedleben in 1858, concluded after experimentation that the thymus was not essential to life, but that the extirpation of the spleen and the thymus was necessarily fatal to life. He thought as many other authorities have expressed themselves that this gland was of importance in the production of erythrocytes in foetal life, and perhaps of lymphocytes in life, and also an aid in the nutrition and growth of the body.
3. Langerhans and Saveliew in 1893 did not note any significant changes in the animals as a result of



thymus extirpation, but practically all of the rabbits and dogs died as a result of this procedure. Other men, as

4. Taurulli and LoMonaco in 1897,
5. Abelous and Billard in 1896,
6. Camia in 1900
7. Verwecke in 1899.
8. Vincent in 1903.
9. Carbone in 1897.
10. Ghika in 1901.
11. Fishlin 1907.
12. Basch in 1902 to 1908.
13. Matte in 1913, and
14. Pappenheimer in 1914, and many others have experimented with different animals with questioned deductions.

Apparently, with proper precautions and asepsis at the time of the extirpation of this gland is practiced—no other animal than the frog is apt to succumb as a result.

From all available evidence from extirpation experiments, proof has yet to be established that the thymus has a definite endocrine function.

In connection with the work of Basch—and to a lesser extent, Fishl—experimenting with dogs, they found that thymectomies limited the growth of bone and calcification of bone; that the peripheral nerves were more excitable to galvanic current than the control animals and also noted frequent convulsions. Naturally, the bones were softer and more flexible, the gait more or less awkward, the bowing or bending of the long bones to an extreme degree.

Fracturing of the bones was easily reduced and the healing process naturally prolonged.

These were some of the more important deductions that lead one to consider the possibility of the consideration of the thymus as a probable source or associated organ in the production of tetany.

Although many authorities claim that the thymus gland is the seat of erythrocytic formation in the fetus, and that the thymic cells are nothing more or less than lymphocytes, and even though <sup>15</sup>Dauckakoff has shown that these cells give rise to plasma cells and polymorphonuclearleucocytes, still proof is wanting to substantiate that

this gland has a true endocrine function.

The lymphogenic function unquestionably is concerned with the defensive mechanism against infections.

#### *Pathology of the Thymus.*

(1) *Thymus Aplasia and Hypoplasia* often noted in children with mental disturbances.

<sup>16</sup>Bourneville found the thymus absent in 70 per cent of 28 mentally defective cases, and <sup>17</sup>Sajous believes that the deficient activity of the thymus results in a deficiency of nucleins supplied to the brain through the lymphocytes causing idiocy. This fact is also borne out by <sup>18</sup>Harrower, who states that hypoplasia is found in conjunction with mental defectiveness.

(2) *Active and passive congestion.*

(a) Hemorrhagic cysts of the thymus (congenital syphilis); (b) diffuse haematoma of the thymus; (c) punctate haemorrhage of the thymus.

(3) *Acute Thymitis*—Secondary to metastatic infection (Staphylococcus, Streptococcus, Colon Bacilli—through hematogenous route). Noted either in the parenchyma or in existing cysts. (Symptoms—pressure, tracheostenosis, temperature, pressure on the sternum, leucocytosis, polynucleosis.)

(4) *Acute Infections and Thymus*—Interesting facts regarding thymus and acute infections:

1. The thymus gland is three times larger than normal in most of the acute diseases.

2. There is a marked atrophy in chronic conditions.

3. Necrobiotic changes in lymphocytes seldom seen except in diphtheria.

4. Thymus often times enlarged in diphtheria, but sometimes atrophied where this disease is associated with scarlet fever.

5. Positive cultures have been obtained in the thymus in children having died of acute infections, and it is believed that bacteria are more often cultured from this gland than either from the spleen or the liver. Seldom involved secondarily in either leukemia or Hodgkin's disease.

*Conclusions:* Infectious diseases produce a hyperplasia of the thymic elements, particularly affecting Hassal's

corpuscles. Other clinical involvements of the thymus such as sclerosis of the thymus in malnutrition, syphilis, etc.

Tertiary syphilitic manifestations of the thymus are sometimes noted, but is most uncommon.

#### (5) *Tuberculosis of the Thymus.*

Primary tuberculosis of the thymus is extremely rare. Jacobi having examined 100 thymi of tuberculosis patients and found it in three out of sixty cases in patients having died from any kind of disease other than tuberculosis and found it in one-fourth of all the cases that had succumbed to tuberculosis.

In all cases he was able to demonstrate the presence of the tubercle bacilli.

#### (6) *Tumors.*

Tumors of the thymus are seen more often than has been considered by most practitioners.

Among the benign thymomata that have been reported are lipoma, myxoma, fibroma, dermoid cysts and cysts. Among the more common malignant growths of the thymus gland are the sarcomatous thymomatous and the carcinomatous thyoma. Of unusual interest and importance is the fact that we never encounter metastasis of malignant growth in this organ.

#### *Clinical Syndromes.*

There are eight clinical syndromes associated with disturbances of the thymus gland, namely:

1. Thymic Asthma. 2. Mors Thymica.
3. Status Thymicolymphaticus. 4. Timme's Multiglandular Syndrome.
5. Thymus in Exophthalmus Goitre. 6. Myasthenia Gravis.
7. Thymus in Tetany, and 8. Thymus in Prostatitis.

This paper includes the clinical entities encountered in diseases of children, namely—thymic asthma, mors thymica, status thymicolymphaticus and thymus in tetany.

*Thymic asthma* originated with <sup>19</sup>Kopp in 1829, and from this time on, this condition has been of extreme interest in the eyes of the pediatricians and general practitioners. Only recently, <sup>20</sup>Chevalier Jackson discovered at the time of operation on one of his patients a case that had, perhaps, escaped observation and says: "On passing one of my bronchoscopes, I dis-

covered a scabbard trachea with a chink of not over two millimeters on inspiration and one millimeter on expiration, the obstruction extending from the second to the fourth rib. The tracheal mucosa was collapsed from before backward almost in contact."

There was permanent relief by thymectomy. The more important symptoms associated with this condition are:

1. Respiratory stridor—particularly an inspiratory stridor audible at considerable distance.
2. Breathing abnormal, considerably accelerated, sometimes noted within 24 hours or 48 hours after birth.
3. Skin—lips and nails evidence cyanosis, due, perhaps, to a tracheo stenosis.
4. Epigastric retraction, marked.

This disease is encountered only in infancy.

*Mors thymica* is generally associated with sudden death in previously apparently healthy child. <sup>20</sup>Grawitz considered the question of death influenced either by a mechanical or a chemical cause, both of which are discussed under previous headings.

*Status Lymphaticus*—Dunn has advanced the explanation that the principal theories other than that of pressure have been explained either by:

- (1) A hyperthymization. (2) Intoxication from faulty tissue change, and (3) Intensified anaphylaxis.

"As a rule, the cases divide themselves into two distinct groups where the dyspnoea may be either continuous or intermittent, the former being seen more often in very young infants. There are periods when respiratory difficulty increases and terminates in a suffocative attack associated with intense cyanosis, and continues in repeated attacks at various intervals, although there is limited dyspnoea between the attacks. The stridor is intensified during the attacks, but may be present in the interim. The intermittent form is more commonly seen in the experience of pediatricians, occurring often in the latter part of the first year, and occasionally in the second year—is characterized by paroxysms of difficult breathing being apparently normal



between attacks. The picture is either that of a sudden suffocative attack associated with cyanosis and difficulty in breathing or else the paroxysms last longer, but are less intensified. The breathing is extremely rapid, not so labored, limited cyanosis, and suffocation is rarely seen. Stridor is also not necessarily associated with this particular picture. The duration may last anywhere from a few hours to several days.

"In status lymphaticus the thymus is from five to ten times larger than normal, weighing as much as 60 grams; all of the lymph nodes are enlarged, particularly the mesenteric. Peyer's patches, the lymphoid tissue of the pharynx, the lymph nodes of the body as a whole, the follicles at the base of the tongue and the spleen are all markedly hypertrophied."

This entity is a menace because—

1. It is attended by instability of lymphoid tissues—capable of expression varying from simple urticarial rashes to sudden death.
2. It is responsible for lowering the threshold of infection, particularly through the avenues of the respiratory and intestinal tracts.
3. Defective development of the muscular coat of the arteries renders them incapable of this standing, changes in blood pressure that are lightly borne.

#### *Thymus in Tetany.*

This clinical syndrome is considered because in experimental pathology of lower animals where thymectomies have been performed, there is apparently a calcium deficiency and tetany. The skeleton shows underdevelopments in length, the epiphyses are abnormal, soft and deformed. Fracture healing occurs with little callous formation and sometimes one is inclined to consider the possibility of rickets as occurring with certain alterations of the thymus.

#### *General Symptoms—Death.*

Tamassia states that it requires the weight of 180 grams and Scheele puts the weight at 750 to 1,000 grams to exert sufficient pressure on the trachea to produce either cyanosis or death.

But, on the other hand, if one considers that the space between the manubrium and the spinal column in the newly-born measures only two to three centimeters and that this diameter can be decreased by throwing the child's head backward, one must readily accept that a death by pressure is possible.

Sudden death has been reported by many as due to a shock precipitated either by a fall, accident, anesthesia, surgical operations, acute disease, a cold bath, and the injection of an anti-toxin.

There are also three types of cases in which sudden death occurs:

1. The child is apparently healthy and no other cause is discoverable.
2. It is associated with the presence of some other disease adequate or inadequate to produce the fatal issue.
3. A definite cause of death is present, but one which is insufficient to produce it in a normal child.

#### *Interesting Facts.*

1. A pigeon breast is not associated with an enlarged thymus.
2. It is believed by some that there is a relation between status lymphaticus and scrofula.
3. Of 5,652 autopsies at Bellevue Hospital, status lymphaticus occurred in 451 or in 8 per cent—six times more common in males than in females.

#### *Differential Diagnosis.*

*Cyanosis:* From the standpoint of thymic disturbances must be differentiated from—

1. Congenital Heart Disease. 2. Congenital Atelectasis. 3. Small anterior fontanelle and overlapping of cranial sutures (Bloom). 4. Sepsis. 5. Tetanus, and 6. Pneumonia.

*Sudden Death* from the standpoint of thymic disturbances must be differentiated from:

1. Malformation. 2. Internal Hemorrhage. 3. Asphyxia from overlying. 4. Asphyxia from aspiration of food into the larynx or trachea. 5. Atelectasis. 6. Marasmus. 7. Convulsions in children showing no special signs of disease. 8. Asphyxia in older infants and young children, and 9. Death after a few hours' illness in which the chief symptom is high fever.

*Stridor (stridulous dyspnoea)* from the standpoint of thymic disturbances must be differentiated from:

1. Enlargement of bronchial lymph nodes. 2. Retropharyngeal abscess. 3. Membranous laryngitis. 4. Catarrhal spasm of the larynx. 5. Laryngospasm. 6. Congenital laryngeal stridor. 7. Foreign body. 8. Bronchial asthma. 9. Spasmodic croup. 10. Influenzal croup. 11. Malformation of larynx and epiglottis. 12. Intralaryngeal obstruction. 13. Polypi. 14. Adenoid hypertrophy. 15. Oedema of glottis. 16. Fracture of trachea, and 17. Enlarged mediastinal and bronchial glands.

#### *Methods of Diagnosis.*

1. Objective signs. 2. Percussion. 3. X-ray. 4. Diagnosis by elimination discussed under differential diagnosis.

#### *1. Objective Signs.*

Objective symptoms in many cases justify clinical diagnoses and described as rather typical of some thymic disturbance a child with a fair amount of adipose tissue, pale and pasty in color. Enlargement of the adenoids and tonsils with general adenopathy of the superficial lymph nodes is evidenced. The area of thymic dullness is increased and the spleen is remarkably enlarged.

#### *2. The Threshold Method of Percussion.*

Placed on a firm table, the arms clasped about the head, the head held in semi-flexion—the body is maintained in the median position. Use a light stroke, go more by tactile sense of resistance than by sound. Determine the mid sternal line. Percussion is negative, if no dullness or if dullness extends no more than 7-8 of an inch to the left of the sternal line—not more than 1-2 inch to the right. Anything over this is equivalent to an enlarged thymus, especially if the dullness is continuous with the cardiac dullness below. If dullness is noted, and it is due to an enlarged thymus, it will disappear on putting the head in extreme dorsal flexion. Many describe the area of normal thymic dullness as an irregular triangle of which the base is at the sterno-clavicular junction and the apex at the second rib just at the left of the sternum.

When the dullness is continuous with the cardiac dullness, concealing the note of the pulmonary resonance between the heart dullness and the area of the normal thymic dullness, this is a further evidence of an enlargement of the thymus. At times the thymus may be felt in the episternal notch.

#### *3. X-Ray.*

If the objective sign and percussion are in accord with the possibilities of an enlarged thymus an X-ray should always be made.

On the other hand, should an X-ray be made and prove negative, with positive symptoms, treatment should be instituted, nevertheless. For let me emphasize most emphatically that while the size of the gland does play an important role in symptoms observed, still the enlargement antero-posteriorly and an enlargement upward into the superior thoracic inlet can precipitate death, as previously illustrated.

#### BRIEF RESUME OF CASES.

##### CASE 1.

Seen first at 9 months. Cyanosis at birth. Thought previously to be due to traumatic injury. Extremely fat. 32 pounds 8 ounces. Lymphocytosis. Difficulty with inspiration. Diagnosis: Thymic asthma. Confirmed by X-ray. One application seemed to suffice.

##### CASE 2.

Age 6 months. Referred by Dr. Philip Carter. History of adenoids. Peculiar inspiratory stridor. Occasionally cough simulating whooping cough and with history of frequent colds. Pale and pasty in color; question of adenoids had been considered and enlargement of thymus could not be eliminated. X-ray confirmation. One exposure of radium 525 mg. hours. Size was considerably decreased when second picture was made three months after treatment.

##### CASE 3.

Age 2 weeks. Lymphocytosis; asthmatic breathing, croupy cough, with peculiar respiratory stridor. X-ray confirmed diagnosis. First application of X-ray at 1 1-2 months. Three exposures altogether, two weeks apart. All symptoms disappeared. Diagnosis: Thymic asthma.

##### CASE 4

Age 7 months. Mucus in throat. Seems to choke at times. Hemoglobin 70%. Total white count 10,750. Small 81, large 3. Neutrophils 16. Questionable diagnosis of enlarged thymus. X-ray confirmation, thymic asthma. Two applications of X-ray two



weeks apart with absence of symptoms thereafter.

## CASE 5.

Age 5 months. Cyanosis, difficulty in breathing with a history of improvement with successive exacerbations and improvement, etc. Diagnosed as whooping cough. Diagnosis, thymic asthma confirmed by X-ray. Three X-ray irradiations two weeks apart with disappearance of symptoms.

## CASE 6.

18 days old. Cyanotic spell. Wheezing inspiration. Marasmic child. Diagnosis: Thymic asthma, confirmed by X-ray. X-ray applications on the 19th day, 29th day, 41st day, disappearance of all symptoms. History of older brother having died of cyanosis at birth.

## CASE 7.

5 1-2 months. Pasty looking, underweight, mild evidence of rickets. Sarcoma of buttocks. No symptoms warranting a diagnosis and X-ray was taken to determine whether or not there had been any metastasis in the lung.

## CASE 8.

16 months. Convulsions since 6 months of age, increasing in intensity and number. Blood count 8,500; small 82%, large 0, neutrophils 18%. Four applications of X-ray within two weeks. Spells have not diminished in number and seem to have become more pronounced in duration. Wasserman, father positive, mother negative, child negative. Three blood pictures made respectively 7, 9 and 10 months after last X-ray revealed the following:

Large 7, small 47, N. 46; total 6,000.

Large 6, small 25, N. 69; total 8,000.

Large 7, small 26, N. 67; total 7,000.

Although the thymus apparently was normal in size, after the third application, the symptoms apparently had not been benefited by treatment. Radium was then used for two applications with no better results. Whether this case is one of a multiglandular syndrome, or whether the thymus is one of the syphilitic variety, or whether the antero-posterior diameter of the gland is still disproportionate to the antero-posterior diameter has not been determined. Subsequent observations have not been allowed by the parents.

## CASE 9.

Age 11 1-2 months. Flabby, asthmatic breathing. History of blue spells with temper, backwards physically with mental retardment. Diagnosis: Thymic asthma with X-ray confirmation. Two applications two weeks apart, all symptoms disappeared.

## CASE 10.

3 weeks old. Cold and cough with blueness of the lips and inability to breathe properly since birth. Thymic asthma diagnosis confirmed by X-ray. Four treatments, three, four, five and six weeks successively. Symptoms have all disappeared.

## CASE 11.

Referred by Dr. C. Y. Seagle. 3 weeks. Blue Baby. "The older he gets, the bluer he becomes." "Two very severe spells yesterday, with apparent loss of life." Diagnosis: Thymic asthma, confirmed by X-ray. Three successive weekly applications with disappearance of symptoms.

## CASE 12.

Age 4 months. Heavy breathing since birth. Marked snorting and crowing respiratory sound. Total white 7,256, small 63, large 6, neutrophils 31. Two exposures one week apart, since then absence of symptoms. Diagnosis: Thymic asthma.

## CASE 13.

3 days old. Referred by Dr. S. M. D. Clark. Peculiar breathing. Seems to choke on liquids. Pale color. Bluish lips. Diagnosis: Thymic Asthma, confirmed by X-ray exposure. Two applications. Family moved away from New Orleans and have lost trace of them.

## CASE 14.

5 years old. Mentally backward. Breathes with great difficulty. Retraction of the chest both below and above sternum. General peripheral adenopathy. Enlargement of the spleen. Flabby underweight. Total white count 5,000, neutrophile 55, small 39, large 6, percussion positive. Diagnosis: Thymicolymphaticus. Parents would not submit to further treatment and patient was taken back to his domicile. X-ray confirmed diagnosis.

## CASE 15.

2 years of age. Has had difficulty in breathing since birth. General adenopathy. Enlargement of spleen. Retraction of upper and lower chest on inspiration. Diagnosis: Status lymphaticus. Confirmed by X-ray. Two exposures with marked improvement.

## CASE 16.

Referred by Dr. Lucius McGhee. 10 months of age. History of frequent convulsions, increasing in number and duration. Associated rickets, flabby, mentally and physically backwards. Wasserman negative Hemoglobin 55%, total white count 5,500, small 44, large 11, neutrophils 45. Questionable diagnosis of thymic asthma, substantiated by X-ray. Parents refuse to remain in order to have treatments continued.

## CASE 17.

3 weeks of age. Referred by Dr. Randolph Unsworth. Strangles with each feeding almost since birth and has had frequent peculiar fainting spells where the baby becomes "perfectly white." Diagnosis: Thymic asthma. Corroborated by X-ray showing marked enlargement to both sides of sternum. Three exposures, first two being one week apart and the last being two weeks following the second. "Since then seems like a new baby."

## CASE 18.

2 days old. Feeble, crowing cry. Very pale. Appears lifeless. Diagnosis: Thymic asthma. X-ray applications 5th, 14th, 26th and 60th day respectively with a marked reduction in the size of the gland and absence of symptoms mentioned.

## CASE 19.

7 months old. "Spells and convulsions." First once a week, now daily. In the way of elimination, the thymus was considered, but no positive diagnosis was made. X-ray bore out the possibility and four treatments were given with no improvement. Wasserman of father positive, mother negative, child negative. After seven months of treatment, iodides and mercurial inunctions, convulsions have decreased in every way. No conclusions, however, could be made as it would be difficult to state whether the mixed treatment or X-ray was responsible for the improvement. However, this case was apparently one involving more than the thymus gland alone.

## CASE 20.

Referred by Dr. H. Gates. 1 year old. Splotchy skin, frequent urticarial eruptions, crowing sound on inspiration. Blue lips off and on. Total white count 14,500, small 34, large 5, neutrophiles 60, eosinophiles 1. Two exposures, one week apart, marked improvement. Diagnosis: Thymic asthma confirmed by X-ray.

## CASE 21.

Age 1 month. Grandfather positive Wasserman, father questionably positive. Baby has been blue all over off and on since birth. Diagnosis: Thymic asthma confirmed by X-ray.

## CASE 22.

11 years. Was admitted to Touro Infirmary for intestinal upset. One Sunday afternoon suddenly become very pale and died immediately. His mother, sister and self had all slight deformities of the hand and he had a rather marked general exostosis. A post mortem was held and revealed a tremendous thymus. No suspicion of thymic disturbance had been made for there had been no significant signs or symptoms of the clinical syndromes mentioned in this paper.

## CASE 23.

6 months. Gets "black and blue every time she cries." "Becoming more noticeable the older she gets." Suspicion of thymic asthma corroborated by X-ray. Three weekly applications—symptoms cleared.

This series of 23 cases includes 13 males and 10 females; ages range from two days to eleven years, inclusive. Eight cases under 1 mo., five cases 1-6 mos., six cases 6-12 mos., three cases 1-5 yrs, and one case 11 1-2 yrs. Eighty-three (83) per cent under 1 year of age.

*Significant Symptoms:*

Cyanosis, continuous or intermittent; dyspnoea, with marked respiratory stridor, associated with cyanosis, temper spells, fainting spells, and the general objective symptoms usually associated with thymicolymphaticus such as general adenopathy, large spleen, etc.

Nineteen (19) positive and two (2) questionable thymi were diagnosed prior to X-ray substantiation.

*Treatment:*

(1) X-ray. (2) Radium. (3) Combination of X-ray and radium. (4) Medicinal, and (5) Surgical.

X-ray—Of this series of 23 cases, 20 received Roentgen irradiations, 1 received a combination of Roentgen irradiations and radium and 1 received radium alone, 1 did not receive any treatment whatsoever.

The Roentgen irradiations were given at various intervals ranging from two to three days up to a period of seven to fourteen days—and in a few instances, monthly. Exposures made from two to three minutes up to ten to fifteen minutes. In all of these cases improvement seemed to follow the application of the Roentgen irradiations, except in the one case previously mentioned.

As the thymus is very sensitive to X-ray, and inasmuch as X-ray exposure has proved harmless whether in normal or abnormal individuals, this seems to be the treatment of choice.

*Conclusions.*

1. Artificial involution of the thymus follows Roentgen irradiation.
2. X-ray therapy should be used in all cases whether mild or urgent.
3. Cases with marked symptoms should receive repeated massive doses.
4. As regeneration of the gland is to be expected, the condition should be watched very closely from time to time by an occasional X-ray.
5. Mental retardment and physical development that warrant the consideration of the thymus gland as a probable factor should receive X ray treatment even though the X-ray picture is negative.
6. As a precautionary measure, or preoperative treatment, the so-called lymphatic type of children should be



given X-ray therapy to enable them to withstand inter-current disease or anesthetic.

7. Preoperative exposure of older children whether it is suspicious of enlarged thymus or where there has been a history of enlarged thymus in the past.

8. Routine preoperative X-ray treatments of hyperthyroidism in children though most uncommon, should be resorted to in case surgical intervention is necessary (<sup>23</sup>Lange modified.)

9. The therapeutic tests with X-ray are always permissible (<sup>24</sup>Friedlander reported series of over 100 cases of which only four were unsuccessful, using the technique outlined as follows:

"A Coolidge tube, backing up a nine and one-half inch spark, was employed. The rays were filtered through 4 mm. of aluminum and a piece of thick leather. The target skin distance was approximately nine inches. The routine exposure was twenty-five milliamperes-minutes. In mild cases a single dose given over the anterior surface of the chest proved sufficient. In more urgent cases fifty milliamperes-minutes were administered at the first treatment, twenty-five anteriorly and twenty-five posteriorly. During the treatment the child was kept quiet by four sandbags, one placed across each arm and one across each leg. The interval between treatments was usually one week unless the urgency of the symptoms suggested more frequent applications." It has been demonstrated in rabbits that four exposures on successive days give greater degree of fillosis than fifteen exposures over five weeks.

#### *X-Ray.*

- (1) Decreases the size of thymus—with disappearance of the cough, the stridor and the asthma.
- (2) In status thymicolymphaticus—the lymph nodes recede appreciably.
- (3) There is stimulation of the patients' mental and physical growth.
- (4) Lymphogrosis rapidly disappear.

#### *Radium.*

Inasmuch as the writer has had only two cases, one partially treated with radium, and the other treated with ra-

dium alone this does not warrant deductions. However, this case received one treatment, and three months later a second X-ray showed a marked shrinkage of the thymus.

<sup>25</sup>Brayton and Heublein have reported series of 34 cases of enlarged thymus treated with radium with a prompt disappearance of all symptoms. Their technique is as follows:

"100 milligrams of radium element, still in its 0.3 millimeter silver capsule, is wrapped in sufficient gauze so that when strapped to the chest by a strip of adhesive, it will lie half an inch from the skin surface. Four marks are made in the form of a rectangle over the thymic area, and the nurse is instructed to allow the package to remain two hours over each mark. This makes a total exposure of 800 milligram-hours. From the moment a diagnosis is made, the child's head should be kept in a flexed position, thus lessening the severity of the asthma and the possibility of sudden death."

In very serious cases which are diagnosed within a few days after birth, several cyanotic attacks occurring each hour, radium would be the method of choice.

#### *Combination.*

Some authorities have advocated the use of both means, namely, radium and X-ray, but as we have no sufficient deductions to warrant it would seem inadvisable at this time to encourage this method of treatment.

#### *Medicinal.*

As most of these thymic infants and children are below par and show to a certain extent a secondary anemia and lack of muscle development, various arsenic preparations administered either in the form of arsacetin or sodium cacodylate intramuscularly have had distinct effect on the blood picture as well as the improvement of the patient's general condition. Iron in various forms, particularly iron citrate hypodermatically has also been suggested with good results.

#### *Surgical.*

It is generally conceded that the surgical removal of this gland is not followed by very gratifying results, and while patients apparently improve, the possibility of infection at site of operation renders this surgical intervention extremely dangerous. Even <sup>26</sup>Olivier

and Veau whose success with thymectomy has been most brilliant, latterly advocate the use of the X-ray by preference.

### General Conclusion.

- (1) Study your patient and make your diagnosis.
- (2) When in doubt give X-ray irradiations.
- (3) X-ray is the method of choice—massive frequent doses are advocated.
- (4) Remember your responsibility to your surgical cases.

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### DISCUSSION.

Dr. Leon J. Menville (New Orleans): There are several things concerning the subject matter of Dr. Bloom's paper that are of great interest to me as a Roentgenologist. What has the Roentgenologist to use as a standard of a normal thymus? We know that in the examination of the heart by means of the X-rays, we use a standard of distance, consideration of the build, weight and age of the individual. In this manner we are able to arrive at a correct measurement of a normal heart. I hope to do some experimental work upon the normal thymus, taking in consideration the above mentioned factors. To determine positively whether a thymus gland is enlarged we must know the size of the normal. Of course a markedly enlarged thymus is easily shown with the X-ray, but the borderline cases deserve more consideration.

In the treatment of an enlarged thymus



with either the X-rays or radium, the thyroid is also receiving a certain amount of radiation—realizing that improper radiation of the thyroid gland is productive of much harm—is it not possible that too great a radiation over the thymus (especially using very intensive dosages), may ultimately produce disturbances of the metabolism of the individual? We do not know the exact physiology of the thymus gland at this time, and for this reason I believe that intense radiation should only be administered in those cases where the thymus is so enlarged that the toxicity of its secretions so manifest itself upon the patient that life becomes in danger. Small fractional doses over a long period of time, with careful watching of the patient by the physician in charge, would perhaps be of more benefit to all concerned.

There is no difference in the biological effect upon tissue using either radium or X-rays. We are utilizing in both instances the gamma rays. I prefer using radium to the X-rays in treating enlarged thymus, for the reason that radium can be applied and made to remain permanently in one position, whereas, treating a fretful baby with the X-rays, he is apt to shift around and make the treatment difficult and dangerous. With radium applied skilfully the thyroid gland will receive less radiation than with the use of the X-rays.

Examination will show that the bulk of the meal is well forward and what we see, is only a remnant of the meal in the haustration, on account of its slow progress at this point. I agree with Dr. Barrow that we can sometime make a diagnosis of diverticulitis with an injected meal, but I wish to impress the point that the method of preference, the one that is used more generally, is the barium enema examination.

Dr. Homer Dupuy (New Orleans): I wish to speak of dyspnea as a diagnostic symptom in thymic disturbances. In the absence of X-ray evidence, how can we suspect thymic enlargement? The dyspneic picture is typically expressed by the inspiratory stridor. An infant with inspiratory stridor, without marked rise of temperature, should be suspected of thymic enlargement. The only thing you might confuse with this would be congenital adenoids, or laryngeal diphtheria. We exclude laryngeal diphtheria immediately by the perfect voice present. In the presence of adenoids at birth or a few months after, the picture is very different. The child is a sniffling child. There is no inspiratory stridor. So when you eliminate laryngeal diphtheria, and the sniffling being absent, even without the aid of the X-ray to show thymic enlargement, inspiratory stridor should point strongly to the thymus.

A foreign body might be thought of, but, of course, in the infant that is rare. Again the history of the patient, the high temperature usually present with foreign body in the bronchial tract would help in differentiating.

So here is the point—with inspiratory stridor, marked dyspnea, with absence of sniffles and absence of voice disturbance, suspect thymic enlargement.

Dr. E. C. Samuel (New Orleans): I have

had the pleasure of seeing a number of these cases of Dr. Bloom, and I think we can safely say that since we have been doing X-ray therapy that we have treated probably 150 cases of enlarged thymus and the allied conditions caused by it.

Dr. Menville spoke of establishing what we mean by a normal thymus. I think we have pretty permanently established that in our work at Touro, due to the service of Dr. DeBuys in radiographing the babies within twenty-four hours after they are born, and I think we have about arrived at what we can call a normal and an abnormal thymus. I do not mean to make that statement didactic.

I certainly believe that Dr. Menville is correct in trying to persuade you not to give the large dosage that has been recommended. I have always been an advocate of the fractional dosage in thymus disease, and I am sure that our results have proven this by the experience of both Dr. Bloom and Dr. DeBuys. They use an average of about 1 1-2 minims, and that is repeated at the end of ten or fifteen days, depending upon the patient's general condition. We tried at first giving five or six minims with adequate filtration, and we produced just the thing we were trying to eliminate. So by cutting down the dosage and giving it at intervals we have practically eliminated this condition.

In regard to radium versus X-ray, we have practically abandoned the use of radium, for the reason that you are able to keep your patient a much shorter time in your department, and we think the results are practically the same. We can see no difference at all. We can use radium, as Dr. Menville and Dr. Bloom have said, but it is usually in position at least six hours over the area. Whether you have them at home, or in a hospital or institute, it makes no difference, the child must stay put for at least six hours. With X-ray therapy that is not the case. You only have these children for one and a half or two minutes every ten or fifteen days.

In regard to the effect of the X-ray on the thyroid in the treatment of thymus conditions, we have practically eliminated this feature by using a small cone directly over the thyroid, anteriorly and posteriorly, and allowing the assistant to hold the legs and arms in the straight-out position, and just radiating over this region.

Dr. L. R. DeBuys (New Orleans): The glands of internal secretion liberate certain products which are called hormones. The functions of these glands may be increased, normal or diminished. There is an intimate relation between the functions of these various glands. Occasionally we see disturbances in the correlation of these different functions. These glands function differently at the various periods of life as for example, at birth, during infancy, at the period of second dentition, at puberty, and also during adolescence. We pediatricians should have some normal standards to go by before using any destructive agent which might permanently impair the internal secretion of any one of these glands.

A few years ago we began to study the shadows in the thorax of the newly born, so

as to ascertain what the normal and what the abnormal shadows are. This observation now includes nearly 200. Every baby born in the newly born service in Touro Infirmary is radiographed within twenty-four hours after birth. As many as possible of these cases are observed at six months, and we have some at one year, so as to see what is taking place in the thorax with the different types of shadows that we find. It would take too long to go into the study now, but the results as I presented them last year before the Congress of Physicians and Surgeons in Washington with regard to the shadows of the thymus were as follows:

1. There is no constant relation between the heart shadow and the shadow of the thymus.

2. The shadow of the thymus is not necessarily influenced by the position of the heart.

3. The shadow of the thymus varies in its size and position independent of the heart shadow and with no relation to the size of the infant.

4. These variations in the shadows of the heart and the thymus can exist without clinical manifestations of disease.

In our study we have shown that the thymus can be large at birth with no clinical symptoms. We have followed these cases to six months and later and have seen no symptoms develop. We have seen some cases at the different ages with enlarged thymic shadows without symptoms, just as we have seen some cases with enlarged thymic shadows with symptoms, and we have seen some cases with very small shadows, and very marked symptoms. It would seem then that we should not subject these cases to treatment except when we find clinical symptoms of disturbed function.

With regard to the treatment in our experience surgery plays no part. The only results we get are from the use of the X-ray and radium, preferably the X-ray in my experience. One word with regard to the treatment—there may be a slight reaction shown by a slight increase in the symptoms following the application of the therapeutic agent.

Dr. R. E. De La Houssaye (New Orleans): I would like to say a few words relative to the diagnosis of thymic conditions. When an enlarged thymus is suspected and an X-ray report comes back "enlarged thymus" do not rest so secure in your diagnosis. I saw over one hundred babies autopsied dying from various causes and routine X-ray pictures were made of the thymus in each case. Many pictures that showed large thymic shadows weighed only 5 to 8 grams. The lateral dimensions were present, but the majority with large thymic shadows presented no clinical symptoms.

The thymus diminishes in size during the first year, this is perfectly normal. When you are using X-ray therapy and the thymus appears smaller with cessation of the symptoms that first gave the impression of a thymic condition you are again confident of your diagnosis. I want to suggest that we study these cases very carefully eliminating such as cerebral haemorrhage, laryngeal malforma-

tions and obstructions, food allergies, etc., and not be led astray by an X-ray picture.

Dr. C. J. Bloom (New Orleans), In closing discussion: Regarding Dr. Menville's discussion concerning the relation between the thymus and the thyroid, additional information on this subject can be given. Personally the speaker believes that an over-application of radium or X-ray irradiation of the thymus might produce a disturbance of the thyroid, because we know that many children who have succumbed to thymic disease have revealed at post-mortem small parts of the thyroid gland associated with the enlarged thymus.

Frequent application of the X-ray over a short period of time versus X-ray irradiation over a long period of time, experimentally favors the former. Atrophy of thymus in rabbits subjected to daily irradiation covering a period of four or five successive days on one hand, have been much more marked than irradiation given once a week for a period of fifteen weeks. I believe that this is equally true in the treatment of children.

One word in behalf of what Dr. Menville has said—the treatments as instituted in the past, in this series of twenty-three cases, has been very successful—there being only one death and this case was not diagnosed anti-mortem.

Regarding Dr. Samuel's discussion, I cannot agree with him that he can make an X-ray of the chest in twenty-four to forty-eight hours after the birth of the child and determine whether or not the thymus is normal. Pathologists have not been able to determine what the normal thymus is in size, and it would seem even more difficult for the radiologist to make such a deduction. The statistics given in the body of my paper surely speak of the difference in the mean weights of thymi obtained in post-mortems. In other words we have contradicting figures, and nothing so far as actual weight is concerned.

We also have to consider the fact that a misinterpretation might be made of the shadow at the base of the heart at such a time because frequently the auricles are temporarily dilated, due to the previous foetal circulation and would require a good many days before the base of the heart has compensated for its new life.

## NON-SPECIFIC URETHRITIS.\*

BY W. A. REED, M.D.,  
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Non-specific Urethritis may be defined as an inflammation of the Urethra, in part or whole, not due to the presence of the Gonococcus. Although the great majority of all cases of Urethritis are the direct result of the specific action of the toxins produced and liberated by the diplococcus of Neisser,

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there still remains a sufficiently large number of cases not resulting from this infection to justify calling them to our attention and discussion.

It is at times no easy matter to form a clear cut line of distinction between that type of case which is one of frank non-specific origin and those in whom a *Urethritis* would probably have never occurred were it not for the presence of more or less permanent changes wrought in the tissues of the lower genital tract by gonorrhoeal infection at a previous date, with a consequent lowering of resistance, permitting organisms which under ordinary conditions are harmless to become pathogenic.

True non-gonorrhoeal *Urethritis* has been divided by Pederson, Spittell and others into two types; 1, bacterial and 2, non-bacterial. Complete absence of bacteria from urethral discharges, regardless of the etiological factor, is not common, as shown in the study of fifty-eight of the cases included in this article. In only eight cases was there found to be a complete absence of organisms, and it is more than probable that a number of the apparently non-bacterial cases would have shown the presence of organisms had it been possible to continue examination of smears of the discharge. Nor is it reasonable to expect a large number of absolutely non-bacterial urethral discharges when one remembers that normal urethras harbour from fifteen to thirty different strains of bacteria in twenty percent of cases" (Irving S. Koll.)

Generally speaking, one may consider as non-bacterial those cases of *Urethritis* resulting from excessive masturbation or prolonged sexual excitement, the use of strong prophylactic injections, careless urethral instrumentation, irritation from the passage of urine laden with crystals of oxalates, phosphates or urates, or containing large quantities of chemical irritants such as alcohol, turpentine or the iodides.

In those cases of *Urethritis* classified as bacterial, one is usually able to elicit the history of a recent intercourse with a woman near to or during the menstrual period, or one suffering from a leukorrhoeal discharge, demonstrate the presence of intra-urethral chancres or

chancroids, find a long redundant prepuce with retained secretions, or obtain a history of the recent use of an unclean urethral instrument. At other times it is found associated with infection higher up in the genital tract, acute intestinal disturbances, as well as pronounced intestinal stasis, and even during some of the acute infectious diseases, especially Typhoid Fever.

It is in the above group that one may properly add a certain number of selected cases of *Urethritis* in which almost every kind of organism, except the *Gonococcus*, can at times be found, and in whom the urethra, because of a previous specific infection, no longer possesses the necessary resistance to withstand the attacks of ever present and ordinarily harmless organisms.

These are the cases which we generally classify as Chronic *Urethritis*, and which are truly non-specific, inasmuch as the *Gonococcus* has long since departed. The persistence of the symptoms and the frequency of relapses are often very distressing to us as well as the patient, and it is only after tireless efforts that these individuals are brought to a symptomatic cure. The symptoms usually appear in these cases of non-bacterial *Urethritis*, following an incubation period of a few hours or days, in the form of a mucoid or mucopurulent discharge, a very little reddening of the Urethral Meatus, at times a slight burning on urination, and a hazy or faintly cloudy first glass of urine, the second glass usually remaining clear. Recovery occurs rapidly, as a rule, following the removal of the cause, the abstinence from all forms of sexual excitement, and the ingestion of large quantities of fluids, or at most, the administration of one of the various urinary sedatives. Local treatment is rarely necessary.

The symptoms observed in cases of bacterial origin may be mild, moderate, or severe. At times they are so mild as to be scarcely observed by the individual, there being only a slight semipurulent discharge, little or no burning on urination, no frequency, and showing only a slightly turbid first glass of urine. On the other hand, one not infrequently sees cases in whom either the virulence of the invading organisms

is severe or the resistance of the host is impaired, permitting an extension of the infection to the posterior urethra and bladder, and even to the prostate, vesicles and epididymes, associated with all the distress of such complications. However, it is extremely rare to observe the profuse urethral discharges, the excruciatingly painful straining, frequent urination, the marked edema of the parts, lymphangitis and even adenitis that are at times associated with a *Urethritis* of gonorrheal origin.

Treatment should be begun at once and should be as mild and simple as possible. First the patient must be impressed with the necessity of avoiding sexual stimulation in any form, and that proper diet, physical rest, and maintenance of active kidney and bowel functions are of extreme importance. Supplementing this by the oral administration of hexamethylenamine, one of the essential oils or at times the alkalis, is frequently all that is required to secure a rapid recovery. However, it is usually necessary to institute some form of local treatment before the desired results can be obtained. At this point permit me to lay emphasis on the value of mildness in whatever form of local treatment you prefer to use. As a rule, Permanganate of Potash, Protargol, Zinc and Silver in its various forms are among the drugs selected for use within the Urethra. They are all good when used in suitable dilutions. It is far better to err on the side of too weak solutions than on the other. There is nothing that will keep these cases from getting well so much as the use within the urethra of high powered cauterizing injections. In the treatment of Gonorrheal *Urethritis*, it is rarely possible to annihilate an infection once established sufficiently to produce symptoms evident to the patient with one or a few powerful injections. This rule is even more applicable to cases of non-specific bacterial *Urethritis*. In those cases in which the infection becomes posterior, it will often be necessary to use through and through irrigations into the bladder. Personally I prefer to stand by the time-proven drug,—permanganate of potash,—judiciously combining its use with very weak solutions of silver nitrate given anteriorly, post-

eriorly, or both, as the case may need. Many of the newer preparations, such as Acriflavine and Mercurochrome are also very efficacious, but in my hands they have proven no more so than the older well recognized forms of treatment which are certainly less expensive and less liable to deterioration. In the more severe cases of this type it may be necessary to clean them up, so to speak, by more or less massage of the prostate and seminal vesicles, using sounds or dilators in the urethra to stimulate absorption of soft infiltrations and the healing of infected follicles. Fortunately such changes in the urethra are not nearly so prevalent as in severe urethritis of gonorrheal origin. Permanent recovery is the rule.

Now permit me to turn to those cases of non-specific bacterial urethritis, whose existence depends upon the presence of more or less severe tissue changes brought about by a true gonorrhea at some time in the past. Having once battled with the vast and mighty army of the gonococcus, the barriers and fortifications are never just so strong again and the urethra long remains a prey to the sporadic attacks of the vanguard of the main army, the non-specific organism.

These are the cases that try our patience and tax our patients and unfortunately comprise no small percentage of our clientele. Let us consider such a case coming to us, complaining of a persistent sticking together of the lips of the urethral meatus, frequent slight discharges of mucopus, occasional burning on urination and no little mental anxiety over his condition. It is our first duty to thoroughly satisfy ourselves that there are no gonococci still present in the urethra by repeated examination of urethral smears, remembering that staphylococci which normally inhabit the urethra will under certain conditions change their staining characteristics and become gram-negative, thus serving as a source of serious confusion to one not thoroughly experienced in the identification of the gonococcus. The micrococcus catarrhalis at times invades the urethra and may necessitate the use of cultural methods to distinguish it from the gonococcus.



Next, learn as much as possible regarding the probable location of the lesion by study of the voided urine, using the two, three or five glass tests. As a routine practice, the two or three glass tests are sufficient and very reliable. By this means we can to a degree judge whether they are confined entirely to the anterior or the posterior urethra, or both, or to the prostate and seminal vesicles.

Now examine by means of the finger in the rectum the prostate and seminal vesicles, noting their size, shape, consistency, whether sensitive to the touch, and lastly, massage them to obtain secretion for further examination. Where the voided urine is laden with pus it is always preferable to irrigate the urethra before expressing the prostatic and vesicular secretions to avoid their becoming contaminated with pus on their passage out through the urethra. This secretion should at once be centrifuged by the Johns method and any pus found present examined in stained preparation for organisms.

Next, attention should be turned to the urethra proper, and a search made for strictures of large or small calibre, follicles, and periurethral infiltrations, by means of olives, the Otis urethrometer and palpation of the urethral wall over the largest sound that the urethra will admit. Finding no strictures, palpable follicles or periurethral infiltrations present, there remains one more means of clearing up the diagnosis, namely, inspection of the interior of the urethra through the urethroscope. Not only is its use practicable in examining and treating lesions in the anterior urethra, but in the posterior urethra as well. While only a small proportion of cases necessitate the use of this instrument to establish a diagnosis and bring about a cure, there still are enough to well compensate one for the time required to become proficient in manipulating the instrument and recognizing the lesions. The principal lesions to be found in the anterior urethra are those involving the glands of Littre and lacunae of Morgagni and are mostly seen on the roof of the urethra and usually in the first two or three inches back of the fossi navicu-

laris. Normally these structures are scarcely visible to the naked eye, but under conditions of chronic inflammation, are readily discernable through the urethroscope, with their red-rimmed mouths pouting upwards and filled with a glazy mucopurulent secretion. It is extremely pleasing to note the results that are at times obtained by the cauterization and destruction of these foci by means of strong solutions of silver nitrate or even pure carbolic acid applied through the urethroscope. Similar and satisfactory results have been for years and still are being secured by regular urethral dilatation, either by sounds or some of the special dilators, although perhaps a trifle less rapidly. Still it is a considerable source of personal satisfaction to see the actual lesion and observe its improvement during treatment.

Before bringing this article to a conclusion, I wish to present to you the general deductions drawn from a study of 141 cases of non-specific bacterial urethritis seen and handled in private practice and in whom the gonococcus could not be demonstrated by any of the usual laboratory methods. Of these, 63 cases were studied in detail and the following figures tabulated:

1. Twenty-eight had never had a gonorrhoeal urethritis.
2. Thirty-five had suffered with gonorrhoea an average of seven years previously.
3. The average duration of the symptoms on applying for treatment in 53 of the cases was eight weeks. Of course in some the condition had existed only a few days.
4. Ten cases admitted that they had suffered with some form of urethritis "at intervals" for a long time; one as long as 15 years.

The predisposing and etiological factors were determined as far as possible with the following conclusions:

1. Eight cases were definitely proven to be the result of strong urethral prophylactic injections.
2. Seven followed sexual excesses.
3. Three resulted from infection from secretions retained under long foreskins.
4. One was due to the presence of an intra-urethral chancroid.
5. In ten, urethral bands and strictures were demonstrated.
6. One case was associated with an acute intestinal disturbance.
7. One resulted from excessive masturbation.
8. And in the balance of the cases the predisposing factor could not be determined with any degree of certainty.

The main symptoms complained of by these cases included shreddy urine, a frequent or permanent morning drop, slight urethral discharges following the least provocation, and in some, frequency and burning of urination.

One or more urethral smears were made in all but five of the 63 cases, and in only eight were bacteria unable to be demonstrated. The balance showed *B. Coli*, staphylococci, pseudodiphtheroids, pneumococci, and streptococci in a few or large numbers.

Pus was found present in secretion expressed from the prostate and vesicles in 47 of the cases, nine were found free of pus, and seven were not examined.

The vesicles were not palpable to the finger in 47 cases, seven seemed pathologically enlarged and nine were not examined.

In 29 cases sounds of large size were passed and no follicles or periurethral infiltrations could be palpated.

Six cases were examined through the urethroscope and pathological changes in the glandular structures of the urethra demonstrated. It is very probable that similar changes would have been found in more of the cases had they been subjected to urethroscopy.

Treatment of these cases extended over periods from two days to nine months. The average time being one month.

The results of treatment were 35 cured, 23 greatly improved at the last date of observation, and 5 remaining unchanged.

The remaining 78 of the 141 cases were composed of individuals also suffering from non-specific urethritis, but in whom gonorrhoeal urethritis had occurred at a more recent date, and were therefore eliminated from the other group.

In conclusion, permit me to admit that there are a certain small number of chronic urethrites that seem to be absolutely resistant to all forms of treatment. Nevertheless, by careful, patient attention and the use of every available means at our command we are able to bring joy to many an individual who has long despaired of ever being cured.

## DISCUSSION.

Dr. H. W. E. Walther (New Orleans): There are two points I would like to add to Dr. Reed's valuable contribution. The first relates to diagnosis. We cannot emphasize too strongly the necessity, the imperative necessity, of employing the Gram stain in all urethral discharges, to the contrary notwithstanding the teaching of some men in our own community that by a simple methylene blue stain or any single stain employed they can differentiate the gonococcus from other organisms. This has been impressed upon me very forcibly in our clinic work. Of course the Gram stain is not absolutely infallible. But we cannot employ a cultural method in all cases. We should stick to the Gram stain and not try to replace it by some short-cut method that is not accurate in its findings. The Gram stain is not complicated, any man can do it in two or three minutes, and it gives you information that will be very enlightening when you think you are dealing with a Neisserian urethritis and you find the opposite to be true.

The other point relates to equipment. It is certainly surprising to see cases that have been to some physicians and find the kind of syringe they are using. In this modern day it is inexcusable to use the old black rubber piston type of syringe. Your patient does more damage with this type of syringe than he does good. The piston either works so loosely that the solution backfires through it and leaks out, or it works so tightly that it will not start at the beginning and when it does start nothing stops it. The trauma produced is worse than no treatment at all. The glass barrel of Becton, Dickinson & Co., with a rubber bulb attached, of two-dram capacity, is the only satisfactory syringe to use. It seems elementary to present this point, but I consider it one of the most important in the handling of cases by self-treatment (something I do not approve of, but when it must be done the patient should be given the best type of syringe for the purpose). This syringe costs no more than any other, and is infinitely more satisfactory. It has been on the market for ten years, and we should see that the druggists abandon the other kind.

About eight years ago, in the *Journal of the American Medical Association*, I described a new metal urethral clamp. We know that meditation to the urethra should be prolonged rather than simply to put the fluid in and allow it to run out immediately; but the patient's fingers get cramped in trying to hold the meatus. I therefore devised a clamp with serrated blades which prevent it slipping and obviates one point that is very objectionable. This is put on the lips of the meatus, and with the patient lying in bed or on a treatment table this clamp can be applied at the tip of the meatus and the solution can be held in for ten or fifteen minutes.

My experience with non-specific urethritis has not been as large as that of Dr. Reed. It certainly brings home the fact that we cannot sit at our desks and simply turn to the patient and say "you have gonorrhoea" without going further.



Dr. M. H. Foster (Alexandria): I had considered the Gram stain was sufficiently established as the means of diagnosis of the gonococcus. Always looking for the simplest thing, I have tried to make diagnosis by other stains, but I consider the Gram stain is the one we should employ.

The matter of the right kind of syringe in treating anterior urethritis I consider of much importance, as Dr. Walther has said. When I came out of the army I began to write prescriptions when injections were indicated, and I asked the patient to return both the drug and the syringe to me after the prescription had been filled, and in every instance some other type of syringe had been given him. When I took the prescription back to the druggist and accused him of substituting something else, I found that the druggists were not keeping pace with the improvements in this line, and were not equipped with these syringes such as Dr. Walther has described; but now they have them.

In regard to the cause of non-specific urethritis, Kidd of London has mentioned the type arising from focal infection, and when he makes a statement it is always backed up by case records and laboratory findings. There is also the type mentioned by Dr. Reed, from bacteria indwelling in the methral cavity. And we cannot overlook the fact that there are types of non-specific urethritis which are produced by intra-meatal infiltration. In these cases always satisfy yourself that there is not an intra-meatal chancre. The important class is that produced as the result of induration along the urethral canal following gonococcus infection. A very important type will be found resulting from stricture of the canal.

Recently a man came to my office stating that he had been treated for two years and in two months had received twenty shots of vaccine. That can only be excused by the fact that the man did not know how to properly treat urethritis. If he had been equipped he would have found the stricture of the posterior urethra. But he was trying to treat this condition in an inadequate way.

Dr. F. M. Johns (New Orleans): I am glad Dr. Walther is so enthusiastic about the Gram stain. I believe the Gram stain may be designated as the most difficult stain to make correctly. When you remember that most of the mistakes with Gram stain result in a diagnosis of gonorrhoea, you can readily see why so many cases are diagnosed as gonorrhoea. Since the advent of American dyes on the market we instituted a special study of the Gram stain and have completely revised most of our formulas, and those who are interested I will be glad to give the results of our experiments. Suffice it to say that you do have to make a considerable alteration in your formula.

Another mistake we have found very prevalent is in the Gram iodine solution. Unless a man is making Gram stains every day—if you make a Gram stain only every three or four days or one a week you are not checking

up all the time and it is easy to let the bottle stand on the shelf and the iodine escape. I believe that this is the reason Dr. Reed states that sometimes the staphylococcus shows Gram negative. A good Gram stain with plenty of free iodine will be a rich brown color.

Dr. Paul J. Gelpi (New Orleans): The instructive paper of Dr. Reed's ought to impress upon us certain points that I think should be stressed. First of all, the frequency of non-specific urethritis imposes the necessity of a clear-cut differential diagnosis. The next thing is the importance of curing these cases. We have here a true inflammation, and if we do not get them well and allow them to become chronic, we have an infiltration of round cells and formation of fibrous tissue, which eventually means stricture.

Whereas simple urethral infections are not as far reaching as Neisserian infection, the above considerations make us realize that serious results may ensue unless they are properly treated and cured.

Dr. Paul Michinard (New Orleans): I do not want to give you any means of treatment—I want to put a bug in your ear to help you save thousands of homes. I have seen, in an experience of thirty years, a number of instances where I had to go in and play the good priest in case of non-specific urethritis in the female. Quite recently a man came to me, a very jealous sort of fellow, and said, "you are treating my wife." "Yes." "What is the matter with her?" I said, "she has a cystitis and I believe a urethritis." He said, "will you tell me the cause of it?" And I replied, "I will." It required eight days of investigation for me to find the cause of your wife's trouble, and she will get well without any medicine, because my medicines have failed to cure her." I had sent the urine around to Dr. Gomila, who found no gonococci but staphylococci, but on looking around for the cause of the staphylococci I found some trouble with the teeth. Dr. Wahl examined her teeth, and found five points of infection. We had these teeth extracted, the gums treated, and the patient got well in seven days without any specific treatment.

I have seen a number of cases of non-gonorrhoeal urethritis in the female. I have also seen cases of the mild form of infection in the male, contracted from the female, that was entirely innocent on the part of the female. Dr. Chassignac referred a case of that kind to me where the urethral discharge together with staphylococci and streptococci got into the male urethra and caused non-gonorrhoeal urethritis. I mention that to you so that if you do have a married male with urethritis, or you do find a female with urethritis, please do not be in a hurry to attribute the cause to the gonococcus. The same is true with that infernal idea that every case of salpingitis is due to gonorrhoea. Many a home has been destroyed by that idiotic statement made years ago. I have recently operated on four cases where the micro-organism was the bacillus coli.

## X-RAY EXAMINATION OF THE COLON BY MEANS OF THE BARIUM ENEMA.\*

BY LEON J. MENVILLE, M.D.,  
NEW ORLEANS.

The X-ray plays a very important part in the examination of the colon, and a gastro-intestinal examination can hardly be considered complete without such an examination.

It is not the intention of the writer to render a paper on technique and roentgen interpretation, but rather an attempt to show the value of the barium enema in the diagnosis of the colon.

Dr. W. J. Mayo, in the April, 1923, number of the *Journal of Surgery, Gynecology and Obstetrics*, says: "Among all the additions to diagnostic resources that have been made in this generation, the roentgenograph is of the first importance. The sense of sight in this field has brought order out of confusion and separated facts from fancies." The roentgenograph is especially indicated in the examination of the colon. The fact that we are able to visualize the colon in its entirety by means of the barium enema, makes this examination very valuable; in addition to the sense of sight which is of great importance, we also utilize the sense of touch to a decided advantage.

In the best clinics of this country the barium enema examination of the colon is a routine for nearly all abdominal pains; at one of the great clinics an average of over 15 colon examinations is made with the X-ray each day, and I have seen at this clinic many hundred such examinations.

The colon should be entirely emptied for a satisfactory examination, and the patient is best prepared by taking 2 ounces of castor oil the night previous to the examination, abstaining from the evening meal, and the following morning, several enemas of clear water is given until the water returns clear.

The enema with which the examination is made consists of 8 ounces of barium sulphate, 16 ounces of mucilage of acacia and adding 2 or 3 cans of unsweetened, evaporated milk so as to make 50 to 60 fluid ounces.

The normal colon will ordinarily hold from 40 to 50 ounces of fluid enema, depending upon its length and its muscular tone; it can easily be made to fill while the patient is upon his back, and it is not necessary to use the awkward and embarrassing knee chest position.

It is indeed interesting to observe the entrance of the enema into the sigmoid and on through the entire colon, and in many instances beyond the ileo-caecal valve into the ileum, pushing it way forward distending the lumen of the colon and bringing into prominence the entire colon; the time required to fill the colon with the enema is from 3 to 10 minutes.

The fluoroscopic examination is of the first importance in this examination, but plates should also be taken. It is with the fluoroscope that we are able to watch the progress of the enema through the colon, observing any abnormalities, palpating for tumor with the examiner's hand at the site of pathology. By palpation we are able to separate the hepatic flexure and by shifting the patient from side to side the splenic flexure. We can also demonstrate the mobility of the caecum, ascending, transverse, and descending colon, and sometime the sigmoid, all the while examining the patient with the fluoroscope.

The normal colon differs markedly in the radiologic picture and it is of importance that we recognize a normal colon, otherwise the abnormal or pathological would be troublesome to recognize. Remembering that a normal colon is closely fixed at the hepatic, splenic flexure and at the rectum, the colon between these points is loose and assumes various positions, in some instances the transverse colon will be well down into the pelvis and in another case higher up, yet both are normal colons. In abnormal colons we sometimes find ptosis of parts of the colon, the hepatic flexure occasionally will be found low, but rarely does the splenic flexure change its position. Any part of the colon may be displaced by extrinsic tumors, such as those emanating from the kidneys, liver, pancreas, spleen, uterus and adnexa by bands of adhesions, by pregnancy and by psoas abscess. We also find in abnormal colons, an increase in length, the redundancy being usually

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most marked in the sigmoid and transverse portions. This increase in length is a relatively common finding in constipation, but may also be found in cases which function normally.

The barium enema is being used to advantage in helping diagnose the following conditions:

1. Cancer of the colon.
2. Diverticulitis of the colon.
3. Tuberculous colitis.
4. Chronic ulcerative colitis.
5. Polyposis of the colon.
6. Transposition.
7. Hirschprung's disease.
8. Fistulae of colon.

#### *Cancer of the Colon.*

Cancer of the colon is diagnosed by the X-ray enema in a very large percentage of cases. The filling defects and a corresponding palpable mass are of great value in making the diagnosis. We should not forget that there are certain conditions, namely benign tumors, polypi, syphilis, actinomycosis and cicatricial stricture from ulcer, which will produce filling defects, or a palpable mass. These lesions occur infrequently, and for this reason do not offer any serious difficulties. In such cases, however, it would be necessary to have the clinical picture added to the roentgen examination.

#### *Diverticulitis of the Colon.*

The roentgen signs of diverticulitis of the colon are in the majority of instances characteristic and the barium enema is of great importance in the diagnosis of this condition. As nearly all the diverticulae of the colon are false ones, it may happen that we could overlook a very small one, but on the whole the percentage of correct diagnosis is far greater than by any other method of examination.

#### *Tuberculosis of the Colon.*

The distal segments of the colon are seldom involved by tuberculosis. The most frequent site of the colon to be involved is the caecum and ascending colon. Our attention, therefore, is directed in particular to these two segments of the colon in our examination for tuberculosis of the colon.

Carman says, "That the enema is preferable in making this examination, since it demonstrates small irregularity of contour by actually outlining the

bowel mass, whereas the ingested meal is so unevenly distributed through the normal colon that its irregularity cannot be distinguished from that due to disease. This is especially true in cases with little involvement." I, personally, believe that whenever possible both methods should be used, preference given to the enema. The roentgen sign of importance in tuberculosis of the colon is the filling defects and the absence of barium at the site of the disease, caused by alterations in the wall of the bowel from the disease and also spastic condition accompanying this disease. The above roentgen signs are not entirely characteristic of tuberculosis of the colon; carcinoma and ulcerative colitis may produce similar conditions. However, a lesion of the caecum or ascending colon, with the absence of barium shadow is strongly suggestive of tuberculosis and tuberculosis should be sought for in other parts of the body.

#### *Chronic Ulcerative Colitis.*

The barium enema X-ray examination in this disease shows a rapid filling of the bowel with the enema, with smooth walls, free from haustration, and narrowed lumen. Any portion of the colon may be affected. The X-ray examination not only helps in the diagnosis, but shows the extent and location of the disease.

#### *Obstruction of the Colon.*

We are so familiar with the value of the X-ray in this condition, that it is not necessary to mention its many advantages.

#### *Hirschprung's Disease (Mega Colon.)*

A congenital idiopathic dilatation of the colon. Segmental dilatation is more frequent than entire dilatation of the colon, especially the sigmoid (mega sigmoid). The diagnosis of this disease is clearly brought out by means of the barium enema, and there should be but little difficulty in a correct interpretation.

#### *Fistulae.*

The barium enema is of considerable help in diagnosing fistula, locating the exact part of the bowel in which they originate, as well as the extent of their ramification.

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### DISCUSSION.

Dr. A. L. Levin (New Orleans): I should like to ask Dr. Menville whether the so-called enterolith can easily be demonstrated by the X-ray. In other words, when a barium meal is given for a gastro-intestinal picture, can the X-ray man easily recognize intestinal concretions? In this connection I should like to relate the history of a case which will be of great interest to all of us, especially to the gastroenterologist:

I was called to see a case several months ago giving the following history. A woman above middle age, able to pursue her regular occupation of teaching in the public schools up to about December, 1922, at which time she began to lose her appetite and to suffer from constipation, nausea and then persistent vomiting set in with abdominal cramps off and on. She began to lose in weight rapidly and the color of the conjunctiva and the skin became distinctly icteroid. Involvement of the nervous system was manifested by a very marked general depression. Physical examination of the abdomen presented the only interesting feature; that is, a marked abdominal tympany over the left and lower abdomen with a flat sound over the right upper abdomen. I introduced the stomach tube and obtained over a half gallon of dark green stagnant material of a very foul odor. I put her on full diet for another 24 hours with the idea of determining whether there would again be a marked duodenal regurgitation. The following day I introduced the tube and found the same quantity of fluid with a heavy residue. The color of the fluid obtained was not as dark green as the first, but rather a light yellow. The examination revealed that it was duodenal contents.

I diagnosed the case as one of obstruction at the duodeno-jejunal junction, and advised an X-ray to confirm the condition. The X-ray showed a giant duodenum. We did not look any further, and were satisfied that our diagnosis of duodeno-jejunal obstruction was correct.

On strength of the above findings I advised operation. The surgeon agreed with my opinion and also suggested surgical interference for relief of the above condition.

At the operating table, to our surprise, a very unusual condition was found. There was absolutely no obstruction at the duodeno-jejunal junction. The duodenum was found markedly dilated. The intestines lower down were normal, but the entire lower bowel from one end to the other was filled with hard fecal concretions. The surgeon could not do anything. The abdomen was closed, and shortly after the operation the patient

began to sink very rapidly, and in spite of our efforts, died two or three hours after the operation.

Statistics, according to the surgeon's statement, demonstrate that the prognosis in such cases, from a surgical standpoint, is very bad. The majority of them die from toxic absorption shortly after the operation.

Personally I feel that had the X-ray man gone a little further and if it had been possible to tell me that he had found concretions or enteroliths further down in the tract, I probably would have tried first in some way to get rid of these stones in the intestines and have watched the results, and the outcome would probably not have been as sad as it was with surgical intervention.

With regard to Colitis and chronic ulceration of the large bowel, this is very interesting too. Logan, several years ago, wrote an excellent paper published in one of the volumes of Mayo Clinic, where he demonstrated 117 cases of chronic colitis. They were all proven by X-ray. These cases have typical X-ray features, and that is, that the sacculations are lost, and the large bowel presents a perfectly smooth lumen, narrow, sometimes presenting only the width of a finger. The treatment of such cases is very tedious, and in a large percentage is unsatisfactory. I have in mind a case which I treated by transduodenal lavage after other various treatments had been pursued for several years without results. The results with transduodenal lavage in this case were excellent and the patient is in perfect health today.

The X-ray of the large bowel was of the same type that Dr. Menville has shown us here today.

Dr. Lester J. Williams (Baton Rouge): Dr. Menville brought out one point that I think is of great importance to the general practitioner, and that is the effect of the posture upon the enema. He admits that there is no necessity for the knee-chest position in giving the enema, and there is really no necessity for a high enema of water to completely fill the colon. The fluid flows easily through an ordinary syringe without the necessity of any special apparatus.

I was interested in the very excellent slides, particularly those of chronic ulcerative colitis.

Dr. S. C. Barrow (Shreveport): The doctor's slides have covered practically every phase of the subject that we are usually called upon to investigate with the X-ray, but I want to touch upon one or two points that I think are of importance to the general practitioner, and that is multiple diverticulitis—not the gross type, but the diverticulitis the result of chronic inflammation of the colon. I want to stress the point that a simple opaque enema will frequently fail to show this condition and we must rely upon the opaque meal by mouth after 72 hours. The meal must be passed by mouth, and then give it time to pack into the small excavations of the wall of the gut, in order that it may be demonstrated.

Dr. L. J. Menville (closing): The question of Dr. Levin as to the X-rays being able to demonstrate fecaliths. We know that the shadow cast by the substance with the X-rays is dependent upon the cube of the atomic



number multiplied by its density. The X-rays will demonstrate a fecalith, depending upon its character and formation. Sometime we must differentiate between fecalith and renal calculus and the best way to make the differentiation is by complete purgation. And for the reason that fecaliths cast shadows, I insist upon complete purgation for a barium enema when the X-rays is used.

I thank Dr. Williams for his discussion and also Dr. Barrow. Barium enema for the demonstration of diverticulitis of the colon is always used at the Mayo Clinic, for the reason that portions of the ingested meal may remain in the haustration of the colon, after the meal has passed on, and may resemble a diverticulum. Movements of an ingested meal in the colon is similar to water in a moving stream, it is more rapid in the center and less towards the sides. It is for this reason that a 24-hour ingested meal of the colon is confusing when examining for diverticulitis, the sides of the colon may show some remnant of the meal, but a careful barium enema examination will make the diagnosis clear.

## PLASTIC OPERATIONS ON THE FEMALE PERINEUM.\*

BY WM. D. PHILLIPS, M.D.,  
NEW ORLEANS.

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Plastic operations on the female perineum very often fail, and the results expected are not obtained. The patient fails to obtain relief from the symptoms from which she suffered, and in some instances is made worse as a result of the operation, also in other cases, as a result of failure to properly repair a recent laceration, the patient at some time sooner or later is forced to suffer serious discomforts, or the annoyance of another, and probably more serious operation. There must be a reason for this, and it is the purpose of this paper to call attention to a few of the practical points so necessary for the successful repair of perineal lacerations or relaxation. Failure to appreciate the anatomical structures as they exist, excision of an excessive amount of mucous membrane and distortion of the normal muscular and fascial supports will all tend to produce failures referred to above. In an attempted repair of the relaxed vaginal outlet, we can not expect an exact anatomical restoration, but physiologically the function should be restored.

For convenience of description, we

will classify the lacerations as follows:

1. Superficial laceration.
2. Deep lacerations—median and lateral—extending if lateral into one or both sulci.
3. Lacerations of the recto-vaginal septum involving the sphincter and extending a variable distance up the septum, most often spoken of as complete laceration.

The operations for repair of these conditions being referred to as:

- 1—Primary or immediate.
- 2—Secondary.

The immediate repair being a repair done any time from immediately after delivery extending up to a period of 72 hours after delivery. The secondary repair being a repair done any time after involution has taken place, or not before six or eight weeks after delivery.

I believe all primary lacerations should be repaired immediately after delivery, care being taken to approximate lacerations of the anterior wall as well as the posterior wall lacerations. The sutures in the first group or superficial lacerations being placed while waiting for the placenta to become detached. In the more extensive or deep lacerations and in all cases of complete lacerations, better results will be obtained by waiting twelve to eighteen hours after delivery, the repair being made under a general anaesthetic, with the patient resting on some form of table, as the more extensive lacerations cannot be repaired satisfactorily with the patient sinking down in the hollow of a bed, or without the aid of an anaesthetic. The main reason for waiting several hours in these cases is to allow the primary odema to subside.

It has been my experience that the primary repairs have given me the same percentage of good results as the secondary repairs.

### *As to the Type of Operation.*

In the recent lacerations it is only a question of approximating the torn edges of vaginal structures, being careful to expose the entire laceration so that no part of it will be overlooked; also to eliminate all dead spaces, number three chromic cat gut being used as suture material.

In the recent complete lacerations or lacerations of the recto-vaginal septum

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involving both the sphincter and Rectal wall, I believe the Emmet method of closure is the most satisfactory, closing the tear in the rectal wall first by means of silk or linen sutures, this line of sutures being reinforced by a second line of Lembert cat gut sutures, and the torn edges of the muscles being approximated above this with cat gut sutures.

If the repair was not attempted during the seventy-two hour period after delivery, or failure of the primary operation occurred, it would then be necessary to do the secondary repair.

The symptoms presented in these cases vary from almost negative symptoms to very pronounced ones, depending upon the character and type of relaxation. If a complete laceration exists, the loss of control of the rectal contents, or incontinence is the most prominent symptom, whereas in the incomplete cases bearing down pains in the lower abdomen, pains in back, bladder disturbances or an associated partial or complete prolapse of uterus may be the cause of the patient seeking relief.

The extent of the relaxation existing, and the symptoms presented should assist as to the treatment to be instituted. If the relaxation is at all extensive, it should be repaired at once, as in addition to affording relief of the usual symptoms, a prolapse of uterus may be prevented by prompt and early repair. In the incomplete forms of laceration, particularly the lateral ones, retro-displacements and downward displacements of uterus, are more common, because of the resulting injury to the lifting portion of the levator ani muscle.

As to the type of operation for the secondary repair of the relaxed or lacerated perineum, I feel the type of laceration should decide this. In the incomplete lacerations, or relaxations, the principal of the operation, or perineorrhaphy is the same. The method of disposing of the excess of mucous membrane flap being the principal difference, as exposure of the muscular structures, and shortening the levator loop are the cardinal points and differ very little in the various types of perineorrhaphy. The main difference in all cases of perineorrhaphy being the method of disposing of the excess of

mucous membrane and closure of wound.

In cases of wide separation of the levator ani muscle, I prefer to use the Emmet method of denudation, as I believe a more satisfactory closure is accomplished. In the other type of cases, the ordinary flap splitting method being used, and the excess of mucous membrane being removed after the Hegar method of denudation. The muscles being sutured with a number two or three chromic cat gut, care being taken to pick up on either side a sufficient amount of levator ani muscle, bringing the two sides together in the mid line of the perineum, thereby shortening the levator ani loop, and making the pull of the muscle between the rectum and vagina, instead of the coccyx as it was originally.

In the complete lacerations, in addition to the above, the tear in the rectal wall (if it exists) must be disposed of, and the torn edges of the sphincter ani muscle exposed and sutured together. In the secondary cases, I think it is much easier to separate the rectum from the vaginal musculo fascial plane, just below the vaginal mucosa, pulling the upper angle of the tear in the rectal wall down, and suturing the sphincter muscle above on healthy rectal tissue. This does away with the sutures in the rectal wall, which are objectionable, because of fear of infection.

In laceration of the anterior wall, or cystocele, the question of closure is not so easy, as in the post wall lacerations, because of the absence of muscular structures. The main support of the bladder is fascia, which is carried down with the bladder as the cystocele develops, and in order to restore this, the usual longitudinal incision is made on the anterior vaginal wall, from a point just below the urethra, to a point just above the cervix, the mucous membrane flap being dissected back on either side, and the bladder exposed. The bladder is then freed from its attachment just above the cervix and dissected up in the direction of the pubes, where it normally belongs. The fascia plane being then reconstructed by means of continuous sutures of cat gut, the excess of mucous membrane being removed, care being taken not to remove too much, as



by doing this the anterior wall is shortened to such a degree as to pull the cervix downward, and possibly causing some distortion of the urethra.

In the very large cystoceles in elderly women without prolapse of uterus the interposition or transposition operation will probably give better results than this method, and should preferably be used.

As to the preparatory treatment of these cases there is very little to be said, the usual pre-operative instruction being all that is necessary, but it is different with the post-operative treatment. There is hardly any type of surgical cases that the careful attention of the nurse is so necessary as it is in plastic perineal cases, and the success of the operation often depends upon the post-operative care.

In the incomplete lacerations no great care need be taken regarding the time following the operation, during which the patient may be permitted to have a bowel movement, but in the complete lacerations, both after the recent and secondary repair, great care should be taken to keep the patient from having a bowel movement for a period of seven to nine days after the operation. This may easily be accomplished by diet, which should consist mostly of albumin water, and strained broth, no solid food being given, and the daily administration of opium pills, one every six or eight hours, or paregoric, drams one every six or eight hours for three or four days. On the morning of the seventh or eighth day, the patient is given a laxative, and an oil or glycerine enema, through a small catheter, when there is a desire for a bowel movement. This enables the patient to have a soft stool without injury to the suture line.

In all plastic cases the patient is encouraged to void, and after voiding is irrigated with some antiseptic solution, the perineum being dried with sterile gauze, and a dusting powder, preferably, sterate of zinc applied, and a sterile pad kept constantly against the perineum.

#### *Conclusions:*

1. All lacerations should be repaired if possible during the first seventy-two hours after delivery.

2. Marked relaxations of the vaginal outlet in young woman should be operated upon as early as possible, as by this means, the more serious conditions such as uterine displacements may be prevented.
3. The dry method of treating perineal wounds will give better results than the moist method, or use of douches.
4. Proper knowledge of the anatomical structures as they exist is necessary for successful repair of perineal lacerations, or relaxation.

#### DISCUSSION.

Dr. Walter Levy, (New Orleans): I cannot agree with Doctor Phillips in waiting eighteen hours to suture primary tears. He says the oedema will be subsiding by them. It seems to me the oedema is just well developed by then. The oedema does not develop right away, in my experience, and I think the main trouble is that when you suture right away you draw the suture too tight and do not allow for the secondary swelling; then when the swelling does occur the sutures cut through and your work is for nothing.

There is one thing in tying these sutures that we practice. Doctor Phillips says it is easy to put through the sutures and bring them together, but I think we obtain better results by doing this. (Illustrates on black-board.)

I am glad the Doctor brought out the point of rectal repairs with the intra-rectal silk sutures. If there is anything that is a pernicious practice it is the through-and-through suture; they will break down every time.

I cannot agree on operating on the young woman in the child-bearing period. I would rather take my chances of descensus. If you operate they become pregnant again, they break again, and you have re-created them into primipara as far as the perineum is concerned, and you have the same difficulty.

At Touro we examine each case for retroversion, and if we find them we treat them, and after a few months we find the displacement has disappeared.

Dr. E. H. Walet, (New Orleans): In regard to primary lacerations I believe we ought to sew all we can at once if we are prepared to do so, and in private practice we ought to be prepared to do this. In institutional practice, however, we have everything available, and we can almost foresee the cases that will give us trouble, and I think these cases ought not to be delayed unless there is satisfactory contra-indication. That contra-indication would be postpartum hemorrhage, and you can deal with it. If you are forced to pack the uterus: have a good light, you have all the material at hand, so you can put in one or two lap-six sponges, and if you have to sew the cervix, do it. But I believe what makes perineal repair more successful is the proper diagnosis of the nature of the

tear and in order to make that diagnosis clear we must have the vaginal canal properly packed. Then the essential thing when you have made your diagnosis is to suture the perineal tear in layers.

Dr. Paul Michinard (New Orleans): There is a psychologically interesting feature in all of these discussions. I have listened to many of these papers and discussions from men who have a big hospital practice, but we cannot associate our domiciliary practice with hospital practice. Take this thing of laceration of the perineum. We are told here to do the repair the moment we find the tear. That may do in a hospital. These women come in before delivery, and that is the time we see them, and the tear is not repaired after prolonged pressure of the fetal head against the perineal structures—the tear occurs quickly, either from instrumentation or otherwise. But let us take another view. Here you are called in the night to the country, as I have been called when I practiced down town, to see a woman with the fetal head has been traumatizing that tissue. hour and a half or two hours. That fetal Then you are called upon to make a hurried delivery and apply the forceps to the dead baby, owing to meningeal hemorrhage. These perineal tissues are traumatized and we have a tear. Would it be wise to suture at that time?

In our judgment it would not. We know that in the course of forty-eight hours some part of that traumatized tissue will slough off, and with the sutures in that mass of slough you will in all probability cause subsequent septicemia. Why not wait a few days and see what will happen. A tear when the perineum is at rest is easy to sew up, but where pressure has preceded for a long time the occurrence of this tear, we should not sew up the tear immediately.

Next, supposing we had in that tear a laceration of the sphincter muscle. We want, if possible, to prevent infection by keeping away from the wounded surface fecal matter. We know the sphincter is composed of muscle fibers. It is a strong resisting material, not like the connective tissue behind the mucous membrane of your vaginal wall. We ought to sew that tear at once and bring these muscles together with a silk-worm gut. I have done that repeatedly with beautiful results.

Next, about the suture material. I have used cat gut in quite a number of instances, and the post-operative appearance is beautiful, but I have always felt afraid, and when I had bad results I blamed it on the cat gut. But what I do is this: I have gone back to the silk-worm gut. Bring together the levator ani muscle with No. 2 cat gut, sometimes doubling it, and then the rest of the operation is done with silk-worm gut.

As to the technique of sewing the perineum, there are 57 varieties. Every operator has his choice, and every operator has modified somebody's operation. You can do your own, provided you bring together the levator ani muscles properly.

Dr. W. D. Phillips (closing): Answering Dr. Levy, would say that time did not permit me

to go into detail concerning this subject, and I feel sure from his remarks that he did not interpret the real meaning of my remarks. I do believe that there is less oedema twelve hours after delivery than immediately after delivery, but there are other reasons for deferring the primary repair in the more extensive type of perineal laceration. The extensive tears are usually associated with long tedious occipito posterior positions, the tissues are stretched considerably and there is considerable oedema. Again, we are usually pretty well worn out from handling this type of case, and the patient is usually exhausted, also, the hemorrhage does not bother you as much several hours after delivery, as it does immediately after delivery, and I think you get better results to place a sterile pad over the vulva, and go back after twelve or eighteen hours when you are fresh, get somebody to give an anaesthetic and go about the repair in the proper way. I am sure I have had better results in the extensive lacerations by following this plan.

Dr. Levy stated that he did not agree with me in regard to repairing lacerations in young women. I, of course, would not advise perineorrhaphy for every simple laceration, I referred to those cases of marked relaxation, and in cases where uterine displacement has already taken place. My idea in operating on these cases is to prevent a more extensive type of displacement, with a consequent more extensive operation.

Regarding the point that he brings up, "they are liable to lacerate again," I do not believe that the case is more liable to lacerate after perineorrhaphy, than before, but if they do lacerate, we can repair them immediately afterwards. I cannot see the wisdom of permitting a young woman to suffer the annoyance of uterine displacement, for fear if the laceration is repaired, she may have another laceration at a subsequent delivery.

In answer to Dr. Michinard, regarding cases of infection. I, of course, would not attempt a closure in these cases. I referred to the usual clean cases.

## PRACTICAL ORAL HYGIENE FROM THE DENTISTS' STANDPOINT.\*

By C. S. TULLER, D.D.S.,  
NEW ORLEANS.

In bringing this subject before the Orleans Parish Medical Society it is with the hope of supplying an easy means whereby you may help us render this much desired aid to both oral and bodily health. The mouth is the gateway to life and all too often the gateway to death as well. A clean mouth in the body of every person would result in a tremendous reduction in both dental and bodily disease.

The tremendous loss of teeth now oc-

\*Read Before the Orleans Parish Medical Society, on Sept. 21, 1923.



curing by extraction for the removal of focal infection, which is raising such a storm of protest on the part of the ultra conservatives (and not without some justification) is to be avoided in the future only by teaching the rising generation the value of *live* teeth and mouth hygiene. It might also be added that more scientific and careful practice on the part of the dental profession would also greatly aid in approaching this ideal.

Your special attention is directed to the expectant mother who is as greatly in need of oral prophylaxis treatment at the hands of the dentist as she is of your care and attention during pregnancy. I would recommend regular monthly inspection and thorough cleaning by the dentist until the ordeal is over and the physician should see that she is properly instructed in the home care of her mouth.

No one is in greater need of a thorough knowledge of oral hygiene than the trained nurse, but I have my doubts as to the efficiency of her training judging by the care she has given her own mouth prior to becoming my patient.

The illustrations to be thrown on the screen were gotten up for public school work and are the result of the united efforts of about a dozen of the most capable and learned dentists in the United States and represent the fruit of about twenty years experience in training patients and watching results. The results are clean, healthy mouths with pink firm gums, the minimum of caries and an absence of fetid breath and coated tongue.

The rest of the subject will be handled by the aid of lantern slide illustrations under the following headings: What to use; How to use it; When to use it.

#### DISCUSSION

Dr. W. A. Lurie: We should be grateful to Dr. Tuller for his complete and interesting paper on the care of the teeth. The advice voiced by Dr. Tuller seems to be that which is becoming rather general in the dental profession. The idea of prevention. Preventive dentistry is the practice of to-day and the goal of to-morrow in that profession. Already much has been done by dentists in preventive dentistry and in cleaning up of many systemic conditions resulting from infections about the mouth. We all know of many cases of such nature, but the phy-

sician would do well to pattern after the advice given by Dr. Tuller in teaching the patients the value of a clean and healthy mouth. This is all the more vitally true when we remember that foods and all means of sustenance are normally delivered for digestion through the mouth. As all foods receive their preparation in the mouth by mastication, there should be good, healthy, clean teeth to chew with. There is hardly any need to make mention of infections which can result in neighboring tissues, by superficial extension from the mouth, for such cases are seen by the physician very often. Many of these cases can be saved future surgery about the throat and nose, if, as Dr. Tuller pointed out, the deformities and irregularities about the mouth and teeth be corrected. I enter my plea with Dr. Tuller's for preventive medicine and dentistry.

Dr. Homer Dupuy: It has been emphasized that the mouth is the flora bed of microbes. This being the case is it not remarkable, nay Providential, how we get away with surgery about the throat and mouth without more serious secondary infections. Certainly if we remove foci of infection about the teeth and adjacent tissues we should minimize such a constantly present danger. Preoperative care of the teeth therefore is not an unimportant preparation, and I am asking Dr. Tuller to touch on this very question in closing.

Dr. G. H. Upton: The writer deserves to be congratulated upon his interesting and instructive paper, also the Society for bringing up before the Membership papers of this type and character.

In arriving at the etiological factors of a diseased condition, we should take advantage of all the adjuncts at our command, and certainly not the least of these is the dentist.

When our Laboratory and other reports come back negative as regards to any pathological change we should avail ourselves of our good friend and co-worker the Dentist to see if he can find out any diseased condition of the teeth, and oftentimes, when he treats or removes the offending tooth or teeth, the pathological state for which we were called upon to treat becomes markedly ameliorated and oftentimes cured.

If Oral Hygiene is faithfully, earnestly and steadfastly adhered to, many of the diseases now listed in our Medical Nomenclature cease to exist.

#### SURGICAL SHOCK.\*

BY J. L. ADAMS, M.D., AND J. Q. GRAVES, M.D.,  
MONROE, LA.

The ultimate aim of all surgical interference is to relieve pain, correct abnormalities, and restore health by removing destructive pathological processes.

The life of the patient is the matter of first consideration, regardless of

\*Read Before the Louisiana State Medical Society, on April 24-26, 1923.

what is to be done, and how it is to be done.

In surgery, as in all other human endeavors where ambition and enthusiasm spurs the surgeon on even to the border of pioneer grounds, the pendulum often swings from one extreme to another, but, between the extremes the truth is always found.

The one, in any overzealous effort to lead in the art of mechanical execution and spectacular technique, loses sight of the all important matter of thoroughly studying the patient as an individual entity. The other, with equal zeal to outstrip his co-workers, gives too much time to studying the details of the individual case, and neglects points of technique and execution that are of paramount importance to the patient.

Before the period of asepsis, infection was the surgeons greatest enemy; for, however much he studied the case and however masterly he executed his technique, his inability to combat sepsis limited his field of usefulness.

To the illustrious Lister, whose untiring efforts made aseptic surgery possible, the world owes an undying debt of gratitude; for it was he who revealed to the world the real cause of fermentation and infection, and made aseptic surgery common knowledge.

Today we have another enemy looming up before us in large proportion, that condition known as Surgical Shock which is claiming a heavy toll daily among our patients who are carried to the operating table. To Fenton B. Turke, of New York, George Crile, of Cleveland, Ohio, and many others, the surgeons of today are greatly indebted for their exhaustive studies into the cause, prevention and treatment of Surgical Shock.

While they have a great deal of light on the subject, and brought out many important points for our consideration, the study of the subject. Surgical Shock is yet in its infancy, and offers a rich field of life work for many zealous young minds. We find it lurking hard by many of our surgical efforts, creeping into every home and hospital when least expected. Like sepsis before the days of Lister, it still defies and laughs at

the surgeon—because of the many unknown routes of approach.

There are a number of theories of shock, which time and space will not permit a liberal discussion of, but I deem it timely to give passive mention at least to the theories of Turke and Crile, because their theories of cause and effect of shock throw much light upon the treatment of the same.

After a careful compilation of knowledge gained from experiences with war material and experiments in laboratories on lower animals, Fenton B. Turke concludes that the live animal is only a group of cells, and shock is nothing but a phenomenon of the dynamics of the cell; the phenomenon being produced by a toxin liberated by cell disintegration producing a tissue poisoning and not nerve changes.

Crile considers shock a state of exhaustion where the organism has lost its self mastery, which results from cell disintegration, in the master organ, the brain. That the brain is the seat of the primary lesion is demonstrated by the fact that shock can be prevented by blocking the field of operation with a local anesthetic, or minimizing the response of the brain cell to traumatic impulses by the use of nitrous-oxygen anesthesia.

Whatever the cause of the surgical shock may be, whether psychic, traumatic or toxic, the basic phenomena are the same, the master organ, the brain, has lost its power of transforming potential into kinetic energy, consequently the organism cannot perform its normal work.

The individual is prostrate; the features are shrunken and blanched; the surface cold and bathed in profuse perspiration; the temperature is sub-normal; the pulse weak and rapid; blood pressure falls rapidly; the alkalinity of the tissues diminished; the viscosity of the blood increased; the splanchnic vessels become highly congested while the peripheral vessels are contracted, and respiration rapid and shallow. This picture gives a clear conception of what is seen in a case of surgical shock.

*Causes*—With the above definition before us it seems only natural that we should turn to the realm of biology in search for the final cause of shock. A



careful study of which, combined with the experimental data, is destined to offer a working basis, free from prejudices and speculative fantasy.

George Crile holds that the most important causes of shock are fear, pain and traction. Fear may be either conscious or sub-conscious; he has recorded instances where fear alone has caused severe shock. Every surgeon, with any appreciable experience in abdominal work, has observed the effects of traction, or pulling on the viscera and abdominal organs, especially in the upper abdomen.

*Second;* Hemorrhage is also an important factor in the production of shock, and has to be reckoned with in all surgical procedures. Many observers have noted that the degree of shock was entirely out of proportion to the amount of blood lost, therefore, great care should be exercised in reducing the loss of blood to the minimum.

*Third;* Prolonged anesthesia, especially ether and chloroform, will produce shock, and often to the very severest degree.

*Fourth;* Exposure of the tissues to heat or cold will precipitate shock; this is often done by allowing a draught of cold air in the operating room; the use of cold sponges, and by the careless application of cautery or a sponge that is too hot.

Among the most important signs and symptoms of shock, which the surgeon should always keep in mind during any surgical procedure of any magnitude, are; 1st, Acceleration and loss of volume of pulse; 2nd, Blanched and clammy surface with profuse sweating; 3rd, Lowered blood pressure; 4th, Rapid and shallow respiration; 5th, The tissues fail to bleed when incised. The above signal is sufficient to arouse the suspicion of any alert surgeon that his patient is bordering on dangerous ground.

*Treatment*—The causes of surgical shock are of pre-eminent interest to the surgeon because of their bearing upon the treatment. The treatment naturally divides itself into two divisions, namely, pre-operative and post-operative.

The pre-operative treatment should always be given first consideration, un-

less the condition of the patient demands immediate surgical attention. Under such emergency conditions we are forced to depend solely upon the post-operative measures at our command.

The most important pre-operative measures are; 1st, Special attention to the nutrition of the patient, and where necessary a high caloric feeding should be maintained for an appropriate interval before operating. 2nd; Absolute rest in bed, keeping the patient warm and comfortable, thereby, reducing the waste product and increasing the unit of resistance. 3rd: Physiologic rest is also of great importance. It means reassurance to the patient that all will be well and no dangers are apprehended. It means an atmosphere of quiet and confidence, and requires much skill on the part of the surgeon to accomplish this end, and can be done then only by absolute co-operation of surgeon, interne, nurse and orderly. 4th: During the operation the body temperature should be maintained by external application. The rate and volume of pulse, and the blood pressure should be kept under close observation, because one of the greatest errors of the surgeon is to allow his patient to drift into a state of profound shock before anything is done to check or prevent it. Nitro oxygen gas combined with local blocking where not contraindicated is of immeasurable value to surgeon and patient, because, as has been shown by Crile, cell activity is lessened by deficiency of oxygen under oxygen gas anesthesia.

The post-operative treatment of surgical shock resolves itself into meeting the conditions and indications as they arise. One of the most dangerous effects of shock is the loss of the power of the master organ to create body heat, therefore, the first indication would be the application of artificial heat to the body. 2nd: The restoration of fluids to the tissues, which have been lost either directly or indirectly. This can best be done by proctoclysis of 5 per cent (soda and glucose); hypodermoclysis; normal saline solution.

3rd: If the degree of shock is acute or due to the loss of blood, transfusion should be resorted to immediately, and

not wait until the patient has become clammy and pulseless as in former days. If the patient is restless, 1-6 of morphine and 150 atropine by needle is of great value. No medicinal heart stimulant should be given, but, in view of the fact, that whatever blood remains in the body is largely in the splanchnic vessels, vasodilatories are indicated because they relieve the work of the heart during the weaker stage. Lowering the head of the bed favoring the flow of blood to the brain is reputed to be of great value. Sleep and absolute rest are among the most beneficial agents.

When shock is due to hemorrhage the first suggestion is to control the hemorrhage and to compensate for the loss by the introduction of either blood or other alkaline fluids to maintain the alkalinity and prevent undue viscosity of blood.

#### DISCUSSION.

Dr. Isadore Cohn (New Orleans): The names of Crile, Henderson, Janeway, Ewing and many others are inseparably connected with the subject of surgical shock. Whatever the cause, we know that lowered blood pressure is to surgical shock what the thermometer is to the febrile reaction, and therefore our only hope is to raise the blood pressure and do it as quickly as possible. The most effective means at our command are transfusion, external heat and rest approaching a state of hibernation. There is only one drug will give rest,—morphine, and morphine given freely. The effect of adrenalin is transient. It will raise the blood pressure, but it soon passes. There is only one way of getting fluids in which will have any lasting effect, and that is by transfusion. Transfusion is not so hard to do as many are inclined to believe. The citrated (?) method of transfusion is rather simple. The blood must be properly typed or you will get into trouble, but typing is easy to do. One thing we should make an attempt to accomplish, and that is to have donors typed and ready in case we have a case of surgical shock developed. Hypodermoclysis is too slow for the emergency case. It is valuable, but too slow.

Morphine, external heat and transfusion I believe are the indicated treatments for surgical shock.

Dr. M. Couret (New Orleans): The subject of surgical shock is interesting to me for the reason that surgeons so frequently come to the pathologist with this query: "My patient died apparently without any cause. What do you suppose killed him?" Ruling out other causes at autopsy, such as hemorrhage etc., etc., the cause of the sudden "blowing up" can only be due to surgical shock. There are

no definite lesions at autopsy which we can say are those of shock. At Hotel Dieu we have been working towards finding some means of lessening surgical shock which occurs, not infrequently, as late as twenty-four to forty-eight hours after the operation. The methods Dr. Cohn suggested of treating shock have all been tried and tried thoroughly, with comparatively little results. What we have found to be the best is unquestionably adrenalin. Adrenalin is given in five to ten-minim doses from twelve to twenty-four hours before the patient is put on the operating table, and is continued regularly every three or four hours for twenty-four to forty-eight hours after the patient has left the operating room. We can show you the results in the work of some surgeons who have carried this out faithfully and have lessened their mortality to little or nothing, from operations such as gall bladder and appendicitis, while others who are not giving adrenalin, or giving it in a hap hazard way still continue with the usual mortality.

After all the use of adrenalin in such cases is not new or empirical. It is a well known fact that fear will reduce to a considerable extent the amount of secretion from the adrenal glands, which is so essential to preserve the function of the liver and other organs. We find so many patients come to the operating table with fear—a common expression from them is "I know that I will die from that operation," and they are frequently right and die—from fright. By giving adrenalin in sufficient quantities you will compensate for its deficiency through fright etc., and lessen your mortality following surgical operations to a great extent.

Dr. E. Denegre Martin (New Orleans): I will speak of but one phase, and that is operative or traumatic shock. What has been said so far covers the subject in a general way. Years ago we went through this same period and we had to give the question a great deal of study. Crile had written so much about his anoci-association that we decided to go to Crile and find out what this wonderful treatment was. After being there a week Doctor Crile addressed us on this subject, and after his address I said to him, "You left out the most important part of the whole subject—you left out Crile." Therein lies the secret. Anyone who has seen him operate will understand me, and the individual who has not would make a good investment to go there. That was the first time I realized that the shock my patients were suffering from was not the shock of surgical trauma, especially in laparotomies, gall bladder and appendix operations—that we were not studying the patient, but were fascinated by the carrying out of somebody's operation, and the patient himself was not taken into consideration. What do I mean by that? If a patient goes on the table in fear and trembling—I do not want that patient. You must get the confidence of the patient—He must be made to understand that he is going to be benefited and that there is no danger in the operation. Of course there are exceptions. But the best thing is to get into that patient and get out as quickly as possible.



When Crile operates nothing is touched except that portion which must be operated—there is no pulling with fingers, no tearing apart of tissues. When the patient gets off the table he scarcely knows he has been handled at all. We must face this, and not look for cure where we have been the cause of the shock.

Of course we know how shock from hemorrhage is met—by transfusion. I do not agree entirely with Doctor Cohn that transfusion should be used in all cases. I do not believe it is of any value except in shock from hemorrhage. In traumatic shock I do not believe it is any good; on the contrary, that is where I think you want morphine—morphine and complete rest.

The best preparation for shock is to prepare your patient against the possibility and not to inflict it during operation.

Dr. P. B. Salatich (New Orleans): I am a great advocate of adrenalin. I want to mention a case of gall bladder trouble that I operated on under local. Twenty-four hours after operation patient was greatly shocked.

I asked the nurse how often the patient got adrenalin, and she said he was not getting adrenalin. I immediately ordered it and in twenty-four hours the patient was all right.

One point about adrenalin—if you have a bad patient start with ten minims every three hours, but you have to watch it. The nurse will call you and say the patient is scared and worked up, the pulse is fast, and it looks almost like he is doing very badly but this soon passes off. In many patients adrenalin 10 min. has no effect in increasing the rapidity of the pulse, but if it does, next dose give five drops of adrenalin in fifteen drops of water. If they stand that all right, next time give them five and five, and go on up to pure adrenalin. But when you start, give it diluted.

Dr. L. H. Landry (New Orleans): In re-

gard to hypodermoclysis and intravenous infusion—there is a time in shock when these will do good; it is no use waiting until transfusion is indicated; and in that respect I wish to make a very positive statement: That glucose is so far superior to saline solution that in my opinion there is no comparison between the two. Glucose solution should absolutely take the place of saline in proctoclysis, hypodermoclysis and intravenous infusion. If you give a saline infusion, your patient may pick up for a little while, but in two or three hours he is right back where he started from; the saline does not stay in the circulation long. We have been using glucose for the past six or eight years or more, and I would not go back to saline under any consideration. There is a little more trouble to using glucose, because it has to be made fresh; it will not keep longer than forty-eight hours. We have the pharmacist fix a certain amount daily which is sent to the operating room; if it is not used there it is sent to the wards and used as hypodermoclysis or proctoclysis or if not used thrown away; it is very inexpensive, so there is little loss.

Dr. E. H. Walet (New Orleans): The combating of shock during an operation that is difficult and requires time is very important. I believe we can help our patients in these cases very much by curtailing the anaesthesia as soon as possible. I have found that when you have been doing some severe surgical procedure and you look at your patient and find him looking like shock, it is a good thing to say to the anaesthetist, "Suppose you stop." I expect to complete the operation before the patient wakes up. In a few instances I have stopped the anaesthetist twenty to thirty minutes before I finished the operation. Therefore I believe that when you have been operating a long time, in selected cases, you can safely tell the anaesthetist to stop.

# New Orleans Medical and Surgical Journal

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## AMERICAN HOSPITAL ASSOCIATION

The twenty-fifth annual conference of the American Hospital Association held in Milwaukee on October 29 to November 3, was the best ever in the history of the Association.

It is meet and proper that it should have been because the membership is larger than ever, the association was celebrating its silver jubilee and it met in Milwaukee which possesses that most convenient of meeting places, its Auditorium.

Divided and subdivided so as to accommodate comfortably from a committee meeting to a large general session, the auditorium faces four streets, is accessible, and has a total seating capacity of over 8,000, with an exhibition space of over 100,000 square feet. Its availability contributed largely to the success of the conference.

The attendance was not only large, but it was earnest and it was busy. There were sessions from 9:30 to 11 A. M.; from 2:30 to 4 P. M.; from 8 to 10 P. M. All sorts of problems were presented and discussed, ranging from the size of hospital beds to the style of Hospital buildings, from the way to renovate gauze to the manner of running an out-clinic. Everything was not settled, by any means, but many useful conclusions were reached and much light was cast on all subjects presented.

While there were many representatives of metropolitan large hospitals, the majority present were from the smaller community hospitals, this means that the ladies were in preponderance, which, it must be added, in no way detracted from the efficiency displayed in the proceedings. Although all the ladies were not beautiful, all seemed intelligent and interested as well as energetic and not a few were blessed with commendable pulchritude sufficient to add to the attraction of the seances.

The local hospitals held "open house" on their respective day, there were numerous receptions, teas, auto drives, and the conference closed with a dinner followed by dancing.

One of the important features was the hospital standardization session conducted by the American College of Surgeons and in which took part Dr. Albert J. Ochsner, Dr. Franklin H. Martin, and Dr. M. T. MacEachern, on Monday evening.

The exhibitors provided diversion and instruction. There were some 150 commercial and about a score of literary and scientific exhibits. They were visited by large numbers during the intervals between sessions and deserved all the attention they received.

The officers of the association are entitled to great credit for the manner in which the entire affair was handled and should be congratulated upon the measure of success attained.



## EXPERIMENTAL CARBON MONOXIDE POISONING AND ITS TREATMENT.

Few persons, unless endowed with more than the ordinary zest for scientific truth, would care to subject themselves voluntarily to the hazards of carbon monoxide poisoning. Haldane was probably the first one to make the attempt to administer a definite quantity of this poisonous gas, in order to estimate accurately the amount of blood in the human body. Since then Yandell Henderson, with a number of co-workers, have at various times experimented with the gaseous interchange between the alveolar air and the blood stream.

Henderson and his co-workers have had as the object of their research work the establishing of the principles of gas absorption and elimination as applied to anaesthesia and asphyxiation, both with carbon dioxide and latterly with the poisonous monoxide of carbon. They paved the way for three intrepid investigators in this field, Sayers, Massey and McConnell.

Sayers, of the U. S. Public Health Service, Chief Surgeon of the Bureau of Mines, in collaboration with Yant has published the results of his work which not only possess a personal but a scientific interest as well.

The experiments consisted in the inhalation of the air of a 1,000 cubic foot gas chamber into which had been allowed to flow a definite measured quantity of freshly generated carbon monoxide. The experimenter was permitted to breathe the mixture until symptoms became pronounced.

The principle physiological effect seems, according to Sayers, to be that, due to asphyxia, depletion in the oxygen carrying capacity of the blood bearing a direct relation to the concentration of the gas and the period of inhalation. Likewise the effects are in proportion to the length of time and the extent of the oxygen deprivation.

Bearing these facts in mind it is clear that recovery depends on the rapid elimination of the carbon monoxide from the blood under the usual circumstances which attend asphyxiation and without medical assistance this is accomplished to a marked extent by the

ordinary process of respiratory exchange, and it is fortunate, as Sayers remarks, that the hemoglobin parts with carbon monoxide at all, i. e., that the reaction between the two is a reversible one.

This normal displacement can be enhanced by the use of other gases which also possess chemical affinities for the hemoglobin. These are oxygen and carbon dioxide, both of which were used in resuscitation experiments by Sayers and his associates.

Analyses of blood samples showed that between 35 per cent and 40 per cent of the oxygen carrying capacity of the blood taken by the carbon monoxide. This produced symptoms varying from violent headache and dizziness to unconsciousness in one case.

The effect in the elimination of the carbon monoxide were tested using air, oxygen alone, and a carbon dioxide—oxygen mixture and the decline in the blood concentration was carefully checked by analysis.

It was found that oxygen alone caused the elimination of the carbon monoxide four times as fast as did air alone. While a mixture of oxygen containing 8 per cent-10 per cent carbon dioxide hastened the elimination five or six times as would normally take place. It is, therefore, the choice in an emergency, and these emergencies occur with sufficient frequency to warrant the keeping of apparatus filled with this gas mixture on hand.

Sayers, Massey and McConnell deserve great credit for the zeal, self-sacrifice and accuracy with which they have carried on this dangerous experiment, all the more so when it is recalled that a fairly narrow margin of 10-15 per cent blood saturation exists between relative safety and a possibly fatal result.

## ENDEMIC CENTERS.

When a disease repeatedly recurs and spreads from a region, district, locality or at times even from a city or state, the source from which this propagation occurs is known as an endemic area or endemic center. A disease is said to be endemic in contra-distinction to epidemic when but few people serve to keep the disease active, whereas the

term epidemic implies that a large number of people are attacked or that there is extensive prevalence.

Excellent examples of diseases with endemic areas are those of yellow fever, cholera and plague. Endemic areas for yellow fever exist along the Atlantic coasts of Mexico, Central and South America and the West Coast of Africa. Endemic centers are Guatemala, Spanish Honduras, Costa Rica and the Guianas in the Western Hemisphere, and Senegambia in the African Coastal area. The hygienic conditions and probably rodent carriers are responsible for the endemicity.

Plague is endemic in regions of the Kurdistan Hills, Irak in Mesopotamia, the Himalayas and other regions of India, Tripoli in Northern Africa and the Baikal province of Siberia.

Cholera is undoubtedly endemic in numerous parts of India and Central Asia, for the great epidemics of ancient and modern times have usually emanated from the former country. Cholera spread along trade and caravan routes at one time ravaging the countries of Europe and persisting until late into the nineteenth century. The great prevalence of this disease throughout Russia during the last five years probably also came originally from India via Persia and the Caucasus.

Typhus fever is said to be endemic in Tunis, Tripoli, Algeria and Morocco, Asia Minor, Persia and Afghanistan. In India an endemic center stretches from Beloochistan in the south to Kashmir in the north. There are also endemic centers in Indo-China, Japan and Mexico, Peru and Chile.

These are examples of endemic diseases whose centers, regions, or areas, must be constantly watched to prevent them from spreading across the boundaries into European or American countries. The character, manners, customs, degree of civilization, sanitary conditions, modes of travel and commerce are indirectly, and the rat, flea, lice and mosquito pests are directly, responsible for the endemicity.

Cholera, malaria, the plague and a number of other endemic diseases supplied the impetus to two great branches of medicine—hygiene and public health. One of these has to do with the study of

the characteristics of a disease, its mode of transmission and the methods most practical in eradicating it; the other, public health, deals entirely with the application of the principles which hygiene, including preventive medicine, developed by research.

Our own country has areas where certain diseases are endemic. The hookworm infection and malaria are largely confined to the Southern States. Likewise Rocky Mountain fever is found nowhere else in the world; it has so far been reported from Washington, Oregon, Montana, Idaho, Nevada, Wyoming, Utah and Colorado. The most pronounced endemic center is the Bitter River region of Montana. Rodents are the carriers, and ticks belonging to the genus *Dermocentor*, the vectors. The difficulty in eradication is apparent in this instance when it is recalled that it is essentially a disease of the lower animal and that six varieties of rodents are involved.

Endemic centers are difficult to eliminate. The eradication depends largely upon the population and it is difficult, even impossible, to change the habits of a people in a short time, even though these habits are responsible for an incalculable amount of suffering and death. However, endemic centers are gradually contracting and in some instances disappearing, though it will require many years of watchfulness and persistent effort before all are completely abolished.

It is generally conceded that a people have the right to live as they choose, to have what diseases their manner of living favors the propagation of, but this right extends only to themselves and ceases at the frontier. The rigid enforcement of immigration laws and personal examination of immigrants from endemic centers when there is cause for suspicion, have saved all the civilized countries of the world from the scourges of the Middle Ages.

#### DOCTOR AND SPECIALIST.

The titles mentioned above are much abused and mis-used. There are so many kinds of professions, trades and businesses, the adherents of which are known as "Doctor," that some medical organizations are urging all physicians



and surgeons in this country to use the suffix "M. D." discouraging their friends from addressing them as "Doctor"—especially as many see fit to use the slang "Doc" (meaning a half-doctor), whereas they refer to Osteopaths, Opticians, Chiropractors, Chiropodists, etc., as "Doctor."

The term "Specialist" should be used with caution. Many people, especially in the rural districts, confuse a real specialist in medical, surgical or dental work with the advertising quack, who

terms himself a "specialist" (in everything, very often!); we know of an instance in which, for this reason, a parish health officer carefully avoided the term, in advising parents about school children, giving, instead, the names of the men doing special work.

As a further mark of distinction, those who are F. A. C. S. or F. A. C. P. should be encouraged to use them after the M. D. on cards, scientific papers, etc.

# PROCEEDINGS OF TOURO INFIRMARY STAFF

*Clinical Meeting, Oct. 17, 1923.*

Dr. Feingold, Presiding.

Probable Lymphatic Leukemia. Dr. Randolph Lyons: I regret that the patient I am reporting is not able to be present tonight, but she went home a few days ago. I could not keep her long enough. Her presence, however, would not be of much value.

Mrs. E. A. D., 27 yrs. Admitted 7-25-23. Discharged 7-27-23. Referred by Dr. Matas. Through the courtesy of Dr. Matas, I am presenting the history taken on her first admission to the hospital, July 25th, 1923.

Complaint: "Sore mouth and nose, weakness and fever." The family history is unimportant. The past history is entirely negative except for pneumonia at 10 years. Patient has two healthy children. No miscarriages, no menstrual disturbances. Habits good.

P. I. Began about 3 months ago with fever and sore throat, after which she had a severe pain in back which was relieved by strapping. Has been running temperature every evening since onset. Has felt weak for past 2 months—soreness of mouth, tongue and throat has not improved. Nose became involved about one month ago. About this time appeared a sore on the left side of her nostril which disappeared in about 10 days, after which a similar one developed under her nose. This one is still present. She has been getting progressively weaker, but continued doing her housework until last week, when she took to her bed.

Was under treatment during past two months without benefit. A Wassermann taken about 1½ weeks ago was negative. Five days after taking this Wassermann her throat and nose become worse. She was advised to have another Wassermann made. This was positive. Two days later two Wassermans were run on the same specimen of blood and one was positive and one was negative. All positive Wassermans were made with cholesterinized antigen and both negative Wassermans with acetone insoluble antigen. It was decided to bring the patient to Dr. Matas for diagnosis.

Pr. H. Patient somewhat emaciated. Anemic. Glands of neck bilaterally enlarged. Moderate general adenopathy. Temperature 102. P. 120. R. 22.

Head and Neck: Pustule at tip of nose. Total obliteration of right nostril from ulceration on inside of alae of nose—deviated septum. Mouth dry. Patches of vesicles on tip and dorsum of tongue. Gingivitis more marked on upper than lower gum. Lips swollen. Ulceration at angle of right, also a fissure. Lips spongy and exudate on surface.

Thorax. Lungs negative. Heart negative. Abdomen negative.

Pelvic examination: Negative. Cervix slightly lacerated. Slight discharge. On left leg there is an infiltrated, discolored area on anterior surface of tibia.

Dr. Kearney: "Excoriations about nasal vestibules, fissures at corners of mouth. Many bad teeth. Gingivitis, glossitis, confined to tip of tongue. Examination of nose unsatisfactory on account of soreness, but no clinical signs of disease of the nasal accessory sinuses found nor any pathology of soft intranasal tissues. Larynx and nasopharynx not examined because of soreness of mouth."

7-26-23. White cell count 28,600 with 97% lymphocytes. Coagulation time 2½ min. Hg. 70. Red count 3,130,000. Color index 1.13.

S. Lymphocytes..	95
L. Lymphocytes..	1
Neutrophiles ....	4
Eos .....	0
B. ....	0
	-----
	100

Patient was discharged from hospital on following day (July 27th).

Blood examination on July 28th. W. B. C. 32,800. Hgb. 70. Lymphocytes 97%. Reds 2,400,000.

Blood examination on August 1st. W. B. C. 38,000. Hgb. 70%. Lymphocytes 97%. Reds 2,500,000.

Readmitted to Touro on August 3rd,



1923. Since discharge has run temperature ranging from 100 in A. M. to 103 in P. M. P. 102 to 120. Has become paler and weaker.

P. E. Appears paler. Mod. general adenopathy. Knee jerks present. Pupils react to l. and a. Pustular eruption about mouth. Gums are spongy and bleed easily, but no hemorrhages. Lungs negative. Heart, systolic at apex. No apparent cardiac enlargement.

Abdomen. Flat, some slight general rigidity. Spleen and liver not palpable. No edema of feet. B. P. 114-52.

Dr. K. Nose and Throat. "Evidently has coryza. No other nasal pathology found (except anemia of mucous membranes.) The mouth and lips are much better than when seen on July 25th. However, the anemia of the mucous membranes seems more marked."

Radiographic examination of chest shows "evidence of enlargement of heart to right and left. There is no glandular involvement." (Aug. 7, 1923.)

Urine. Sp. g. 1020. Acid. No albumin, sugar or acetone. Aldehyde negative. No blood, pus or casts.

8-4-23. Small superiosteal swelling found over anterior surface of right tibia—this area is tender; states she had similar lesion on left leg which disappeared. Complains of pain in rectum; small inflamed hemorrhoid noted.

Aug. 5. Nasal condition and eruption around mouth better.

Aug. 6. Complains of left hip. Left inguinal glands enlarged and tender. Swelling on right tibia still somewhat tender.

Aug. 7. Complains of nose being "stopped up." Has some pain in left hip and leg. Hemorrhoid protrudes. Looks more inflamed. Mucous membrane around it swollen.

8-15-23. Hemorrhoid shows superficial necrosis. Left inguinal glands seem to be a little diminished in size. Area of swelling and tenderness over right tibia gone.

8-19-23. Patient has been better for past two days, although reports show a gradually progressing anemia.

8-21-23. Hemorrhoid smaller—necrotic area has sloughed off. m.m. less swollen.

8-23-23. There appeared large vesicle (1.5 cm.) surrounded by area of red-

ness and inflammation, very sensitive, on left post axillary region at level of 6th intercostal. Some tenderness over 6th and 7th intercostal nerves on left side.

8-28-23. Blood transfusion. (Dr. Landry) citrate method at 1 p. m. Husband donor, 500 cc.; chloroform and local used. P. 110 at start and 104 at finish. At 5 p. m. color of fingers and lips markedly improved.

8-29-23. Today patient had some reaction. Temp. 103-4. P. 130.

8-30-23. Examination of throat shows tonsils enlarged and very pale. Gums swollen but are pinkish; gums under upper teeth in folds.

9-10-23. Moderate enlargement of epitrochlear, axillary and inguinal glands. M. membranes paler.

9-22-23. Transfusion (husband) 60 cc. pure blood and 220 cc. of citrated blood.

9-23-23. Slight headache today.

9-27-23. Discharged.

Treatment: Consisted of rest, plenty of food, fresh air, one light X-ray treatment over right cervical glands and right groin. Arsenic and iron. Two transfusions.

There has been a steady reduction in the red cells. They went down still more after the X-ray treatment, which probably did not help matters, until they reached one million. The white blood count went up to 38,000 and then dropped before and after one light X-ray treatment until it went down to 7,000. After two transfusions, when she left she had a red blood count of two million, a white count of 7,000, and hemoglobin 35%. The chart will demonstrate better than I can explain. (See chart attached.)

Before she came in the hospital the blood picture was one of almost all lymphocytes. After coming in the hospital there were 27% small lymphocytes and 54% large lymphocytes. This represents the difference in personal equation. Most of the blood counts on the inside were made by the internes. There was a good deal of variation in the differential counts. The count ran along in July and August up to the 27th with a high lymphocytic proportion. On the 27th she had 22% polymorphoneutrophils.

On the 28th of August she was given her first transfusion. The polys went up to 48%, then gradually came down again to 23%. Following the transfusion, we first noticed the presence of myelocytes. There may have been a few present before, but they must have been very few. I have not seen as many since. After the second transfusion the lymphocytes went up, but the total whites went down. No enlargement of the spleen. When she left the adenopathy had not increased. The spleen, as far as I could make out, was not definitely palpable. This case is difficult to classify. In the beginning it was most suggestive of lymphatic leukemia.

## DISCUSSION OF DR. LYON'S PAPER.

Dr. Matas: The chief interest in this case as far as my connection with it is concerned is in the differential diagnosis between an acute syphilitic infection beginning in the mouth and oral-pharynx and some other form of cryptic or atypical infection beginning in the mouth which would account for the local and constitutional manifestations (including the hematologic findings) which were peculiar to this case. I knew the family antecedents of the patient and was much concerned in the diagnosis, as it meant so much to the patient and

her family. The diagnosis of *syphilis innocuum* with the atrium of infection in the mouth had been stated by the physicians who had attended this young woman some time before she came under my observation. The first impression seemed to justify this conclusion. The disease had been ushered in with a sharp attack of widespread and intense stomatitis and fever. The lips, tongue and pharynx were swollen and covered with grayish patches formed by the coalescence of a number of small blistered surfaces which resembled mucuous patches in a striking way. The tonsils, pharynx and palate were also inflamed in the same way. Saliva constantly dribbled from the mouth and deglutition was almost impossible from dysphagia and a swollen tongue; the breath was foul, the nares, upper lip and margin of the nasal orifices at the muco-cutaneous junction, as well as the inner lining of the nose presented a number of indurated acnoid or farunculoid pustules with centers of follicular necrosis resting on an inflamed and extremely tender base. The submaxillary lymph nodes were enlarged and tender on each side of the submaxillary region. There was a constant headache and a temperature of a remittent type which rose to 103 and over, especially in the afternoons. A weak, rapid pulse, a cyanotic duskiness of the face and marked pallor combined with a general emaciation, completed the picture of a profound general infection which seemed to have its prime focus in the oro-nasal cavity. No distinct separate ulcer or lesion could be distinguished in the multitude of local ulcera-

Date	Erythro cytes	Leuco cytes	Polys.	S.L.	L.L.	Eos.	M.	Mye.	Unknown	Hgb.	Remarks
July 25.	3,000,000	29,000	..	96%	..	..	..	..	....	70%	
July 26.	3,130,000	28,600	3	96%	..	0	0	..	....	70%	
July 28.	2,400,000	32,800	..	97%	..	..	..	..	....	70%	
Aug. 1.	2,500,000	38,000	..	97%	..	..	..	..	....	70%	
Aug. 3.	2,190,000	25,850	9	27%	64	0	0	..	....	55%	Anisocytosis poikilocytosis
Aug. 4.	.....	17,750	3	24%	73	0	0	..	....	....	
Aug. 6.	.....	18,500	5	34%	61	..	..	..	....	33%	
Aug. 12.	1,780,000	15,250	5	42%	53	0	0	..	....	30%	(Dare)
Aug. 13.	X-ray therapy										
Aug. 17.	Blood culture negative										
Aug. 18.	1,560,000	10,250	16	32%	52	0	0	..	....	30%	Anisocytosis (1) 2 nucleated reds. Poly- chromitophi- lia
Aug. 27.	1,110,000	6,250	22	62%	16	0	0	few	....	16%	(Dare) Mod. poikilocytosis and anisocytosis—1 normoblast
Aug. 28.	Blood transfusion										
Sept. 3.	1,570,000	7,000	48	46%	6	0	..	..	....	30%	
Sept. 6.	1,800,000	17,000	25	37%	16	..	..	22	....	30%	Color index .83 plus. Dr. E. Bass
Sept. 12.	.....	19,500	23	52%	10	..	0	15	....	30%	
Sept. 21.	1,760,000	17,500	..	..	..	..	..	..	....	28%	
Sept. 22.	Blood transfusion										
Sept. 26.	18,700,000	7,750	20	56%	2	1	1	21	....	35%	
Sept. 27.	.....	.....	10	66%	14	1	0	8	....	....	Discharged
Oct. 12.	2,000,000	5,250	6.5	75%	11	1	0	4.5	2 (Lym)	40%	4 Nucleat reds (Tallquist)



tions in the mouth as the original seat of the inoculation of the disease, if such existed.

The clinical diagnosis of syphilis, supported by a positive Wassermann, seemed to be justified before the patient was admitted to the Infirmary, and, on the strength of this, one Salvarsan intravenous injection had been given before her admission. However, the patient grew rapidly worse and presented the clinical picture just described when she entered my service at the Infirmary. It was then that the Wassermann which had been reported as positive by one laboratory and contradicted by another with a negative report, was again tried by Dr. Lanford, who found it *negative* for the second time. Dr. Lanford also made a number of smears from the scrapings of the most typical patches on the lips and tongue, but he found these entirely free from the treponema. Then came the blood picture which was made by Dr. Basinger which showed a total leucocytosis of 28,600 and a differential lymphocyte count of 96%. This exaggerated lymphocytosis was confirmed by several careful counts made by Dr. Lyons himself. The hematological and other laboratory evidence eliminated the diagnosis of syphilis, and I then referred the patient to Dr. Lyons, whose interesting account of her subsequent history we have just heard.

The diagnosis now centers on what type of lymphogenous leukemia this is. In a large experience I recall only one case in which an acute lymphogenous leukemia was ushered in abruptly by an acute febrile attack associated with striking and peculiar oro-pharyngeal manifestations. It bore some resemblance to this case though the ulcerations were more pharyngeal than oral. This occurred over 20 years ago; the patient was a very prominent citizen and the diagnosis excited considerable discussion among the medical men who saw him. At that time serology and hematology were in their infancy and the treponema was still unknown. In this case there was a profound anemia, a general adenopathy of the lymph nodes and a low septic fever which never left the patient. At the very outset there was a marked stomatitis and pharyngitis with superficial ulcerated lesions causing much dysphagia and which gradually extended to the esophagus and intestinal tract. Apart from a low hemoglobin percentage and a total red and white count which showed a great increase in the leukocytes, there was no other laboratory evidence available to confirm the diagnosis of acute septic leukemia, of the type described by Pel. of Amsterdam, which I concluded the patient had at the time. The patient lingered a long time and died a little over a year and a half after the inception of the first symptoms in a state of febrile marasmus, anemia and cachexia with a general moderate adenopathy and an appreciable enlargement of the spleen.

In the case now under discussion the patient is still under observation and it is too early to formulate the final prognosis, but the marked improvement of the general condition, the healing of all the mucous lesions, the subsidence of the fever and of the glandular swellings in the neck, the gradual drop in the total leukocyte count and the corresponding increase in the lymphocyte differential, especially after

the two blood transfusions administered by Dr. Landry, make me hope that the disease is not a true lymphogenous leukemia, but a lymphadenosis, in which the enormous increase in the lymphocyte count is a transitional phenomenon, with a probability of final recovery.

The recent and most instructive paper by Downey and McKinlay, of Minneapolis, on "Acute Lymphadenosis compared with acute Lymphatic Leukemia" (Arch. Int. Med. p. 80; 32, 1 July, 1923) gives an account of a number of cases which bear a close resemblance to our patient. The blood pictures carefully recorded in this contribution are also very illuminating in conjunction with the clinical data. They teach us that we are only now beginning to learn that lymphatic leukemia is merely a generic term which is applicable to various types of hyperlymphocytosis, some of which are transitional, benign and spontaneously curable, and others are progressive, malignant and fatal.

We also learn that total leukocyte counts and differential counts which do not distinguish between the different types of lymphoid cells are of little value in deciding for or against true leukemia. It is also interesting to note that in the majority of the benign, acute, lymphocytoses reported by Downey and McKinley the exaggerated differential lymphocyte count coincided with the acute oro-pharyngeal mucous inflammations and an adenopathy of the submaxillary and upper cervical glands, as in this case. From all this it would appear that the differential studies of the lymphogenous leukemias offers a rich field for further clinical and hematological study, and that the usual gloomy outlook of these cases is likely to be much modified in the future by improvements in the present method of differential cytologic diagnosis in this particular field of hematology.

Dr. Lemann: This reminds me of the group of cases reported by Barker and Baetjer a number of years ago. It seems to me that the data presented would warrant the diagnosis of acute lymphatic leukemia even though the patient has not come to exitus. The duration of these cases is usually some three or four months. As I understand it, this case has lasted five months. That, of course, is considerably against the diagnosis. In some respects the case reminds me of a patient whom I saw some years ago with Dr. Cohn in whom the onset was equally sudden and in whom the duration was some three months. At the outset the total white count was not very high, around 10,000, nearly all lymphocytes. The case was also marked by what was thought at first to be carbuncles, which reminds one somewhat of the lesions described around the nose in this case. Also, our patient, as I recall it, had some irregular fever. This case represents a profound disturbance of the hematopoietic system. How we are going to classify these blood disturbances is not altogether clear. We are still feeling our way and trying to put together the pieces of the puzzle.

Dr. Lanford: This case has been of interest to me even before admission into the hospital as one of the specimens of blood examined gave a negative result by my laboratory, which re-

sult was entirely different from the positive report made by two other laboratories. In the absence of any distinct evidence of syphilis no specific treatment was given, although she was brought to the hospital for this purpose. Fortunately, the blood examination made enabled us to quite definitely rule out syphilis as a causative factor.

Because the condition has behaved somewhat differently from the usual course of lymphatic leukemia, I do not think that we should dismiss that diagnosis because so many of the laboratory findings and the clinic evidence suggest such a diagnosis, and while at the present time there may be a diminution in the white cell count, this can be explained on the theory of exhaustion of the lymphoid elements of the

body resulting from over-stimulation. I fear that the case will ultimately end as do all these cases of lymphatic leukemia.

Dr. Lyons: I am sorry somebody did not hold out a better prognosis for us. I really do believe she is at present in a stage of a leukemic leukemia. I did not mention where the negative Wassermanns were made because I did not know. It was not in the history. I want to agree with Dr. Lanford in his statement that no matter what the grouping is, the bloods should be matched directly before the transfusion is done. We have had some experience with bloods in the same grouping that did not work out when tested directly one against the other.



## NEWS AND COMMENT

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### *Southern Medical in 1924.*

By unanimous vote of the councilors, the 1924 Convention of the Southern Medical Association was awarded to New Orleans. Houston, Atlanta and Kansas City made a lively bid for the convention, but the New Orleans delegation, headed by Dr. C. C. Bass, got to work early and with the assistance of the Louisiana physicians and those of our neighboring states, were able to return us a winner. The Southern Medical Association has not met in New Orleans in over fifteen years.

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On October 12th there was organized in the New York Academy of Medicine "The American Association for the Study and Cure of Cancer." There were over 60 enrolled from eighteen different states of the Union, and some from outside countries, as charter members.

Dr. L. Duncan Dulkley was elected president, Dr. Curtis Frank Claassen of Brooklyn, vice president; Dr. A. Hirst Appel, Colonel in the Medical Corps, U. S. (retired), secretary and treasurer, with an executive committee of five.

The next annual meeting will be held in Chicago in May, during the meeting of the American Medical Association.

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### *Eighth Congressional District Medical News.*

Natchitoches and LaSalle Medical Societies have been added to the list of organized parishes in the Eighth District, and the Congressional Medical Society has been re-organized. As soon as Grant and Winn parishes are admitted, the Eighth Congressional District will be 100 per cent.

The Rapides Parish and District Medical Societies held a joint meeting October 1st at Alexandria. Dr. C. R. Reed of Natchitoches presided. An interesting program was presented on "Relations of the Diseases of Ear, Nose and Throat, to the Diseases of the Human Body, and Vice Versa," by Dr. G. R. Beridon, president of the Avoyelles Parish Medical Society. Dr. J. E. Knighton presented a series of clinical

histories with exhibition of specimen on "Miliary Tuberculosis."

Following the program, a luncheon was served at the Baptist Hospital. Talks were made by Dr. S. J. Couvillon, councilor; Dr. S. R. Reed, president; Dr. M. H. Foster, secretary-treasurer; Dr. Clarence Pierson, and Dr. J. L. Wilson. This meeting was attended by over sixty physicians, and was one of the most successful in its history.

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The Avoyelles Parish Medical Society met at Moreauville, October 9th. Sixteen physicians attended, including Dr. R. B. Wallace, Dr. M. H. Foster and Dr. C. M. Abbott of Alexandria.

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The Bureau of Public Health and Medicine of the American Medical Association proposes to have a monthly radio broadcast of medical talks on subjects of interest to the general public. The committee proposes using long range stations in the large cities throughout the country. In this way health talks can be given to the largest number of people. The material will be prepared by the Editorial Board of the A. M. A. Health Monthly Hygien, and handled through the local medical societies.

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Dr. E. Hause of Ferris, Tex., will read a paper before the Orleans Parish Medical Society, November 26th. The subject will be "The Drug Scopolamin," and his paper will cover its application in the fields of laryngology, obstetrics and criminology. The following day he will give a demonstration of his application in criminology. An invitation is extended to all physicians to attend this meeting.

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The following chairmen of the sections have been added to the Scientific Program of the Louisiana State Medical Society, to be held in Opelousas, April 22nd to 24th, 1924, since the November issue:

Pediatrics—Dr. Louis I. Tyler, Baton Rouge.

Eye, Ear, Nose and Throat—Dr. C. A. Weiss, Baton Rouge.

We would like to suggest that those who would like to read papers, get in touch with the chairmen as early as possible.

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*Standing Water of Any Kind Breeds  
Fever Mosquitoes.*

Although yellow fever apparently no longer occurs in the United States, and its future occurrence here is most unlikely, the so-called yellow-fever-mosquito, which is perhaps the commonest household mosquito in the Gulf states, has been shown to be responsible for the carriage of dengue or "breakbone" fever.

The immediate justification of this note is the fact that during the summer of 1922 it has been estimated there were 600,000 cases of dengue fever in the southern United States.

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Costs of construction have increased 20 per cent in Louisiana since last spring, when Congress provided \$650,000 for the construction of additional buildings at Carville, La. The funds, therefore, are sufficient only for the erection of 17 cottages housing 12 lepers each, together with a dining room and kitchen building and additional power plants, water supply and sewage disposal units. The infirmary needed for treatment of the blind and crippled must await further appropriations.

There are now 174 lepers at Carville, every bed being filled, the inmates including men and women from nearly every state in the Union. The new buildings authorized will add 204 additional beds which will be immediately utilized, since there is a waiting list of more than 100 who wish to enter the institution and many other lepers in the United States aggregating, it is believed, more than 1,000, whom it is desired to segregate as soon as facilities can be provided. One-fourth of the inmates at Carville are totally blind from the disease and the mutilations, especially of hands and feet, resulting from the diseases are such as to remind one forcibly of Biblical descriptions.

The new construction which will be immediately undertaken will probably require several months for completion.

*World War Officers Must Apply for  
Commissions Before November  
11th, 1923.*

On November 11th, 1923, the granting of commissions in the Reserve Corps, without examination, will cease. All who were officers during the war may, if they get their application through to corps headquarters before November 11th, 1923, be commissioned in the highest grade held by them during the war. After November 11th, anyone applying must stand an examination, which will be by no means easy. Those interested should write at once to Headquarters Organized Reserves, 607 Commercial Bank Building, Alexandria, La., or Headquarters 87th Division, Poland and Dauphine streets, New Orleans, La., for application blanks.

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New York Academy of Medicine announces the coming celebration of the 50th anniversary of the founding of the New York Laryngological Society, which, as announced by the New York Academy of Medicine, will take place November 15, 1923, commemorates an event of unusual interest. As far as can be learned this organization now, the Section in Laryngology of the Academy, is the oldest society in existence of the department which it represents.

In connection with the celebration there will be an exhibition representing the important contributions made in the progress of laryngology in the City of New York.

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*Lafayette Parish Medical Society.*

Members of the Lafayette Parish Medical Society met at the Elks' Home in this city Thursday night to elect officers and transact other business in connection with the activities of the organization for the ensuing year.

Dr. C. E. Hamilton was chosen president, Dr. L. A. Prejean, vice president, and Dr. Harold G. F. Edwards, secretary and treasurer.

Dr. O. P. Daly was elected a delegate to the State Medical Society meeting at Opelousas next April, and Dr. F. E. Girard, alternate.

Members of the society in attendance included Drs. U. J. Arreteig, L. O. Clark, A. J. Comeaux, O. P. Daly, G. R.



DeLaureal, J. P. Francez, F. E. Girard, C. E. Hamilton, Thos. Latiolais, L. B. Long, N. P. Moss, M. M. Mouton, C. K. Olivier, L. A. Prejean, Harold G. F. Edwards, M. E. Saucier, R. D. Voorhies and W. J. Youngue.

Physicians who were special guests at the meeting were Drs. Homer Dupuy, C. V. Unsworth, Leon Menville and Allen Eustis, all of New Orleans, and Dr. F. T. Gouaux of Lockport.

Following the meeting the members and guests enjoyed the hospitality of the Lafayette Rotary Club at a dinner and dance.

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#### *Medical Association of the Southwest.*

The annual meeting of the association was held in Convention Hall, Kansas City, on Thursday, October 11th, in conjunction with the fall clinics. The following officers were elected for 1924:

President, Dr. W. H. Addington, Altoona, Kansas, and secretary-treasurer, Dr. E. H. Skinner, Kansas City, Mo.

It was voted to hold the next annual meeting in Kansas City, October 13, 1924, in connection with the Kansas City Fall Clinics. The Medical Herald and Electro-Therapist was selected as the official organ of the association, and all members in good standing will receive the journal from this date.

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#### *Third District Medical Society.*

Physicians throughout the Third District met yesterday at the court house in New Iberia for the purpose of organizing the Third District Medical Society and transact other business in connection with the activities of the organization.

Dr. Lester Williams, president of the State Medical Society, presided, and urged the necessity of a live organization in the Third District.

The following were elected officers for the ensuing year: Dr. L. B. Crawford, Patterson, president; Dr. F. T. Gouaux, Lockport, vice president; Dr. Harold G. F. Edwards, Lafayette, secretary-treasurer.

Dr. Allen Eustis, of New Orleans, presented a most valuable paper on

"Pancreatitis"; Dr. Leon Menville, a paper on "Radium Therapy"; Dr. Homer Dupuy, a paper "Dysphonia as a Symptom of Disease"; Dr. C. V. Unsworth, "The Early Symptoms of Paresis."

The society will hold its next meeting sometime during the month of February, the exact date and place to be decided later.

There were some thirty members present.

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#### *Monthly Bulletin Shreveport Medical Society for November.*

##### Scientific Program.

Uterine Hemorrhages. . . . Dr. R. H. Blackman  
Regional Anaesthesia. . . . . Dr. J. E. Heard  
Charity Hospital, November 6th, 1923.

The regular monthly meeting of the Shreveport Medical Society was called to order by President Pirkle. Twenty-five members were present.

Dr. T. D. Boaz read a paper on Middle Ear Infections in Children.

Clinical cases. Dr. Rauls, of Charity House Staff, reported on the para-typhoid patient whose case history was presented at the last meeting. He reported that autopsy findings proved the case to be general military tuberculosis, illustrating the fact that a positive widal reaction does not prove that the patient has typhoid fever.

Dr. Herold reported a case of mistaken diagnosis and another of focal infection.

Dr. Morrow told of being approached by a chiropractor who declared that he is going to practice chiropractic in Louisiana, regardless of any opposition which may arise. Dr. Morrow said he was calling this to the attention of the society because he believes this fellow represents the first of an organized attempt to introduce chiropractic in Louisiana.

Dr. Herold announced the meeting of the Fourth District Medical Society October 16th, the third Tuesday of the month. The meetings are to be at Charity Hospital.

On motion the society adjourned.

R. T. LUCAS, Secretary.

*Third Annual Fall Meeting, Sixth District Medical Society, Hammond, La., October 31, 1923.*

9 A. M.

Invocation—Rev. E. S. Taylor, Hammond.

Welcome Address—Dr. E. M. Robards, president of the Tangipahoa Parish Medical Society.

Report of President—Dr. C. A. Weiss, Baton Rouge.

Report of Secretary-Treasurer—Dr. R. P. Jones of Baton Rouge.

Report of committees.

New business.

Election of officers.

Unfinished business.

10 A. M.

Clinical motion pictures.

Radical operation of breast carcinoma.

Extraction of a bullet (revolver projectile) from the spinal canal by means of laminectomy.

Extirpation of a cerebral tumor.

Retrograde dilation of a cicatricial stricture of the esophagus.

Operative correction of saddle nose.

Correcting the position and reducing large projecting ears.

11 A. M.

Scientific papers.

Insulin Treatment of Diabetes, with Lantern Slides—Dr. Allan Eustis, New Orleans. Discussion.

A Surgical Clinic Illustrated—Dr. Isadore Cohn, of New Orleans. Discussion.

Disorder of the Pituitary Gland Illustrated—Dr. M. L. Graves, Galveston, Tex. Discussion.

1 P. M.

Banquet tendered the members by the Chamber of Commerce, Rotarians and Tangipahoa Medical Society.

The following doctors attended the Southern Medical Association: Drs. C. C. Bass, R. C. Lynch, J. B. Guthrie, I. I. Lemann, Ansel Caine, Isadore Cohn, Dan Silverman, Geo. Dempsey, Jno. A. Landford, H. B. Gessner, Ernest Samuels, L. R. DeBuys, Allen Eustis, Eliza-

beth Bass, S. K. Simon, E. D. Martin, P. T. Talbot, A. Levin, H. W. E. Walther, F. M. Johns, O. Dowling, J. B. Elliott, J. T. Halsey, H. Dupuy, J. T. Wymer, J. T. O'Ferrall.

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REMOVALS.

Dr. W. G. Young, from Jennings, La., to Port Arthur, Tex.

Drs. C. J. Bloom and R. E. de la Housaye, from 3529 Prytania street, to suite 509-11 Physicians and Surgeons Building.

Dr. A. A. Keller, from 1215 to 1111 Maison Blanche Building.

Dr. G. M. G. Stafford, from Clinton, La., to 1507 America street, Covington, La.

Dr. R. S. Leadingham, from New Orleans, to 464 W. Boulevard, Atlanta, Ga.

Dr. Chas. C. Sims, from Mooringsport, La., to 530, Giddens-Lane Building Shreveport, La.

Dr. C. A. Hiriart, formerly of Oil City, who has been spending some time studying in New Orleans, has located in Shreveport. He is located at the Youree Hotel, with his office in the Comegys Building.

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DIED—Dr. Sidney DeLaup of New Orleans, October 29th, 1923. Dr. DeLaup was a prominent genito-urinary specialist and teacher in the Tulane Post Graduate School of Medicine. He was one of the charter members of the Orleans Parish Medical Society.

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MONTHLY BULLETIN OF THE ORLEANS PARISH MEDICAL SOCIETY.

Dr. Lucien A. LeDoux, Secretary.

Beginning with this issue there will be published a monthly bulletin of the activities of the society.

Office hours of the society, 9 a. m. to 5 p. m. daily, except Sunday. In addition the library is open at night from 7 to 10 p. m., Mr. Leonard Wilson in charge.

The society, during the past month, held two scientific meetings and a special meeting. The special meeting was held in honor of Professor Hans Finsterer of Vienna. He read a very interesting paper on "Gastro-Intestinal Surgery with Splanchnic Anesthesia."



The following afternoon Dr. Finsterer operated at the Charity Hospital and illustrated his method of local anesthesia. Papers presented at the scientific sessions are as follows:

"A Report of One Hundred Anesthetics with Ethylene Gas," by Dr. E. E. Allgeyer.

"Full Term Abdominal Pregnancy" (a case report), by Dr. Lucien A. LeDoux.

"Sickle-Cell Anemia, with Report of Case," by Dr. S. Chaille Jamison.

"What Produces the Aortic and Hilar Shadow," by Dr. Amedee Granger.

"A Review of a Series of Cases of Fibroids of the Uterus," by Dr. C. Jeff Miller.

"The Drug Scopolamin," by invitation, Dr. E. House of Ferris, Texas.

November 27th Dr. House gave a demonstration of his application of scopolamin to criminology at the Parish Prison. This demonstration was largely attended.

Applications to active membership pending: Dr. S. F. Elder, Dr. Sara E. Huckabay, Dr. J. R. Evans, Dr. H. W. Butler, Dr. W. E. Jones, Dr. H. B. Faris, Dr. C. H. Potts.

The following delegates to the Louisiana State Medical Society Convention, 1924, were elected November 12th, 1923. Delegates: Dr. E. L. Leckert, Dr. W. H. Seemann, Dr. Homer Dupuy, Dr. C. G. Cole, Dr. Chas. Chassignac, Dr. J. R. Hume, Dr. J. Signorelli and Dr. J. A. O'Hara. Alternates: Dr. P. Graffagnino, Dr. W. W. Leake, Dr. A. O. Hoefeld, Dr. F. R. Gomila, Dr. A. E. Fossier, Dr. T. J. Dimitry, Dr. Marcy J. Lyons, and Dr. Geo. F. Roeling.

Election of officers of the Society for 1924 will be held December 8th, 1923.

The President appointed a committee to extend an invitation to the Southern Medical Association to meet in New Orleans in 1924, composed as follows: Dr. C. C. Bass, Dr. Homer Dupuy, Dr. H. W. E. Walther, Dr. P. T. Talbot, with Dr. C. C. Bass as chairman. Through their untiring efforts we were fortunate in securing this convention for next year.

The Treasurer's report for October, 1923:

Total receipts .....	\$ 216.50
Total expenditures .....	310.11

Resources.

Domicile Fund, Liberty Bonds par value .....	\$30,000.00
Library Endowment Fund, Bonds, par value.....	3,500.00
Medical Relief Fund (Savings Acocunt) .....	96.23

Total Resources .....	\$33,596.23
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REPORT OF LIBRARIAN FOR OCTOBER, 1923.

Three hundred and twenty volumes have been added to the completed records during the month. Of these 11 were received from the Journal, 5 by purchase, 4 by exchange, 60 by binding and 54 by gift. Of the ones received by gift, 40 were given to the Library by the Eye, Ear, Nose and Throat Hospital.

Approximately 20 members of this Society attended the Southern Medical Convention in Washington, and the coming year the Society will be represented in its governing bodies. Dr. J. G. Dempsey, Vice-President, Conference of Southern States Statisticians of the Bureau of Public Health. Dr. E. C. Samuel, Vice-Chairman, Section of Radiology. Dr. P. T. Talbot, Secretary, Conference of the Presidents and Secretaries of State Medical Associations and State Health Officers. Dr. E. E. Allgeyer was chosen as a member of the Executive Committee.

DECEMBER PROGRAM.

December 3rd, Board meeting. December 8th, election of officers, 1924. December 10th, scientific meeting. December 24th, scientific meeting.

The Secretary of the State Society requests that our members pay their 1924 dues as early as possible so it will facilitate the work of his office.

The New Hospital at Baton Rouge.—"Our Lady of the Lake Sanitarium" is most beautifully situated. It indeed overlooks the lake. It is adequate and well equipped. It is in charge of Sister

Marie de Bethanie, Mother Superior, who for so many years was director of the St. Francis Sanitarium in Monroe.

On November 8th the sanitarium tendered the members of the local medical society and a few guests a dinner which was greatly enjoyed. Among the guests were: Dr. H. A. Pattison, Special Agent, National Tuberculosis Association; Dr. R. L. De Saussure, staff member of the American Child Health Association; Dr. K. E. Miller, Director, Rural Health Administration, and Dr. Oscar Dowling, President State Board of Health.

The Tri-State Medical Society of Louisiana, Arkansas and Texas, one of the oldest organizations of its kind in the South, will hold its annual session in Texarkana on Dec. 5th and 6th. Dr. Heartsill of Marshall, Tex., is president, and Dr. Frank H. Walke, of Shreveport, is secretary. Drs. E. L. Sanderson and A. A. Herold are chairmen of the surgical and medical sections, respectively. Our next issue will give an account of the meeting.

#### BOOK REVIEWS.

General Medicine. Practice of Medicine Series, 1923. Weaver, Brown, Prebble, Sippy. Year Book, Chicago, 1923.

It is obviously impossible to review briefly a volume whose scope is so wide. The subjects embraced include infectious diseases, diseases of the chest, blood and blood-making organs, diseases of the blood vessels and kidneys, the digestive system, metabolism and endocrinology. This volume shows a decided improvement over previous ones in the choice of papers abstracted and with regard to the relative length of the abstracts. It has always been the reviewer's opinion that an article worth abstracting should be treated with sufficient length and clearness to bring out what is original or of interest in the paper. Yet this is rarely the case with most abstracts. It is a pleasure to note in this volume that full measure of space is allotted to interesting and important contributions, for example we find eight pages devoted to an article on radiation in the treatment of blood diseases. Furthermore, many foot notes are found interspersed throughout its pages, giving the personal views of the reviewer, either in praise or criticism of the article abstracted. Although we may not always agree with the reviewer, these notes enhance the value and interest of the book to the reader. This book can be recommended to all practitioners who are interested in keeping abreast of the year's progress in medicine.

R. L.

First Aid X-Ray Atlas of Fractures and Dislocations. By H. C. Orrin, O. B. E., F. R. C. S. (Ed.) Paul B. Hoeber, New York, 1923.

This little book of 76 pages should prove interesting and instructive to X-ray workers and students interested in first aid. The book has many illustrations of actual photographs and X-ray skiagraphs. The text describes the skeleton as a whole and its individual bones. The treatment of fractured bones is fully explained.

L. J. M.

First Aid X-Ray Atlas of the Arteries. By H. C. Orrin, O. B. E., F. R. C. S. (Ed.)

The author renders visible the arteries of the body by means of the X-rays. The entire vascular system exactly as it exists in the human body is beautifully demonstrated. The relation of the arteries to the bones are clearly shown, with the result that definite and exact points for the application of pressure for the control and arrest of haemorrhage now becomes definite facts. Ten beautiful plates of the arterial systems are shown in this little book of 37 pages.

L. J. M.

Diagnostics and Treatment of Tropical Diseases. By E. R. Stitt, A. B., Ph. G., M. D., Sc. D., LL. D. 4th Ed. Rev. P. Blakiston's Son & Co., 1922. Paul B. Hoeber, New York, 1923. Philadelphia

This is a pocket-sized manual of 610 pages, covering in a concise and abbreviated form the diseases common to the tropics. As in preceding editions in part 1, the common disorders are classified and comprehensively discussed and those of minor importance described in less detail. Part 2 is given to differential diagnosis and general laboratory procedures. In this edition many revisions have been made and new illustrations added, and the more recent advances in diagnosis and treatment noted.

The Ophthalmic Year Book for 1922, Volume XIX, Edited by Edward Jackson and William H. Crisp, with a staff of co-laborators. Published by the Ophthalmic Publishing Co. Chicago, Ill.

It is a pleasure to review the Ophthalmic Year Book for the year 1922. You could not expect other than a meritorious volume when the publication is assigned to the editorship of Edward Jackson and William H. Crisp with an excellent staff of collaborators. The first volume was published in 1903 and has been published yearly in a single volume with the exception of volume 15, 16, 17 and 18. The exception volumes were published in quarterly parts. The book was one of the six ophthalmic publications which amalgamated and made possible "The American Journal of Ophthalmology." The year book is issued with the "Journal," these two with "Ophthalmic Literature," which is published with the "Journal," is probably the most complete publication off the American press. The book is a review with digest and bibliography of ophthalmic literature for the year 1922. The table of contents is well arranged and one



readily finds the information sought after. I know of no single volume in ophthalmology which gives in excellent arrangement so much valuable information as is obtained in "The Ophthalmic Year Book."  
T. J. D.

Ophthalmic Surgery, by Dr. Josef Meller, clinical professor eye clinic, University of Vienna. Third edition, translated by Dr. William M. Sweet, professor of ophthalmology, Jefferson Medical College. Published by P. Blakiston's Son & Co., Philadelphia, Pa.

This third edition of Meller's Ophthalmic Surgery is dedicated to the Rockefeller Foundation, "WITH FEELINGS OF THE DEEPEST GRATITUDE for the MAGNIFICENT and NOBLE SUPPORT WHICH, in the YEARS OF DISTRESS, it GRANTED the FACULTIES OF the AUSTRIAN UNIVERSITIES."

The preface is most instructive, which may be taken cognizance of by certain undergraduate and post-graduate medical schools. I quote: "No special value seems to be attached to systematic instruction, but experience and practice are regarded as the chief agents in completing an education. His appeal is for systematic instruction, and not to permit of surgery until they have been taught the fundamentals." It is misleading to designate this publication a handbook, for it is a monograph. It has not the size of a handbook. It has description of single or limited operations. It is a special treatise on selected operations as performed at the Vienna Hospital. The reviewer desires it to be classed as a monograph, though would offer criticism in neglecting to mention that the lachrymal sac may be extirpated by a conjunctival mucous route. It was a disappointment when he states that the "epiphora disappears through a nervous influence." This may be interpreted as meaning that the epiphora disappears reflexly. He neglects to mention the effect of scar tissue in and around the palpebral ligament being a factor, by irritation of the trigeminus and often explaining the continuance of the epiphora. Those interested in ophthalmology can not afford to be without this book, for he will lack familiarity with a class of operations as performed at the Vienna Eye Institute.

T. J. D.

Excursions Into Surgical Subjects. By John B. Deaver, M. D., and Stanley P. Reiman, M. D. W. B. Saunders Company, 1923.

This book of 182 pages contains eight essays, the surgical matter being by Dr. Deaver and the pathology by Dr. Reiman. The first five entitled Peptic Ulcer, Jaundice, Diseases of the Bilepassages, Trials, Tribulations and Joys of a Surgeon, Some Surgical Conditions of the Intestinal Tract were originally delivered in the graduate extension course of Washington University, Seattle; the one on living Pathology has already been published in the "Journal of the American Medical Association." The other two are now published for the first time. Every one of these essays will richly repay careful reading, emanating as they do from two such well known practical authorities in their respective spheres of

action. They deserve to share a place in the surgeon's library alongside of those essays of Moynihan, Randle Short, and a few others.

The Heart: Its Physiology, Pathology and Clinical Aspects. By Dr. Selian Neuhof, B. S., M. D., P. Blakiston's Son & Company, 1923. Philadelphia.

This is one of the most comprehensive and well balanced books on cardiology that it has been the reviewer's privilege to read in some time. It embraces, in its scope, the physiological, pathological, and clinical aspects of cardio-vascular diseases. Graphic methods of cardiac examination are discussed clearly and at sufficient length to be understandable to the average physician, and the frequent combination of polygraphic tracings with electro-cardiograms is a happy one. Furthermore, it is a pleasure to note that the author stresses the importance of information to be obtained from the older time honored non-instrumental methods.

The book closes with a cardio-vascular clinic of some 108 cases. The cases are interesting and instructive. Another feature of value is a well chosen bibliography at the close of each chapter. To all interested in the subject of cardiology this book can be recommended as a practical, comprehensive reference work.

R. L.

#### PUBLICATIONS RECEIVED

W. B. Saunders Company, Philadelphia and London: *The Examination of Patients*, by Nellis B. Foster, M.D. *Gynecology*, by William P. Graves, A.B., M.D., F.A.C.S., Third Edition. *Pediatrics*, by various authors, edited by Isaac A. Abt, M.D., Vols. 1 and 2.

P. Blakiston's Son & Company, Philadelphia: *The Elements of Public Health Administration*, by George Sparr Luckett, A.B., M.D., and Harold Farnsworth Gray, B.S., M.S., Gr.P.H. *Cleft Lip and Palate*, by Truman W. Brophy, D.D.S., M. D., LL. D., F. A. C. S., O. I., SC. D., F. A. C. D.

J. B. Lippincott Company: *Exercise for Health and Correction*, by Frank D. Dickson, M.D., and Rex L. Diveley, M.D. *International Clinics*, by leading members of the Medical Profession throughout the world, edited by Henry W. Cattell, A.M., M.D., Vol. III, thirty-third series, 1923.

Washington Government Printing Office, Washington, D. C.: *The Medical Department of the United States Army in the World War*, Vol. 1, *The Surgeon General's Office*, by Col. Charles Lynch, M. C., Lieut. Col. Frank W. Weed, M.C., and Loy McAfee, A.M., M.D. *The Yellow-Fever Mosquito*, by L. O. Howard, Chief of the Bureau of Entomology. *Public Health Reports*, Vols. 38, Part 1, Nos. 1-26, also Nos. 40, 41, 42 and 43.

Miscellaneous: *Rubber and Gutta Percha Injections*, by Charles Conrad Miller, M.D. *Habitual Constipation*, by Ismar Boas, M.D. *Proceedings of The Medical Association of the Isthmian Canal Zone, January to December, 1920*, Vol. XIII, Parts 1 and 2. *Les Secretions Internes, Leur Influence Sur Le Sang*, by Dr. Maurice Perrin and Dr. Alfred Hanns.



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THE  
NATIONAL, STATE, AND LOCAL TUBERCULOSIS  
ASSOCIATIONS OF THE UNITED STATES



# New Orleans Medical

and

# Surgical Journal

Vol. 76

JANUARY, 1924

No. 7

## TETANUS.\*

BY P. GRAFFAGNINO, M. D., F.A.C.S.  
*House Surgical Officer, Charity Hospital.*

AND

J. M. DAVIDSON, M. D.  
*Admitting Officer, Charity Hospital.*  
NEW ORLEANS.

"Statistics can be made to show anything, even the truth," so said a well known English authority, as recently quoted by Dr. William Mayo. How well this applies to statistics on the treatment of tetanus can be easily verified by a perusal of recent literature on this subject. But too truly did Dr. Herman B. Gessner state, in his review, that the measure of the value of therapeutic methods must necessarily be clinical results. Too often, conclusions relative to these results are hastily confirmed on a small number of cases. A general statement may be made that the more limited the opportunity for observation, the more positive are the views expressed as to the efficacy of this or that remedy or method in the treatment of tetanus.

For instance, from time to time, most enthusiastic reports appear in the literature regarding the brilliant results obtained by the use of antitoxin as a specific application by a particular route, the writer reporting from one to eighteen cases; whereas Sir David Bruce, as chairman of a committee by the British War Office, who studied 1,424 cases and whose knowledge of this disease is probably greater than that of any other writer, says antitoxin has no power of neutralizing toxins already fixed in the nervous system and, if a fatal amount of toxin has been ab-

sorbed, no amount of antitoxin will save the man's life.

Of the first 1,000 cases studied it could be positively stated that 500 received prophylactic injections and of these 363 recovered, giving a death rate of 26.6%. Of the 239 cases who almost certainly received no prophylactic serum, 100 recovered, giving a mortality rate of 58.1%.

In a final analysis of the cases studied by this committee, it says: "From the figures, no case can be made out either for or against the intraspinal route for the therapeutic injection of antitoxin and no useful deduction can be drawn as to the influence of dosage on the curative action of antitetanic serum".

Dr. Fred Murphy, in Keen's System of Surgery, Volume VII, states that the treatment of clinical cases of tetanus is unsatisfactory and uncertain but in view of all experiences, antitetanic serum should be given in large doses.

Ashhurst, probably the most enthusiastic American believer in the use of antitoxin as a potent factor in reducing the mortality, reports a series of eighteen cases from 1906 to 1920, with a mortality rate of 38.8%. He believes that antitoxin should be given in initial doses of 100,000 units subcutaneously; or 20,000 to 30,000 units intravenously; or 3,000 to 15,000 units intraspinally the first 24 hours and repeated as indicated in 18 to 36 hours. He is a strong advocator of the intraspinal route.

Miller, in a recent analysis of 116 cases occurring in the Massachusetts General Hospital from 1872 to 1922, claims that the mortality rate has

\*Read Before the Louisiana State Medical Society, April 24-26, 1923.

gradually declined from 65% in 1910, to 40% in 1921, and he attributes the decline to the early use of antitoxin in large doses, especially by the intraspinal and intravenous routes.

Colonel Sir William Leishman and Major B. Smallman, analyzing 157 cases, hold that their results throw very considerable doubt upon the advisability of applying the intraspinal or intravenous routes, either alone or in combination and seem to indicate considerable virtue in the employment of the subcutaneous and intramuscular routes. On the other hand, Nicoll is a firm believer in the use of large doses of antitoxin, especially by the intraspinal route and maintains that the subcutaneous route is of extremely doubtful value.

Major H. R. Dean, analyzing a series of 25 cases, reaches the conclusion that the most efficacious method of administering antitoxin is by the intravenous route, while Sir David Bruce, Andrews, Golla, Sherrington and others, are strong advocates of the intraspinal route.

Because the writers have seen so many cases of tetanus in this Institution and having noted the great mortality in cases treated by various doctors therein, irrespective of the method of treatment, we thought it might be of some value to carefully review and analyze, in an unbiased manner, the cases treated in this Institution. With this subject in view, we are presenting an analysis of the cases treated in Charity Hospital from 1906 to 1923. We are not unmindful of the fact that Drs. Gessner and Adiger, in 1916 and 1918, reviewed these cases up to that time and to their work we must acknowledge a debt of gratitude.

There are 627 case records recorded in Charity Hospital from 1906 to 1923, which form the basis of this analysis. These cases may be classified as follows:

CHART I.

Adults—Male, 203; female, 82; white, 98; colored, 187. Total, 285.

Children—, 306; male, 204; female, 92; questionable, 10; white, 140; colored, 166. Total 306. Tetanus neonatorum, 36.

Sex—Male, 407, white, 173; adult, 69; children, 104; colored, 234; adult, 134; children, 100. Female, 184; white, 65; adult, 29;

children, 36; colored, 119; adult, 53; children 66.

Race—White, 238; colored, 353.

CHART II.

Site of wound—

Foot and toes.....	327
Hand and fingers.....	63
Leg .....	16
Arm .....	20
Knee .....	9
Back .....	9
Head and face.....	32
Teet .....	1

Analysis of the above table presents in a graphic form the site of the wound associated with tetanus and, as to be expected, the extremities predominate.

CHART III.

Type of injury:

Abscess (inguinal) .....	1
Splinter .....	163
Nail .....	122
Firecrackers ...	23
Blank cartridges } .....	
Air gun .....	6
Gunshot wound .....	
Incised wound .....	44
Crushed wound .....	42
Burns .....	6
Brush burns .....	38
Punctured wounds (excluding nails).....	16
Ulcer .....	3
Abortions .....	15
Tetanus neonatorum .....	36
Morphine addicts .....	9
Infected pimple .....	1
Vaccination .....	3
No history of injury.....	4

The above table presents an interesting study of the type of injuries often

Chart IV

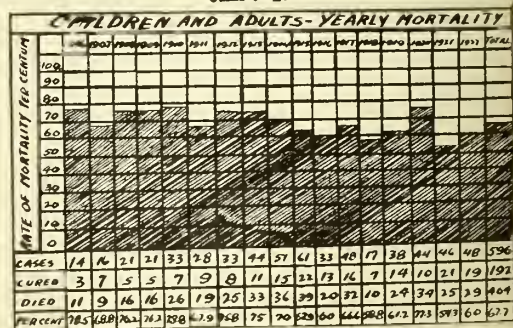
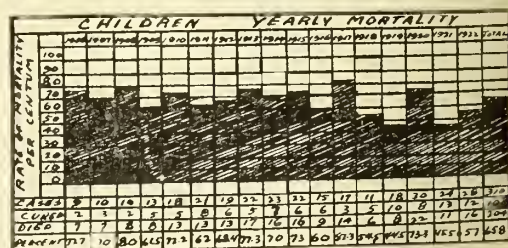


Chart V.

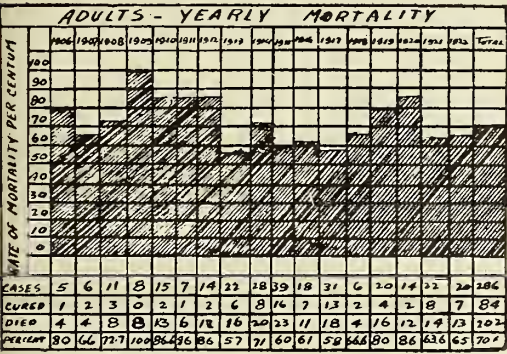




associated with tetanus, and among the unusual we find a great number of abortions, morphine addicts and simple brush burns.

fatal termination. Is it not possible that the doubtful cases, unreliable histories, virulence of the infection, and possible complications that are not considered while studying figures, could explain these discrepancies?

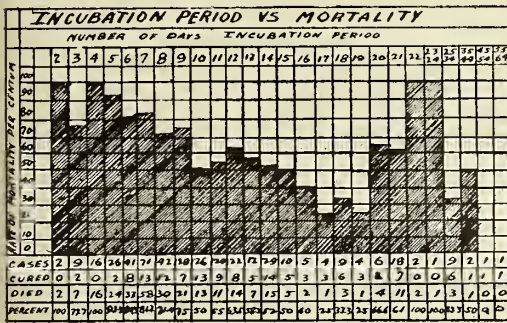
Chart VI.



*Effects of Treatment According to Dosage and Cases Treated Without Antitoxin.*

This contrasts the total number of cases treated with antitoxin numbering 273 with a mortality rate of 66.6% and the total number of cases treated without antitoxin numbering 304, with a mortality rate of 68.08%. A careful study of this chart will reveal the fact that the death rate varied very little, no matter how much antitoxin was given. There were as many deaths and recoveries when only 500 to 1,000 units of antitoxin were given as when over 100,000 units were administered.

Chart VII.



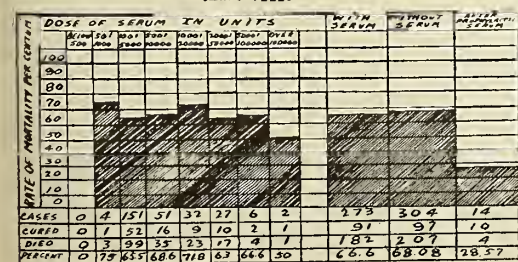
*Incubation Period.*

Analysis of the whole number of cases confirms the law already laid down, that the shorter the period of incubation, the greater the mortality. And yet we see in few instances, hard to explain, cases with an incubation period of three days that apparently recover, while others with an incubation period of twenty to forty-four days have a

Chart IX

DOSE IN UNITS	METHOD OF ADMINISTRATION														
	DIED	CURED	T	V	PA	IN	IP	TA	VS	IM	SM	TS	TNS	SVN	TSNV
BELOW 500	0	0	0												
500-1000	4	3	1	4											
1001-5000	15	1	99	52	16	97	1	2	5						
5001-10000	51	35	16	1	5	25	2	2	11	1	2	1			
10001-20000	32	23	9	6	8	2	2	6	1	5					1
20001-50000	27	17	10	4	2	3		5		7					4
50001-100000	6	4	2	1		1		1		2					1
OVER 100000	1	0	1												
TOTAL	272	181	91	2	72	150	9	16	0	28	1	1	17	1	6

Chart VIII.



Here an effort has been made to classify cases according to the method of administering antitoxin. It is to be noted that very few cases received antitoxin by one particular route, most of it being given in combination. For this reason, we were unable to classify the results obtained by each method of administering antitoxin.

*Other Interesting Features.*

Magnesium sulphate injected intraspinally. Cases, 2; cured, 0; died, 2. Mortality, 100%.

Foreign bodies remaining on admission. Cases, 26; Cured, 11; died, 15. Mortality, 57.7%.

One case died after spinal injection of serum.

One death from anaphylaxis.

One case of re-infection with tetanus after 16 years. Died during the second attack.

Here let us review the recent experimental work and perhaps, who knows, the seeds of these experiments may bear fruit in the minds of some of you and lead to the final solution of this dreadful malady.

The fundamental observations of Marie and Morax, and Meyer and Ranson, which determined the fact that the toxin which was produced locally by the tetanus bacillus was carried to the cord by the axis-cylinders of the motor nerves, the sensory fibres never taking part in this transmission, remains established. However, Teale and Emberton proved, by the re-injection experiments, that after the injection of toxin in an extremity; within a short time it is present in the blood, liver, spleen, etc., and even in the nerve of the opposite extremity, results which could not be possible if the toxin were conducted entirely by the axis-cylinders. The latest evidence seems to point at least to a partial conduction of toxin by the lymphatic route, and that tetanus toxin appearing in the blood stream and other tissue can be neutralized by antitoxin at any stage in its passage before its final and relatively indissociable union with the ganglion cells.

*Types of Tetanus Bacilli.*

Captain Tullock has been able to differentiate four types of tetanus bacilli by means of the agglutination test. Examination of 100 cases suffering from clinical tetanus, showed 41 cases of type 1, 20 cases of type 2, 35 of type 3, and 3 of type 4. So far as known, antitetanic serum prepared in the routine way has the same effect on all types, neutralizing the toxin in any one or all. In 23 cases, not suffering clinically

from tetanus, he found the tetanus bacillus and divided them into the four groups—17 cases belonged to type 1, 3 to type 2, 2 to type 3, and 1 to type 4. Comparing these figures with those obtained from the analysis of 100 cases of clinical tetanus, he found that while 74% of the cases with tetanus bacilli in the wounds belong to type 1, only 41% are found with clinical tetanus. The mortality of these types in which special groups were established, is as follows: Type 1, 11%; type 2, 25%; type 3, 35%, and type 4, 0%. It would seem that type 1 was the most prevalent infection, accompanied by a relatively low mortality, while types 2 and 3, the less frequent, are more virulent.

*Method of Injection of Antitetanic Serum.*

Professor Sherrington performed a series of experiments on monkeys for the British War Commission. Ten control monkeys, and ten receiving the antitoxin subcutaneously, all died. Of twelve treated intramuscularly, all died. Of sixteen treated intravenously, ten died, giving a mortality rate of 62.5%. Of eighteen treated intraspinally, five died, with a mortality rate of 27.7%. The impressive part of this experiment was the method of administering the antitoxin high up in the cervical region.

The laboratory observations on the fate of bacteriologic spores in the animal body, by Koser and McClelland, reported in 1917, are of particular interest in view of the late development of the clinical symptoms in many of the reported cases. These observers find that the spores of the bacillus tetani may persist in experimental cases at the site of inoculation for four months and in the liver and spleen for two months.

An impartial analysis of all case records studied forces us to the conclusion that the status of antitoxin in the treatment of tetanus is as yet not definitely established and that its value as a curative remedy awaits indisputable demonstration. However, we are of the firm belief that in view of the known properties of antitoxin to neutralize the toxin of the tetanus organism and its action, not only as a preventive but in lengthening the incuba-



tion period and attenuating the virulence of the infection where it occurs in spite of the prophylactic use, antitoxin is the specific remedy for tetanus. Further experimental work as to preparation, dosage, mode of administration and effect on the living tissue, will in time bring about the desired end.

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### DISCUSSION.

Dr. E. Denegre Martin (New Orleans): We must bear in mind that these are statistics from the Charity Hospital. It would be important to know how far advanced these cases were. We have had probably twenty of these cases, and of the twenty I think two survived. They came in almost in articulo mortis. I believe there is really nothing to be done in advanced cases. My observation (I have had about 30 cases) is that the death rate will depend entirely upon the virulence of the infection.

Another thing is to be said, that in private cases we get them immediately, antitoxin is given immediately, we delay the effect of the poison, and if a sedative is given these cases will do well. We have reported eight cases cured with chloratone. These were young people and they were taken in time. The initial dose of antitoxin was given subcutaneously, which I think should be done. Whether it is more effective intraspinally is something I cannot say. Then giving chloratone to control the convulsions, these cases do well. I have had one instance of the use of sulphate of magnesia, but that patient was practically dead at the time. It does control convulsions if given in time.

I have not made up my mind as to the best method. This paper brings out the fact that we are not agreed on the treatment of cases by any special or satisfactory means. But you can make up your mind that if the poison is sufficiently virulent we have nothing to counteract it. How often do we see cases of chronic tetanus walking around and getting well with absolutely no treatment?

Dr. L. A. J. Brennan (New Orleans): One point must be considered here, and that is the interference with wound in these cases. I

believe that serum is best used as a prophylactic. Serum therapy is the thing to use where we interfere with wounds predisposed to tetanus. If the wound is let alone no doubt the case will get well by using sedatives and nourishing the patient; but if you have occasion to interfere with a wound or to open it up for drainage, there is where I think the serum comes into play therapeutically. It neutralizes the new poison that is liberated. The organism as a rule grows better where there is secondary infection. In those cases that show infection, I think the wound should be opened up early and drained, not using the scalpel, but some blunt instrument, and thus the wound should be left alone. The patient should be given a prophylactic dose in the beginning to ward off tetanus. After this stage, whenever any interference with the wound is indicated there should be a large prophylactic dose of antitetanic serum given, and I believe these cases will get well, provided they are well fed and given sedatives so they will not die of nerve exhaustion or starvation.

## FRACTURE OF THE LOWER END OR BASE OF THE RADIUS.\*

By JOHN L. WILSON, M.D., F.A.C.S.,  
ALEXANDRIA, LA.

Fracture of the lower end of the radius is the most frequent fracture with which physicians have to deal. This fracture occurs next in frequency to fracture of the ribs, and constitutes ten per cent or more of all fractures. The greater percentage of such fractures is met with by the general practitioner, and not by the general surgeon, and for this reason the treatment of these fractures is carried out by the physician, which makes it very important that we should be posted as to the pathology, etiology and treatment of this fracture.

We have had many notable contributions to our knowledge of the etiology and pathology of these fractures as well as to the treatment of them, since the original contribution by Colles in 1914. Prominent among the contributors of recent years may be mentioned, Scudder, Roberts, L. A. Pilcher, John B. Murphey and Fredrick J. Cotton of Boston. As I understand it two principals are involved in the causation of this fracture, traumatic force applied to the extended or outstretched hand, with its effect upon the peculiarly anatomically formed lower end of the radius, thin

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cortical layer with cancellated bone structure, which renders it peculiarly susceptible to fracture from trauma when received in the manner described in this fracture.

I shall not attempt to describe the types of fracture, each case will present its difference, and the diagnosis of type should be left to the physician in charge of the case. The final authority as to the character and extent of the injury is the X-Ray, and resort to it should be made when practical to confirm the diagnosis of fracture, the type, and in the after treatment, to demonstrate the degree to which reposition of fragments have been secured. Antero-posterior and transverse views should always be taken of the wrist and arm.

The Silver Fork Deformity present in these fractures is characteristic of this particular fracture, so that there is usually no room for doubt of the nature of the injury, excepting in instances of complications, such as luxations, extreme impaction, and destruction of tissues in that region. In addition to the characteristic deformity we find only *partial* disability of the hand, displacement backward, fullness in front of the radius over wrist, loss of normal prominence of the ulnar head on the back of the wrist with fullness in front of the wrist. The hand is usually held in partial flexion. The above symptoms together with the X-Ray findings should complete the diagnosis. Complete and careful examination together with the history of the case will usually give one a good idea of the existing pathology of the average case.

Treatment should always be carried out under light anesthesia in this as well as all fractures. Ether, Gas, Chloroform, gives for a few moments or until light anesthesia is produced, causes muscular relaxation, and partial insensibility to pain, which will enable the physician to adjust these fractures practically without pain and more satisfactorily to ourselves, as well as to give the patient better service. The selection of material for splints is of great importance to the physician, who has to treat these patients, the physicians in the country and smaller towns. We are not always situated so we can draw on

the supply of splint materials usually supplied by the manufacturers, and we must have a suitable, available splint material. Many useful splints have been recommended and successfully used, by a number of good surgeons. The practicability of the splint, availability of material with which to make it is of vital importance to the patient and physician. For some years I have been using a splint suggested by Frederick J. Cotton in his most excellent book on Dislocations and Joint Fractures. This splint can be made almost anywhere that we may be called to treat these fractures. It can be made from a shingle, boxtop, or any like material which is almost always available.

I will now exhibit the splint and explain the method of application. You will note the manner in which the splint is shaped, a notch is removed from the radial side where it presses over the ball of the thumb, which prevents pressure on the ball of the thumb when applied, allowing also free movement of the thumb, which is an item of great importance. The posterior splint also has a notch cut out so as to prevent pressure over the styloid process of the ulnar. These splints when properly padded and properly applied make an ideal splint in the treatment of this fracture, and will prove a great asset to patient, as well as a satisfaction to each of you in handling these patients. The distinctive feature of this splint is that it allows free movement of the thumb and fingers, and when the patient is discharged he does not have to use massage for weeks to overcome stiff fingers resulting from improper splints. In the application of a splint we should always remember the teaching of John B. Murphy. Don't ever attempt to reduce a fracture with a splint. We should first reduce the fracture under anesthesia, be certain that we have done so, and then apply the splints correctly, not too tightly. Remember that in the limb upon which we apply a splint for the treatment of a fracture, swelling will take place within 24 hours, and the patient may have disastrous results from our treatment should the splints and dressings be applied too tightly. We might have ischaemia and in some



cases Volkman's contracture resulting from the treatment, which would be a very serious condition.

I would also call your attention to Murphy's teaching as to the function of splints. He contended that we did not need perfect or superlative immobilization in the treatment of fractures, contending that some movement of the ends of bones would hasten repair. The patient's arm should be shaved and when the splints, properly padded are applied, a two inch piece of Z O plaster should be carried around the lower end of the arm and splints, below the thumb, another be carried around arm and splints above the wrist, and another at the upper extremity of splints, allowing the plaster to adhere to the skin, which will hold the splints in position. We may then apply a roller bandage over all to produce the required amount of pressure.

After the dressings are applied, the arm should be suspended in a sling. A piece of domestic 32 x 32 inches, folded diagonally and placed about the patient's neck and arm makes an excellent sling.

The after treatment of these fractures is of great importance. We should see the patient the following day or within twenty four hours after the first treatment, and make note of the following symptoms and conditions, (a) swelling of the hand; (b) numbness or paresthesia of the hand or fingers; (c) cyanosis; (d) amount of pain; (e) complaint of general discomfort from pressure; (f) complaint of localized pain at or near any special point of pressure. The presence of any localized pain at any point of special pressure is a positive indication to remove the splints at once. All splints should be removed in from 3 to 5 days for the purpose of inspection. After the first inspection 24 hours after first treatment the patient should begin to keep the fingers limber by passive and active motion, even though such motion be painful. Within two weeks mobility should be given at the wrist. The anterior splint being retained as a protective splint after two weeks. The results of treatment when carried out properly with this splint should be good.

## A NEW METHOD OF TREATMENT FOR CHRONIC SUPPURATIVE OTITIS MEDIA.\*

BY M. P. BOEBINGER, M. D.,  
NEW ORLEANS.

The success of surgery should be measured by the end product. The reporting of two cases must have some merit to justify the making of such a report. The radical mastoid operation is counted a success when it effects a cure, though the hearing be sacrificed. A modification of the radical mastoid operation that effects a cure and at the same time conserves the hearing, should be considered the proudest achievement in mastoid surgery. The author realized for many years that the radical mastoid operation is beset by many and serious pitfalls. For instance: Facial paralysis, failure to arrest the discharge and the possibility of a recurrence. These, together with the destruction of the middle ear and its contents, make some other line of procedure a consummation devoutly to be wished.

The cases herewith presented offered no choice of procedure along beaten paths except the radical mastoid or the Heath operation. Imbued with the belief that a rather simpler procedure than either of the above operations should effect a cure and at the same time conserve the hearing, the method and technique herein presented, were instituted.

It is not the purpose of the writer to discuss the usual methods of treatment employed by various aurists, nor to describe the technique or modification of the radical mastoid operation as first employed by Körner and later by Heath, Ballenger and Bryant. These all have their champions and advocates, and no doubt effect cures in certain selected types of cases. The question of long drainage, ventilation and irrigation from a surgical point of view is an important one.

A radical mastoid operation is never performed in the interests of the hearing function, and a statement to that effect should be made to the patient before the operation.

The dangers and accidents attending the radical mastoid operation:—The

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intimate relation existing between the tympanic cavity proper, the epitympanum, the mastoid antrum, the mastoid cells, the facial nerve, the labyrinth, external semicircular canal, the jugular bulb, the sigmoid sinus, the internal carotid artery and the meninges, even when normally located, emphasizes the possible danger of accident attending the radical mastoid operation throughout its entire course.

The above cannot possibly happen to a skilled operator in doing a simple mastoidectomy, or in employing the writer's method.

Indications for the radical mastoid operation:—Briefly stated, is to convert the external auditory canal, tympanic cavity, aditus ad antrum mastoid antrum and mastoid cells, when diseased, into one wide-open cavity; to excavate all granulations and diseased bone, to destroy all membranous and muscular tissue lying within these limits, including the drum membrane, and to effect dermatization throughout the entire area, in the hope that by doing so, the ramifications of the disease will be terminated once and for all. The operation is a capital one, requiring extensive dissection in the most complicated bone in the human body.

The main objects in the local treatment of this disease are, first; to arrest the inflammatory infiltration of the mucous membrane of the middle ear, and to stop its purulent discharge, and secondly; to prevent the development of serious complications.

Patients, as a rule, subject themselves to radical operative measures only when threatening symptoms appear.

When these are lacking, and if the power of hearing is not greatly affected, the patients prefer the conservative treatment, which may continue for years.

*Description of cannula:*--A gold needle of nineteen gauge, two inches long with smooth rounded distal end was made into cannula. The hub of the cannula is smooth within, (a Luer hub) and just beneath the hub, a thread of three-fourths of an inch long for the purpose of raising or lowering the cannula to fit the case. The cross-arms are two in number, three inches long and one-

thirty-second of an inch in thickness and one-fourth inch in width, with numerous perforations at the ends, and made of plated cooper, which forms the letter X.

*Author's technique:*—A simple mastoidectomy is done in the usual manner for a chronic suppurative otitis media. The method pursued by the writer is to enlarge the antral opening, then to work upward towards the tegmen antri, using either chisel or gouge, keeping in mind always, that the surface landmarks, the linea temporalis and the superior wall of the external auditory canal is about, but not quite, the safety limit or danger zone.

The Author continues to work upward and to remove overlying osseous tissue until a probe introduced through the antrum, aditus ad antrum and middle ear proves that you have reached a parallel line with the tegmen antri then the attention of the operator is next directed to preparing the parts before the introduction of the Author's special cannula. All rough edges and projections are removed.

The excavation is irregular in contour, extending from the tegmen antri above (because antrum is now practically obliterated) to and through the mastoid tip below and from the posterior border of the osseous canal wall backward, usually to the limit of the diseased osseous tissue. A careful survey is now made of all parts in order to ascertain if any unopened or diseased cells have been overlooked. The writer then passes a probe into the middle ear and takes soundings, as it were, in order to ascertain the direction of the probe and to the size of the opening which leads to middle ear, and to enlarge and remove any obstruction or interference to the passing of the cannula, which should be introduced into the middle ear with the same ease as the surgeon passes the probe. No force must be used, and if any interference is noted, this must at once be corrected. The surgeon should always gently curet in the neighborhood of the antral orifice of the aditus for fear of dislocating the incus. The field should now be inspected, and the introduction of the author's cannula follows. The distal end is introduced into the middle ear and remains there. The



cross-arms are sutured a safe distance away from the wound into healthy skin, using silk material. A drain of plain gauze is placed into the mastoid wound and the edges of the wound approximated with michel clamps or absorbable sutures. A small opening is made by means of scissors through a gauze dressing and head of cannula uncovered. The after treatment for mastoid wound is same as that employed for simple mastoidectomy.

*Solutions used*:—Acid Boric, one dram to quart; normal saline solution; sterile water; solution of nitrate silver, 1 per cent and 2 per cent; solution of Formaldehyde, 1-2 per cent to 1 per cent; alcohol solution, 50 per cent. The Author believes his results came from use of normal saline solution three to four times daily and finally using alcoholic solution of 50 per cent strength every morning and night.

*How solutions were used*:—Small metal tip to which a piece of rubber tubing was attached. The metal tip was introduced into hub of cannula and to other end a large Luer syringe 10 C. C. filled with solution was used to irrigate middle ear.

*Amount used*:—The personal equation of the aurist should play an important part here. However, the Author advises free irrigation. (Often and plenty.)

*Failures*:—On many occasions, the writer was forced to remove cannula from wound and middle ear on account of blocking of the tube, (especially was this due to use of AGno. 3. This is done with ease. The granulation tissue and tract left open from tube was cocainized, the material removed from lumen, and the tube sterilized, and reintroduced, then not sutured to skin, but fastened by adhesive strips, which the Author highly recommends, as a simple and safe procedure.

Keeping the wound clean beneath the cross-arms is much easier and simpler than in the writer's original model, which did not have cross-arms, but was made with a disc, which prevented the writer from keeping the parts clean, a source of much annoyance.

*Time for cure*:—By the use of cannula and irrigation, the first case required ninety days. In the second case,

five months was required in order to effect a cure. This was probably due to acute mastoiditis and subperiosteal mastoid abscess.

#### REPORT OF CASE

E. W., age seven and a half years—white female.

Examination of right ear negative. Nose and throat negative.

Examination of left ear—Chronic Suppurated Otitis Media. Profuse discharge, acute mastoiditis, sub-periosteal mastoid abscess.

X-Ray examination showed necrosis of mastoid process.

Patient was ordered to Presbyterian Hospital and operation performed December 29, 1921. Treatment continued until June 10, 1922.

Examination of left ear at present shows almost normal drum membrane. Hearing distance for whispered voice 24 feet. Watch test about one foot.

#### DISCUSSION.

Dr. J. D. Martin (New Orleans): We have had a great deal of trouble in these cases and have tried every known cure for them, but even after radical mastoid we have sometimes found them almost as bad off as before, and worse, in fact, as the hearing had been interfered with. This is the first time I have heard of Doctor Boebinger's new method, and I want to know something more about it.

Dr. Homer Dupuy (New Orleans): Someone has said "Be not the first by whom the new is tried, nor yet the last to lay the old aside." But in mastoid surgery we are constantly casting the old aside and trying the new, which goes to prove how inefficient, how unsatisfactory is mastoid surgery for the relief of chronic suppuration of the middle ear, because we must admit that the mastoid operation for acute troubles in the middle ear and in the mastoid is a proven achievement in the surgery of the temporal bone. We are now talking about chronic cases of middle ear abscess for relief of which, our mastoid surgery is most unsatisfactory, so I will cast aside the old and try the new.

The beautiful part about this case is that the drum has returned to normal, the perforation is closed, and there is every reason to hope that Doctor Boebinger's method has affected this cure. So without going too much into technical refinements, let us admit that this seems to be a very important contribution. Yet do not be disappointed when you refer a patient with chronic middle ear abscess to the otologist that a brilliant result is not easily obtained. For despite all therapeutic and surgical measures the chronic middle ear suppuration is quite a problem, still waiting for solution in many cases. Let us hope that Dr. Boebinger has added something useful to our armamentarium with this new wrinkle in our surgery of the mastoid.

Dr. M. P. Boebinger (Closing): I have only had experience with two cases, but I want to make a plea for other men to take it up and try it. We know that in any radical mastoid, say the Heath, it is a question of drainage.

This little girl that I saw had chronic supuration for one and a half years, and she has been well for about one and a half years with a normal drum and good hearing.

## THE TREATMENT OF TINEAL INFECTIONS OF THE HANDS AND FEET.\*

BY JEFFREY C. MICHAEL, M.D.,  
HOUSTON, TEXAS.

Infection of the hands and feet with various fungi is exceedingly common. Included in this category are such rare infections as those with blastomyces, sporothrix, actinomyces, and odium albicans, but this paper deals only with the more common infections with epidermophytos or trichophytos and designated clinically under various names; epidermophytosis, tinea eczematoid and others.

During the warm months this condition constitutes between 50 and 60 per cent of my practice. Not only is it common, but it is tenacious, recurring time and again after apparent cure. These qualities make it an important and interesting subject, especially from the standpoint of therapy. My own experience, summarized herein, is based upon the observation of approximately 750 cases seen in the last thirty months of private practice. The diagnosis of many of these cases has been arrived at purely by their clinical appearance, though a goodly number have been definitely proven by microscopical and cultural study. The latter means are to be advised in all cases, though at times the demonstration of the fungus is exceedingly difficult and time-consuming. According to Darier<sup>1</sup>, it is possible to demonstrate fungi in approximately 80 per cent of cases of dysidrosiform eruptions of the hands and feet, and the importance of basing treatment upon certain knowledge of the cause of the condition makes an attempt, even an exhaustive one, important. Mitchell<sup>2</sup> also insists on the detection of the fungus before treatment is begun, basing his demand for microscopical examination on the possibility of confusing a dysidrosiform eruption due to a fungus with one due to external irritants.

The treatment of this disease varies in certain particulars according to the type present in the individual case. White and Greenwood<sup>3</sup> have proposed a satisfactory classification of the various forms and it will be followed in this paper. They divide it into the vesicular, macerated, macular, hyperkeratotic, and lichenoid types. It is uncommon to see the disease present in only one form; the large majority of patients presenting several or all varieties of it. Besides the pure types, various complications may be added to the clinical picture; these complications resulting from a superimposed infection with pyogenic organisms. Needless to say, the complications must be dealt with effectively before treatment of the disease itself can be undertaken.

The aim of treatment is, of course, the eradication of the causative fungus. These organisms inhabit not only the corneous layer, but invade at least the more superficial strata of the rete. With the remedies in present use, it is hardly possible to penetrate to this depth with fungicides in sufficient concentration to destroy both mycelia and spores. Mycelia disappear rather rapidly following the application of any parasiticide, especially if contained in an ointment base. But the spores remain viable as indicated by the more or less rapid recrudescence of the condition as soon as a growth restraining application is stopped.

Under these circumstances treatment must be based upon general principles, which are:

(1) Mechanical or chemical removal of epithelial debris and corneal layer (curette, keratolytics).

(2) Destruction of fungus by drugs (benzoic acid, potassium permanganate, chrysarobin, iodine, phenol, etc.)

(3) Alteration of cellular activity by physical means (Roentgen-ray, ultraviolet light).

(4) Prophylaxis (sterilization of personal clothing and prevention of contact with infected material).

In addition to the foregoing there is another important feature of treatment that should be mentioned. This is that disappearance of the symptoms of the disease does not mean necessarily that the causative organism has been eradicated.

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cated, and therefore all cases should be apparently overtreated before pronounced cured. Before discharging my patients from observation, I always prescribe Whitfield's ointment with injunctions to apply it daily for two months, and if it happens that the end of this period falls in the winter months, the patient is advised to apply it again for a month at the onset of warm weather.

With this tabulation in mind, I will now pass to a consideration of the treatment of each type of the disease.

#### *Vesicular Form.*

As commonly seen upon the feet and hands this type presents grouped, occasionally isolated dysidrosiform vesicles with clear, syrupy contents. No inflammatory areola surrounds the lesions unless pus formation occurs. As none of the epidermal inhabiting fungi appear to be pus producers, secondary infection with staphylococcus or streptococcus is the cause of the progenic complication.

In the treatment of an uncomplicated case it is my present custom to open the vesicles if they are not numerous and to

apply potassium permanganate solution, 1:2000, for two or three days. When the vesicles are numerous, small, and deeply situated, as often occurs on the lateral surfaces of the digits, then Highman's<sup>4</sup> suggestion of soaking with warm hypertonic solution before the application of other remedies is put into effect. I have found potassium permanganate a splendid application for the vesicular type, though my results with it in stronger concentration, as suggested by Feldman and Ochs,<sup>5</sup> have not been gratifying.

When vesicles have ceased forming, or practically so, or when potassium permanganate has not caused a rapid subsidence of the condition, silver nitrate in 10 per cent solution is substituted. This is painted on every day or every other day. In fact, in the type of the disease with numerous grouped vesicles, I have recently begun immediately with silver nitrate. It converts an exudative condition into a squamous one more quickly than anything I have used so far. It is combined with ultra violet light, using a water cooled lamp without sufficient exposure to cause more than a mild erythema. The erythema, of course, cannot be seen on the silver nitrate treated areas but a sound patch of skin on the wrist or elsewhere may be used as a guide.



Fig. 1. Profuse eruption of vesicular type.



Fig. 2. Vesico-bullous eruption secondarily infected with pyogenic organisms resulting in ulceration.

This treatment has evolved itself in my practice largely by a process of cast-

ing around for something better, because medicaments that had been used were not entirely satisfactory. The black stain that it produces is a drawback but patients do not seriously object to the disfiguring effect.

I do not know the exact value of the ultra violet light in this mode of treatment. Clinical experience has shown, however, that quicker results are obtained when it is combined with silver nitrate than when the latter is used alone. It is too early to say that the combination of silver nitrate and ultra violet light is actually curative. No patient has been treated in this way sufficiently long ago to say that he has been cured. It may be mentioned, however, that several patients who had early recurrences following potassium permanganate, Whitfield's ointment, and roentgen ray, have so far, a matter of three to six months, had no return of the condition. A cure should not be presumed in this disease until the patient has gone through at least one summer without its return. Objection may possibly be made to this statement on the ground that the development of the condition after several months freedom indicates a reinfection rather than a recrudescence. Such an objection would not hold, in my opinion, for the reason that this disease is one of slow development, and if one can judge by the statements of patients it requires more than one warm season for it to develop to any extent.

#### *Macerated Type.*

Typically, this occurs on the apposing surfaces of the toes, less often on the finger webs, as white, sodden, thickened epidermis, which when detached reveals a red, exuding area. Fissures are often associated with it. It is so well known that further description is superfluous.

It is the commonest type of ringworm of the feet and is rarely absent when other forms are present. It is not particularly recalcitrant to well-directed treatment, but treatment must be vigorous and continued for several weeks or months before eradication of the infection can be thought of.



Fig. 3. A pruriously vesicular eruption which through involution is subsiding into the erythematous-squamous (macular) type.

Whitfield's ointment (acid salicylic 2.0, acid benzoic 4.0, Adeps Benzoat 32.0) was a more or less standard treatment for a number of years. This preparation has not lived up to its early promise, and in recent months substitutes for it have been proposed. Ruggles<sup>6</sup> suggested a formula (Tr. Iodine 4.0 Spts. Camphorae 28.0) which was said to be superior and in this estimate J. C. White and Sutton<sup>7</sup> agreed. My own experience with it has not been satisfactory.

Ruggle's second formula (phenol 0.65, Ung. Picis Liquida 6.0, Zinc Oxide 10.0, Ung. Aq. Rosae 20.0) is very useful in exudative examples of the macerated type where the conditions prevent the use of irritating drugs.

Several authors have spoken of the benefit derived from mechanical removal of the epidermis by means of a curette. Recently Sabouraud<sup>8</sup> has formulated a very definite plan of treatment based upon mechanical debridement. Sabouraud scrapes away all the sodden epidermis and then paints the denuded parts with 20 per cent Tr. Iodine in alcohol. This procedure is repeated every day for seven or eight days, and then the iodine solution applied for several



method is the most valuable yet offered. weeks. I believe that Sabourand's I have varied from his directions to the extent of curetting the disease area every other day and by using Iocamphen instead of 20 per cent iodine in alcohol. Iocamphen is a proprietary remedy suggested for this disease by Fordyce<sup>9</sup>. On days that he does not appear for treatment, the patient applies Whitfield's ointment morning and night, first removing any accumulated debris with a gritty soap. After the first two weeks treatment, curettage need only be done twice a week. In approximately forty cases in which this treatment has been carried out, the result has been uniformly favorable. The large majority have required but one month's treatment, a few have needed six weeks to two months before being ready for discharge.

#### *Macular, Hyperkeratotic and Lichenoid Varieties.*

These varieties will be considered together, because their treatment, except in minor ways, is identical.

In the usual type of the macular variety, the lesion extends backward from the digits onto the dorsum of the foot, and hands, and occasionally presents a red, exuding surface.

In this type curative therapy must be delayed until the usual soothing applications have converted the condition into an erythematous-squamous lesion. The hyperkeratotic patches usually occur on the ball of the foot as yellowish, hard, oval, elevated plaques or on the sides of the feet as linear callosities. Lichenoid patches present oftenest on the surfaces below the ankle; occasionally on the back of the hands. The lesions are oval or round, brownish or purplish in color, and show the shagrinations characteristic of lichenification. The fungus is particularly difficult to find in the hyperkeratotic and lichenoid types and they are probably due to secondary changes from irritation and inflammation.

These varieties, with the exception of the exudative form of the macular type noted above, allow immediate use of strong keratolytics. It is my custom to treat these types with Whitfield's ointment in full strength, some-

times increased to 10 and 20 per cent of salicylic and benzoic acids, respectively. Furthermore, roentgen-ray is an extremely valuable agent in these types; particularly of the lichenoid and hyperkeratotic forms. By the use of these agents, it is unusual to find a case that does not involute completely in from six weeks to two months.

#### *Tinea of the Nails.*

Approximately ten per cent of my cases have shown infection of the nails; the diagnosis being reached almost solely by clinical observation. In only one patient, have I seen tinea unguium without evidence of the disease elsewhere. This patient, however, gave a history



Fig. 4. Ringworm of the Nails.

of the occasional occurrence of vesicles on the toes. It is important to cure the disease in the nails because they probably are a prolific source of reinfection of the skin. It is not an uncommon observation to see the disease limited to parts adjacent to an infected nail, suggesting that the disease has invaded the integument through continuity of surface.

The treatment of ringworm of the nail is founded upon the same principles as for tinea of the skin; namely, exfoliation and parasitocidal applications. In some cases the nails are so badly diseased that avulsion is indicated, but as a general rule removal of the nail is unnecessary. The procedure most commonly advised is scraping of the nail until it becomes as thin as is bearable and the application of Whitfield's ointment or of a saturated solution of sodium thiosulfate followed by 3 per cent acetic acid. Hodges<sup>10</sup> obtained a cure in his own case by scraping the nail and Whitfield's.



Fig. 5. Lichenoid type. Pustules are due to secondary infection from scratching.

Roentgen-ray is also of value. The best dose is one-quarter skin units weekly. In treating this condition I have followed the scheme outline above, and have had uniformly successful results in those cases in which the disease affected the portion of the nail distal to the lunula. When the entire nail or the matrix and proximal portion alone was infected treatment has not been as successful. In any event, cure can hardly be obtained in less than six months, and relapses are not uncommon. Provided the matrix is not involved, I believe that patients can be assured of a cure of tinea unguium.

#### *Prophylaxis*

No extensive studies have been reported upon the modes of infection of this disease. There can be no question that it is conveyed by means of socks, through the agency of laundries, and particularly in places where numbers of people go barefooted, as in gymnasiums and country clubs. Close personal contact such as obtains with husband and wife is another means of the spread of the condition.

A knowledge of these sources of infection points the way to the prophylaxis of the disease as well as the prevention of reinfection. Patients should either have their socks boiled, or if that would ruin them as it will silk socks, should soak the socks in gasoline for at least one hour before they are washed. Old bed-room slippers should be discarded and new ones used as soon as the disease appears to be cured. Old gloves should be cast aside. As for shoes, it

has been my custom to have a powder consisting of 25 per cent of boric and salicylic acid dusted into them each day for a week while they are in use. If the patient is a frequenter of bathing beaches, gymnasiums, or similar places, he should be advised to purchase cotton slippers and wear them at these places instead of going barefooted.

#### *Conclusions.*

In tinea of the hands and feet successful treatment rests upon general principles, of which the most important are continuous exfoliation and the use of parasitocidal applications. To prevent recurrences it is necessary to apparently over treat the disease.

While the general principles of treatment apply to each form of the disease, it is necessary to use special methods according to the type present.

Silver nitrate combined with ultra violet light is of value in the vesicular type.

In the macerated form, the best treatment is thorough erosion of the sodden epidermis, followed by an antiparasitocidal application.

The macular, hyperkeratotic, and lichenoid types respond to roengen-ray and Whitfield's ointment.

In tinea unguium paring the nails, Whitfield's ointment, and roentgen-ray have been found satisfactory for the majority of cases. A few cases require avulsion.

Prophylaxis depends upon the recognition of the sources and means of contagion. Public places where people go barefooted are prolific sources of the spread of the disease.

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## DISCUSSION.

Dr. J. N. Roussel (New Orleans),—As far as I can see there has been very little advance in the treatment of ring-worm of the hands and feet. I believe this is due to the fact that the ring-worm fungus is (according to Sabouraud) not killable by any drug of which we have any knowledge today. Like anthrax, the spores are not killable except by fire. There are drugs that seem to put a quietus on it, that put the fungus, as it were, in a state of innocuous desuetude, after which we can by exfoliative measures get rid of it. Go back fifty years, and you will find that they used the same drugs that we now use, outside of the one the Doctor mentioned, and they were just as successful as we are. I think it is notoriously the fact that we are not very successful.

I am glad that I have not as many cases as Doctor Michael's because they would drive me mad.

In the treatment of this condition I prefer to use a saturated solution of Salicylic Acid in Alcohol. It is clean, it does not ruin the patient's shoes (in which they are more interested at times than in getting rid of the ring-worm). In my experience, if the entire foot is painted with this solution twice a day for three or four days, and allowed to peel, repeating the process every fifteen to twenty days, we get better results than by other methods. The X-Ray is of distinct advantage at times, but, not always, by any means.

But what is the use of curing the average case? You cannot convince them that it is necessary to do certain things—that a pair of shoes they have only worn a month or so should be thrown away. They will not do it. If you cure them they put on the infected shoes and get it again. I do not see any sense in trying to cure them, and tell them so.

But the main thing to understand is the idea that you cannot kill the germ. I have never cured a case, they have just gone to someone else. Doctor Michael can cure his, but I do not, I know.

Dr. Jeffrey C. Michael (closing): I believe gasoline is the best thing to use for killing the spores in clothing. We see a good many of these cases among people who go to gymnasiums, swigging pools and beaches, or any place that people go barefooted a great deal, and I advise my patients, so as to prevent reinfections to get cotton slippers and wear them instead of going in their bare feet. As far as shoes are concerned, the best thing to do is to get rid of the shoes.

As far as cure is concerned, I can explain to a certain extent why Doctor Roussel does not cure his patients, and I think the reason is because he is pessimistic. This disease must be treated persistently. The physician cannot expect to get results by prescribing some particular preparation, telling the patient to report in three or four weeks, and if they are apparently well at that time, advising them to await further developments. Under these conditions there is recurrence in a short time. The case must be treated until the point is reached where one is practically certain that the condition is cured. The

spores are hard to kill, but I think if one keeps up the antiparasitic applications that finally the organism is killed off.

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“SOLITARY (NON-PARASITIC)  
CYST OF THE LIVER.”\*

BY H. V. SIMS, M.D.  
NEW ORLEANS.

Lancet Volume 1, 1913. Page 951  
Boyd.

Non Parasitic cysts of the liver are of two classes:

General cystic disease and solitary cysts.

General cystic disease is almost constantly associated with cystic disease of kidneys, and rarely also of the pancreas, lungs, spleen, and brain, and is congenital.

Of the solitary cysts 34 cases operated up to 1912, 24 were females, the average age being 26 years. Resection should be done if possible.

Tice Volume 7 Page 203.

Some cases have been observed to occur in infancy, and it is the opinion of many pathologists that the cases occurring in adult life are really cases that were congenital but have been latent a great part of life. Multilocular cysts in the adult usually appear after 50 years of age. Women and men suffer in the ratio of 3 to 1.

Some have taught that these cysts are inflammatory in origin, and begin as an intrahepatic pericholangitis. Others regard the process as a degenerative one. A certain number of liver cells having disappeared, the area becomes surrounded by a fibrous wall. Some regard the cysts as outgrowths from the bile ducts, or dilated new bile ducts. The theory has also been advanced that some of the hypoblastic cells develop irregularly and from cystic areas. The two most acceptable views are the inflammatory origin and the development from the hypoblastic cells.

Enlargement of the liver may be surmised to be caused by the presence of cysts when a similar cystic condition is discovered in the kidneys.

The cyst or cysts may be small and give rise to no symptoms or they may

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\*Read Before the Orleans Parish Medical Society, on October 22, 1923.

be so large as to fill the entire abdomen. They may be mistaken for hydatid cysts, ovarian cysts, or a dilated gall bladder. The cystic condition of the kidneys which is almost invariably present in general cystic disease can generally be recognized. The patient may present symptoms of uremia, and albumin is sometimes found in the urine.

When the cystic condition becomes manifest early in infancy, or is marked at the time of birth, the prognosis is decidedly unfavorable. When the cysts do not appear until adult life the prognosis is much better and may admit of successful removal. In cases coming on in adult life the cysts may increase to such a size as to produce very troublesome pressure symptoms and threaten life. In some of the congenital cysts, the patient may survive and the cyst become large later in life. In this way most of the adult cases are explained.

In the adult the cysts may tend to merge and form a lesser number but of a larger size than the infant. The portal spaces are fibrous and in them some cystic dilations. The larger biliary ducts appear normal. The cysts are usually the size of a walnut, though some have attained 2 pints, and filled the entire abdomen. On section the cyst wall is found to be composed of fibrous tissue. The contents of the cyst is usually a clear fluid but it may be darkish from hemorrhage, and is sometimes thick and colloid. The fluid contains calcium oxalate, leucin, protein, creatinin., cholesterolin, urea, chlorides and epithelium debris, but not bile. There is a general tendency toward fibrosis throughout the liver. In the portal spaces numerous tubules are found lined with epithelium surrounding the interlobular veins. The cysts arise in the portal spaces in connection with these extensions.

Oxford Medicine. Vol. 3 Page 400.

Extensive hemorrhage into or rupture of a cyst may give rise to severe symptoms. In rare instances the cysts have been pedunculated. Maybe due to biliary retention, though when large the bile may disappear and the fluid may be clear. Like the simple cysts of the common bile duct females provide the vast majority of the cases.

Nelson. Vol. 5, Page 520.

Cystic distension of bile passages may result from obstruction by stone, scar tissue, tumors, or parasites.

Simple cysts, so called, usually single and comparatively rare, have been attributed to local obstruction of bile ducts, perhaps as a result of inflammatory change, perhaps due to congenital malformation. They are usually small and give rise to no symptoms, but occasionally may reach considerable size.

Annals of Surgery. Vol. 73, Page 62

1921. Eisendrath.

In 18 per cent of polycystic kidneys a similar condition is found in the liver. The diagnosis rests between a hydroph of the gall bladder with cholelithiasis, a hydronephrosis, omental cysts, or mesenteric tumors or cysts.

Keen's Surgery. Vol. 1. Page 863.

Says the cyst arises in the free border of the liver, and is frequently mistaken for an ovarian cyst, or a cyst or tumor of the mesentery, or omentum.

International clinics. Vol. 2. 30th Series.

Page 246.

Omental cysts have a portion of the omentum extending over the side of the cyst and drawn out in the form of a distinct pedicle. The cysts are in some cases derived from the lymphatic vessels.

In discussing cysts of the abdominal cavity Dowd states that the term mesenteric is generally used in describing cysts within the mesentery, mesocolon, mesorectum, or omentum, and that there is a distinct advantage in the use of the term, since these regions, as well as the cysts they contain, are anatomically similar. Up to 1920 46 cases of omental cyst formation of all kinds had been reported.

CASE RECORD NO. 371.

Brumfield, Alma—Lewiston, La. Admitted 6-25-23. Discharged 7-26-23. An unmarried negress, age 24, occupation housework, entered Charity Hospital for the relief of "pain in abdomen."

F H—Negative.

P H—Usual diseases of childhood. Malaria. Began menstruating at the age of thirteen, regular twenty-eight day type, seven days duration, until last year when menses lasted but five days and at the present time but three days. There is marked pre-menstrual pain, same lasting after onset of flow. Last



menstrual period 6-25-23. About this time patient noticed mass in abdomen which has been growing steadily since. Pain appeared with onset of mass. No pregnancies.

**P E**—Reveals a well developed, well nourished negress of twenty-four, apparently not acutely ill. **HEAD**: Pupils equal, round, react to light and accommodation. Nose and ears negative. Mouth: teeth in fair condition, fairly kept. **NECK**: Negative. **CHEST**: Bilateral, symmetrical. Resonance and breath sounds normal; no rales heard. Heart not enlarged, regular, rhythmic, no murmurs heard. **ABDOMEN**: Extending from an inch and a half above the umbilicus to symphysis is a smooth, elastic mass about the size of an adult head: it has a fluid feel. It is fixed down below and freely movable above. Area over mass is flat to percussion: tympany in both flanks. **Vaginal Examination**: Mass can be felt.

**EXTREMITIES**: Negative.

**Laboratory Examinations**—**URINE**. Amber with a specific gravity of 1,010. Reaction acid. Negative for albumen and sugar. No indican. A few pus cells and casts. Admitted to ward with a temperature of 99°. Pulse rate 120; respirations 20. Menstruating. No complaint. Given the usual pre-operative care.

**Pre-operative Diagnosis**: Cyst of Right Ovary.

**Operation 7-3-23**. Dr. H. V. Sims, Opr. Associates: Drs. Gladden, W. Bradburn, H. C. Jones and Miss Berdon (Nurse.) Ether Anesthesia. Anesthetist: Mrs. Killingsworth.

On opening the abdomen a large tumor, corresponding in size to about a seven months pregnancy, was seen filling the lower abdomen. The uterus was displaced to the left and jammed up against symphysis pubis. (A pre-operative diagnosis had been made by Drs. E. L. King, Gladden, Parham, Jones and Sims, of Cyst of Right Ovary.)

An incision was made from symphysis pubis to the umbilicus and a tumor larger than an adult's head was found filling the lower abdomen. On close palpation it was found that this tumor did not arise in the pelvis, but apparently sprang from the liver itself, in the region of the right lobe. This fluctuating tumor was of deep purplish-red color, its base was about five inches wide and about one and a half inches thick, apparently of liver substance. Both kidneys were apparently negative and there seemed to be no disturbance in the region of the pancreas or stomach—no apparent signs of metastasis. This pedicle was to some extent clamped, but principally sutured with deep sutures to control hemorrhage. After ligation the pedicle was cut and hemorrhage controlled with some difficulty by means of deep U sutures. The gall-bladder was about five inches long on the under surface of this tumor and was removed with tumor. Abdomen was closed as usual.

The tumor contained about 1,000 to 1,500 c. c. of unclotted blood.

An intravenous infusion of normal saline solution, 1,000 c. c. given on table.

**P. O. Diagnosis**: Probably Hemorrhagic

Cyst of Right Lobe of Liver—Unriagnosed Tumor originating from Liver (?).

**Pathologist's Report**—

**Gross description**: Tumor from Liver. Mass of tissue weighing about three pounds, of a mottled, reddish-blue color. The outer surface is smooth, moist and glistening; doughy consistency. Blood vessels may be seen running on the outer surface. The cut surface is moist, glistening and bloody, very irregular, containing many cystic pockets filled with more or less shiny hemorrhagic material. Cutting into one of the firmer areas shows a moist, glistening surface, somewhat irregular, with a fish-meat appearance. The whole thing is very bloody.

**Final Corrected Microscopic Diagnosis**: Mass is made up of chronic inflammatory tissue, markedly edematous. Microscopic examination fails to reveal presence of liver substance in mass proper.

**Progress Notes**: Developed broncho pneumonia.

7-21-23—Patient doing well. Appetite good.

7-26-23—Allowed to go home and return to the Clinic.

#### DISCUSSION.

A letter from this patient received by me October 21, 1923, states that "she is doing extra well, is able to work, has no pains and feels like a new person."

Dr. Waldemar R. Metz: In 1916, during my tenure of office as House-surgeon of Mt. Sinai Hospital, New York, a woman was admitted with a diagnosis of right sided ovarian cyst and whose clinical history and physical findings were very much in keeping with the case Dr. Sims has cited in his interesting paper. She was examined by the Chief of the Division, his associates and by myself and was demonstrated to the intern staff as a classical example of cystic tumor of the ovary. The patient was assigned to me for operation and I was surprised to find on opening the abdomen a large, reddish-brown mass, about the size of a mush-melon, soft and boggy in consistency and in no manner associated with the pelvic viscera. On following the tumor upward I found it attached to the under surface of the liver, just beyond its free border and to the right of the gall bladder by a long pedicle. I exercised the mass at its pedicular origin by making a wedge shaped incision into the liver substance, suturing the wound with U-sutures of chromic catgut. I mention this case first because it is another type of liver growth that simulated an ovarian cyst and secondly as an illustration that upper abdominal pathology will at times direct its clinical and physical manifestations in parts far removed from the original site of trouble.

Last December a man was admitted to my service at the Marine Hospital here, whose symptoms I interpreted as pointing toward gall bladder disease. For some time previous to admission he had complained of pain in the upper quadrants of the abdomen, associated with disturbances of the gastric physiology and at the time of admission pre-

sented a slight but persistent jaundice. At operation I found a large solitary cyst of the liver with pressure on the stomach and the gall bladder. The cyst was removed without difficulty and the patient made an uninterrupted post operative convalescence. The cyst was opened, its wall scraped and the tissue examined for the hooklets, characteristic of echinococcus infection and none were found.

About a month after this Dr. Maes told me he had a similar case at the Touro Infirmary, so that while solitary cysts of the liver are undoubtedly not common, they are apparently not as infrequent as the literature would have us believe.

Dr. King: This patient had a very tense abdomen entirely filled by this tumor mass. She had never been pregnant. The mass could be felt through the vagina and did not disappear on catheterizing.

We all agreed on the diagnosis and in view of the fact that Dr. Keen has made a similar mistake we did not feel that the error in diagnosis was particularly reprehensive.

## KNOCK KNEE AND BOW LEG\*

II. THEODORE SIMON, M.D.,  
NEW ORLEANS.

Knock Knee and Bow Leg are by far the most common of deformities of the lower extremities and comprise fully 15 per cent of all cases in Orthopedic Clinics. In all tables of statistics Bow Leg is the more frequent of the two (65 per cent) and it is likely that the actual percentage is much greater than appears on hospital records because the condition is thought to be of little consequence, while Knock Knee is considered by the layman and physician alike as a serious deformity and so seeks proper treatment.

Both deformities appear more commonly in the male than in female children, which is perhaps explained by greater weight and greater susceptibility. A large proportion of cases of Knock Knee actually develops or increases to an extent demanding treatment during adolescence, while most cases of Bow Leg in patients over fourteen years of age have existed from early childhood.

At two periods of life do these two deformities most often develop. First, in early childhood, when the upright posture is assumed; second, in adolescence, when rapid growth may lessen the stability of supporting structures and when the strain of laborious work



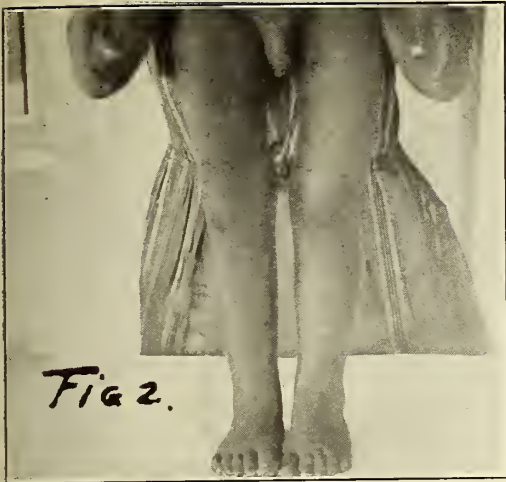
Right Bow-Leg and Left Knock Knee

may be added to increasing body weight. The etiology of these two deformities, excluding those caused by local disease, is the erect posture, when the bones and joints are unequal to the task of sustaining body weight and to the strain of walking; therefore, our greatest consideration is malnutrition of the baby with its resulting changes in bony structure, namely, Rickets. If the deformities are severe, the body presents the usual evidence of general Rickets. However, in some instances, the distortion of the legs is the only sign of its presence.

It is rather difficult to explain why weak legs bend in one way rather than another. Theorizing as best we may, first it may be assumed that a slight deformity is present before the child begins to walk. In young infants it is not uncommon to find a tendency to outwardbowing of the lower extremities from intrauterine posture. This can be much exaggerated by the use of large diapers, also by the sitting attitude of the child. Now, when such a child begins to walk, if of a vigorous and robust type, he will be noticed to separate his feet widely, toe in and sway his body from side to side, all in all having a tendency to produce Bow Legs. On the other hand, let us recall a less robust child taking his first steps. Here due to muscle weakness and inactivity he assumes more an attitude of so-called

\*Read Before the Orleans Parish Medical Society, on October 22, 1923.





Marked Bow-Leg in nine-year-old boy. Note Angulation of Tibia and Rotation of Feet.

Same case after Osteotomy on Right Tibia and Left Femur

rest, his knees are slightly flexed and are pressed together; his feet are somewhat separated and are everted or toed out—these forces are having a tendency to produce a Knock Knee. In considering this latter condition it must be remembered that in the erect posture there is normally an inward inclination of the femur, thereby forming an angle at the knee of about 170 degrees, this angle varying with the breadth of the pelvis and is therefore more in adult male. In other words, in adults there is a normally existing condition of very slight Knock Knee.

The diagnosis of these two deformities is obviously simple. The only symptoms being a pain or sensitiveness over the external or internal lateral ligaments of the knee joint depending on whether there is an external or internal angulation,—the patients tire more easily and are clumsy and have a poor sense of balance in the more aggravated types.

Some record of the deformity of every case seen should be made, either by X-ray Plate or just as efficient by tracing the outline of the lower extremities on a piece of paper. These give permanent records which can later be compared and improvement or digression be noted.

The question, "Will the child outgrow this condition?" inevitably needs an answer. No iron-clad rules or statements can be made but the general conception is: In Knock Knee a slight degree of

deformity which is not progressive will be outgrown if the patient is in vigorous and robust health; if moderate or severe, it may remain stationary but more probably will become worse as time goes on unless treated. In Bow Leg, on the other hand, a slight or even moderate deformity will eventually disappear if active treatment of the constitutional condition is instituted, and providing it is in early childhood. If, however, after the age of six, spontaneous cure is unfavorable—all very severe cases of Bow Leg require active treatment.

The treatment of both Bow Leg and Knock Knee can be considered under three heads:

1. Expectant; 2. Mechanical; 3. Operative.

1. Expectant treatment comprises the proper medical and diatetic management of the predisposing cause of the deformity, if constitutional. Here it may be added, that aside from the routine anti-ricket measures, we find Cod Liver Oil of great benefit. For the past year I have used either the Parke-Davis Emulsion of Cod Liver Oil and Metagen or the Lilly Emulsion, known as Coco Vitamine. Both are a 40 per cent Cod Liver Oil Emulsion with the added vitamine products and especially the latter, with its cocoa taste, is extremely palatable and easily given to children. Improper attitude is corrected, predisposing occupation in the adolescent is discontinued, the patient is encouraged to be off his feet as much as possible. Both night and morning the legs should be



Same as Three after Cuneiform and Linear Osteotomies on both Libra.

massaged and manipulated, being bent gently towards a corrected position.

2. Mechanical Treatment: When our Expectant Treatment shows no marked improvement or shows retrogression, then in mild or moderate cases of these deformities, braces may be used to advantage if the patient is under four years of age. The most efficient brace is the simple straight steel bar extending the whole length of the lower extremity in Bow Leg on the inner side, in Knock Knee along the outer. To this bar the knee is pulled inward in Bow Leg, outward in Knock Knee conditions.

3. Operative Treatment: When Expectant and Mechanical Treatment fail or in extreme cases where it is hardly advisable to submit the patient to their discomforts, operative measures, which consist of mechanical or surgical fracture with correction, should be instituted. In Bow Leg the seat of operation is in most cases the Tibia—either by a mechanical device (osteoclast) or with chisel and mallet a fracture is made at the point of greatest curve and an attempt made to hold the leg in an over corrected position by a plaster cast until firm union has taken place.

In Knock Knee the fracture must be made as a rule in the femur just above the condyles—an open osteotomy with chisel and mallet is preferable, and here again a plaster cast must hold the extremity until firm union.



Same as Three in Sitting Position. Note Knees and Ankles in Apposition.

A point worth remembering is that although firm bony union has occurred there is still some likelihood of recurrence of deformity unless some form of support is used. As a general rule in all severe cases I have fitted a supporting brace which is worn for at least 8 to 12 months after the last operation.

In closing, I wish to cite two cases of interest: Figure 1 shows a Bow Leg of the Right Leg and a Knock Knee of the Left. Figure 2, the same case, after an osteotomy was done on the Right Tibia and the Left Femur showing practically perfect alignment. Figure 3, a nine year old negro boy with a most marked Bow Leg showing almost a ninety degree angulation of the Tibia with Marked rotation inward of the feet. Figure 4, the same case, after a cuneiform osteotomy in the upper third of both Tibia and a lineal osteotomy at the junction of the upper and middle third of both Tibia, showing a practical cure. Figure 5, same case, in the sitting posture, with perfect apposition of knees and ankles.

#### THE UTERO-SACRAL LIGAMENTS AND THEIR RELATION TO DE- SCENSUS OF THE UTERUS.\*

BY JOHN F. DICKS, M.D., F.A.C.S.,  
NEW ORLEANS.

A mass of literature has accumulated dealing with uterine displacements. The round ligaments, so to speak, have occupied the center of the stage, to such an extent that our attention has been drawn from the other support that are

\*Read Before the Louisiana State Medical Society,  
April 24-26, 1923.



of equal importance in maintaining the uterus in its normal position in the pelvis. Experience with students in the Gynecological clinic has taught me that they invariably diagnose retro versions and flexions and can describe in minute detail the various techniques of the round ligament suspension, yet completely overlook the position of the uterus from the stand point of its relation to the vaginal outlet. This fault is not alone confined to the students of medicine but to a large number of practitioners as well. I have often witnessed operations upon the round ligaments for retro displacements with descensus of the uterus, with no attempt on the part of the operator to overcome the downward sag of the entire uterus, the one idea is to correct the retro displacement.

My object in presenting this paper is to give due credit to each group of structures attached to the uterus and canal and to especially emphasize the mid supporting group which to my mind is most often overlooked.

Bonney of London has divided the elements comprising the sustentacular apparatus into three groups.

1—The upper supporting group.

2—The middle supporting group.

3—The lower supporting group.

Bonney says that it is obvious that they all play their part in keeping the uterus in its normal position and that the yielding of any one of them causes increased strain to be thrown on the other. All the structures attached to the body of the uterus may be classified as the upper supporting group, under this head we have the broad, the round, and the ovarian ligaments. The mid supporting group consist of the utero sacrals and the lateral cervico pelvic or Mackenrodt ligament. The lower supporting group consist of the pelvic floor and fascia.

Bovee, I believe was the first to really focus our attention upon the utero sacral ligaments. From 1902 to 1908 he published many articles showing the importance of these structures and described various operative procedures which have been most interesting and instructive to the profession. He shows that as far back as 1850 efforts were made to utilize these ligaments in displacements. In this historical account he says that

the early operation consisted in folding the ligaments with their peritoneal coverings without isolating them. Bovee's own technique consists in dissecting the ligaments free, then doubling them on themselves and suturing them to the cervix below their normal insertion.

Professor Blaisdel of the division of anatomy of Stanford University has made a special study of these structures. He is of the opinion that there are three tissues involved, muscle, fibro elastic tissue, and peritoneal folds.

The utero sacral ligaments were thought by older anatomists to be purely peritoneal folds, but a careful review of the literature and a dissection of these tissues have convinced me that they are definite ligaments and are capable of maintaining considerable pressure and weight. They are doubtless one of the important structures that support the female generative organs.

The utero sacral ligaments arise from the bony pelvic floor on either side of the sacrum, they curve towards the median line and are inserted into the posterior surface of the cervix. It is true that when the abdomen is opened and they are sized with forceps or sponge holder, they merely appear as folds of peritoneal tissue which is endowed with considerable elasticity. In reality these folds are only the edge of a strong fascial sheet which extends in a circle about the pelvic floor.

The utero sacral ligaments have attracted very little attention from the operative stand point. The general impression seems to be that they are difficult of access and doubtful surgical utility. Bovee insists on their value, however, and Goffe has made the statement that they are the most rational structures we can use for restoring the uterus to its normal position.

My attention was first drawn to the importance of these ligaments in descensus of the uterus in 1914 by Dr. S. M. D. Clark, since then I have shortened them many times and I have been much pleased with the results. The technique that we have employed differs in several respects from the one advanced by Bovee. The procedure is very simple, however. The pelvis must first be well packed off. By making upward traction upon the body of the uterus the

peritoneal folds containing the utero sacral ligaments are easily demonstrated. Several interrupted sutures are next introduced from side to side deep into these folds to include the ligament, they are then brought together and the sutures are tied in the mid line. The number of sutures to be introduced depends upon the amount of relaxation of the ligaments. Linen is the suture material of choice but twenty day chromic gut has been used with satisfactory results. By drawing the ligaments together in mid line it shortens them and by so doing gives an upward and backward pull upon the cervix. It can be easily understood how the shortening is accomplished if it is remembered that the ligaments form a V with the apex at the cervix.

I wish to make my ideas as to the value of the utero sacral ligaments perfectly plain. I can not entirely agree with a recent article published in the *Journal of Obstetrics and Gynecology of Australia* advocating the shortening of these structures for complete prolapse of the uterus, but I do feel that they have a definite surgical value in descensus of the uterus associated with displacement. I do not wish to convey the impression that I am under estimating the importance of the round ligaments. I maintain that if the abdomen is open and we are correcting a displacement by the round ligament method and there is an associated descensus of the uterus the utero sacral at the same time should be shortened. The procedure only lengthens the operation by a few minutes and the results in well selected cases are most gratifying.

#### DISCUSSION.

Dr. H. W. Kostmayer (New Orleans): The fact that there are some 85,000 operations on the round ligaments means that someone has been wrong in handling retro-displacement of the uterus, and it has always been my impression that in any operation for suspending the uterus proper attention to the pathology would mean better results. Doctor Dicks' discussion of the utero-sacral ligaments is in line with this thought of mine. For a great many years I have not attempted to correct retro-displacement of the uterus without correcting the over length of the utero-sacral ligaments.

I think in this case the method is not so much to be discussed as the necessity for operation. The condition groups itself in my mind into these phases. There are two

types of retroversion of the uterus—one is congenital and the other acquired. I believe in congenital retroversion of the uterus the anterior vaginal wall is too short and it has therefore held the cervix too far forward, and therefore the round ligaments and the utero-sacral ligaments are shortened. In the acquired retroversion shortening of the round ligament or the utero-sacral is sufficient.

A further group is between the retroversion and retroflexion. In the retroversion the pathology is this. The round ligaments have ceased to function, and utero-sacral ligaments have ceased to function, permitting the uterus to turn forward and the fundus to turn backward. In retroflexion the round ligaments have ceased to function, but the utero-sacral ligaments are still functioning and therefore the uterus is bent, and it would be ridiculous to shorten the round ligament for retroflexion of the uterus. (Illustrates on blackboard).

Dr. E. H. Walet (New Orleans): I would like to refer to one type I had occasion to observe lately, a case of prolapse in an old woman of sixty-six years, a woman weighing about 220 pounds. On examination I found the uterus dragged down under the symphysis pubis and the cervix just about emerging from the vaginal orifice. She had a rectocele starting away up and coming down. The anterior vaginal wall sometimes has a congenital defect, but she had a straight anterior vaginal wall without cystocele. Therefore she had a very marked rectocele high up. I availed myself of the fascial repair of the pelvic outlet. She was the mother of sixteen children, so she had trauma to account for the destruction of rectal fascia. I attempted this for the first time. My idea was to utilize the utero-sacral ligament; therefore I made a longitudinal incision through the vaginal mucosa to the recto-cervical junction and exposed the rectal fascia. Having done that I opened the posterior cul-de sac, and I got to the utero-sacral ligament about here (illustrates on blackboard) I took up the fascia of the rectum about 1 1-2 inches below the junction of the posterior cul de sac. I went up and took a bite of the utero-sacral ligament, much as he has, and then going around to the other side through the rectal fascia and the other utero-sacral ligament and tied that. In doing this you bring the fascia high up and shorten the utero-sacral ligaments. Then continue to suture your rectal fascia together, reset the mucous membrane, sew it over the fascia and do a perineorrhaphy. It was two and a half months ago, and I am glad to say she is relieved. That makes me believe that Dr. Frank of Denver, who does much of this fascial repair based on the anatomical principles, is doing good work.

Dr. G. A. Mayer (New Orleans): I have had the good fortune to follow a good many of those cases that have had this operation performed. The cases that have first and second degree descensus, with the perineum in good tone, can be cured. It is possible to do away with sterility in certain cases by restoring cervix to seminal lake.

The technique that has been followed is the



same as shown in the last two pictures. We have had no hematoma and some of the women have become pregnant and were delivered without any trouble.

### SOME OBSERVATIONS ON THE PHENOLTETRACHLORPH-THALEIN TEST OF LIVER FUNCTION.\*

BY DANIEL N. SILVERMAN, *M.D.*,  
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When Aaron, Beck and Schneider in 1921 simplified the technic of administering tetrachlor and recovering this dye from the duodenum as a means of determining liver function, I started my series of tests. Through the courtesy of Dr. Geo. S. Bel, the medical department of Tulane University granted me sufficient supply of the dye in ampule form, as recommended by Aaron.

Briefly the method is as follows:

The duodenal tube is passed in the fasting stomach and allowed to enter the duodenum in the usual manner. The position of the tube has been verified by the fluoroscope in each and every one of my examinations. With the individual recumbent, he drinks 500 c. c. of water to produce a continuous flow. An intravenous injection of 1 c. c. representing 50 mg., of tetrachlor is made. The duodenal contents are allowed to drip into a porcelain dish containing ten c. c. of 40 per cent sodium hydroxide. This solution is changed every two minutes in order to leave no uncertainty about the dye appearing. The initial

appearance of the dye is indicated by a faint purplish tinge. This color becomes more marked until a maximum color change is seen. Aaron gives the normal time of maximum appearance as 17 1-2 mins. Friedenwald and Gantt state that the average time of excretion in all normal cases in 13 8-10 mins.

With the introduction of the Rosenthal method (Dec. 1922) for the determination of percentage of phenoltetrachlorphthalein retained in the blood, Dr. M. P. Bowden, of the Touro Laboratory, and I began a series of examinations of liver function by this technic. It has also been our endeavor to correlate the results of the duodenal method with the results of blood serum analysis. These findings will be published in a subsequent article. If correct, the time of the dye elimination into the duodenum as a liver functional test will be of material aid to those making examinations of duodenal contents for other factors, such as the pancreatic digestion and the biliary secretions.

The phenoltetrachlorphthalein test is our best means of determining liver function. The appearance time of the dye may be normal in face of a chronic biliary infection. Massive destruction of the liver, as in cirrhosis and carcinoma, causes a delay in excretion of the tetrachlor.

The results obtained in some of my cases are shown in the accompanying chart.

#### THE PHENOLTETRACHLORPH-THALEIN TEST OF LIVER FUNCTION

No. of cases	Diagnosis	Date	Phthalein excretion	
			Initial time	time of maximum intensity
			min.	min.
1.	a. Syphiloma intra-abdominal)	10-27-22	15	18
	b. After anti-leuitic treatment	12-20-22	13	18
2.	Hepatic syphilis	11-1-22	43	43
3.	Chr. Nephritis	1-9-23	10	14
4.	Chr. Appendicitis (operated)	3-17-23	18	20
5.	Chr. Cholecystitis	4-4-23	19	23
6.	Chr. Cholangitis	4-17-23	..	26
7.	Cholelithiasis (operated)	9-15-23	17	20
8.	Chr. Biliary infection (jaundice)	9-21-23	..	31
9.	Tropical Sprue	10-4-23	12	12
10.	Hanot's Cirrhosis	10-5-23	None in 2 1-2 hours	
11.	Pellagra (dermatitis)	9-24-23	None in 1 1-2 hrs.	
12.	Chr. Cholecystitis	10-16-23	18	30

\*Read Before the Orleans Parish Medical Society, on October 22, 1923.  
(1) From the Department of Medicine, School of Medicine, Tulane University of La.

## A PLEA FOR A MORE DEFINITE INTERPRETATION OF ABDOMI- NAL PAIN.\*

By A. L. LEVIN, M.D.,  
New Orleans.

Pain, nature's warning or danger signal, is a very wise provision of the Great Designer of the human body; it is the automatic valve in the human machine calling for repair. Investigation as to the cause of the deranged function of a certain mechanical device is the practical rule in the affairs of every day life. A careful examination usually precedes the decision as to the contemplated repairs and when the trouble is definitely located, the necessary plans for repairs are drawn and the expert mechanic proceeds with the work. In the human machine, the mechanism and functions of which are still at this advanced scientific age in the realm of mystery, when the signal pain is being heard, we proceed with our measures of aid in a different manner. The signal pain, naturally must be stopped first. A hasty examination very often is sufficient to decide on a plan of repairs or reconstruction and a rush job is affected. The result is in many instances disappointment and a painful scar as evidence of mechanical failure to locate the seat of the trouble. The numerous mechanical failures which come daily under our observation in the clinics and private offices should arouse our interest for deeper study and a better understanding of the most common seat of trouble, in the most mysterious closed box of the human machine—the abdomen. This being the object of my paper, I will proceed with the subject in a greatly condensed manner.

Pain in the abdomen is a long and tedious medical chapter to cover in this short space of time. R. W. Leftwich enumerates several hundred causes of pain in the abdomen. Again, abdominal pain is being classified as subjective and objective. As the subjective pains are usually hysterical, we shall not consider them and deal exclusively with objective abdominal pain. It usually spells pathology and may be due to a

lesion of the skin, the subcutaneous tissue, the muscle, the peritoneum or the viscera. As most abdominal pain is local, e. g., that due to renal, biliary or appendiceal colic, gastric and duodenal ulcers, we shall consider them first and later on call your attention to frequent diagnostic errors.

In the discussion of abdominal pain, we must bear in mind the symptoms which form a complete chain of dyspepsia, i. e., epigastric pain, fullness, vomiting, nausea, flatulence, loss of appetite, furred tongue, constipation or periodic looseness of bowels, heartburn and acidity. Renal stone colic will often produce a typical history of dyspepsia as described and attract our attention to the gastro-intestinal tract. But a conscientious doctor who makes a complete urinalysis will easily locate the seat of the trouble, as exemplified by the following case:

A young man, aged 32, farmer, complained for several years of indigestion and pain in the right upper abdominal quadrant, radiating to the right lumbar region. Several attacks required morphia for relief. The pernicious habit of sending dyspeptics to the X-Ray man for a gastro-intestinal picture, before even a specimen of urine is examined, should be condemned. The patient passed through the regular X-Ray routine, but without any definite information. When the next step of procedure, i. e., extraction of teeth was advised, he decided to change mechanics. The history led me to suspect his right kidney. A urinalysis revealed numerous pus cells, numerous red blood cells and casts. An X-Ray of the right kidney demonstrated plainly a very large stone in the right kidney. Nephrectomy cured the dyspepsia, and abdominal pain.

It is often quite difficult to differentiate between gall stones and right renal colic, but a careful analysis of the distinguishing features is often of aid. In biliary colic during an attack, there is severe and agonizing pain in the right hypochondrium; vomiting, sweating or shivering is frequent and even collapse may occur. The pain is likely to pass around into the right side and to the angle of the right scapula, or referred to the tip of the right shoulder. Jaun-

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September 27, 1923.



dice of varying degrees will result if the calculus obstructs the common bile duct partially or completely. Sometimes an enlarged gall bladder can be palpated. The feces should be watched for a stone, passing it through a sieve. One attack predisposes to another, it is more common in women than men, fat subjects more than thin ones, and middle life is the common age. Of great value in the diagnosis are often the X-ray and the recent method of obtaining the bile by means of intraduodenal gall tract drainage (W. F. Monges, p. 367—Non-surgical drainage of the gall bladder, Lyon).

*Renal Colic.*—The pain starts in one loin and radiates downward to the thigh and to the testicle in the male, to the labium majus in the female. The urine contains blood, ureteral and kidney pelvis epithelium, pus in varying degrees, there is frequent micturition and small quantity of urine. Here again X-ray is of great value. The absence of pyrexia and tubercle bacilli in the urine will exclude kidney tuberculosis. In Dietl's crises, we may have the same symptoms and urinary findings, but a large hydronephrotic movable kidney may sometimes help us in clearing up the situation.

*Appendiceal Colic.*—This is the stumbling block upon which physician and surgeon have clashed and met many a Waterloo. Russell remarks on this subject, "Nothing is more valuable and nothing can be more misleading in medicine than personal or individual experience." This is specially applicable to the question of handling abdominal pain emanating from the appendiceal region and its radiating territories. One man calls in the knife the moment he scents appendicitis, another holds lingeringly to the dying faith in a stercoral typhlitis and perityphlitis." It is also of benefit to quote A. M. Willis (Virg. Med. Monthly, 49:573, Jan. 1923), "Statistics in the registration office of the United States show a steadily mounting number of deaths from appendicitis. Among the causes for this is the reduction of the number of rural practitioners, in consequence of which a practice of home medication has developed." A campaign to teach laymen that every abdominal pain is,

possibly, due to appendiceal involvement, and that cathartics are contraindicated, might save many lives. Another factor is the selection of a surgeon for convenience sake and not considering the surgical aptitude of the physician."

For brevity sake, I will add my own mite of experience in this important field of abdominal pain in the form of the following "don't's":

1. Don't order a purgative on first sight.
2. Don't favor the application of heat, it favors increased peristalsis.
3. Don't minimize an ordinary attack of indigestion, it is a revolutionary reaction of bacteria in the abdominal kingdom.
4. Don't fail to recognize a ruptured appendix on your second visit even when the patient looks somewhat improved.
5. Don't fail to carry out in all abdominal cases detailed palpation.
6. Don't fall in line with those who favor a routine sacrifice of the appendix upon the altar of surgery.
7. Don't fail to operate in any case with a history of previous attacks, a marked tenderness on deep palpation, or marked rigidity even in the face of an ordinary degree of leucocytosis.
8. Don't use morphia injudiciously.
9. Don't overlook gastric crises of tabes.
10. Don't forget syphilis of the abdominal viscera.

In regard to X-ray diagnosis of appendicular involvement, I wish to make the following remarks:

When the evidences present a picture of a classical type of appendicitis, it is not necessary to have an X-ray confirmation; operate as soon as indicated. In the indefinite case of indigestion, the X-ray is of value. Here I wish to emphasize from personal observation the following points: A 24-hour radiographic plate demonstrating a filled appendix is not a conclusive evidence. It simply means that the appendix is patulous. If after purgation to get rid of the barium, the appendix remains filled on a 48-hour or later plate, the evidences are more conclusive. **A**

definite cecal stasis with ileo-cecal kinking and distortion, even without visualization of the appendix, is also very important evidence. Here again, I wish to advise you that some of my cases with positive X-ray records of chronic appendicitis are free from any abdominal pain and indigestion for nearly two years without resorting to immediate appendectomy. The histories of some were very suspicious of a luetic taint and mixed treatment was resorted to. I also firmly believe that quite often in cases of innocent patulous appendices, the barium entering the lumen of the appendix remains there as a foreign body because the relaxed appendiceal structures have no power to expel the heavy metallic substance, thereby giving rise to appendicular trouble. I found barium in removed appendices months after an X-ray of the gastrointestinal tract was made. Remember also that the lumen of the appendix is an excellent incubator for intestinal parasites, such as amoeba, the flagellates and pin worms. We must then bear in mind intestinal parasites as a cause of abdominal pain.

Angina abdominalis in gouty and arterio-sclerotic subjects can be recognized by the increased tension and the condition of the arterial wall. Abdominal pain in an anemic, poorly nourished and neurotic type individual, recurring regularly without any definite causes, and the pain is aching, tearing or darting in character, is most likely of a neuralgic origin. Fortunately it is rare.

An attack of gastric or intestinal crises of tabes is often mistaken for acute indigestion and a scapegoat is sought in the appendix, gall bladder or gastric ulcer. The character of the pain, lightning like, absence of knee jerks, ataxy or Argyle Robertson pupils will determine the diagnosis. Blood and cerebro-spinal fluid examination should be made.

The existence of Pott's disease in children giving rise to abdominal pain can be determined by the presence of spinal tenderness and rigidity and X-ray of vertebrae.

Plumbism as a factor can be recognized by the history and definite symptoms.

The diagnosis of pancreatic pain is not so easy. It is a severe deeply seated epigastric pain radiating to back and loins. Other signs of pancreatic disease, such as wasting, pigmentation of skin, and character of stool being bulky, offensive, with an excess of unaltered fat, may lead one to suspect the pancreas as the seat of the trouble. The determination of pancreatic enzymes in the duodenal contents by the recent methods is of great value, but the general practitioner without the aid of a well-equipped laboratory should adhere for the present to the points above mentioned.

Acute perforation of gastric, duodenal or intestinal ulcers present a characteristic acute, agonizing pain, board-like abdominal rigidity, not relieved by morphia, flexion of thighs, symptoms of shock, history of previous digestive disturbances and sometimes the presence of blood in gastric contents. It must be diagnosed early and closure of perforation effected, within 10 hours of the occurrence. Otherwise the prognosis is very grave.

*Abdominal pain caused by gastric and duodenal ulcer.*—Serious thought and consideration should be given to this type of pain. Many errors have been made and discouraging postoperative results are quite common. The cause of delayed pain in various types of ulcer is invariably pylorospasm. Other factors may cause it and it is not so easy to distinguish. Close clinical observation will establish the diagnosis in a large number of cases. The periodicity of the attacks, with remissions, the relationship of pain to food, acid curve of gastric contents, the presence of blood in gastric contents, also in the feces, a blood stain on the silk thread, localized pain, frequent vomiting, hematemesis and roentgenographic examinations are all important diagnostic aid. The pain and the behavior of the gastric secretions vary according to the location of the ulcer.

A differentiation between duodenal ulcer and gall bladder disease with or without stones is quite a difficult task. It might be of value to bear in mind a few useful points. In gall bladder disease with stones, the pain varies greatly in intensity and duration and may be



accompanied by fever and followed by temporary icterus; it is usually accompanied by nausea which is not relieved by vomiting; on palpation, the pain is usually over the gall bladder region.

Bear in mind that the roentgenographic diagnosis of duodenal ulcer is only presumptive and not authoritative. I remember one instance in the operating room where out of 5 cases operated on for duodenal ulcer, 4 proved to be gall bladder cases.

While discussing this phase of abdominal pain, I wish to relate briefly the histories of two cases which came under my observation, one over three years ago and the other about a month ago.

Case 1. A gentleman above middle age began to complain of intense periodic abdominal pain, accompanied by the usual chain of dyspeptic symptoms. The pain at times would be intense and lasting for hours. He lost considerably in weight. Neither physical examination nor laboratory findings had definite illuminating points to establish a diagnosis. The attending physician could no longer hold back the surgeons knife, so an exploratory was performed. A mass, involving the duodeno-biliary-pancreatic region was found and a gastro-enterostomy was performed. The mass was considered to be a duodenal ulcer of long standing, assuming a malignant character. The operative procedure brought several months relief, followed by agonizing pain. After a second long tedious struggle, the abdomen was reopened and an ulcer was found at the site of the gastro-enterostomy. A jejunostomy was made with relief again for only several months and a third period of agonizing pain. This time I was granted the opportunity of studying the case with the surgeon who was at a loss as to what surgical move to make. The roentgenographic studies made several times demonstrated that the surgical routes were working well. After much deliberation and speculation, the surgeon hesitated to interfere a third time and referred the patient to me for "medical play", as he termed it. I resorted to the time-worn remedy, mercury and iodide, in spite of a negative blood and spinal fluid. It is a delightful end of the story,

the patient is enjoying life once more for nearly a year.

Case 2. A gentleman also above middle age developed upper abdominal pain only two months ago. There was a vague history of a mild form of indigestion off and on for about five months. He was referred to me by his family physician to determine the cause of the upper abdominal pain. It would come mostly in the evening or during the night. Aspirin was sufficient to control the pain, an occasional vomiting spell would precede the pain. On physical examination, I though I could palpate a small mass at the right epigastric angle. The gastric analysis on two occasions revealed the presence of dark blood. An X-ray demonstrated plainly a definite duodenal irregularity and deformity. On several occasions, the vomitus contained specks of blood; the fluid of a gastric lavage had a slight bloody discoloration. Occult blood was positive in gastric contents but negative in stool. A strong suspicion of duodenal ulcer, probably malignancy was entertained by me as well as the surgeon. Medical trial for 10 days along the lines of duodenal ulcer failed to give any results. Laparotomy was decided upon and was performed by two of the leading surgeons. To my chagrin, the surgeons could not find the source of the pain as there was no evidence of ulcer or cancer. Hemorrhoidectomy was done. 'Cancer turned out to be hemorrhoids' was the remark made to me by the patient's closest friend, "now we can feed him on anything we want", was the next sentence. Four days after the operation, he was sent home. Five days later, a sudden hematemesis ended his life before the surgeon could reach him. What was the cause of his abdominal pain, and where was the source of the bleeding? These questions are still unanswered. Neither the medical nor the surgical mechanics have been able to solve the problem definitely. This and similar accidents are often a source of worry to many of us, mechanics of the human machine. Can the keys to the most mysterious closed box of the human machine be found? Hence my plea for a more definite interpretation of abdominal pain.

## SYSTEMIC DISEASES WITH TEETH AS THE PRIMARY CAUSE.\*

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One of the most important advances which has been made during the past decade in the science of medicine, and when I say medicine I mean it in its broadest sense which must include all branches of the healing art, has been the development of our knowledge concerning the role which disease in one part of the body plays in the etiology of disease in other parts of the body. The recent advances in dentistry have brought this field of work into very close relationship with that of medicine. Today it is necessary for the physician to take into account the condition of the teeth in formulating his diagnosis of a large variety of medical cases. It is equally necessary that a dentist make a careful survey and inquiry into the general condition of the patient before deciding upon dental procedure, for some of the systemic disturbances indicate need of thorough and radical dentistry, while under conditions of good resistance of the patient a more conservative measure may be preferable. The subject of focal infection is a big subject and cannot be covered in one evening. There is no question but what the importance of good teeth and their preservation has been pressed home to the public at large too effectively during the last two decades by the dental profession so that now many of the patients who have had this extensive dental work done in the past are now suffering from systemic lesions. There is no question but what the dental profession has allowed the pendulum to swing too far in the conservation of tooth structure, and today there is danger of having the pendulum swing too far back in the eradication of teeth for the purpose of relieving some systemic conditions. It marks a great step forward in health preservation that numerous scientific researches which have been brought for-

ward during the last decade have served to prove unequivocally what some dentists have long suspected and what some physicians have believed;—namely, that there is a most important relationship between certain diseased conditions about the mouth, and systemic diseases. Yet, we must not forget in formulating our diagnosis that the mouth is only one place where we may look for the origin of these low grade infections. We find the origin of these low grade infections of the body in:

1. The Pelvis, which includes the Urethra in the male and the Tubes and Ovaries in the female.
2. The Appendix.
3. The Gall-Bladder.
4. The Head and Neck, which includes the Tonsils, the Sinuses, the Teeth and Gums.

All of these places in the body must be taken into consideration in running down a low grade infection. There is no question but what these low grade infections are a greater menace today to humanity than all of the diseases of bacterial origin combined, excepting possibly tuberculosis. Within the last quarter of a century we have seen two great changes come over the world. First, we have seen the average length of life per individual greatly increased. Secondly, if we look at the lists carefully we find that the causes of death have increased in some of the columns and decreased in others. There is for example an agreeable falling off in deaths due to typhoid, cholera and small pox, and increase on the other hand in the number of heart and kidney deaths, and those due to arteriosclerosis and anemia, and to certain other things too frequently regarded as a necessary accompaniment of old age. Quoting from Prof. Martin H. Fisher of the University of Cincinnati, he says; "Old age, in my opinion, is not so much the cause of many of the pathological changes attributed to it, but these changes are the cause of old age." He says further; "There is a physiological death, but I question very much from the people and patients that I have seen whether a physiological death ever occurs much below 90 or 100 years." The question now comes up, if we no longer die of the old causes, and it is conceded that

\*Read Before the Orleans Parish Medical Society, on October 22, 1923.



we do not, then what is it that carries us away in our forties, fifties and sixties? Barring gross accidents and such diseases as cancer we now die largely of the direct or indirect consequences of low grade infections, the nature and prevention of which is only now becoming clear. We do not die of acute scarlet fever as we used to; we do not die of acute typhoid, of acute pneumonia as much as we used to, and most of us do not yet die physiologically, that is, of old age. In many cities where formerly there were hundreds of typhoid cases, today there are hardly enough to demonstrate the disease to medical students, but many of those who have been spared typhoid, die by newer causes. These newer causes of death are subtler forms of infection and subtler types of disease. They are largely systemic infections, low grade in their origin and spring from local causes, and are so very small that they are largely overlooked. Dr. Charles H. Mayo, in a paper some time ago, made this statement: "As we see things today, it means there will be far less surgery and less sickness when the full benefit of the knowledge of low grade infections becomes known throughout the world." Three fourths of the Mayo Clinic is abdominal surgery, nearly all of which can be traced to mouth infections. All this is being materialized by evolution. It will be indeed Utopian when the medical profession, the dental profession and the laity are all working together to stamp out all of the preventable diseases which are a menace to humanity. The time is coming when future generations will no longer die of low grade infections as we are today because the source and prevention of these diseases will be known and the effects of them will be realized. Periods of progress in medicine and dentistry have occurred only as scientific and general knowledge have advanced. Yet, wonderful strides have been made in all lines of medicine during the past century by the public's appreciation of disease and its prevention; and this has been brought about more by the protection of the people by public health laws and the saving of children than through the knowledge of the use of drugs. It is a hundred years since we began to preserve meats

and vegetables in the process of canning while hot and the exclusion of air by the means of sealed covers, but it was not until Pasture's time that we understood the scientific reason for this in the destruction of bacteria by heat and the prevention of the entrance of living germs by the process of sealing. It has been definitely shown first by Hunter of London, later by Rosenow, Billings and Hartzell, and many other American physicians and dentists that chronic diseases, acute diseases and special local diseases, such as arthritis, neuritis, iritis, nephritis, sciatica, acute paralysis and heart lesions come from mouth infections in many instances. Also that appendicitis, disease of the gall-bladder and ulcers of the stomach are caused by a mass of bacteria in the capillary circulation at the base of the mucous cells in these organs, and is caused in the same manner from local infection originating from somewhere. While as we have stated there are several sources in the body for the entrance of bacteria and their culture in a local focus, it is conceded that the mouth is the most common. In the mouth we have several sources for the entrance of bacteria. The tonsils commonly harbor the disease germs. We find them frequently in the disease known as pyorrhea, and we find them in abscesses about the roots of the teeth. It has been believed for a long time that acute infections may disseminate toxins which produce systemic manifestations. It was also recognized a long time ago that areas of local infections in one part of the body may set up secondary foci in other parts, as in diffuse nephritis which often follows acute attacks of tonsillitis. It has also been observed many times that septic emboli from wounds or as a result of surgical operations may be carried from the blood stream from the wound to distant parts and set up secondary infections. The knowledge of these facts is not new. If acute infections are able to produce disabling metastases why may not chronic infections cause the same? In fact they do. There is an abundance of clinical evidence in practically every hospital in the country showing this to be a fact. The prompt subsidence of secondary lesions such as iritis and neu-

iritis after the eradication of a primary focus, such as a chronic abscessed tooth, or the eradication of a pyorrhea pocket is striking evidence of the relationship of mouth infections to secondary manifestations. Very few adults are without some form of infection in some part of the jaws. These lesions may be and sometimes are so small as to give the patient no physical discomfort whatever, and in a large majority of instances the knowledge of the same to the patient is not present. That serious manifestations are not more common as a result of this foci is probably due to two factors; first, the normal resistance of the individual; second, to the fact that the bacteria of chronic processes are usually of relatively low virulence. Rosenow has shown that these pathogenic organisms may not always remain of low virulence. He believes they have the property of mutations and the theory of mutations in animal life is that the variability in the germ plasm is such that it may at times give rise to morbid and permanent variations and these if advantageous to the animal are preserved by natural selection. So according to Rosenow these pathogenic organisms may be of low virulence today when the individual resistance is sufficient to take care of them and later if the patient's resistance becomes lowered the future generations of the same low virulent pathogenic organism may take on a different characteristic and with suitable environment and nutrition become exceedingly virulent. By getting into the blood or lymph streams, these organisms are carried to different parts of the body, and there set up secondary manifestations of diseases. There is an abundance of clinical evidence that such low grade infections may originate in the mouth. Lang of London reports 175 cases of iritis, 71 of which were due to mouth infections. Billings of Chicago reports 498 cases of chronic arthritis, 89 per cent of which show definite X-Ray evidence of alveolar abscesses. Billings also showed a second group of 70 patients of myositis, neuritis, goitre, asthma and nephritis, 74 per cent of which had alveolar abscesses. Of course in many cases multiple infection may be present in various parts of the body. To produce a cure, all contributing

causes must be removed. As we see it then, the patient's resistance must be the determining factor as to our advice to the patient. The resistance to infection may be lowered by a large variety of causes, such as drug habits, tuberculosis, anemia and other blood diseases, diseases of the ductless glands, lead poisoning, therapeutic use of mercury and potassium iodide, pregnancy, old age, over-work, lack of proper nourishment, faulty methods of living, etc. In these patients, oral and other forms of sepsis are a greater menace to health than in the case of normal individuals. A dentist sees two classes of individuals; healthy individuals and sick people. The patients who consult a physician are usually ill. For this reason the advice to an average patient given by a physician is usually more radical. The future dental treatments must be based more upon the results obtained by a more thorough examination of the patient. If the patient's resistance has been lowered through any cause, radical dentistry should be practiced. We must not overlook the fact that certain types of patients may tolerate successfully a certain class of dental work, whereby it would be a failure in another patient of less resistance. We should study the resistance of our patients. The physician should take into consideration the resistance of the patients before determining upon the extraction of teeth. We are not yet ready to say that devitalized teeth are a menace to mankind, neither are we ready to say that all patients may tolerate devitalized teeth. It is unfortunate that both the physician and dentist of today are depending too much upon X-Ray findings in making their diagnosis. The radiogram is not a picture of the pathology but a shadow of the conditions that are present. Many conditions may be read into a radiogram by the inexperienced. We must only use the radiogram in conjunction with the case history, physical diagnosis, etc. We must not overlook the fact that the radiogram is only one link in the whole chain of evidence from which we may formulate a judicious diagnosis. Knowing what we do of the far reaching effects of low grade infection, it is our



duty when a patient is suffering from systemic disease, to completely eradicate that infection wherever we may find it. Too often teeth are condemned by the physician when the origin of the infection may be in some other part of the body, due to incomplete examination.

In closing, I want to ask you gentlemen a favor. When you refer patients to the dentists don't send them there with instructions to have this or that tooth pulled. Frequently patients come to my office and say Dr. X sent me here to have this tooth pulled, just the same if I were to send them to you with instructions to remove appendix or leg.

#### DISCUSSION.

Dr. Lurie: I rise to add my simple words of commendation for Dr. Kelleher's paper and to coincide with him in much that he has said. In my own practice I have noted what would seem to be miraculous a cure of some chronic cases. In others there has been failure, much as the essayist has shown. Perhaps the failure has been in the lack of the proper consideration of the metastatic focus or the degree of destruction which has taken place and was then considered the diseased condition or site for treatment. In this connection I would like to ask Dr. Kelleher his opinion of such teeth as are often pictured with enlargement of the roots, as excementosis, with out alveolar destruction or disturbance of the lamina dura or infection. These cases are most often noted with cases of advanced arthritis of the deformans type. There has been nothing said of root canal surgery and the method of its practice nor what can be considered good root canal filling. What is the status of the devitalized tooth? Many questions such as these were sent out in questionnaire form by Dr. Byron Dowling of New York and in summing up from his hundred replies there was no agreement by the dental profession on any of the points. It would be interesting to learn what the local opinion is on these subjects, if Dr. Kelleher can enlighten us.

Dr. R. Lyons: I would like to compliment the essayist on a most interesting paper. The subject of focal infections, especially as regards the teeth, has been extensively investigated by the medical as well as dental professions during the past five or more years, and while much has been learned, the subject is far from exhausted.

It is a good sign to note that dentists and doctors are co-operating more and more for the purpose of detecting or eliminating the teeth as a source of infection. The wholesale extraction of teeth is no longer justifiable because a patient has an arthritis. The X-Ray has been one of the greatest aids in restricting this frequently unjustifiable procedure. Dr. Kelleher, tonight, did not enter into a discussion of the cases that are not materially benefited by proper dentistry even though no other foci of infection are demon-

strable. It should be borne in mind by both physician, and dentists that long standing joint involvements due originally to mouth infections may not clear up after the elimination of the dental infection for the reason that the infecting organism has gained a foothold in one or more joints so that the removal of the original focus is like "closing the barn-door after the horse has escaped." Furthermore, a damaged joint will never be quite normal again. We should, therefore, be very guarded in our prognosis in long standing arthritic cases especially, for even the prominent may be a matter of, not weeks, but months.

Dr. Bass: Some years ago I became interested, with Dr. F. M. Johns, in the subject of pyorrhoea. Although we did not continue our studies our experience at that time led to certain definite impressions.

One of those impressions was that what is generally recognized and diagnosed as pyorrhoea and, in fact, the condition shown by Dr. Kelleher's picture tonight, is the advanced stage or end of a disease which has existed for many years. The early stages of the disease are not ordinarily recognized.

Another one of those impressions was that pyorrhoea is practically a universal disease of adult life and frequently before that time. I venture the opinion that pyorrhoea can be demonstrated in the mouth of every person here tonight.

I should also like to call attention to the fact that in the management of pyorrhoea dentists and others lay emphasis upon operative treatment, etc., to the neglect of the most important thing, viz, mouth hygiene, or properly brushing the teeth and cleansing the teeth at night before retiring.

Dr. Kelleher (closing): I wish to thank you gentlemen for the interest shown in my paper.

In reply to Dr. Jamison, as I have said before, there is no question that in the past too many teeth have been sacrificed in the search for a foci of infection when a proper diagnosis would have prevented this needless loss of teeth. However, it must be borne in mind that the teeth are only one factor to consider in our diagnosis, and if not the direct cause of disease may be a contributing cause and should be eradicated, which procedure would not show results unless the other contributing causes were also corrected.

Answering Dr. Johns' statement that he has never found infection on a tooth that was filled to the apical end, I wish to quote one recent case at Charity Hospital: A young nurse suffering from acute arthritis had two lower molars devitalized. Radiogram showed slight apical infection, also roots filled to apex; teeth were extracted under local anesthetic and sent to P. D. and were found to be streptococci.

Relative to the technique of extracting teeth, treatment of pyorrhoea pockets and interpretation of dental radiograms discussed by Dr. Lurie, your chairman of the Scientific Program Committee has informed me that he plans to have several of my dental colleagues come before you, and I hope they will touch upon these subjects, which time forbids tonight.

# New Orleans Medical and Surgical Journal

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## WANTED: MORE CAREFUL MEDICAL WRITING.

It is certainly true that we, of the South, do not contribute our full share to medical literature; we are not as prolific, in this respect, as our Northern brethren. However, with our improved state medical organizations and, especially, the wonderful growth of the Southern Medical Association, we are doing much better than formerly and will soon "come into our own."

When we do write, we should try to word our papers in attractive style and be especially careful of our rhetoric and our grammar. There are numerous errors which we see quite often (too often) and we must confess that they are more commonly seen in the papers of our Southern confreres—which is doubtless due, to a large extent, to the fact mentioned above, i. e., that we are not as experienced writers as we should be. We refer, especially, to such as "operated" for "operated upon," "tubercular" for "tuberculous," "temperature" for "fever," etc. We feel satisfied that, in time, our diction will be as good as that in any other locality.

The object of this brief editorial is to call attention, not only to our lack of writings, comparatively speaking, but also to plead for clearness in expression and care as to literary style.

### STEINMETZ.

"I do not wish to work for money. Let me draw it as I wish and if I draw

too much, tell me. Do not fix an amount. If I think of money I will not work as well. Build me a house, if you wish, and a laboratory. That is all." Such was the agreement between Charles Proteus Steinmetz, the electrical wizzard, and the General Electric Company, of Schenectady.

This man, speaking a foreign tongue, handicapped with a congenital deformity of the spine, came to America, and within the span of a bare quarter-century accomplished unbelieving feats with electricity. In his laboratory in Schenectady he had but recently generated "lightning" of a voltage that rivaled Vulcan himself.

Steinmetz died, October 26, 1923, of myocarditis, leaving virtually no estate. His books, papers, an old electric automobile, and a fifteen hundred dollar insurance policy, the same as is issued to all veteran employees of the General Electric Company, apparently comprised his entire worldly wealth. But though he is dead, his spirit will go on, for science will be indebted to Steinmetz for many years to come. His aims and ambitions, as expressed in his own words, proclaimed him as a true scientist. Medicine can well add her tribute, along with all other branches of science, to a man who unquestionably could have made millions, but who never drew a salary.



**HOSPITAL EXPANSION.**

The increasing number of private hospitals is evidence of the desire of many people to be cared for in these institutions. Any person who has been treated in a well regulated, properly operated hospital realizes the difference in institutional care and care at home. Supply and demand go together, therefore in many States as well as our own, a number of new hospitals are being organized and operated.

In New Orleans the Hotel Dieu has now under construction a new hospital unit which will be the last word in modern hospital construction. At the Touro Infirmary there is also in the course of construction a very large addition, which, when completed, will materially relieve the strain of present overcrowding at that institution. We expect to hear, at an early date, of the breaking of ground for the Dibert Memorial Tuberculosis Hospital which is so sorely needed in this community. With the completion of these three new hospital units we will have advanced materially towards bringing hospital organization back to pre-war status, at least, as regards accommodations sufficient for the needs of our city and surrounding territory.

With our medical confreres of Baton Rouge, we rejoice in the opening of their beautiful new Sanitarium, The Lady of the Lake. The name of the structure is as beautiful as the building itself. There is no question of the need of such an institution in our Capitol and, with the organization of its Staff, we can expect scientific contributions of no mean merit in the immediate future.

**THE PUBLIC HEALTH NURSE.**

The responsibilities of a public health nurse are very great and her qualifications and training should be commensurate with the responsible duties imposed upon her.

The following resolution pertaining to the necessary prerequisites for examination for certificate for public health nurses was recently adopted by the California State Board of Health:

Resolved, that applicants for examination for certificate as public health nurse shall be:

1—Registered nurses under the laws of California, and

2—Shall have completed a public health nursing course of from four to eight months in a school approved by the California State Board of Health, or

3—Shall have completed at least a semester (four months) of post-graduate work in social service, including theory and practical work, or

4—Shall present evidence of having engaged in general public health nursing for at least two years in connection with a public health organization approved by the California State Board of Health.

5—All applications for examination as public health nurse shall be filed in the office of the California State Board of Health and shall be passed on by a committee of the board.

6—Upon examination, credit of 5 per cent will be given to applicants who have completed a four months' course in public health nursing, and 10 per cent to applicants who have completed an eight months' course in public health nursing.

**THE STATE SOCIETY.**

As this issue is about to go to press, the fiscal year of the Louisiana State Medical Society for 1923 passes into history. The State Medical Society has reasons to be proud of the record just made, as during the fiscal year 1174 active members were enrolled from the doctors of the State, the highest they have reached in the history of organized medicine. The numerical strength even surmounts the record made at the recent meeting of the American Medical Association in New Orleans, by thirty members. At that time we were materially assisted by the influence of a special representative from the American Medical Association, who toured our State in the soliciting of members, and also by the added interest which was naturally attracted by the meeting of the American Medical Association in Louisiana. So in the past year, this effort making can be only attributed to the increased activities of the various medical organizations and district societies of the State Medical Society. They have tried in

every way to make the State Society more attractive and of more personal benefit to each individual member of the Society. The gospel has even been carried into the remote sections of the State, resulting in new organizations where previously little or no medical organization occurred. The last two annual meetings of the State Society were attended by a larger number of members than ever previously recorded. This is simply a reflection of an increase of medical activities and medical interest.

The State Medical Society is going to be entertained at its next annual meeting in April, 1924, in Opelousas, by the hospitable physicians of St. Landry parish. These physicians with their usual display of good judgment, and far sight into the future, have seen in their wisdom to select Dr. Fred J. Mayer as the chairman of their local arrangement committee. Dr. Mayer is one of our ex-presidents, and it will be useless to state that they are acutely active and are initiating their plans for making the meeting the best and most satisfactory in the history of the State Society. To the many of us who are familiar with the natural attractions in Opelousas and close vicinities, it is useless to have pointed out the unusual stroke of nature in laying out this beauty spot of Southwest Louisiana. She blessed them with scenery unequalled, and endowed the same to men from which have sprung some of our most renowned physicians, who enjoy

reputations of being hospitable in every true sense of the word. They are all co-operating jointly to make this meeting a great success. We are assured of ample hotel and other accommodations, which should not distract in the least or tend to influence one to miss such an unusual opportunity. Opelousas realized her opportunities in having the State Society with her, and are making plans to excel any other city which have had the honor of entertaining the State Society. "Past records will not stand, we must have a new one," seems to be their slogan.

Other than making the necessary plans incident to the social entertaining of its guests, you may feel confident that the scientific program, from all indications, will be up to the standard. From information now in our hands, we can feel assured of the attendance of two special representatives from the American Medical Association. The object desired to be accomplished by their attendance, is to assist the State Society from a viewpoint of organized medicine, and aid in every way possible to stimulate activities along some of the lines which are now foremost before the medical profession. We hope that their presence will add to the stimulation and result in their being able to come in contact with a larger representation of our State Society.

Indications are, therefore, for a most successful meeting. Make your plans early to attend.



# PROCEEDINGS OF HOTEL DIEU STAFF

Dr. Homer Dupuy, President

## *Diathermy in Urology.*

Dr. H. W. E. Walther demonstrated the new Fischer hospital diathermy unit and lauded its value in the treatment of certain urological conditions. Diathermy, the latest and unquestionably the most useful of the high frequency modalities, is employed in two forms—medical and surgical—both being generated in the same way, but applied differently. In medical diathermy we raise the temperature of tissues only within physiological limits; in surgical diathermy we far exceed this limit; destroying tissue. d'Arsonval current is used. Dr. Walther stated that much benefit to his patient had been noted in applying medical diathermy to cases of arthritis, prostatitis, seminal vesiculitis and epididymitis. The pain usually disappears after the first treatment and the swelling and period of confinement to bed are most favorably influenced. Applications require twenty minutes.

In surgical diathermy (electro-coagulation), where high frequency current is applied for the destruction of tissue by heat, without sparking, we have a modality for destroying new growths that is bloodless, clean, producing little shock, and which seals all lymph channels in its wake. For treating tumors of the bladder, cervix, urethra and external genitals, it surpasses scalpel-surgery.

Dr. Walther stated that he first became interested in surgical diathermy after a visit to Dr. Gustav Kolischer at Michael Reese Hospital, Chicago, where Kolischer has done commendable work with diathermy and radium in cancer of the bladder and of the prostate. It is today conceded by all that the only scientific way of handling malignant neoplasms of the bladder or prostate is through the open bladder. Some few selected vesical papilloma, of small size, can be successfully treated by diathermy and radium through the cystoscope. But the majority of bladder growths, extending from trigone into the internal vesical spineter, are best treated

through the cystotomy wound. Kolischer lays stress upon the point that, in treating tumors of the lower urinary tract by means of diathermy, one requires an apparatus that will deliver up to 4000 M. A. current. This can only be obtained in the newer type of machines.

The results obtained with diathermy in the Urological Service of the Hotel Dieu will be reported in detail later in a special article on the subject. Dr. Walther acknowledged indebtedness to his associate, Dr. C. L. Peacock, for his valuable assistance in this work.

*Dr. Dimitry:* Dr. Walther's demonstration carries a message of assistance to those who handle malignant cases, for by his Diathermy demonstration he enlightens us on a procedure that may prove valuable in preventing metastasis i. e., if malignancy is accepted as a local and not a general condition. Surgery cares for the offending condition, but by removal it adds the possible danger of dissemination. The Deep X-ray is stated to be beneficial if administered a short while before operation for it is said to constrict surrounding lymphatics and vessels.

I have often desired, in my special line, to add still further precaution by the use of the hot iron, and I had hoped to have used this diathermy procedure, but lacked a working knowledge until this night, when the doctor has so well explained its use.

I would ask further enlightenment of its use when the eye is to be removed for a malignancy. After the use of the diathermy needle, should we wait for a slough before proceeding with the knife and scissors to remove the eye?

*Dr. Walther:* It is best to wait several days to a week for each slough to come away before attempting removal of tumor mass.

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## *Laminectomy for Intraspinal Pathology.*

*Dr. J .T. Nix:* reported a case to stress the value of laminectomy for the most varied conditions involving the spinal cord. He believes the operation

should be done more often than it is, and feels that with proper care and study the operative mortality should be no higher than for other major surgical procedures.

Probably the best work on the subject is that of Elsborg's "Diagnosis and Treatment of Surgical Diseases of the Spinal Cord and its Membranes", published in 1916, from which the following is quoted:

"Opening the spinal canal has a profound effect upon the spinal cord and acts beneficially upon some spinal diseases, whose nature is, as yet, not clearly understood, and whose pathology is unknown." He goes on to state that he has observed these results in patients presenting signs of tumor, but in whom no tumor, nor visible evidence of pathology was found, in patients with symptoms and signs of multiple sclerosis, with indefinite sensory disturbances and in those presenting abnormalities of the spinal vessels. In many of these cases there was not increase of ultra spinal pressure nor other lesion of expanding character.

The case tonight is that of a young man, thirty-seven who gives a history of crushing injury between two cars about three years ago, after which, he was apparently well for two years. Beginning about January 1st, 1923 his legs began to get weak and unsteady, and he had a peculiar burning pain in the calves with cramps at night. The condition has gradually grown worse until just before admittance to the hospital his thighs at times would violently contract on abdomen, when lying down during the day, and all night even while asleep. Occasionally when standing if he should cough or sneeze, his legs would violently jerk up causing him to fall. There were no bladder or rectal symptoms, his Wasserman was negative, his physical examination and history revealed nothing. He was given two injections of Salvarsan without results.

Diagnosis made was Intraspinal irritation from tumor, pressure or spicule of bone. This was verified by Dr. Cazenavette who localized the irritation at level of 3rd lumbar vertebrae. Patient was kept under close observation for two months, when after showing no

improvement operation was decided upon.

Laminectomy started under local anesthesia, but patient finally given gas with some ether. The laminae on right side were much thicker than on the left side and meninges of cord somewhat adherent. There was no evidence of increased pressure nor other pathology, excepting thickened laminae with adherent dura, so the membrane was not incised.

Patient for the past five days showed wonderful improvement, all symptoms disappearing entirely, then, they gradually returned until a large amount of serum was let out from under the skin incision. After this the symptoms rapidly disappeared again. For four days now there has been absolutely no signs of any discomfort, nor return of previous symptoms. We hope and expect to obtain a very good result.

His experience with laminectomy for spinal pathology has been limited to four cases. First: A case similar to the present one though more advanced, the patient being confined entirely to bed, and gives no history of injury. Operated in 1917 she completely recovered and attended all household duties for four years. In the early part of 1922 she developed acute nephritis and died after a brief illness. At the time of her death she was fifty-four years of age.

Second case: Operated in 1920 evidence of spinal tumor at level of 3rd lumbar vertebrae. Dura opened, apparently the vessels were engorged but no tumor was found. Patient left one month later for California and no message has been received since.

Third case: Operated here about three months ago showed a tumor located at level of 9th. thoracic vertebrae. Section of tumor sent to laboratory, and report showed it to be malignant lioma. The tumor was too extensive to be removed, involving the entire circumference of meninges of the cord.

For the localization of the pathology Dr. Nix gave credit to the very able assistance of Dr. Cazenavette and his confrere, Dr. Perret.

In the few cases he has had there has been no operative mortality and the patients have recovered remarkably bet-



ter than he expected, there being very little appreciable shock.

In concluding he wished to emphasize that: All tumors of the spinal cord, cases of apparent ultra spinal pressure, all vertebral fracture with evidence of pressure and countless other conditions should have the benefit of laminectomy. It will prevent many an untimely death and save or restore health of many unfortunate paralytics.

*Dr. Cazenavette:* Through the kindness of Dr. Nix I saw two of the cases he referred to. The first was that of Mme. B., an elderly lady, who at the time of my visit on Sept. 3rd, 1923, complained of weakness and pains in the lower extremities and also of partial loss of control of bladder and rectum. The initial symptom consisted of pain in the back, radiating to the hips and thighs, began some five or six months previously. These pains were very severe and were pronounced at night. During the past two months she had had involuntary and uncontrollable movements in the limbs, frequently accompanied by severe pains. The bladder and rectal involvement were of about two weeks' duration.

The neurological examination revealed almost complete paralysis of both lower extremities, with occasional uncontrollable movements of flexion of thigh on abdomen. The deep reflexes, knee-jerk etc., were greatly exaggerated and Babinski and ankle clonus were present on both sides. Loss of sensation to touch and pain extended up to the umbilicus. No abnormal nervous symptoms were present above the waist line. The above symptoms with a history of gradual loss of control of bladder and rectum proved quite conclusively that we were dealing with a case of tumor at about the ninth segment.

At the time of my second visit, on Sept. 10th her condition was much aggravated. There was then not only complete paralysis of motion and sensation in the lower limbs but also complete loss of rectal and vesical control. All the reflexes were abolished. The line of sensory demarkation was at the umbilicus on the right and a little lower on the left.

The cerebro-spinal fluid and serum examinations were negative for lues.

The operation, on Sept. 13th, revealed a glioma extending from the eighth to the tenth dorsal segment of cord.

The second case was that of Mr. D. who came to see me on Oct. 6th., 1923.

His complaint consisted of weakness in the right lower extremity and severe pain in the lumbar region. The pain was rather constant and worse at night. Some months ago he noticed the difficulty in walking. He could not raise the foot to clear the ground. This foot felt stiff and weak. Examination showed no atrophy of muscles of affected leg. But there was inability to move the leg and foot and also marked exaggeration of deep reflexes and Babinski. There was at times involuntary movements of the affected limb. The left leg was not affected and there was no affection of the bladder or rectum. Thorough search for sensory disturbances showed nothing but a hyperaesthetic area in the lumbar region (about 3rd lumbar). This area was also painful to touch.

These symptoms increased until he could not use leg at all and could not rest from the severity of the pain. There was present symptoms of meningeal irritation, causing involuntary movements in the right foot and leg.

The diagnosis made was that of probable tumor affecting the meninges and cauda at about level of third lumbar vertebrae.

The operation on Nov. 18th, 1923 showed evidence of projection of bone causing pressure on right side and adherent meninges on the left, at the third lumbar. Since the operation he has had no pain, no involuntary movements in limb and has regained some power in the leg.

Before closing this discussion I wish to emphasize the necessity of a neurological examination in all cases of "back-ache", especially when this symptom is worse at night and in the recumbent position. Such an examination might reveal these pains to be of root or intraspinal origin and amenable to surgical intervention.

## NEWS AND COMMENT

New Orleans, April 21, 1923.

To the Officers and Members, House of Delegates, L. S. M. S., New Orleans, La.:

Gentlemen:

Since the last meeting of the Louisiana State Medical Society, the Louisiana State Board of Medical Examiners has granted 84 original certificates, as follows:

*Medicine and Surgery.*

Examination ..... 55  
Reciprocity ..... 9

*Midwifery.*

Examination ..... 20

Of the 55 certificates issued after written examination, 3 were temporary permits, pending the applicants' completion of citizenship. Seven applicants failed to pass the examinations in medicine and surgery and 6 in midwifery; of the 17 applicants for undergraduate examination, 16 were successful and 1 unsuccessful.

The number of physicians legally qualified for 1922 was approximately 1,840, which is a slight increase on last year, taking into consideration the fact that fewer original certificates were issued in 1922—21 less than in 1921. This is evidence that the physicians were prompt in renewing.

The official list of physicians and surgeons, midwives and chiropodists for 1922 was sent to all practitioners and other interested parties, including the offices of the secretary of the Louisiana State Medical Society, Internal Revenue Department, Prohibition Director, Louisiana State Board of Health, District Attorneys and Clerks of Court. Only the names of those who had been issued original or renewed certificates for the year 1922, up to date of publication, were included therein. During this year, we continue to furnish your office and the various departments interested with lists of those who renew their certificates for 1923, and the current licenses of these Departments are issued accordingly.

Since our last report, the Board has held four regular meetings—two joint

examination and business meetings and two business meetings. In addition, the members of the board went to Baton Rouge in June of 1922 to combine our efforts with those of the Louisiana State Medical Society when the chiropractic bill was placed before the Committee on Public Health and Sanitation of the State Legislature. We are glad to be able to say that this committee gave a unanimous unfavorable report on the chiropractic bill. We feel that we owe to the members of the committee and to all those who gave their assistance in killing this measure a vote of thanks for the stand they took in keeping the regulation of the practice of medicine in its proper sphere in the State of Louisiana. We have every reason to believe that the chiropractors will bring up another bill before the Legislature next year, as we get inquiries almost daily in regard to chiropractic licensure in Louisiana. The board has been very active in the suppressing of the chiropractors who have come to Louisiana and we have succeeded, by personal interview, in stopping quite a few before they started. We believe that we have fewer chiropractors in Louisiana than in any other State in the Union; we have only one openly practicing and he leaves the State next month.

We might take this occasion to state the secretary of this board, Dr. Harrison, attended the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals in Chicago recently. After a comparison of the problems which confront the other State boards, the secretary has returned to Louisiana confident of the fact that Louisiana has one of the strongest, if not the strongest medical law in the United States. As an instance which shows that we are not alone in our belief, we give the following excerpt from Dr. H. M. Platter's article "Enforcement of the Medical Practice Act" read at this meeting. "...I would invite your attention to the penalty sections of the Louisiana and Ohio laws. The former is superior in that it also includes procedure by injunction. Both



are sufficiently active to cause consternation in the ranks of organized opposition and I hope, bring to successful realization the protection of the public..."

During the past year, Washington and Tennessee were added to our list of States with which Louisiana reciprocates; this makes a total of 37. In checking over the requirements of the different States you will find that Louisiana ranks with the highest.

As a matter of general information we might say that the board has decided that on and after June, 1923, this board will give no examination in any other than the English language, a requirement exacted by nearly every State.

We beg to submit the following summary report, from audit of certified public accountant, through date of March 31, 1923. The detailed financial report is being sent the Governor, as is customary, and a copy of this report is also on file in our office. We would be very glad, at any time, to show the detailed report to anyone interested.

*Condensed Cash Summary—March 31, 1922, to March 31, 1923.*

Cash balance, March 31, 1922 .....	\$ 7,163.06
Receipts March 31, 1922, to March 31, 1923.....	6,509.04
<hr/>	
Total .....	\$13,672.10
Disbursements .....	6,374.62
<hr/>	

Cash balance, March 31, 1923 .....	\$ 7,297.48
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During this period \$777.18 was expended for special investigations in alleged cases of violation and in violation proceedings. From the results obtained we feel that this amount was well spent. This expenditure was reduced to a minimum by the splendid co-operation which was given us by the office of the Attorney General. We appreciate, in particular, the earnest attention which the Hon. T. Semmes Walmsley, Assistant to the Attorney General, has rendered.

All cases of alleged violation reported by the board since the last meeting have been handled, either through the courts or by personal interview and communications. Many cases reported were sat-

isfactorily adjusted after personal interview, when possible, with the reported parties. In some cases in which conclusive evidence had to be obtained, special investigators were employed by the board to investigate the charges made.

Forty-eight of these cases of alleged violation were placed in active file. They may be classified under the following headings: (a) practicing medicine without a license (miscellaneous); (b) osteopaths; (c) chiropractors; (d) optometrists; (e) various limited practitioners; (f) licensed practitioners; (g) licensed midwives; (h) druggists; (i) chiropodists; (j) miscellaneous. The present status of these cases is as follows:

Pending .....	11
Dismissed .....	20
Injunction .....	9
Conviction (court) .....	4
Criminal proceedings .....	1
Certificate reinstated .....	1
Deceased .....	1
Recommended for examination...	1

In the case of Dr. Marble, who was a licensed physician who practiced chiropractic, we believe that he has been finally stopped from practicing anything whatsoever for, according to the office of the Attorney General, he leaves our State for parts unknown the early part of next month.

The board refused to renew for the year 1923 the certificates of four midwives and recently an injunction was taken out against another midwife, restraining her from practicing.

It might interest the profession to know that the Fife Brothers, Lake Charles, were tried for practicing medicine and convicted; they were refused writs of certiorari and prohibition by the Supreme Court of the State, the reasons given by the Supreme Court for its refusal to grant the writs being that..."the law defining the practice of medicine in Louisiana is constitutional and sound in principle..." The Fife Brothers were subsequently sentenced to 60 days in jail, and the judge admonished that if they came before him again on the same offense, and were convicted, he would give them a year in jail. We have been informed that the Fife Brothers are chiroprac-

tors. We wish to commend most highly the attitude and assistance of a number of the members of the medical profession of Lake Charles and the local legal authorities. More convictions of this kind would be obtained if we could get the combined efforts of the medical profession and the local State authorities, as was done in the Fife case.

We also feel that better results would be obtained if more physicians would report violators of the law, when they come in contact with them, and allow us to use their evidence. We assure the profession, and particularly those in the country, that if they will report cases of alleged violation coming to their attention, that we will take action for prosecution, if sufficient evidence is obtained.

In passing we might say that, with the exception of one or two minor cases, we have had very little complaint in regard to osteopaths. The secretary interviewed a number of beauty specialists who had been reported and, with one exception, matters were satisfactorily adjusted. In one case, the party is under criminal charges and the case is now pending. We have been informed that she intends to leave town. The secretary has also had personal interviews with several shoe dealers, who had clerks who had taken courses by mail, in regard to broken arches, etc., and we believe we have stopped most of that.

The term of office of Dr. Thos. E. Wright, Monroe, vice-president of the board, will expire on Augst 24, 1923, and recommendations should be made to the Governor for the vacancy at this meeting of the State Society. Dr. Wright has been a member of the board for six years, and we could always count upon him to stand for the interest of the board and organized medicine. We feel that Dr. Wright has been quite an asset to the board and it has been our pleasure to serve with him. His attendance and interest has always been 100 per cent.

Respectfully submitted,

*Louisiana State Board of Medical Examiners,*

By Roy B. Harrison, M. D.,  
Secretary-Treasurer.

*Monthly Bulletin of the Orleans Parish Medical Society.*

Dr. Lucien A. LeDoux, Secretary.

The Society during the past month held two meetings. A scientific and a Joint Clinical Meeting with the Staff of the Charity Hospital. At the Scientific Meeting three papers were read.

At the Clinical Meeting cases were presented and discussed by Drs. Waldemar R. Metz, H. W. E. Walther, E. D. Fenner, J. E. Landry, Randolph Lyons, J. Birney Guthrie and J. A. Storck.

At the annual election held December 8th, 1923, the following members were elected to the Board of Directors for 1924:

Dr. S. Chaille Jamison, president; Dr. Urban Maes, first vice-president; Dr. Maurice J. Gelpi, second vice-president; Dr. E. A. Ficklen, third vice-president; Dr. Lucien A. LeDoux, secretary; Dr. John A. Lanford, treasurer; Dr. Daniel N. Silverman, librarian. Additional members Board of Directors: Dr. H. W. Kostmayer, Dr. J. J. Irwin and Dr. W. A. Reed.

The Scientific Meeting scheduled for December 24th, was dispensed with by the board.

Dr. S. F. Elder and Dr. Sara E. Huckaby were elected to active membership.

*January Program.*

January 7th, Joint Board Meeting;  
January 14th, Annual Installation Meeting;  
January 28th, Scientific Meeting.

A dinner was given December 4, 1923, at the Hotel Commodore, by the Rockefeller Foundation, in honor of a group of health officers representing eighteen foreign governments, who for the past three months have been in the United States under the auspices of the Health Section of the League of Nations for the study and observation of various types of public health organization.



Dr. George E. Vincent, president of the Foundation, presided at the dinner. Dr. William H. Welch, director of the Johns Hopkins University School of Hygiene and Public Health, in the absence of Dr. F. F. Russell, general director of the Foundation's International Health Board, extended greetings to the foreign visitors on behalf of the public health workers of the United States. The other speakers were: Mr. John D. Rockefeller, Jr., Chairman of the Board of Trustees of the Rockefeller Foundation; Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service; Dr. Linsly R. Williams, Managing Director of the National Tuberculosis Association; Dr. W. S. Rankin, State Health Officer, North Carolina, and Dr. Norman V. Lothian, of the Health Section of the League of Nations.

The visit of these health officials to the United States represented the third general interchange of public health personnel arranged by the Health Section of the League of Nations. The first took place in Belgium and Italy in 1922, and the second in England and Poland during February, March and April, 1923.

In the present group were representatives delegated by their respective governments, among them many of the most eminent sanitarians in the world, from France, England, Italy, Russia, Poland, Spain, Holland, Belgium, Greece, Yugoslavia, Germany, Switzerland, Norway, Mexico, Salvador, Brazil, Chile, and Canada.

The system of international interchange of public health personnel was made possible by a contribution to the Health Section of the League of Nations from the International Health Board of the Rockefeller Foundation, amounting to \$60,080 a year, for a period of three years. The object of the plan is to bring the public health personnel of different countries into close relationship with each other, to effect a mutually profitable exchange of views on health subjects, to make comparative studies of health organization and legislation in different countries, and to promote international co-operation in establishing uniform standards for public health regulations.

The monthly meeting of the Shreveport Medical Society was held on November 6th, 1923.

Resolutions drawn up by the Memorial Committee commemorating the death of Dr. W. H. Billingsley and Dr. S. Y. Alexander were read. Dr. Ragan made a motion, which was seconded and passed, that the disposition of these resolutions be left to the judgment of the secretary.

Dr. R. H. Blackman read an interesting and instructive paper on "Uterine bleeding." Discussion by Drs. Bodenheimer, Heard, Barrow.

Dr. J. E. Heard read a valuable paper on "Regional Anaesthesia." Discussion by Drs. Ragan, Stamper, Johns, Bodenheimer, Pirkle.

Dr. Barrow showed a roentgenogram of a patient having a chest tumor, probably sarcoma, who improved remarkably under X-ray therapy.

Dr. Herold called attention to the Tri-State Medical Society meeting at Texarkana, Tex., December 5th and 6th.

*R. T. Lucas,*  
Secretary.

There is a great deal of difference of opinion among medical men regarding the value of scopolamin as applied to criminology as demonstrated here by Dr. R. E. House of Ferris, Tex. The demonstration before the society was under most unsatisfactory conditions. The test at the Parish Prison proved more satisfactory. Those who watched the demonstration from beginning to end felt that there was a good deal of merit in his work.

The Public Health Committee of the American Medical Association has arranged with the local medical societies throughout the country to give monthly radio health talks. The Orleans Parish Medical Society, in conjunction with the radio station of Tulane University, will begin the program Friday, December 21st, between 8 and 9 p. m.

Dr. E. O. Trahan, of Baton Rouge, has been appointed Chairman of the Section on Bacteriology and Pathology;

and Dr. J. N. Roussel, of New Orleans, has been appointed Chairman of the Section on Dermatology, for the approaching meeting of the Louisiana State Medical Society to be held in Opelousas. Those desiring to read papers are asked to get in touch with the chairmen as soon as possible.

At a recent meeting of the St. Landry Parish Medical Society the following were appointed Committee on Arrangements: Dr. Fred Mayer, chairman, Opelousas; Dr. B. A. Littell, Opelousas; Dr. J. N. Brown, Washington; Dr. W. R. Boudreau, Washington; Dr. F. C. Shute, Opelousas.

Washington, D. C., December 10, 1923.—The Department of Commerce announces that compilations made by the Bureau of the Census shows that the mortality rate for the registration area was 11.8 in 1922 per 100,000 population, against 11.6 in 1921. Six States, Michigan, Mississippi, Ohio, Pennsylvania, Virginia and Wisconsin show lower mortality rates for 1922 than for 1921. The lowest 1922 State rate (8.1) is shown for Idaho and the highest (14.7) for Maine and Vermont each. For cities which at the last census had populations of 100,000 or more, the lowest rate (7.5) is shown for Akron, and the highest (17.8) for Memphis.

Appointment of Dr. S. Josephine Baker, of New York, as Consulting Director in Maternity and Infancy and Child Hygiene of the Children's Bureau of the United States Department of Labor, is announced by Grace Abbot, Chief of the Bureau.

Physicians and druggists throughout the country are receiving in their mail a card bearing an excellent likeness of Emil von Behring, the eminent bacteriologist, who is probably best known for his discovery of diphtheria Antitoxin. Inquiry reveals that this card is the first of a scientists' set being issued by the H. K. Mulford Co., Philadelphia.

Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia an-

nounces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about Three hundred Dollars, will be made on July 14th, 1924, providing 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 can not have been published.

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

At Washington, D. C., January 7, 1924.

At Chicago, Ill., January 7, 1924.

At San Francisco, Ca., January 7, 1924.

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

*H. S. Cumming,*  
Surgeon General.

At the December meeting of Shreveport Medical Society, the following officers were elected for 1924: President, Willis P. Butler; vice-presidents, I. Henry Smith and Edgar L. Sanderson; treasurer, Lewis Cass Spencer, re-elected; secretary, Robt. H. Lucas, re-elected. Delegates to the State Society will be selected at the January meeting.

Contracts have been let and work has been started on the new North Louisiana Sanitarium, on Hamilton Terrace, Louisiana avenue, Shreveport. It is to be a fire-proof building, modern in every respect, and will be owned and operated by Drs. Louis Abramson and A. A. Herold; when complete, together with out-buildings, etc., it is said that it will represent the outlay of approximately a quarter of a million dollars.

The Highland Sanitarium, Shreveport, is contemplating the erection of an annex to their already commodious institution; the contract will probably be awarded very soon.



*The Tri-State Medical Society Meeting.*

The Tri-State Medical Society of Arkansas, Louisiana and Texas held its nineteenth annual meeting in Texarkana, Tex., on December 5th and 6th, under the presidency of Dr. O. M. Heartsill of Marshall, Tex. Much interest was shown in the sessions, there being a total attendance of about 200. The papers were of high quality, visitors reading being Dr. Frank Smythe, of Memphis, on "Shockless Surgery"; Dr. J. C. Masson, of Mayo Clinic, on "Post-operative Ventral Hernia," and Dr. Grayson Carroll, of St. Louis, on "Ureteral Obstruction."

Dr. A. E. Chase, of Texarkana, Tex., was elected president for the ensuing year; Drs. L. J. Kosminsky, E. L. Sanderson and F. S. Littlejohn, vice-presidents for Arkansas, Louisiana and Texas, respectively; Dr. F. H. Walker, of Shreveport, La., was selected as secretary-treasurer for his seventh term. Shreveport was chosen as the meeting place for 1924.

*Automobile Fatalities 1922.*

Washington, D. C., December 3, 1923. The Department of Commerce announces that the returns compiled by the Bureau of the Census show that during the year 1922, 11,666 death resulting from accidents caused by automobiles and other motor vehicles (excluding motorcycles), occurred within the death registration area of the United States (exclusive of Hawaii), which area contains 85 per cent of the total population. This number represents a death rate of 12.5 per 100,000 population, as against 11.5 in 1921, 10.4 in 1920, 9.4 in 1919, 9.3 in 1918 and 9 in 1917. In the 27 States for which data for 1917 are available the actual number of those deaths increased from 6,014 in that year to 9,581 in 1922, the corresponding rates for these two years being 8.7 and 12.9.

The recent convention of the Radiological Society of North America was held in Rochester, Minn. It is the largest X-ray society in the world. Dr. Granger and Dr. Leon J. Menville of New Orleans, and Dr. Barrow of

Shreveport, were in attendance. The convention was held on December 3rd to 8th, and was attended by a large number of its members, comprising the foremost radiologists of America and Canada.

Dr. Leon J. Menville, Councilor of the Radiological Society of North America, also ex-president of the State Radiological Society, and chairman of the House of Delegates of the Louisiana State Medical Society, was elected vice-president of the Radiological Society of North America. The next meeting will be held in Kansas City.

The Lafourche Valley Medical Society on November 20th, 1923, at 11:00 a. m., held a wonderful meeting as a guest of Drs. St. Martin of Houma, La., at the Elks' Home in Houma. The following participated in the Scientific program: Drs. W. E. Kittredge, of Tallieu; Thos. B. Pugh, Napoleonville; W. A. Martin; W. O. D. Jones, New Orleans, and R. C. Mooney, United States Veterans' Bureau. After the Scientific meeting, which was well attended, an elegant dinner was served at the Houma Hotel.

The American Association for the Study of Goiter, composed of goiter surgeons, pathologists, Anaesthetists, Internists and Radiologists, will have its annual meeting in Bloomington, Ill., the 23rd, 24th and 25th of next January.

*Removals.*

Dr. P. T. Talbot, from 1120 to 1112 Maison Blanche Building.

Dr. Wm. M. Johnson, from 1218 to 1112 Maison Blanche Building.

Dr. Wm. B. White, from Shreveport, La., to Stamford, Conn.

The following have moved their offices to the new Giddens-Lane Building in Shreveport: Drs. D. H. Alverson, S. C. Barrow, A. P. Crain, J. L. Ewing, Ellis and Butler, C. R. Gowan, W. S. Harmon, W. R. Harwell, J. F. O'Leary, M. R. Purnell, T. Ragan, O. C. Rigby, C. C. Sims, E. C. Simonton, W. P. Yerger.

Dr. W. E. Wilkinson, formrely of Gahagen, La., is now located at Haynesville.

Dr. J. C. Parrott, from Robeline, La., to Campti, La.

Dr. J. B. Glass, from Flora, La., to Robeline, La.

Dr. R. F. DeRouen, from Clarence, La., to Natchitoches, La.

Dr. W. N. Hankins, from Campti, La., to Alexandria, La.

DIED—Dr. Chester Owen Smith, Casapalca, Peru, November 23rd, 1923. Dr. Smith was born in the Parish of Winn, La., March 12th, 1896. Graduated from Jena High School in 1914; graduated from Tulane University in 1921. Served internship in Hospital Santo Tomas, Panama Canal Zone in 1922, after which he accepted a position with the Cerro de Pasco Copper Corporation, Casapalca, Peru, where he met his untimely demise from the dreaded malady, "Tropical Malaria."

DIED—Dr. S. W. Stafford, of New Orleans. Following an illness of several months, Dr. Stafford died suddenly on December 3rd, 1923, age 50 years. He was formerly superintendent of the Charity Hospital of New Orleans, and a prominent surgeon of this society.

DIED—On December 4th, Dr. I. E. Siess, of Alexandria, La.

DIED—Dr. W. M. Lynch, of New Orleans, on December 6th. Dr. Lynch was 68 years old.

DIED—On December 11th, 1923, at Chicago, Mr. Wm. Whitford, age 68 years.

Dr. W. H. Knolle will visit New Orleans during the holidays.

The Chairman of Section on Medicine wishes that all members who desire to present papers in this section, send their request, along with title of paper, at once, so that the section can be completed. Address care of the Louisiana State Medical Society, 1551 Canal street.

The conference of the Health Officers of Mississippi and Louisiana, held in New Orleans, December 13 and 14, was a notable success.

There were registered 136, among whom were representatives of the two State Boards of Health, directors of different bureaus, surgeons of the Illinois Central, Yazoo and Mississippi Valley and Southern Pacific railroads, sanitary engineers and public health nurses.

There was no set program, the discussions being led by men who had had experience in the various subjects selected. Among the speakers were: Dr. W. S. Leathers, State Health Officer of Mississippi; Dr. H. M. Bracken, of the American Social Hygiene Association, New York; Dr. L. D. Fricks, Surgeon United States Public Health Service, Memphis, Tenn.; Dr. John A. Ferrell, Director for the United States, International Health Board, New York; Dr. S. C. Beach, Health Officer, Illinois Central Railroad, Chicago; Dr. R. W. Knox, Chief Surgeon, Southern Pacific, Houston; Dr. J. Shirley Sweeney, of Johns Hopkins University; Dr. F. J. Underwood, Director of Child Welfare; Dr. Henry Boswell, Director Bureau of Tuberculosis; Dr. C. C. Applewhite, Director of Rural Sanitation, and Dr. W. W. Hall, President of the Mississippi State Board of Health. Dr. T. T. Tarlton, Dr. L. C. Chamberlain and Dr. B. A. Ledbetter, members Louisiana State Board of Health, and Dr. John Callan, Superintendent of Public Health, New Orleans, were present.

Dr. L. D. Fricks and Dr. C. P. Coogle gave a demonstration in diagnosis of splenic malaria. They had as subjects seven little boys.

Dr. W. H. Seeman, Bacteriologist for the Louisiana State Board of Health and New Orleans City Board of Health, gave a demonstration of the Schick test.

Great interest was shown, especially in the subjects of vital statistics, morbidity reports, railway sanitation and child hygiene.

Dr. Oscar Dowling and Dr. W. S. Leathers presided at the opening meeting. The other meetings were presided over alternately by health officers from Mississippi and Louisiana.



# *New Orleans Medical* *and* *Surgical Journal*

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## THE SCOPE AND INDICATIONS OF MYOMECTOMY IN FIBROIDS OF THE UTERUS.\*

BY C. JEFF MILLER, M.D., F.A.C.S.  
NEW ORLEANS.

The technique of hysterectomy as a method of treatment of fibroids of the uterus has probably been perfected to an extent hardly equalled by any other abdominal operation. The mortality has been reduced to such a low percentage and the ultimate results are so satisfactory that it is difficult to persuade the average surgeon that any other method of treatment could possibly yield equally good results. If we consider that a fibroid is a benign growth, that many do not cause symptoms which affect the patient's health, and that but a small number serve as a possible origin for malignancy, we must admit that hysterectomy is a very radical procedure in many cases. Moreover, during recent years it has been shown that certain types of fibroids can be admirably treated with radium, and radium and hysterectomy are unquestionably the two most popular procedures of the present day.

We have not fully appreciated the scope of myomectomy, partly because no definite technique can be advised for all cases, and partly because of the prevalent belief that it is not as safe an operation as hysterectomy, and that further growths will form in too large a percentage of cases to justify its employment. For these reasons it is not performed nearly as often as it is indicated; indeed a review of hospital records will show that its performance is

comparatively rare, in spite of the fact that it has been long since shown that it yields excellent ultimate results, with a mortality no greater than in hysterectomy.

There is no doubt that in the majority of cases of fibroids requiring surgical treatment hysterectomy is the more suitable and the more satisfactory operation, for the scope of myomectomy is limited by many factors. Its outstanding claim is that it preserves the menstrual function, and that a fair percentage of pregnancies follows its performance. Before it can be made a more popular operation, however, it must be shown that the number of pregnancies is sufficient to warrant the preservation of the uterus, that the growths do not recur as often as is believed, and that menstrual disturbances are corrected.

It is already proved that the mortality following myomectomy is no higher than in the case of the well established hysterectomy, and it is difficult to determine the basis of the prevalent impression that it is a more dangerous operation. Since few surgeons have had a very wide experience in its performance, the impression is probably based upon isolated instances, or the occasional case that ended disastrously. The operative mortality reported by W. J. Mayo is no greater than in the case of hysterectomy, and his figures are confirmed by Arthur Giles, who reported a mortality of less than 1 per cent in a series of 107 cases, and 1.8 per cent in a series of 167 cases. Victor Bonney has reported a 2 per cent mortality in 100 cases. In 50 consecutive cases in my own private practice, I find that there was one fatality, or a 2 per cent mor-

\*Read Before the Louisiana State Medical Society,  
April 24-26, 1923.

tality. This death occurred in a young girl, 28 years old, who was by no means a satisfactory risk, as she had been bleeding over a long period of time, and was extremely anemic. Multiple growths were removed, including a very large one of the sub-mucous type, but there was no evidence of shock at the conclusion of the operation, and for the first three days there were no untoward symptoms. She then developed an acute dilatation of the stomach, which could not be controlled by any measures, and death ensued on the seventh day. There was no evidence of infection or hemorrhage at any time. The other cases all made uneventful recoveries, with but two exceptions. One developed a hemorrhage on the eleventh day, which was the time of her regular menstrual period. Drainage was instituted through the lower end of the abdominal incision, and the only ill effect was the prolongation of her convalescence. She left the hospital with the wound well healed, and reports excellent health ever since. The other case ran a septic temperature, beginning about the seventh day. The condition was diagnosed as a bilateral parametritis, and on the nineteenth day a quantity of pus was evacuated through the original incision, after which she made a good recovery. This patient also was extremely anemic, and in other ways was not an ideal surgical risk.

One of the common objections urged against myomectomy is the danger of recurrence of fibroids, and the ease with which small growths may be overlooked at the time of operation, which eventually develop and demand further intervention. It has been difficult to establish definitely what percentage of cases upon whom myomectomy has been performed develop subsequent fibroids. Arthur Giles, who has recently investigated his own series of cases, found the uterus of normal size with no return of the growths in 90 per cent of 88 cases. Just how many of the 10 per cent in whom the recurrence was reported showed new growths, or minute growths overlooked at the time of operation can, of course, hardly be estimated. Some of the growths were very small, the size of a mulberry or a pea, and were giving rise to no symptoms. They were merely reported as having been found at the

time of the subsequent examination. In my own series of 50 cases I have been able to follow up 35, and only one of these (2.8 per cent) showed a recurrence. This was found by the attending physician three years afterwards, in the course of a pelvic examination to determine the duration of a pregnancy. It was very small, located on the anterior wall, and was giving rise to no symptoms. In this case myomectomy was not performed by laparotomy, and the small growth was probably overlooked owing to the difficulties of examination through the vaginal vault. The percentage of recurrence reported by Giles is considerably higher than that reported by other surgeons, but even a recurrence of 10 per cent does not necessarily offer an insurmountable objection to myomectomy, since only a few of the recurrent growths cause symptoms and in those cases a short application of radium usually controls the trouble.

Another question of interest is the effect of myomectomy on the menstrual loss, and on this point we can give our patients fairly definite assurance. Of the cases which I have been able to follow up, 95 per cent menstruate regularly and normally, and 97 per cent report their general health markedly improved. Two patients report continued ill health. In one of these cases the menstrual disturbances were entirely controlled, but two years later she was obliged to submit to an operation for acute intestinal obstruction, which does not seem to have been in any way connected with the previous operation. In the other case a decided neurotic element is present. Five per cent of the patients report menstruation still profuse, though in practically all the cases the flow is distinctly less. Dysmenorrhea is very commonly associated with fibroids, and a large number report this symptom either improved or more readily controlled by simple measures. Two patients have not menstruated since the operation; one of these was 48 years old, and the myomectomy was done in the course of very extensive work in the upper abdomen; the other patient was 36. The conclusion to be drawn, then, is that about 5 per cent of our cases will continue to menstruate profusely following myomectomy. But since we have



an ideal therapeutic agent in radium, which can be used in graduated doses without producing a premature menopause, this objection is also not insuperable. I might add that in one of my own cases excessive bleeding following myomectomy has already been controlled in this way.

The next important point to be considered is what percentage of women bear children after this operation. So many considerations enter in, however, that no definite conclusions could be drawn without an exhaustive study of a large series of cases, and I am not aware that any single collection has been published large enough to decide this point. In Giles' series, 28 per cent of the women who had a chance to conceive became pregnant. In my own series, among the 35 whom I was able to follow up, six were unmarried, and there were ten pregnancies among the remaining 29 patients (about 28.6 per cent). Of these, six patients, or 60 per cent, had not been pregnant previously. Three were pregnant at the time of operation, of whom one miscarried five days afterwards. She later conceived and was delivered normally at term. Five others were also delivered normally at term. One had a premature rupture of the membranes at a little over seven months. Two were delivered by Caesarean section. In one case the patient was delivered in another service, and the indications are not known. The second patient conceived twice, and was delivered each time by abdominal section for borderline contraction, the test of labor being given during the first pregnancy. She died four days after the second section of acute dilatation of the stomach. The last patient is now nearly three months pregnant. Of the 19 who had the chance of pregnancy and did not conceive, it is interesting to note that 14, or over 75 per cent, had been married prior to the operation sufficiently long to have borne children, and yet had never been pregnant. These figures prove that so many other factors may enter the question of pregnancy that it is not well to emphasize this possibility unduly. The average woman, however, does desire to preserve the menstrual function and to become pregnant if she can, and myomectomy makes both of

these things possible. And pregnancy does follow in a sufficient number of cases to recommend the operation unqualifiedly whenever it is indicated.

Some women will insist upon the assurance that hysterectomy gives that there will be no return of the trouble, and request that that type of operation be done which will make the outcome final. I think, however, that if the advantages of myomectomy are placed before the average woman in the proper light, and if the possibility of the use of radium if trouble does recur is explained to her, she will usually prefer myomectomy when it can be performed. Its advantages have so far outweighed its disadvantages in my own work that I am prompted to widen its indications whenever possible.

In deciding whether hysterectomy, myomectomy or radium is indicated in uterine fibroids, we must take into consideration not only the number, size and location of the fibroids, but also the age and social and financial condition of the patient. When a woman is dependent on her own efforts, and perhaps is supporting a family also, when it is imperative that she return to work at the earliest possible moment and in the best possible condition, no chance must be taken of a second operation or even of further treatment. The age of the patient is also an important consideration. Myomectomy has few indications after 38. In a few of my cases the patients were older, but there were always special reasons for the procedure; in 86 per cent of the cases the patients were under 38. In single women in the late thirties the indications for myomectomy would not be so urgent as in the married nullipara who especially desired children. The indications also are somewhat qualified by the history of previous pregnancies. When a woman has several living children there is less reason to preserve the uterus than in the case of the woman with no children who particularly desires motherhood. There is also another reason for preservation of the uterus which may well be emphasized here, namely, for the correction of prolapse. This series will show several instances, all among older women, where fibroids were associated with retrodisplacement

and cystocele. Myomectomy was done with the interposition operation, and in no single instance was the result unsatisfactory, whereas when hysterectomy is done in these cases, we not infrequently find the results of plastic work poor, and a subsequent prolapse of the vaginal walls.

It is hardly necessary to add here that myomectomy is useless if the appendages are diseased. Fibroids are frequently associated with chronic salpingitis and with ovarian disorders, and in these cases neither radium nor myomectomy has the slightest indication, and hysterectomy is the only possible procedure.

The ideal case for myomectomy is the single, well defined, encapsulated tumor. As a rule, the case presenting numerous small growths does not give satisfactory results. It is easy to overlook them, and if they are of different types and widely distributed, a damaged and useless organ may be left, and the whole point of the operation be defeated. I have, however, removed as many as 18 growths from one uterus, the woman afterwards conceiving and delivering normally, and in 28 of the 50 cases upon which this study is based, multiple growths were removed, some of them from five to eight inches in diameter. I might point out in this connection that in a large service in a public hospital we find fewer indications for myomectomy, owing to the fact that the colored patients particularly seldom seek medical relief until they are driven to it by pain or incapacity for work. When they do present themselves, the growths are so numerous or of such enormous size that nothing but hysterectomy can be considered. Moreover, there is frequently associated tubal disease, and even in the cases where this is not present and myomectomy might be possible, the difficulty of persuading them to return for further observation and treatment if necessary makes hysterectomy most frequently the operation of choice.

The sub-peritoneal fibroid is most easily handled, although when it is found presenting a broad base the uterine wound is sometimes very difficult to close. There is rarely any difficulty in removing the interstitial types, and many of these growths may be re-

moved through a single incision by tunnelling into the uterine musculature. This point, however, is often over-emphasized because of the fear of multiple incisions through the peritoneal covering of the uterus. It is better, in many instances, to make more than one incision than to run the risk of damaging the uterine muscle by blunt dissection in an endeavor to reach many growths through one incision. Submucous growths often present difficulties, and usually demand opening the uterine cavity. These are the cases which sometimes present subsequent infections of the operative field, and must be managed with the strictest aseptic precautions. In 20 per cent of my cases, however, in which the cavity was opened, only one had a complicated recovery.

Fibroids are most frequently located in the anterior wall of the uterus and are most easily dealt with in that position. Over half of the growths in my own series were so located. Tumors situated between the folds of the broad ligaments present occasionally some rather exasperating problems owing to the relations of the blood supply and the ureters, but with care these problems are readily solved. Tumors involving the lower uterine segment and the cervical region will more often demand hysterectomy because the elongation of the cervix they produce is difficult to deal with after their removal.

Hemorrhage during the operation is sometimes rather annoying but with increasing experience this is easily controlled. In addition to careful suturing of the wounds, it is a good plan to throw a ligature about the branches coursing along the side of the uterus; this may be done as a preliminary step, on one side or on both as indicated, and the operation as a result will be practically bloodless. One of the chief difficulties of myomectomy is the control of cozing, and endeavors to overcome it have prompted the use of too much ligature material and too tight suturing. It was pointed out many years ago by Dr. Ochsner of Chicago that some of our mishaps arise from too tight suturing of wounds, and Dr. Mayo also attributes many complications to over-zealousness in this regard. The sutures should be



placed sufficiently taut merely to control the oozing, and a suture should be placed about half an inch beyond each end of the incision. The results are surprisingly effective.

Myomectomy is often applicable to growths complicating pregnancy, though as a matter of fact the majority of women with fibroids will often pass through an uneventful pregnancy and deliver normally at term. Too often do we see the uterus removed in the early months of pregnancy with a child occupying the cavity, a procedure practically never indicated with a non-viable child. The average case can proceed to term and be delivered according to the indications at that time. Certainly where growths have risen out of the pelvis and do not interfere with the birth canal the test of labor should be allowed. Where growths occupy the pelvis, the patient may be subjected to myomectomy during the pregnancy without disturbing the fetus. I have done this in three instances, in only one of which the patient miscarried. In the second of these cases the growth practically filled the pelvic cavity and miscarriage seemed inevitable, but after myomectomy the patient went to term and delivered normally. In the third instance the patient was four months pregnant and had an incarcerated fibroid. This was drawn out of the pelvis and removed, and she also delivered normally at term.

These cases have been reviewed with the idea of showing that we may extend the indications and scope of myomectomy, and to emphasize that there is no standardized technique for its performance. Each case must be decided on its own merits, but with ingenuity, a careful search for minute growths, thorough hemostasis, and strict aseptic precautions the operation is in every way as safe and as satisfactory as hysterectomy, and, while its scope is limited, it is decidedly superior to the more radical procedures.

## DEAFNESS AND ITS PREVENTION.\*

BY W. T. PATTON, M.D.†  
NEW ORLEANS.

A specialist reading a paper before a general body such as this, should attempt to find a subject of interest and understanding for the general practitioner.

I have chosen deafness and its prevention. Let me emphasize *prevention*, and not treatment, for I will touch upon the treatment only in so far as it relates to prevention. Certainly this subject is of great interest to all medical men, but especially to the general practitioner and the pediatrician, for as these are thrown in closer contact with patients and at an earlier age than the aurist, it is to them, first, that the patient with slight, or beginning ear trouble comes or is brought.

It may be stated in the beginning that most ear conditions seen early can be cured and permanent damage avoided, that most chronic deafness can seldom be improved and rarely be cured.

Of all the misfortunes that can befall one probably that of being deaf or blind is the worst, which of the two is the most distressing would be hard to decide.

Deafness may be divided into three classes: Congenital, hereditary and acquired. The so-called deaf mutes belong to the first and second class, and need our attention mainly from the educational point of view, these unfortunates should be placed in institutions for the deaf and dumb at an early date where they can often be educated and made useful citizens.

Acquired deafness may be divided into two great classes, conduction deafness and perception deafness, and possibly a third, otosclerosis. Conduction deafness is much the most common, although many believe the Perception apparatus is always involved. What do we mean by conduction deafness. The ear is divided into external ear, drum membrane, middle ear, and ossicles, internal ear with the cochlear, part of eighth nerve, the eighth nerve and brain center. The outer ear, external canal,

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drum membrane, ossicles, and middle ear simply receive the sound and transmit it to the internal ear and auditory nerve, therefore the structures are known as the conduction apparatus, and deafness due to trouble in these parts known as conduction deafness. Deafness due to injury or disease of the cochlear nerve, internal ear, eighth nerve or brain is called perception deafness.

Congenital deafness takes place before the child is born and may be due to a true congenital defect because of an abnormal development, or to syphilis of one or both parents. Hereditary deafness can be claimed only in those cases in which there is a deafness among the ancestors in the direct line. Acquired deafness comes on after birth within the first few months or later on in life, the result of some febrile disturbances, one of the exanthemates, or because of certain localized conditions, which interfere with the delicate mechanism of the middle ear. The majority of cases are the result of neglect of the ears during or after measles, scarlet fever and meningitis, the meningitis may be either of the epidemic type or one of the low grade meningitides so often caused by syphilis, deafness caused by meningitis is usually of the perception apparatus. It is a sad commentary on our knowledge of the subject that over 30 per cent of the inmates of our institutions for the deaf, are children who have an acquired deafness which might have been prevented if taken in time.

The removal of the tonsil and adenoid is a question of vital importance, particularly in relation to the subject with which we are dealing, there may be innumerable controversies as to whether the adenoids and tonsils should be removed, or when, for the purpose of improving health; there should be no question about their removal when any signs of ear trouble occur. The large adenoids give sufficient trouble to call for their removal. As to the small adenoids which often block and infect the mouth of the eustachian tube, that is open to question in minds of those who have not seen the aftermath, in the form of progressive deafness. No matter how small the adenoids are, no matter at what age they are first noted, be

it the first months of life or during the second and third year, they should be removed, as soon as there is any evidence that they are causing trouble, particularly with the ears.

As a general rule, the majority of men are in favor of leaving the tonsils in situ until the second year of the child's life, unless they are found to be directly responsible for systemic disease, or have been the seat of repeated local infection, however we must not lose sight of the fact that tonsils may cause impairment of hearing because of their close proximity to the eustachian tube.

The discharging ear has been, or is, an infected ear. Certain deposits have taken place in the tympanic cavity, such as the deposits of fibrin and perhaps inspissated pus, this may make an alteration in the hearing mechanism which may be permanent, the eustachian tube may still be inflamed so that no air reaches the middle ear, or else a small perforation dry and crusted over may remain unnoticed, these are conditions which can readily be remedied if seen early, but which are sure to leave their mark later on, if neglected. All children's ears should be tested after any suppurative conditions, and one should not be satisfied until the hearing has been brought back as nearly to normal as possible.

It is only necessary to call attention to the various amount of harm that is done to ears during the exanthematous diseases, particularly measles, scarlet fever and meningitis. The ears are usually taken care of during the acute stages of the disease, and remedial measures are at once used, yet the after effects, or chronic conditions such as adhesive processes, or slight discharge are neglected for years, which means permanent impairment of hearing.

Medical men are realizing more and more that they must acquaint themselves with the various factors that lead to deafness in childhood, and with those factors which arrive in childhood and bring about deafness in later life, the problem divides itself into three parts—1. Education of the parents, teachers and physicians to those factors which give rise to deafness. 2. The proper in-



terpretation of causative factor in early childhood which can be corrected at that time. 3. Preventive measures which will arise during the routine examination of children's ears. In a paper of this kind we have not the time to take up each of these subjects as we should, under the first heading, "*Education of the parents, teacher and physicians, etc.*" I will only mention a few points. Children whose parents or relatives have had progressive deafness, children born of parents closely related, or of any syphilitic parents should all be more closely observed by parents and doctors. Under the second heading "*The proper interpretation of causative factor in early childhood which can be corrected at that time,*" the general public, also the general practitioner should know that a discharging ear is not only a source of danger to life, but will probably injure hearing, don't send these cases away with the suggestion to wash out ear with salt solution or simply tell them "as long as the ears are discharging the poison is coming out, not to try and stop the discharge", this is frequent advice I regret to say. Even after ear has ceased to discharge, children tested will be found to be slightly deaf, it is neglect in these early suppurating ears or in the adhesive or so-called catarrhal conditions that lead to deafness in later life. These conditions can be treated in a number of different ways, and it is only by careful study of the case that we often can cure these acute and early conditions and prevent serious deafness late in life.

The third, "*Preventive measures which will arise during the routine examination of children's ears.*" Usually all school boards have an oculist connected with them, the eyes are closely watched, yet few school boards have an otologist connected with them and usually it is the duty of the teacher to detect ear trouble, this is rather unsatisfactory for the early conditions are overlooked or if recognized the child is told to have ears examined and that is the end of it. Certainly ears should have the same supervision as the eyes. Ears of all children should be examined by otologist routinely, nurses can be instructed to make the simpler examination, and refer those children who need

more detailed studies to the specialists. Clinics should be established in the schools themselves so that under a competent aurist the treatment can be expedited and little time lost from school duty.

It will be noted that so far the writer has devoted his attention to only children and purposely, for many times deafness can be prevented but seldom cured, and often only slightly improved, therefore prevention should start with earliest manifestation of ear trouble which in a great percentage of cases can be traced back to early childhood.

Now let us dwell for a few minutes on the so-called chronic progressive deafness; this is a very common condition and usually associated with tinnitus, this form of deafness is placed in three categories—chronic catarrhal, otitis media, otosclerosis and nerve deafness. The three periods at which progressive deafness most commonly has its onset are at the crisis of life: puberty, adolescence and the menopause, and to these may be added a fourth, the oncoming of actual old age. Here we could write several papers on causes, I will mention only a few conditions to look for; focal infection, heart and kidney trouble, diseases of the internal gland, menstrual disorders, nervous condition, worry or shock, disturbances after severe illness, blood pressure changes, in fact a complete and most painstaking examination of the entire body is called for, even when we can find no cause.

Otosclerosis. There are about ten different theories as to the cause of otosclerosis. Brude gives authorities for syphilis, artereo-sclerosis, chills, internal secretion changes, latent tetany, rheumatism and gout, uremic intoxication, scrofula, anemia, rickets, osteomalacia, auto-intoxication, tuberculosis, tropho-neurosis, and wasting diseases. The hereditary nature is most marked, as with bony abnormalities and some bone diseases. Moons and Politzer gave reasons for considering it a primary disease of the bony labyrinth, the mucous membrane was found perfectly normal. Mayer now considers it an undescribed variety of otitis-fibrosa and osteofibromatosis. Ferreri says, there seems a "great affinity" between ostemalacia,

rickets and otosclerosis, therefore the treatment by phosphorous, cod-liver oil and gland therapy. Sieberman regards it, as an over development in the labyrinth of cartilage remnants, which normally are there at least until adult life, especially in the region in front of and above the oval window.

In discussing perception deafness there have been two theories as to etiology that have divided otologists into two camps: First, those who have believed in the theory of negative pressure and, second, those who have believed in infection as the primary cause. Andrews claims that all deafness is the result of a deep infection in the lymphoid tissues, that the infection then exists as a chronic focus, subject to acute exacerbation, that the resulting deafness does not occur from extension by continuity of the infected tissue through the tubes and middle ear, so much as it is the result of the toxin acting on the perception apparatus, that is we have perception deafness from the beginning, without regard to tissue action in the middle ear. Lymphoid tissue predominates until adolescence then is replaced by fibrous and mucoid element, which are much more susceptible to infection. The next class of cases follow infectious diseases, which in many instances, result in chronic foci, subject to acute exacerbation throughout life. Foci of infection may lay dormant for years in teeth, tonsils or other membranes of Waldeyer's ring, sinuses, lymph glands, etc., and only after some sickness, as influenza, measles, diphtheria, etc., the patient develops a progressive deafness. Why this infection takes place in a particular joint in the endocardium or middle ear, we do not know, but once having occurred, the tissue reactions go on in the same organ indefinitely. In all cases where there is a functional disturbance of the perception apparatus and in the organ of hearing, as in other organs, the restoration of function is dependent on whether its special nerve mechanism is irreparably damaged or only functionally disturbed. The mouth, nose and lymphoid tissue continually harbor a number of bacteria. These patients have low resistance and overwork is as patent in activating the focal process as is exposure, this being the

case it is believed that the deafness is a manifestation of the systemic infection resulting from a special strain of bacteria, the toxin acting on the perception apparatus from the beginning and continuing to act until the terminal stage of marked perception deafness on nerve degeneration, the accompanying gross tissue changes in the conduction apparatus playing but a minor roll in the deafness.

Of all the cranial nerves none is so vulnerable to syphilitic infection as the eighth, or auditory, for this reason it frequently happens that the eighth nerve is first to feel its influence, and the otologist is thereby afforded an opportunity to recognize the general character of the disease from the start. In the majority of cases the cochlear branch is affected to a far greater degree than the vestibular, both may be affected simultaneously. In the marked shortening of bone conduction we have one of the most reliable and most striking evidences of luetic infection, as it is perhaps the most striking sign, occurring in 95 per cent of cases. A deafness without apparent middle ear trouble, showing a positive Rinne, should at once arrest the attention of the aurist. These cases if treated early by salvarsan, potassium iodide and mercury is good for improvement of hearing, but should be guarded; prognosis of the hereditary type is bad.

#### Conclusions:

1. Deafness if seen early can often be cured.
2. Neglect and under treatment of diseases of the ear, nose and throat in childhood is responsible for a great deal of deafness in later life.
3. Syphilis and focal infection are the most common causes of perception deafness.
4. In all deafness of long duration the changes for improvement are slight, for cure, practically hopeless.
5. It is absolutely necessary to educate the doctors, teachers and parents of the great necessity of insisting upon having all cases of deafness treated early and vigorously, thereby hoping to prevent a great deal of deafness in later life.



## DISCUSSION

Dr. Homer Dupuy (New Orleans): I shall touch upon a phase of the subject which I hope will interest the general man.

I make a plea for the more frequent performance of tympanotomy—incision of the ear drum. If a child has an acute middle ear suppuration there are only three possible outcomes: First, there may be spontaneous rupture of the ear drum with relief of symptoms—pain, temperature, etc., and possible restoration of hearing. Second, abscess without perforation, but with subsidence of the temperature and pain and the ultimate recovery of hearing. And a third group in which there has been no perforation of the ear drum and yet when the acute symptoms have passed away exudate remains in the middle ear. It is this third group that we so often see with marked and permanent deafness.

The persistence of pain and temperature due to otitis media calls for incision. Not to do this is to invite spontaneous perforation which is not desirable. Even without this undersizable perforation by Nature the pain and temperature may disappear but the post-inflammatory remains in the middle ear may so disorganize its contained structures that incurable deafness may ensue. Years after, these patients seek relief but the permanent damage was done during the previous attack of ear trouble when no incision of the drum was performed. To wait for Nature to perforate is to ask for something which does not equal in efficiency the surgeon's incision. A timely and properly performed tympanotomy is conservative and does help preserve the hearing.

Dr. A. E. Weil (New Orleans): I think there is no question that the ear, nose and throat men are the men who see the disastrous results following neglected cases of ear conditions which result in deafness. I think we are all pretty much agreed with what Doctor Patton has said in his paper. We also agree with what Doctor Dupuy has said about opening the ear drum. But I would go a step further than Dr. Dupuy in his statement, and in fact I would be inclined to disagree with him on the subject. He says that Nature ruptures the drum and the pus is allowed to escape and we have sufficient drainage. I doubt that. I have seen a great many of these acute otitis cases, especially in children, in which the case has been watched, the temperature and pain allowed to go on for two or three days; finally the ear drum is ruptured and you get drainage after a fashion, but if you look at the drum you will see a little bit of a pin-hole opening through which the pus is being forced. I claim that that is not sufficient drainage and that these ears frequently do not get well, and certainly not as quickly as cases where there has been an incision in the drum. Therefore I maintain that where a child has pain and temperature we are not justified in waiting 3 or 4 days but within the first twenty-four hours, if the pain and temperature remain, free incision should be made, and adequate drainage established. Drainage of the middle ear is the *sine qua non* in the treatment of acute otitis.

Doctor Patton has spoken of the removal of tonsils and adenoids, and of course we all agree on that. But he made one statement with which I am not entirely in accord, and that is that adenoids in a child should be removed, no matter what the age of the child. I do not believe that adenoids and tonsils should be removed under five or six years of age, unless we can see that they are causing definite and distinct damage to the ear.

One further point has not been touched upon by Doctor Patton, probably on account of lack of time, and that is deafness resulting from acute otitis, cases that go on discharging for a certain length of time. In ordinary otitis if a tympanotomy is properly performed in a few days the drum membrane returns to normal and the hearing is restored. But there are a certain number of cases in which this does not happen and in which the suppuration suppurated for six weeks without distinct signing much sign of abatement. It is in those cases that I think the otologist has a distinct function. I maintain where an ear has been suppurated for six weeks without distinct signs of subsidence, it is time for us to interfere and open the mastoid and get free drainage of the ear from in front and behind. A mastoid operation is not a serious operation in acute mastoid. And where you get an acute otitis which persists for six weeks, the mucous membrane of the mastoid is certainly involved as well as the middle ear, and in those cases I claim we are following conservative procedure in opening the mastoid and draining these ears from behind as well as in front. If they are allowed to persist indefinitely we will get chronic otitis with large perforation of the drum, and the chances are it will not heal. If it does heal it leaves a scar and the hearing is permanently affected. Consequently I claim that conservatism requires opening the mastoid if middle ear trouble persists, without distinct signs of subsidence, for about six weeks.

Dr. F. C. Ewing (Alexandria): A few years ago, across the ocean, I asked a young man in one of the hospitals why he had taken up eye work, and he said "Because you cannot cure anything in the ear." That was true some years ago, and it is too much so today. We know that tuberculosis is a reproach to the general practitioner, and I think otosclerosis is a reproach to our profession. The paper has given you the pathology but the otology, is something we know little about. The first cause we do not know. I have ceased to treat it, because I think the treatment is ineffectual and in a small place like Alexandria, people reproach you for not doing them good, the contact being more intimate. Furthermore, honesty is the best policy." Of course the important thing is prevention. The Doctor says 20 per cent of deafness could be prevented. If 20 per cent could be prevented, then 90 per cent, of preventable cases must be due to adenoids and tonsils—those due to infection, we can not foresee and they can only be prevented through hygiene. How can we foresee syphilis, for instance? The main thing is to do something when the imminent happens. I advocate a free myringotomy,

free syringing, and the postural treatment of acute suppurative otitis media where the membrane has not ruptured.

In influenza infection you may not see any flow for twenty-four hours, after myringotomy, and then it will run out like water. I endorse what the Doctor says about the mastoid operation. I question whether you could prevent toxemia in scarlet fever and suppuration of the middle ear by spraying. The Doctor speaks about catarrh causing deafness. Catarrh will regulate itself when the patient's health improves. I see many tubercular patients, if it is the simple, unobstructive form, in the Veteran's Hospital at Alexandria. We know better than to spray them. We say, "You will be better when your health is better." These boys want me to treat them for nose and throat catarrh, but what is the use? We know unless we build up the system treatment is useless in tuberculosis. A great deal of prevention resolves itself into building up a strong body by regularity of living, by bathing and fresh air and rational hygiene.

Dr. T. R. Ragan (Shreveport): I take to myself as well as the profession generally a great deal of reproach in allowing this condition to progress towards deafness. I think the paper is directed toward the general man to make him more cautious. We all see running ears that are constant and many of them have a history of having existed for many years. If the parents see a bad eye they call attention to it, but they do not know the importance of calling attention to ears in the same way. I think we should all take this to ourselves and see that we do our part in calling attention to the specialist, so they may get proper treatment early. In the city where they have school inspectors a great deal of attention is paid to them, but in many cases the damage is already done. It is up to the profession generally to recognize this and call attention early enough so they may get the right treatment and prevent the deafness which is incurable after it occurs.

Dr. Rufus Jackson (Baton Rouge): I want to mention one class of case mentioned by Doctor Dupuy, and that is the case that does not come to immediate and active suppuration. With the multiplication of the character of infections we are having today, and the borderland cases of the different groups, we are having many cases that do not come to frank suppurative process, and yet in these cases the child may have impairment of hearing for a considerable length of time. To my mind that is one of the most important conditions that the general practitioner should be watching for today. If the ear drum perforates and the child is relieved by nature; if there is no pain behind the ear or other objective symptoms, the child is not in imminent danger; but this other condition is insidious. You find the child has a slight deafness which does not clear up completely in a few days. That is the case that leads to constriction of the eustachian tube and an adherent process of the middle ear.

There are some controversial aspects of this question that are very tempting to us specialists but that are not of

interest to the general practitioner; and as Doctor Patton has said, it is important that this should be considered by the general practitioner. But I must say this—and I am a good enough friend of Doctor Weil to say it—that I have never seen any man perform a mastoidotomy on six weeks suppuration. I have been taught by the best men I know and they followed the idea that mastoid operation is reserved for necrosis of the bone, that you must have a necrotic process of the mastoid cells, or a granulation process of the antrum, before you are justified in doing a mastoid operation.

But if a man has cleared up the nose to keep it from continuing this infection through the Eustachian tube, and there are no positive findings to indicate necrosis or granulation process there is some constitutional condition that needs to be cared for.

Dr. William Sheppegrell (New Orleans): I was not present when Doctor Patton read his paper, but have heard nothing in the discussion regarding the effects of hayfever on deafness. Cases that have suffered from hayfever for a number of years, almost invariably have a certain degree of deafness as a complication, the hearing usually being lowered 25 per cent., and frequently 50 per cent or more. Unfortunately, hayfever is rarely recognized the first year of its development as forming a distinct clinical picture. An examination of the nostrils, however, shows a difference between hayfever and coryza that is easily recognized by the expert, and absolutely confirmed by the diagnostic tests. The first year the patient is rarely treated for hayfever, as he usually assumes that he has a cold. The second year he becomes suspicious on account of its character and periodicity, and the third he begins to realize he has hayfever. The subject of hayfever fortunately, is now better understood and I wish to emphasize the importance of its early recognition and treatment with a view of preventing deafness, as early cases respond especially well to the immunizing treatment. After the second season the ears become more affected, and this tendency increases with each season.

You first have congestion of the Eustachian tubes and consequent defective ventilation of the middle ears, then retraction of the drums, and later a condition develops which is as difficult to treat as the usual cases of catarrhal deafness. I especially wish to call your attention to this phase of hayfever, as such cases are more apt to come to the attention of the general practitioner.

Dr. W. T. Patton (closing): I believe with Doctor Weil that after six weeks of continuous discharge you should do a simple mastoid and get a larger opening.

Doctor Ewing spoke of otosclerosis. Otosclerosis and osteomalacia have been studied together lately and I think the experiments have been practical. In some cases the use of codliver oil has been quite helpful.

I thank Doctor Ragan, because he is the only general practitioner who spoke, and I had hoped that the general men would not be so timid, but would give us some discussion.



## OSTEOMYELITIS.\*

BY URBAN MAES, M.D.  
NEW ORLEANS.

While there is no disease in the surgical category which is better known or better understood than osteomyelitis, it still presents many phases in which the diagnostic acumen of the surgeon of experience is taxed, and in spite of laboratory data and careful X-raying, an occasional case still slips by with extensive loss of function or even loss of life. Two axioms which should be uppermost in the mind of every surgeon are: No purgation in acute abdominal pain until the diagnosis is assured, and early operation in osteomyelitis. Many surgeons in large centers, and those with hospital and dispensary services rarely see acute infectious osteomyelitis in its initial stage. It is to the general practitioner that the warning must be sounded, for he is called first, and may undertake medical treatment at the only time when actual benefit can come from anything but a mutilating surgical procedure, when bone has been destroyed, and life and limb are in jeopardy.

The older name, acute infectious osteomyelitis, has given way to acute hematogenous osteomyelitis, both as more fitting, and as a more exact description of the disease, which is always blood-borne or metastatic; septicemia is not necessarily implied, although this condition may supervene, and is undoubtedly present in many if not most of the fatal cases.

In order to review fully acute hematogenous osteomyelitis as an entity, it is necessary to recall the circulation in bone as originally described by Lexer; the etiology is the same whether we accept his conception or the more recent observations of Starr, and there is only a minor point of difference in their theories as to the treatment of the disease. Lexer has shown that the main nutrient vessel enters the shaft of the long bone near the middle, and divides, sending branches to both ends, which, after numerous divisions, end in fine capillaries in or near the metaphysis. The epiphysis gets its blood supply from the cortical branches, which are numerous and distributed to the entire sur-

face, while the cortex of the shaft is supplied from the periosteal vessels. It will thus be evident that the long bones derive their blood supply from three separate sources, and this will explain in a measure why the cortex becomes involved only secondarily in osteomyelitis, while the epiphysis is rarely if ever attacked by the disease. On the other hand, it is the fine capillaries originating from the main nutrient vessel in which the septic infarct becomes lodged, and we have simply to apply the reactionary phenomena of inflammation to bone tissue to complete the early picture of hematogenous osteomyelitis.

With this fundamental view of bone circulation before us, let us now turn to the pathology and attempt to complete the picture before considering the diagnosis and treatment. The septic infarct may have its origin in an unnoticed skin furuncle, a tonsillar crypt, or the mouth cavity, and is carried in the general circulation until a satisfactory lodging place is found. The lung and cerebral capillaries, being relatively large, do not arrest the infarct, and it finally reaches the terminal capillaries in the metaphysis of the long bone, where the bacterial colony begins to grow. On account of bone density we cannot have much, if any swelling, therefore early necrosis occurs, which may extend rapidly along the marrow of the diaphysis or may find its way through the cancellous structure to the surface, and make itself known as a subperiosteal abscess. In the experience of the most of us, both of these phenomena are possible, and the contentions of both Lexer and Starr would seem to be correct. With increasing inflammation, more pressure is exerted, and actual death of bone occurs with localization of the abscess and the casting off of a sequestrum. In many instances this localization does not occur, and we see rapid involvement of the entire marrow. In an example of this sort recently observed, the infection found its way to the subperiosteal layer and spread rapidly in this space, causing a necrosis of the entire shaft of the femur by cutting off its blood supply. In most instances, however, where death of the patient does not supervene, localized death of bone

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gives relief to the patient, while the surgeon is at his wits' end to terminate the long suppurative process.

The organism found is usually the staphylococcus aureus, which would seem to be expected. Occasionally a strain of streptococci may be found, but this organism does not have the wandering or metastasizing properties of the staphylococcus, usually causing trouble by local reaction or through the lymph stream.

The clinical picture of acute hematogenous osteomyelitis is fairly characteristic, although there may be some obscuring or complicating condition to mask the symptom complex. Just as there are those of us who still on occasion give a purgative in acute abdominal pain so we may sometimes be tempted to treat pain in or near a joint with salicylates, etc.; but we should remember always that just as the giving of a cathartic has complicated many a simple appendix, so valuable time may be lost in medical treatment of osteomyelitis. The time to recognize and attack acute hematogenous osteomyelitis is at the onset, during the stage of inflammatory reaction and before the actual death of bone takes place, for it is only during this period that conservative surgery will avail.

In most instances the diagnosis rests on a rather clear-cut story. The average case occurs in a child between two and ten years of age, who has bad tonsils, bad teeth, or possibly an insignificant skin infection. Exposure or traumatism may play a part, although the injury may be so slight as to be altogether forgotten. As a rule, persistent, localized pain near a joint is the first symptom, which is quickly followed by a chill, with temperature up to 103 or 104, and the usual symptoms of toxemia, such as vomiting, dry tongue, headache, etc. The blood picture will show a marked leukocytosis, 20 to 30,000, with a corresponding increase in the polymorphonuclear leukocytes. It is at this stage that recognition of the disease and prompt treatment will save much time and suffering to both patient and physician. Unless proper treatment is inaugurated at once, redness and edema become marked in the soft parts, and there is a corresponding

increase in the toxemia, as well as local destruction of bone. To quote from Starr, "The diagnosis must be made on signs present. Severe pain in the neighborhood of a joint, with a spot of tenderness, in a growing child is extremely significant. If it is accompanied by high fever and rapid pulse, with high blood count, the diagnosis is moderately certain."

Let me emphasize here that the X-ray is useless at this stage of the disease, and may even be misleading. By the time gross changes can be demonstrated radiographically, the opportune time to inaugurate treatment will have passed.

The diseases from which acute hematogenous osteomyelitis must be differentiated are acute articular rheumatism and acute infectious arthritis. In the former there is less constitutional reaction and more localized pain confined to the joint itself rather than to the neighborhood of the joint. There is immediate joint swelling and much less severe pain, with a more gradual onset. In arthritis, there is more joint fixation from muscle spasm, with the swelling limited to the synovial membrane of the joint.

In our own study of 23 cases from the records of Touro Infirmary, summarized by Dr. A. B. Pitkin, we find that eight patients were admitted without any diagnosis having been made. Four were sent in with a diagnosis of chronic osteomyelitis, and the remaining eleven were variously classified as "intestinal upset," rheumatism, typhoid fever and tuberculosis. The duration of the disease before admission varied from three days to five years. The X-ray diagnosis was positive in all of the old cases, but showed nothing up to the third day in any case, at which time there was already marked bone destruction. The stay days in the hospital varied from one—in a patient with a small focus in the os calcis, which was easily removed with a curet—to 84. All of these patients were discharged still unhealed.

I believe most of us are prepared to accept the pathological picture as already presented, and can visualize the process as a true bone abscess, analogous to any other abscess except as to the special tissue involved. The soft



parts accommodate swelling to a greater or less extent, but unyielding bone cannot swell. There is consequently but one outcome to bone inflammation, and that is necrosis from local anemia. This local death of bone and the profound toxemia can be combatted only by following the old surgical adage, "ubi pus ibi evacua." There has arisen some discussion as to the propriety of following Starr's suggestion of simply opening the periosteum in early cases. The writer would prefer going a step further and making several drill holes in the cancellous bone structure in these cases, or even opening the marrow canal with a trephine where this is indicated. The instrument, armamentarium would be very simple. A small carpenter's gimlet added to the surgeon's pocket case and used under aseptic precautions might be the means of saving a great deal of disability and cutting down a needless mortality.

Kellogg Speed has called attention to the disturbance of growth following osteomyelitis in growing children. This would remind us that the maintenance of normal longitudinal bone growth is dependent on sufficient blood supply in the region of the epiphysis, and while Starr suggests that holes be made in the cancellous bone in the direction of the epiphysis, this latter must not be injured. Our drill holes must be in the metaphysis, but not through it.

Should the opportune time for the inauguration of treatment be passed, however, we then have to deal with an entirely different phase of the disease, and it is here that surgical skill and ingenuity may be taxed to their uttermost. Once actual death of bone has occurred, the subsequent handling of the case will depend on the rapidity of the spread of the infection, and whether or not there has been an early perforation of the cortex with localization of the infection. Radical treatment varies all the way from simple removal of the sequestrum to complete excision of the shaft of the bone involved. Moreover, the infected cavity left after the removal of the sequestrum varies in extent and in the amount of the surrounding infection, and may require an extensive use of the curet and chisel and the removal of a sufficient amount of

bone to require later some plastic procedure, or even a bone graft.

The best method of filling the bone cavities left after such operations has been the source of much speculation. The various plasters, waxes and bone chips have all had their day. Lining the cavity with skin, as suggested by Neuber, is a valuable procedure if the infection has been entirely eliminated; but this, like all other procedures, is destined to failure in the face of infection. Bancroft has shown that we may be more conservative since the infection can be controlled by the proper use of Dakin's solution, and there are even some instances in which with this method of treatment the sequestrum has become reorganized and healed in place.

Since the experience of army surgeons has been so valuable in the application of Dakin's solution by Carrel's technique in bone suppuration, the writer would advocate the use of this method, which has been most helpful in his own personal experience. The bone cavity treated in this way will usually fill with healthy granulations, which in turn become covered by epidermis. This is in most cases followed by a reproduction of new bone to fill in the cavity. The subject of bone grafting is a chapter unto itself, and will not be touched on here.

In conclusion, let me urge early diagnosis and prompt operation in acute hematogenous osteomyelitis. In this way alone, we can save life and preserve function.

When in doubt, early exploration under aseptic precautions can do no harm, and if a trephine or burr is not at hand, several holes made with a carpenter's gimlet may be sufficient to limit the process.

In chronic cases, the use of Dakin's solution by Carrel's technique will give good results and limit the extensive use of the chisel with the subsequent necessity of bone grafting.

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#### DISCUSSION

Dr. John Oeschner (New Orleans): It is more particularly of the acute condition that

I wish to speak. To those of us who see much osteomyelitis there are certain conditions that are absolutely axiomatic, and I had hoped that the general practitioner was sufficiently conversant with the symptomatology of osteomyelitis to know that it has its corollary in appendicitis. There is only one treatment in the acute condition, just as in appendicitis. There is certainly no general practitioner who being faced with pain located over McBurney's point, chill, high temperature, total leucocyte count of anywhere from 10,000 to 30,000 would hesitate for a moment to cut into the abdomen and take out the appendix. Anybody who would be regarded as a medical idiot. And yet we are permitting our children suffering from osteomyelitis to lose bone, to lose joints, to lose life itself, simply because we are afraid to tackle the job. What do we have? A child, usually between two and ten, and on up to adolescence. This child has a chill, high temperature, leucocytosis. What is it? It is an infection. Where is it? When it occurs in the region of the appendix, it is appendicitis. But where do we have complaint of pain? Invariably at the end of one of the long bones, and what happens? The infection travels, usually the infarct takes place at the epiphysis, and there pain is complained of. You will have swelling, and redness, and heat. There is no possibility of the infection going into the soft tissues—you cannot do it. But in three or four days Nature has done what you could not do—it has worked through and made a sub-pareta abscess, and then the variest tyro in medicine could take care of it. It does not require any special education. The abscess is opened—and the doctor is a big man. But the bone has been irreparably damaged, sometimes has to be removed, and sometimes the joint is involved.

What should be done? As in the appendix get the pus out, for in seventy-two hours—in twenty-four hour, the damage is done for all time. Cut down over the site of the pain and with a trephine go in and take off two or three little plugs of bone, but do not bother the marrow.

Dr. Isadore Cohn (New Orleans): I do not know that I have ever heard a presentation so concise, so definite, and so much to the point as this of Doctor Maes, and of so much value to most of us.

Doctor Oeschner in his discussion touched some interesting points, but he did not go far enough. He said after a few days pus gets out and forms an abscess, then somebody opens the abscess, and he is a big man. Gentlemen, I think he is a little man who does that. If he does not go in where the infection started the medulla he has not done enough. The time to make a diagnosis of osteomyelitis, as Doctor Maes has beautifully put it, is before the X-Ray can help us. Those who sit down and depend upon the X-Ray might as well do nothing. You cannot depend on it.

The trephine is a good instrument, and does little harm, but the simplest of all measures is possible in a well equipped hospital where you have a motor-driven drill and can make two or three openings and drain the abscess.

Please throw your curettes away. Put them in a museum. If you use a curette you are simply scraping off some of the cells which are protecting you. Whether you use Dakin's solution, or whether you use dichloramin, or whether you use anything—as long as you have the abscess drained you have done your duty, and the main thing to remember is that since there is pus along the periosteum there is certainly pus in the bone.

We have all seen people using gouges, and mallets and chisels to get into the bone. The cause of death in fracture of the long bone is fat embolism. The first pathological change that takes place in the medullary canal is fatty degeneration. If we use a gouge and mallet we are forcing fat globules into the circulation and increasing the chance of fat embolism.

Let us not forget the many complications that may arise, and when we see these patients do not wait for the X-Ray to help us.

Dr. S. C. Barrow (Shreveport): I want to correct one little error. The paper states that the X-Ray is of absolutely no value, and it has been likewise stated by those who discussed the paper. Radiologists will admit that the X-Ray has no value in osteomyelitis to the extent of demonstrating that there is an osteomyelitis, but I will gamble that these gentlemen who discussed the paper invariably have an X-Ray examination, if only for the purpose of excluding injury or trauma to the bone, excluding arthritis, and various other things. An X-Ray examination, even though negative, is of as much value as when positive. I do not presume to tell you that we can show you an acute, osteomyelitis, but we can tell you in all cases that there are not other things that no doubt will confuse you.

Dr. Urban Maes (closing): I want to say that Doctor Barrow's point is well taken. We all have X-Ray pictures made, but we use them in a negative way.

## THE VALUE TO THE GENERAL PRACTITIONER OF X-RAY EXAMINATION OF THE STOMACH AND DUODENUM.\*

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Little did Roentgen, the discoverer of the X-ray, realize, at the time he made his monumental discovery in 1895, the broad field of application which was to follow.

Today the X-ray is used in every civilized country of the globe both as an aid to diagnosis and in the growing field of therapy.

If you look over the list of scientific exhibits at this meeting you will note that, of a total of 56, that 13 are entirely

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X-ray and that three additional exhibits are partly radiographic, a very high percentage of the whole exhibit.

In no phase of X-ray work has there been more definite and certain strides made than in the study of the digestive tract.

With thorough, careful study it is now possible to determine the presence of 90 to 95 per cent of organic lesions of the stomach and duodenum. A negative diagnosis may be made in an equally large percentage of cases. Dr. Will Mayo said that in health one should be able to eat anything and even throw in an old shoe besides without feeling any inconvenience from the stomach. This agrees with the teaching of some of our leading internists among whom I may mention my chief in medicine, Dr. George S. Bel.

When a patient comes in complaining of indigestion, only too often the poor stomach is blamed off hand and the patient becomes a human drug store—pound after pound of chemicals, pint after pint of liquids poured into the protesting organ.

Some one has termed the stomach the greatest liar of all the organs of the anatomy. It has been referred to as the alarm box of the body.

How many patients have been dieted and fasted for a peptic ulcer when the trouble existed outside the stomach. On the other hand how many individuals have been labeled chronic dyspeptics and consigned to indefinite invalidism when a real lesion of stomach or duodenum could have been definitely located and relief secured by skillful surgery.

The practice of medicine is tending to become more and more scientific. If, in the examination of our cases, our findings can be made objective and if the subjective phenomena minimized as a basis of diagnosis then will diagnosis reach its highest scientific attainment.

The principle advantage of X-ray examination exists in the fact that the findings are objective. A thorough examination of each part of the stomach and duodenum permits the careful, painstaking, trained Roentgenologist to state with reasonable assurance that an organic lesion of the stomach or duodenum does or does not exist.

In order to determine the presence of abnormalitis in the gastric or duodenal wall, it is necessary to be familiar with normal appearances. I find that the greatest source of error for beginners in Roentgenology in making interpretations is that they are unacquainted with the normal stomach. As an example of this, I put the question to my students beginning their course in X-ray as to what was abnormal about the appearance of a certain stomach. There were eight answers each one stating an abnormality. I could see not even one.

The stomach is subject to so many variations of position and peristalsis that anyone seriously considering taking up this work should spend several months at least in the study of the normal and its variations. Otherwise both the Roentgenologist and the physician relying upon his report will be subjected to many needless embarrassments.

If this has happened to you, do not blame the X-ray for the fault lies rather with the one using it.

At least 85 per cent of the value of the X-ray in diagnosis is in the correct interpretation of the shadows cast by it upon the screen or plate.

In making the X-ray examination the routine I have adopted begins with a preliminary fluoroscopy of the patient's chest. Then the oesophagus, the fundus of the stomach, the median portion, the pyloric antrum, the pylorus itself and the duodenum are studied in turn. Care should be given to each part of the stomach as though one were dealing with several organs.

It is possible to identify definitely the pylorus as such, one sees the shadow produced by the muscle between the pyloric antrum on one side and the duodenum on the other. The determination of the location of an ulcer, whether post-pyloric or prepyloric is an added advantage as ulcers of the duodenum are so seldom found to have a malignant process engrafted upon them.

In my own experience the fluoroscope has been more satisfactory than the skiagraph. It permits examination from many angles. One can associate palpation with fluoroscopy and note in many cases the relation of palpable masses to filling defects in the gastric outline. Also through the abdominal

wall the stomach may be moved about and many spasms, especially about the pyloric antrum, may be overcome; besides the flexibility of the walls of the stomach may be determined in this way. This is an important point in suspected early malignancy of the stomach as in a small percentage of cases a gastric tumor may not project within the gastric lumen.

The examination of the digestive tract is not complete, however, without plates of the gall bladder region and an examination of the terminal ileum, appendix and colon.

At times, recourse is necessary to the use of the opaque enema which gives us a better idea of the walls of the colon, from just above the rectum as far as the caecum, than any other known method of examination outside of a most thorough exploratory laparotomy.

In conclusion: By a more accurate means of diagnosis of organic lesions of the stomach and duodenum which we possess in the X-ray, much misdirected treatment will be avoided when the stomach and duodenum are not at fault. On the other hand, many cases which are classified as chronic dyspeptics will be restored to health by the recognition of an organic lesion and its relief by the skilled surgeon.

#### DISCUSSION

Dr. S. C. Barrow (Shreveport): This is a subject that should be brought before the profession whenever possible. I was asked by a physician yesterday, a man who knows medicine well, if the X-Ray was of any value in the determination of gastro carcinoma. I have again been asked if by the X-Ray we could determine the presence of a simple pyelitis. These questions indicate a lack of information on the part of the profession generally as to what the X-Ray will do, and one of the most important points for the profession to know is in just what conditions the X-Ray is valuable.

We had a treat in December hearing Dr. Carman read a paper in which he reported 523 cases of duodenal ulcer which were diagnosed by the X-Ray and 520 found to be correct. It does not interest you how the examination is made, or the technique used; the thing that interests you is the fact that a correctly made and interpreted X-Ray examina-

tion in these conditions mentioned by Doctor Henriques will put you right in a large majority of cases. We cannot all attain the proficiency of Doctor Carman, but with reasonable care and skill we can detect the large majority of these conditions.

Dr. A. A. Herold, (Shreveport): From the standpoint of the internist, I would like to say a word or two about this most important means of diagnosis. I recall a case in which we were in doubt whether it was duodenal ulcer or gall bladder infection. The report of the radiologist was in favor of duodenal ulcer. At the same time the man was undergoing treatment with another man for gall bladder infection. We got together and decided that it might be both. This man went away a good many miles to be treated by a gastroenterologist in a distant city, who made a diagnosis of colitis, but he did not cure him. He came back for further treatment for duodenal ulcer and gall bladder infection.

Too often these patients will go from doctor to doctor until when we go to look for the real trouble we have to call on the radiologist to help us out in our dilemma. And it is not so much the technique of the radiologist, as his ability in interpretation, as Doctor Henriques has emphasized.

Dr. E. Denegre Martin (New Orleans): It is singular the impression that prevails, especially among the practitioners away from the large centers, who are not familiar with X-Ray work. The general impression seems to be that all you have to do is to send the patient to the radiologist, and a diagnosis will come back. For myself, I depend much on the radiologist. But the history must go with the case. It is just as important that the radiologist should know the history as to know the technique of taking the picture. We have many times been misled when the diagnosis was not confirmed, and I believe many of these instances are where the history has not been taken.

I am afraid we are going a little too far today on the laboratory side. As long as scientific medicine is in the hands of the scientists it is all right; but we are not all scientists, and I am afraid we are depending too much today for diagnosis upon the laboratory, and are forgetting examination of our patients, getting the history, and putting the two together. Our laboratories should be for the confirmation of diagnosis, and not for the purpose of making diagnosis on which the surgeon may operate. I have as much faith in the X-Ray apparatus as anybody in the world. There is not a day that I do not use it. But we must not depend upon it exclusively.

Dr. Adolph Henriques (closing): I wish to thank Doctor Barrow for his discussion. As I said, the method is objective, and at least 85 per cent of the value of the method depends upon correct interpretation.



## FULL TERM ABDOMINAL PREGNANCY (A CASE REPORT).\*

By LUCIEN A. LEDOUX, M.D.

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The occurrence of full term abdominal pregnancy is rare. To operate and deliver a living fetus is unusual. The case I am reporting tonight presents several phases of more than ordinary interest.

In the July, 1922, issue of *Surgery, Gynecology and Obstetrics*, Dr. P. Graf-fagnino, of New Orleans, reported that from 1906 to 1920 there was on record at the Charity Hospital of Louisiana, eleven (11) cases of advanced abdominal pregnancy; since that time two cases have been added and in both instances we have had the good fortune to have both of them come under our observation.

After reviewing this record, I have briefly classified them as follows: (a) Primipara, 5; (b) Multipara, 4; (c) unclassified, 3; all cases were colored women. Fifty per cent occurred in women between the ages of 26 and 30. The youngest was 20, the eldest 90. Eight of these cases were full term foetuses, one seven months, the other four months; additionally a case of twins, period of gestation not stated; two unclassified; one deserted before operation. Of the 12 cases recorded, two (2) were viable foetuses; one (1) died a few hours after birth, the other was discharged and at last reports was living and well. Nine cases were discharged as well; three (3) cases died.

Jane P., colored, age 28 years. Admitted to ward 39, Charity Hospital, March 10, 1923, complaining of vomiting since last August, feeling of fullness in lower abdomen and pressure on the rectum. Headache, backache and constipated.

F. H. Negative for syphilis, T. B. and cancer.

P. H. Usual childhood diseases, otherwise negative.

M. H. Menses at 14 years of age. Regular, 30 day type, duration 4 to 6 days, color normal, flow moderate, no dysmenorrhea. Last menstrual period, July 1st to 15th; patient is not sure as to exact date.

P. I. Last August patient began having vomiting spells which have continued to this time. About a month ago, patient took some sort of purgative and shortly afterwards noticed that her baby was lower than usual.

She states, tho, that she has carried low all along. Her bowels are badly constipated and she has to resort to castor oil to get results.

Phy. Exam. Shows a colored female, very poorly nourished and skin rough and dry.

Head: (Eyes) Pupils equal and regular, react to light and accommodation. No edema found.

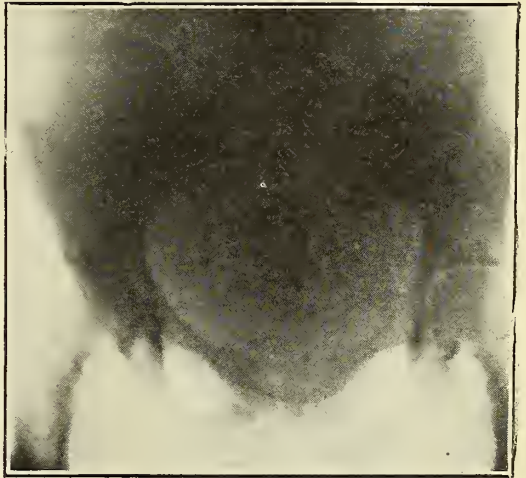
Mouth: Teeth in bad condition. Tongue coated; tonsils hypertrophied.

Neck: No glandular enlargement.

Chest: (Lungs) Respiratory rate and breath sounds normal. (Heart) Enlarged to the left, strong and forcible systolic blow at the apex which is not transmitted.

Abdomen: Enlarged and distended. Foetal parts found to extend to the umbilicus. Back of foetus appears to be low down and to the left. Foetal small parts generally felt over abdomen to pubis.

Vaginal examination: Bulging of post-vaginal wall is noted, cervix found very high, behind the pubis. Cervix is soft, but will not admit one finger.



X-Ray of case of Full Term Abdominal Pregnancy. This picture was taken several days before the operation. Of interest is the low level of the foetal vertex.

Rectal: Foetal head is found to be encroaching upon the rectum, and the vagina, in the cul-de-sac as far down as the coccyx.

Diagnosis: Full term pregnancy, foetus viable. Vertex, occipito-posterior partially incarcerated.

Her temperature on admission 99 degrees, pulse 110, urinalysis 3-14-23, negative except for few hyaline cases. Coagulation time 4 minutes. B. P. S. 190, D. 110, Wassermann negative.

X-Ray report: Enlarged size and density foetal gravid bones. In addition, as you will see, the plate shows that the pelvis was amply large enough for the passage of the head and the vertex is very low, lying near the level of the bi-ischial line. The case was examined by Dr. Kostmayer and members of the Staff and we agreed that in all probability it was a case of relaxed uterine wall, which allowed the head to sink low into the pelvis; possibility

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of an extra-uterine pregnancy. We decided to note case closely and be prepared for vaginal hysterotomy.

Progress Notes: 3-10-23: Head low in cul-de-sac and resting on coccyx, cervical os found with great difficulty. Cervix pointing upwards.

3-14-23: External os, two fingers dilated, general condition good.

3-15-23: 9 A. M.: Few cramp-like pains are felt in lower abdomen. 4 P. M.: Pains are becoming more regular and more like labor pains. No show. 6 P. M.: Pain more frequent, every 2-3 minutes, duration 15-20 seconds, similar to labor pains. Perineum beginning to bulge and upon rectal examination there is found to be a definite attempt to expel the foetus.

8 P. M.: I saw the patient and ordered her prepared for operation. Patient was prepared for plastic work. Under ether anaesthesia it was found that the vertex was pushing through the recto-vaginal septum. The cervix was found high up, anterior, behind the pubis and above the bladder, soft and internal os persistently closed.

Vaginal hysterotomy and forceps had been decided upon, but in view of our findings, an extra-uterine pregnancy, median section was done.

Operation 3-15-23: Median incision about 6 in. long, middle of incision at point of umbilicus. Skin, fascia and peritoneum very thin and adherent. Peritoneum opened at level of umbilicus; dark brown colored omentum bulged out, followed by a portion of transverse colon. The uterus was not visible. Hand was introduced into abdomen and foetus found lying free in the abdominal cavity. The membranes were found ruptured. Male foetus delivered, which breathed and cried immediately. Color somewhat cyanotic. Cord clamped and cut. Placenta and membranes, which were bile stained, found adherent to the right tube, broad ligament, caecum and under surface of the liver. The fimbriated end of the right tube was the point of origin of the umbilical cord. There was no abdominal bleeding. The uterus was in normal position, purplish colored and soft, and about the size of a three months pregnancy. Both tubes, though enlarged, were normal. Ovaries normal. Removal of placenta was deemed too hazardous and was left in situ with a firm pack about the base.

Presentation-vertex-position R. O. P.

Weight of child 7 1-2 pounds.

Abdomen closed according to usual technique with silk-worm and catgut sutures. Drain and lap six at lower angle of wound. Patient did fairly well throughout and there was no bleeding from the cut skin surfaces.

The following day the condition of the mother and child was excellent. Succeeding days showed satisfactory progress, with free drainage. The drain and pack were removed by the end of the fifth day. Patient was given water and sugar freely. Temperature averaged normal, pulse 95. On the 25th ten days after operation, the patient's temperature rose to 103, pulse 120, followed by a severe chill. The course that followed was typically septic; became distended and show-

ed all symptoms of a general peritonitis. Her condition progressively grew worse and she died March 31st, 16 days after operation. I was able to get a partial autopsy. The abdomen contained straw colored fluid and there was evidence of a moderate grade general peritonitis. The placenta was found attached to the fimbriated end of the right tube, post surface of right broad ligament and appendiceal region of the caecum. About half of it had become detached and separated by organized blood clot. All evidence of umbilical cord and membrane had disappeared.

The baby was discharged on the 12th day and at last report was doing very well.

## DISCUSSION

Dr. S. M. Blackshear: I would like to ask the Doctor why he had not removed the placenta? It seems to me he would have removed it after taking out the drains.

Dr. E. L. King: I think I can answer Dr. Blackshear's question. It is pretty well established that the removal of a placenta in the case of a pregnancy such as this (i. e. with a living child) is dangerous. There is danger of fatal hemorrhage from the vessels of the placental site. In the reported cases where the placentae have been removed there has been attachment to the uterus or to the broad ligaments, or to both. Under such conditions, it is better to do a hysterectomy, removing uterus, broad ligament (or ligaments) and placenta en masse. The only other way to handle the situation is to leave the placenta alone. In case the foetus has been dead for some time, removal of the placenta is simple and free from risk.

Recently a case was reported (Practical Medicine Series, Chicago, one or two years ago) in which the placenta was left intact and firmly attached in the cul-de-sac; the abdomen was closed without drainage. The operator reported on the patient's condition one year later. The placenta was still there, and was not giving any trouble. Its ultimate fate has not been determined.

The advisability of drainage in such a case, with the placenta left undisturbed, is possibly open to question, but it has always been the custom.

Dr. H. W. Kostmayer: Dr. LeDoux's case came some three or four weeks after I had had a similar one. In the first case, the woman had foetal parts close beneath the abdominal wall. The X-ray showed an intra-uterine pregnancy; there was some doubt as to the diagnosis. The Radiologist reported an intra-uterine pregnancy. On X-ray examination, about the foetus, there was the uterine wall. The ultimate test in diagnosis is to find the uterus separate from the pregnancy on physical examination. The rest makes no difference. I saw this patient, and without having seen the X-ray, I found the uterine body lying in front, and to the right side. There was no doubt about that. I then went down to the X-ray room and studied the plate. I removed a dead foetus. This was the first of the two cases. This problem was simple.

When the other patient came along, I told Dr. LeDoux that some years ago Dr. Hidder,



of London, had told me of having opened the posterior cul-de-sac, put on Elliott forceps and delivered a baby, and after the 7th, 8th or 9th day the dried up placenta was pulled away. His case made an uneventful recovery. I told Dr. LeDoux I thought his case was somewhat similar.

It was decided to either split the cervix or split the cul-de-sac and remove the fetus. But on examination under anaesthesia the fetus raised up into the abdomen. The problem was difficult. An abdominal section was decided upon. In answer to Dr. Blackshear, the only thing that might be done is to go back into the abdomen about the 10th day. This seems worth thinking of. If you pack, most of them die of sepsis. I had a case in which I lost mother and baby, the mother from sepsis from a packed abdomen, and the baby from syphilis. It seems best that we should leave it in for all time or leave it in without packing and go in at a future time. This case was fascinating, following on top of the other one.

Dr. LeDoux (close): I think that Dr. Blackshear has been answered pretty well. The patient weighed about 95 pounds and was lucky to survive the anaesthetic. I thank Dr. King for assisting me in explaining this to Dr. Blackshear.

I am inclined to agree with Dr. Kostmayer that closing without drainage is the safest procedure. I have never been up against this type of case before, but I believe it is best to close.

In answer to Dr. Michinard. The cervix was very soft, but the internal os was found persistently closed.

As regards the psychic features of this case. She last menstruated about the 1st to the 15th of July and delivered about the 15th of March. She was about due.

In closing I want to emphasize two points: (1) the typical normal labor pains occurring at frequent intervals with bulging perineum; (2) as in a previous case the uterus was the size of a three months pregnancy. I have read reports of other cases and found that the uterus enlarged almost up to the 3rd month.

### AN APPRECIATION OF SOME OF THE MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.\*

BY FRANK J. CHALARON, M.D.  
NEW ORLEANS.

Modern methods of diagnosis of syphilis date from 1905 when Schaudinn and Hoffman identified *S. pallida* as the causative organism of the disease, and thus made possible the positive identification of a lesion as a chancre in a minimal time. In order to realize the value of this discovery, we must remember that the diagnosis of the primary

lesion had up to that time been based on purely clinical data and observation. The period of incubation, the appearance of the lesion, its induration, or lack of induration, the accompanying non-suppurating adenitis, and the number of the lesions were in the main features in the differential diagnosis. That there existed a strong doubt as to the positiveness of the diagnosis even when all the symptoms were found in a given case is evidenced by the fact that many able syphilographers advised that no matter how typical the primary lesion, no treatment be instituted until the appearance of the secondary eruption. On the other hand, induration, copious suppuration, multiplicity of lesions, and healing after cauterization frequently led to a denial of syphilis to the sorrow and confusion of the diagnostician when a few weeks later the patient returned with a telltale secondary eruption.

Today the diagnosis of the primary lesion is based solely on the presence of the specific organism as demonstrated by the microscope or the complement fixation test. Contrasting the two methods the importance of the time saved in establishing adequate treatment is evident. We know that moderate invasion of the body by a few spirochetes precedes or is simultaneous with the appearance of the primary lesion. This time gained means the practical certainty of crushing the disease in a year at most, as against the possibility of a cure after two or more years.

Of the means at our command to demonstrate the *S. pallida* in a lesion or its satellite bubo I will discuss the best.

#### *The Dark Field.*

By this diagnostic method it is possible to identify 65 per cent of genital lesions as chancres on first examination. Only 14 per cent of those in which the organism was not found gave a positive blood Wasserman at a later date. However, the dark field examination has requisites which discount its value to the general practitioner. It demands a certain amount of technical skill in the proper adjustment of the dark ground illuminator and in the differentiation of the spirochetes and what is more important it requires either bright

\*Read Before the Louisiana State Medical Society, April 24-26, 1923.

sunlight or an intense artificial light. It should therefore be reserved for the specialist or the laboratory worker.

The Fontana-Tridondeau stain. This method is practically as accurate as the dark field over which it has advantages commending it as the diagnostic method of choice to the physician who makes his own examination. Simplicity of technique easily obtainable in ingredients, rapidity of procedure, and finally the fact that slides may be kept for 24 hours without affecting the result of the examination warrants its description.

After cleansing the field with a saline solution or distilled water, serum is made to ooze from the suspected lesion by rubbing with a piece of moistened gauze, or by gently scarifying the edges with a needle. After waiting a few minutes, enough exudate is obtained to make two or three slides. The serum is taken up and spread in a very thin layer with a platinum loop or an ordinary wooden toothpick. The slides dry very quickly depending on the thickness of the layer. Sol. No. 1 Dehemoglobinizer — (acetic acid 1, formalin 2, distilled water 100) is allowed to run over the slide for one minute. Sol. No. 2 mordant (tanic acid 5, distilled water 100). This is applied and the slide is warmed over the flame for one minute washing off in tap water. Sol. No. 3 stain (Nitrate of silver 20 per cent sol. add drop by drop strong ammonia until precipitate is redissolved and solution has a slightly opalescent appearance.) Apply cold for one minute, then warm over flame for ten seconds; wash in distilled or cistern water and either dry in air or by moving in warm air over flame. Care should be taken not to boil when warming as an excess of heat causes the spirochetes to lose some of their identifying convolutions. The organisms appear black on a yellow background. If the lesion has been treated locally with mercurials or caustics which kill the superficial organisms and give negative slides, the application of normal saline compresses for 24 hours will frequently bring back the spirochetes to the surface. It may be that in spite of the last procedure the slides remain negative. Then puncture of a gland in

the satellite bubo as advocated by Schultz must be resorted to. With a hypodermic armed with a fine needle two or three drops of sterile normal saline sol. are injected in the most prominent gland of the bubo. The needle is rotated in the gland a few times to produce exudation of glandular secretion then by aspiration the injected saline is withdrawn and spread on the slide for examination. Gland puncture has given positive findings in 50 per cent of cases in which the dark field had previously failed to show spirochete pallida.

Klauder and Kolmer, and later Fuentes, found that exudate from chancrous lesions gave a uniformity positive W. R. Even in cases where mercurials had been applied and in which the blood W. was neg. The importance of this additional aid in the early diagnosis of syphilis can not be over estimated, since neither contamination nor local treatment affect it and it is present before the blood gives a positive reaction. It is in those cases where other diagnostic tests have failed that it should be used. The authors state clearly that this procedure should not supersede the use of the dark field but should be used only in neg. cases. It would seem that if Klauder and Kolmer's findings are confirmed by other observers, a great step has been made in our ability to express a decided opinion as to the positiveness or negativeness of a suspicious lesion. There is a small percentage of cases which while presenting the clinical appearance of a chancre are persistently negative to all other tests. It is customary under such conditions to reserve the diagnosis until lack of secondary manifestations; repeated negative blood tests have proved their non-syphilitic nature.

#### *The Wassermann Test.*

This test was presented to the medical world by its author in 1906, and was considered as a specific variation of the complement fixation test described by Bordet and Gengou earlier in 1906. It was not very long before various research workers showed that the test was not only not biologically specific, but that it had an average error approximating 30 per cent. While this demonstration of its deficiency stimu-



lated research for a more accurate technique and undoubtedly greatly increased its degree of accuracy it brought forth a great number of modifications of the original test and a voluminous literature. Many of these modifications were of no value, and have been discarded as such. Others have gained favor and are still in use, producing because of their differences a lack of uniformity in results, which is to say the least very disconcerting to the clinician. The most able serologists have given their best thought and most earnest efforts to clearing of this confusion, in their endeavor to standardize the W. R. Kolmer's work along this line is the most complete and comprehensive, and though it covers six years arduous work it is not yet finished. The W. R. has given as high as 98 per cent of positive results in untreated cases; yet it must be remembered that this high average of accuracy is not obtainable by all serologists and that implicit reliance should not be placed in it. Broeman has emphasized the tendency to rely largely on laboratory methods for a diagnosis rather than on the history of the clinical evidence. Correlation between the W. R. and the clinical findings is essential to a correct diagnosis. As valuable as is this test, much damage is being done by its injudicious and ill-timed use, especially when the report of a negative reaction establishes in the patient's mind the belief of a cure and causes the too early cessation of treatment. Quoting from Kilduffe: "A negative R. means that there are no foci of spirochetes sufficiently active to bring about the formation of a detectable amount of reagin in the blood; hence as an indication of complete removal of treponemata at a given moment a single negative W. is useless." At all times when tests are being made the patient should clearly understand that these tests are undertaken with a view of following the progress of the treatment and that their value lies in their interpretation when compared to sufficiency of medication at that time.

It must be noted that certain other conditions than syphilis give positive reaction (yaws, leprosy, pneumonia) and that alcoholism and anesthesia may

cause false negatives. While weakly positive R. are diagnostically of doubtful value a strongly positive R. (yaws, leprosy excluded) obtained by a competent serologist means syphilis in 98 per cent of cases. In the interpretation of the W. there should exist the fullest collaboration between the clinician and the serologist if the maximum of accuracy is to be obtained. When the W. does not conform with the clinical evidence, the test should be repeated and checked by another laboratory before its dictum is accepted as final.

Limitation of time prevents anything but a most cursory discussion of the modern treatment of syphilis.

Just as the discovery of Schaudinn marks the opening chapter in the history of the modern diagnosis of syphilis so does Erlich's presentation of 606 in 1910 open that of modern treatment. Unfortunately Erlich's hope for a complete sterilization of the body by one curative dose of salvarsan was not realized. But that in salvarsan and its justly more popular improvement neosalvarsan he added materially to our therapeutic armamentarium is undeniable. The value of the arsenobenzols is greatest in the early stages of the disease, when the spirochetal invasion of the blood is comparatively slight, and when their tripanocidal action can be used with telling effect and little fear of untoward accidents.

The administration of 606 without regard to the weight of the patient is a common practice which contravenes Erlich's plan of giving stated amounts of salvarsan for a certain number of pounds of body weight. Schamberg has shown that the minimum tripanocidal doses are .005 for salvarsan and .009 for neosalvarsan per kilo. of body weight. In the light of this knowledge, the practice of beginning the treatment of early syphilis with the doses totally inadequate in tripanocidal action seems irrational. Those small doses kill but few spirochetes and tend to establish a resistance to arsenic in the surviving organisms.

The plan of giving several courses consisting of six to eight doses of arsephenamin or neoarsenphenamin at weekly intervals reinforced by weekly intramuscular injections of mercury salicy-

late seems to be the favorite method of treatment adopted by American physicians. Confining observation to the use of the arsenical it is urged that this plan is only applicable to the treatment of early syphilis. In late syphilis, when pathological changes are common in the liver, the blood vessels, and the nervous system and there is more danger of arsenic accumulation a course of arsphenamin should not exceed four doses. The elimination of arsenic is progressive up to the fourth dose; after this there is gradual diminution in the process of elimination and a corresponding arsenical retention in the body. Disregard of this fact may explain the increase in the number of cases of severe dermatitis. The gratifying results obtained by Krefling (U. and C. review, October 1922) after 10 years experience in the treatment of syphilis with salvarsan alone have not been confirmed by other observers and the combination of intravenous injections of the arsenobenzenes with the use of mercurials is still the method of choice.

It is in the treatment of neuro-syphilis that some of the more radical steps have been undertaken by modern syphilographers and neurologists. This is easily understood when we recall that while syphilis was admitted as a possible etiological factor in some cases of tabes and of paresis it was not even suspected of being the sole cause of those morbid conditions. In spite of the great advance in our knowledge of the etiology, pathological anatomy, serology and treatment of cerebo-spinal syphilis many problems remain unsolved. We know that invasion of the cerebo-spinal system by spirochetes occurs at a much earlier date than had been thought possible some years ago. But do we know why in patients showing involvement of the nervous system the rest of the body escapes unscathed, or when the rest of the body bears the brunt of the attack the nervous system remains free from invasion. Some syphilographers explain this phenomenon by the theory that strains of spirochetes show a predilection for nervous tissue. This is still a debatable point which requires further elucidation and confirmation. In the treatment of neuro-syphilis, authorities are divided as to the

best procedure. Fordyce and many other able clinicians favor the Swift and Ellis method for the introduction of medication into the cerebo-spinal system. Sachs and others prefer Durcum's method of spinal drainage immediately preceding the administration of a dose of arsphenamine. Bryne's method of injecting mercurialized serum into the spinal canal has some supporters. Ogilvie's method of introducing neoarsphenamine directly into the spinal canal is used by a few. Stokes uses this method to reinforce the Swift and Ellis treatment. In 1922, Corbus and co-workers describe "A new method for increasing the penetration of arsenic into the spinal fluid in the treatment of neural syphilis." Inspired by the work of Weed and McKibben who were the first to show that intravenous injection of hyper tonic saline solution caused a marked fall in the spinal pressure as well as a diminution of brain bulk, and Foley's study of the phenomenon in decompression hernias who had noticed that following the injection of hypertonic, saline solution the hernia recedes into the skull in about two hours. It occurred to Corbus that it might be possible by this method to increase the amount of arsenic that would be carried by the spinal fluid after intravenous injection. This procedure was carried out on 28 patients suffering from different manifestations of cerebo-spinal syphilis, and the results checked by pressure readings, serologic tests and careful estimation of the arsenic contents of the spinal fluid. All patients had been under treatment before coming under observation for the experiment, and in all but one, the serologic findings were positive. Some of the patients obtained their first negative serologic finding after this treatment. Arsenic was recovered in the spinal fluid of all but two cases, and the pressure was normal in all the cases.

The method consists of administering intravenously 100 C. C. of sterile 15 per cent saline solution warm to 100 degrees. This creates in the patient a feeling of warmth which gradually concentrates in the lumbar region and disappears in about ten minutes. Six hours later when the flow of spinal fluid begins to rise from the choroid



plexus and perivascular spaces a full dose of nearsphenamin is given intravenously. The patient is kept fasting and in bed beginning one hour before the saline injection, and though allowed to leave the bed is advised not to eat for three hours after the administration of the nearsphenamin.

In conclusion, the method is simple, painless and carries no more risk than the usual intravenous injection. The patient is confined to bed for seven hours at the most, except when spinal puncture is made for purposes of examination of the fluid. Diffusion of arsenic in the spinal canal is more uniform than in other methods of spinal treatment. Personally, I have used this method in six cases and while I realize that so few observations are inconclusive, yet the improvement obtained in both the clinical symptoms and serological findings have determined me to give the method a further trial.

#### DISCUSSION

Dr. M. H. Foster (Alexandria): In view of the fact that the Mayo Clinic have announced recently that they are failing to diagnose 66 per cent of venereal sores examined as suspicious by the dark field method, we should hesitate considerably before we rush headlong when we look at a sore and conclude we have a soft chancre. This diagnosis is only arrived at at the Mayo clinic by repeated investigations and if necessary by a puncture.

I admit that at the beginning I looked at dark field investigation from afar, and tried to line myself up with various other plans of finding the spirochaete; but after running through all of them I have come to the conclusion that the dark field is the most reliable method of finding the spirochaete.

In regard to treatment, I have used several treatments, but since the intravenous method has come out I believe it offers a distinct advance. However, if we favor the exhibition of mercury as well as arsphenamin, there is another method which has a decided advantage, and that is the Otting plan, which depends upon the exhibition of mercury together with sulphur waters.

I hope we will remember the point brought out, and not make a diagnosis upon cursory examination, but make an accurate diagnosis and treat adequately afterwards.

Dr. Jeffrey C. Michael (Houston, Texas): Doctor Chalaron has given a very conservative presentation of this subject, particularly as regards treatment. On the other hand, I want to call your attention to what may seem a radical method of treating early syphilis. By early, I mean primary cases still negative serologically. This is the method advocated by Pollizer, of giving 3 maximum doses of salvarsan on three successive days, then following

for six weeks with mercury salicylate every five days, grains one to two; and then a subsequent course of three doses of salvarsan. I have had personal experience with this method and I have been able to follow four cases through a year. None of these patients has given a positive Wassermann, and I believe these cases are cured, clinically as well as serologically. I think this method in properly selected cases—in young, robust men who have no impairment of function of important organs—of considerable value as an abortive method in the type of case I have mentioned.

Dr. E. H. Ellis (Crowley): There is one class of cases which I wish to refer to, and that is the effect of late syphilis. Tabetics in the latter stages sometimes come to us in a deplorable condition, and the treatment I wish to refer to now is palliative, and in my hands has given the patient more relief than any treatment that I have given. I believe that this section here has been very slow to adopt the Swift-Ellis treatment of tabes, that is, neosalvarsan intraspinaly. Not being able to use that, not having a laboratory at hand sufficient to prepare this method of treatment, I resorted to giving mercury intravenously, and I have three cases that I have treated that way—cases that had been given mercury subcutaneously and intravenously without any perceptible relief, the patients going down and suffering more and more insalvarsan and neosalvarsan intravenously, tensely all the time. I concluded to try mercury intraspinaly on one case. I gave twelve doses at ten-day intervals, and there was great relief after the first dose. One woman when she came to the sanatorium was unable to walk, had to be carried up the stairs, and after three doses intraspinaly she walks up the stairway and says she feels perfectly well. I gave her twelve doses intraspinaly, and the last time I tried it I could not get into the spine—I do not know why. The two other cases received four doses intraspinaly with marked improvement. All the cases were markedly improved after the first injection. This mercury is put up by Mulford, 1-24 grain intraspinaly.

Dr. C. S. Holbrook (New Orleans): I wish to say a few words bearing out what Doctor Ellis has said. Treatment by intraspinal injection of mercurialized serum is good and is easily prepared. You may get serum in ampouls if you wish, and make your own. It has the disadvantage of being rather painful, more so than the Swift-Ellis treatment. The Swift-Ellis treatment is giving a dose of salvarsan, and a half hour later collecting 50 cc of blood. The first few doses the time interval is usually narrowed. The blood is taken under aseptic conditions and placed in the ice box; the following day the serum is separated and inactivated; then 25 to 50 cc of salvarsan are injected into the spine. This treatment must certainly be considered when we attack nervous syphilis, and there is one thing very definite, and that is that it relieves the pain of tabes. I do not think it will cure a general parietic. Some cases get improvement under the Swift-Ellis treatment that cannot be expected to do so under any

other treatment. In the past six months I have had a series of 75 or 80 cases, with no bad results at all and some results that could not have been obtained by any other treatment.

I wish to call your attention to the Herxheimer reaction. The other day I had occasion to see a case that died following the injection of 6-10 grams of neosalvarsan. This patient had been given rubs of mercury for a month, and then after a negative kidney examination she was given 6-10 gram of neosalvarsan. Next day she was not feeling so well. I saw her in consultation about the third day, when she was unconscious with positive disturbances of reflexes and anclonus. The patient died an hour or two after. It was a type of Herxheimer reaction. I have seen in the past two years two such cases that died, both following a small dose with no active disturbance at all.

Dr. Frank J. Chalaron (closing): In regard to the Pellitzer method, this method has been known and accepted by many men, but it certainly has not met with general favor among the profession. There is always the danger of acute arsenical poisoning if the doses are repeated so rapidly. We know that the greater part of the arsenic is eliminated in the first twenty-four hours. About fifty per cent, through the bowels, and 30 per cent through the urine; but what becomes of the rest? It has been proven by competent men that there is an accumulation of arsenic in the body after the fourth dose and that elimination decreases.

As to the treatment of Swift-Ellis and the Byrnes method, I discussed that in my paper. Of course the Swift-Ellis has the endorsement of, Fordyce, one of the greatest American syphilographers but on the other hand there is a class of physicians led by Sachs of St. Louis who object to the Swift-Ellis, and prefer spinal drainage. To those who have had but slight experience with the Swift-Ellis it is very fine. You give it to three or four cases and it works beautifully, then you get a reaction that makes you fearful and you give up the Swift-Ellis for some time. Your technique may be faulty, or it may be due to faulty preparation of the serum.

### SICKLE CELL ANAEMIA (REPORT OF A CASE).\*

By S. CHAILE JAMISON, M.D.  
NEW ORLEANS.

The following case is reported because of the great rarity of this condition. So far as I can find from a search of the literature, the cases mentioned in Mason's article, appearing in the Journal of October 14, 1922, Volume 79, No. 16, are the only ones on record; three, his own case making four.

In the laboratories of Clinical Medicine, at Tulane University, thousands of

blood smears from negroes have been studied during the past ten years, and we feel confident that the case reported here is the only one of this type that has occurred in this mass of material.

This patient was in my service at the Charity Hospital ten years ago, and we became deeply interested in the curiously shaped red blood corpuscles, and have been on the lookout for such cases since, but none have appeared. At that time, Herrick's and Washburn's cases were the only ones on record. I was familiar with Herrick's report.

Ida Milton: Colored Female 11 years old. Admitted to Ward 41, August 16th, 1912. Up to one year of age she was a healthy baby and gained weight in a normal manner; she was weaned at one year. Since that time she has always been sickly and thin. She has had none of the usual diseases of childhood, with the exception of measles at seven years. She constantly suffers from sore throat and headaches; frequently complains of aching pains in the legs and arms.

Between her first and second year, she had a very severe attack of "yellow jaundice" which lasted for several months. Since this primary severe attack, she has had mild attacks of jaundice and vomiting nearly every month. These attacks only last for a couple of days, but the stomach rejects everything, and great weakness is apparent. During the vomiting the conjunctiva and urine are yellow tinged, but the stools dark. All of her life she has had fever and "dumb chills", according to her mother. Her bowels have always been regular; she has never had diarrhoea. The doctors of her native town, Le-compte, La., called the condition malaria. The father and mother are both in good health. There is no venereal history. The mother had malaria while nursing the child.

She comes to the service complaining only of weakness and shortness of breath.

Physical examination: The patient is a chocolate colored negro female child, fairly well nourished, but under developed. The mucous membrane of the buccal cavity is pale. The teeth are in fair condition. The tonsils are enlarged. The crypts well marked with pus exuding from one or two of them. The lymphatic glands are moderately enlarged all over the body. The lungs are negative. The heart is negative except for a soft systolic murmur, which is not transmitted. The abdomen appears slightly distended, but there are no areas of tenderness or rigidity and no fluid is present. The liver is palpable two finger breadths below the costal margin; the spleen is palpable; the kidneys are not palpable. The reflexes are normal. The urine was negative on several examinations except for a few hyaline casts. During the patient's stay in the hospital of about four months the temperature ranged from normal to 101; the pulse from 85 to 110. The blood pressure was not taken.

Blood Pictures: Jan. 27th, 1913 Hgl. 30

\*Read Before the Orleans Parish Medical Society, November 12, 1923.



per cent to 35 per cent. Neutrophiles 44 per cent. Small lymphocytes 4 per cent. Large lymphocytes 33 per cent. Large mononeuclear leucocytes 11 per cent. Transitional forms 4 per cent. Myelocytes 3 per cent. Eosinophiles 0 per cent; basophiles 1 per cent. Neucleated reds 0. Total white corpuscles 1,900. Total red corpuscles 1,912,000.

January 28, 1913. Hgh. 30 per cent to 35 per cent. Neutrophiles 61 per cent; small lymphocytes 3 per cent; large lymphocytes 26 per cent; large mononeuclear lymphocytes 4 per cent. Eosinophiles 0 per cent; basophiles 0 per cent. Transotionals 4 per cent; Myelocytes 1 per cent. Neucleated red blood corpuscles one for every one hundred white cells. Total white blood corpuscles 17,000; total reds 2,048,000.

January 30th, 1913: Hgl. 30 per cent to 35 per cent; total reds 1,624,000; total whites 17,000.

February 5th, 1913: Hgl. 30 per cent to 35 per cent; total whites 15,000; total reds, 1,856,000.

The case appeared to show nothing out of the ordinary until one examined the blood smears, when the curious configuration of many of the red cells became evident. Five or six of the corpuscles seen in every field of the oil immersion were crescentic, sickle shaped or long and narrow and pointed at both ends. The smears were studied rather carefully by Dr. C. C. Bass, Dr. F. M. Johns and myself, who agreed that they were unique in our experience. The corpuscles in this case seemed to us identical with those shown in the picture of other observers and published elsewhere.

#### DISCUSSION

Dr. J. C. Cole: I would like to vouch for the fact that Dr. Jamison had such a case, for I recall having seen the smears. I can add nothing more to what he has said, further than I think that when we get cases of this kind or any other case of scientific or unusual interest they should be reported at the time.

Dr. S. Chaille Jamison: I want to thank Dr. Cole for vouching for my case. Dr. Bass got me to report the case and I am here, unfortunately, at a time when he is away from the city at the meeting of the Southern Medical Association.

Unfortunately for science, the case did not die; at least we were not in a position to obtain autopsy. Unfortunately for the case, the mother took her from Hospital. It was one of those cases without known etiology. We suspected syphilis but the Wassermann had not taken the position it has at the present time. Did not find any Hospital records showing a positive Wassermann. I think it must have been a case of hereditary lues. There were not ova in the stools. As far as the blood picture went, on account of the lack of enucleated corpuscles and her youth we could not make a diagnosis of pernicious anemia. We put it down as a case of secondary anemia. I tried to follow up the case. I wrote several postal cards, one a year ago, but received no answer.

## PRACTICAL APPLICATION OF HIGH VOLTAGE X-RAYS.\*

BY S. C. BARROW, M.D.  
SHREVEPORT, LA.

The subject of high voltage X-Ray therapy has already in the last few years been so discussed and re-discussed that it is hardly possible now to touch on a point that has not been investigated and certain ideas established, in many instances definite facts established and laws formulated.

This does not mean that the science of deep therapy is now exact but rather by extensive study and experimentation a foundation has been laid upon which there will grow a really scientific X-Ray therapy.

By the term high voltage we mean voltage in the neighborhood of 200 K. V. or more and while this has only recently come into general use, we must not forget that voltage of this intensity was used by the pioneers with small m. a. in the old days of the static machine and induction coil. Years ago I saw X-Rays being used for deep therapy in which the back-up spark on points was 14 to 15 inches. Riviere reported in 1903 a case of carcinoma successfully treated by X-Rays, using a Muret tube backing up a 40 c. m. spark gap.

This is only said to remind us that high voltage therapy is not so recent as the general public and profession believe and that we can only expect results if administered in accordance with the laws which have been and are being formulated by truly scientific researches and not in the haphazard guess work of the past. The development of accurate measuring apparatus and facts determined as a result have done more to advance X-ray therapy and place it on a firm basis than the manufacture of high voltage machines. In fact the whole technique of deep X-ray thereapy has been changed because of the facts established, the result of accurate ionization measurements in the depth.

In the beginning it would be well for us to remember that it has never been proven and few claim that there is any difference in the biologic action of X-Rays produced by 200 K. V. and those

\*Read Before the Louisiana State Medical Society, April 24-26, 1923.

by 100 K. V. providing the same energy is delivered to the cell. The detailed work of Kroneig and Fraedrick has definitely settled this point and they summarize their results in these words: "Within the limits of hardness of radiation investigated (X-Rays filtered through 3 m. m. of aluminum and X-Rays filtered through 1 m. m. of copper) the intensity of the biologic action is practically independent of the hardness of the rays, the intensity of the biologic action is only dependent upon the radiation energy absorbed.

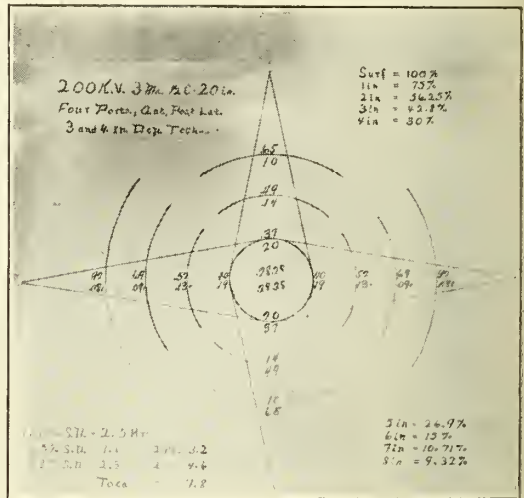
A lesion on the surface will respond in the same manner to X-Rays generated by high voltage as by low voltage and so a lesion in the deep tissues will respond in the same way providing the same radiation energy is delivered to the part. Again it has been proven and now accepted that only a small part of the X-Ray results produced in the tissues is due to the primary beam but rather to the scattered and secondary radiation and a phenomena known to us all since the early days is that scattered and more secondary rays result when high voltage is used than low voltage. The action of the primary rays is an indirect one; the biologic action being produced by the beta corpuscular elements set up in the tissue. The result of the primary radiation. A self evident fact also exists that these beta corpuscular elements are more numerous at the point of impact of the primary beam than distant from it, hence the only logical conclusion will be that more intense effects result when the primary radiation is accurately focused than when indiscriminately applied.

The question then naturally presenting itself first to our minds is why use high voltage? In a few words but accurately, the answer is: Because we can do the same thing more quickly, more precisely and with more certainty than when using low voltage.

It is my opinion that the man operating a machine capable of generating 140 K. V. can do in most cases as successful work as the one operating with 200 K. V. providing he comprehends the basic principals and uses a technique necessary to deliver to the depth the proper amount of measured radiation energy. A comparison of the depth

doses gotten when operating with 200 K. V. with those attained by using 140 K. V. is convincing evidence of the advantage in using the former. The use of the lower voltage necessitates multiple ports and necessarily renders more difficult, more hazardous and more inaccurate the delivery of the proper depth dose.

By the use of modern apparatus it is now possible to determine accurately the exact amount of radiation which reaches the deep tissues compared to the amount delivered to the surface. The ionization effect of X-Rays is in direct proportion to the quantity and the same amount of ionization in the tissue results in the same biologic action regardless of



Showing Uniform Radiation of Pelvis using H.V. X-Ray alone

whether a high or low voltage is used.

The various measuring apparatus now in use, all of which are based on the same principal—the electroscopie response to ionization—enable us to tell the exact per cent of surface radiation which reaches various depths in the tissue, and by simple mathematical calculations we can devise formulae which will give us the required dose at any depth. The use of ionization measurements has established the following facts which we must hold in mind and which form the basic principles of deep therapy:

(a) The greater the T. S. D. the greater the proportion depth dose.

(b) The larger the port of entry the larger the depth dose.



(c) The greater part of the depth dose is due to secondary radiation.

(d) That the higher the voltage used the greater is the proportionate depth dose.

(e) The biologic action is dependent on the quantity rather than the quality of radiation.

Here I would urge the necessity of everyone doing high voltage therapy having access to a measuring apparatus of some type for the testing of his own apparatus and the devising of formulae for administering different doses. To blindly follow the curves, twists, turns and silhouettes now so common, is to invite disaster as surely as will the practice of treating so many hours because the manufacturer says so.

The skin tolerance is yet and doubtless always will be a barrier and limit to radiation and forces us to a cross-fire attack in the use of high, the same not so difficult, as in low voltage X-Rays.

The use of high voltage X-Rays is principally concerned in the treatment of malignancy. That X-Rays will devitalize cancer cells is admitted and the problem confronting us is, what is the necessary amount of radiation to permanently inhibit the growth of the various malignant cells and how can we deliver same without endangering the normal cells? Two questions are here asked covering the most important phase of X-Ray Therapy and the answer to neither seems likely in the near future.

The X-Ray cancer dose varies according to the type of neoplasm and is undetermined clinically. Wood proposes as a unit the amount of X-Rays necessary to inhibit a certain rat tumor of constant and tested biological qualities but its use seems impracticable. Seitz and Wintz speak of cancer and other doses in terms of erythema doses and as this is the limit beyond which we should not go, it seems at this stage the most practical unit for clinical use. From clinical experimentation they claim the carcinoma cell is permanently inhibited by 110 per cent of an amount of X-Rays which, if applied to the skin, will produce a deep tanning in two to three weeks, about 80 per cent of this amount

inhibits the sarcoma cell and 30 per cent produces amenorrhea.

In our practice we have tried to work out a practical scheme of dealing with cancer cases beneath the surface and have convinced ourselves that 110 per cent to 115 per cent of the amount of X-Rays which will produce a heavy tanning of the skin will, if delivered to the carcinoma cell within a period of a few days, produce for the time being a disappearance of the local disease in many cases.

Immediately on the installation of our high voltage apparatus we set about to determine, using a given setting, the time required to produce a safe erythema. Knowing by past experience the factors used when operating with 140 K. V. necessary to produce this effect, by the use of the iontoquantimeter we calculated the required time and boldly administered the dose which we estimated at 9 ma. hours using 200 K. V. at 20 inch distance and a half m. m. copper filter. We soon found this produced rather too heavy a re-action and after a little experimenting we demonstrated to our satisfaction that 7 1-2 ma. hours was the required dose and if applied to a surface epithelioma without infiltration and depth, will effect a cure. This is the dose we are using at this time.

Our next problem was then how to deliver this dose to various depths plus 10 or 15 per cent without over-dosing the skin. Having determined what per cent of the surface dose reached various depths and having selected to use two, three or four ports of entry, it was easy to calculate what fraction of a full dose to apply to each port in order to get the required amount to a three or four inch depth. This technique will be illustrated later by slides.

In the use of H. V. X-Rays accuracy in posturing the patient or parts to be irradiated is more necessary and should be followed with more care than in the use of lower voltages. In fact it is absolutely essential that the parts to be irradiated should be brought directly in the part of the central beam and as small ports of entry used as is compatible with the aim of saturating a given area. The operation of an X-Ray tube with H. V. is comparable with the use of a high powered rifle, if aimed correctly and ac-

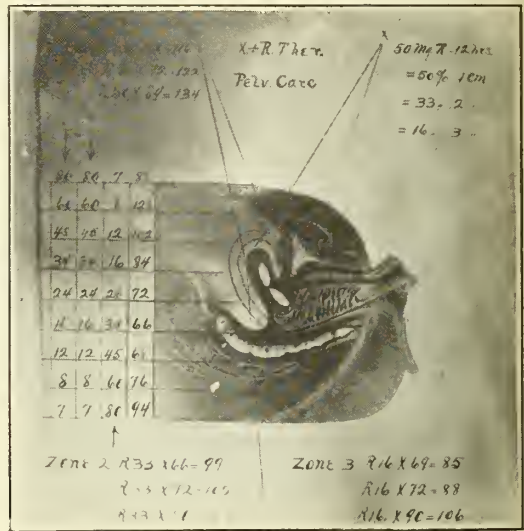
curately, the object in mind may be given a death blow without danger to surrounding objects but if fired without proper thought and care, may not only miss the objective but result in disaster to other objects in the vicinity. For this reason I have chosen an installation which is shown in illustration that enables me to place my tube at any angle or shift desired and at the same time allows the patient to be postured in any pose desirable. The practice of treating patients through a hole in the wall, floor or ceiling, I believe is incompatible with accuracy and will ever be so until tubes are made which will enable us to get sufficient depth doses in one or not more than two ports of entry despite the opinions and practice of some of our authorities and good friends to the contrary.

In the treatment of deep malignancy the area of known and suspicioned malignancy must receive a saturation dose of equal intensity as near as possible throughout—one small area of disease if under-dosed vitiates the whole result while an overdose at other parts only lowers the resistance of tissue needed in the defense. With a tube and table installation where angulation of tube and patient can be easily arranged, it is easy to saturate an area, say of the pelvis, with X-Rays, of any desired size, with any desired dose. In the majority of cases with present voltages and present depth doses attainable this can only be accomplished by the use of several ports of entry, four will easily cover the average requirements.

Realizing the difficulty of accomplishing this end by the use of a small number of ports has led some to the practice of using radium and X-Rays conjointly, which I believe to be illogical, unscientific and from a physical and biologic standpoint, grossly wrong. The intensity of radium radiation decreases so rapidly as we measure out from the point of contact that within a few c. m. its effect is negligible while with X-Rays the variation is scarcely noticeable. Using the radium measurements of intensity given by Schmid's with the X-ray measurements made in our laboratory, we find it impossible to juggle the figures into any combination after many hours effort

which will show a uniform radiation in any way approaching the uniformity gotten by X-Rays alone. In practice our results have been equally disappointing. Where we have used the two in combination we have had cystitis, proctitis, colitis and seen our patients grow worse day by day. The cuts illustrating Schmitz' technique, if examined carefully, will show the same wide variation of dosage, far over at some points and way under at others, as the chart which we show you.

In all cases of malignancy definitely limited to a small area or to an organ or tissue, the removal or destruction of which will not hazard the life of the pa-



Showing Lack of Uniform Radiation when using Radium and X-Ray Combined

tient or probably disseminate the disease; radium or surgery, it would appear, should claim first consideration. In others where the disease is more wide spread or when from anatomy of the parts we may expect early scattering, X-Radiation is the choice. An unbiased opinion or group of opinions will in many instances place the case in a class calling for the judicious use of all agents, X-Rays, radium, surgery and the guiding advice of a good medical consultant.

A patient with cancer has a systemic disease regardless of whether the cancer cell is localized or not and the physiologic defences and repair will as often determine the result as will the re-



moval or destruction of the cancer focus.

These are facts that must be realized by all of us when we review our failures and seek an explanation for our occasional successes.

In 1917 a distress signal was sounded by the people of Europe when a conscience less and deadly foe was striking at their very vitals and threatening destruction of civilizations structure. That wonderful mind, leader and inspirer of men, arose to the occasion and by forcing a unity of action paved the way for the checking and final destruction of the menace which hovered over the whole world.

Today an SOS signal is in the air, a deadly enemy threatens every man, woman and child and they are looking to the medical profession for help as Europe appealed to America. Shall we or will we fail them? We need no leader to point us the way. Unity of action we know is the only solution. We are all members of a great profession and it should matter not to which particular branch the individual case should go. For the accomplishing of the greatest good to the greatest number let us pool and coordinate our efforts, the Radio Therapist, the clinician and the surgeon.

#### DISCUSSION

Dr. Lester J. Williams (Baton Rouge): The greatest aid to the physician are the instruments of precision, and I believe the X-Ray can be numbered among the instruments of precision. With the advent of the high voltage X-Ray machine, such as Dr. Barrow has so ably discussed, we have a precision of X-Ray dosage that has not been seen in the past. Malignancy is the greatest menace at this time that we have to deal with, and our real hope of salvation I think lies in the high voltage apparatus and deep X-Ray therapy.

I was in hopes Doctor Barrow would give us some of the statistics of his work along this line, and I trust in closing he will see fit to mention some of his clinical cases.

Dr. Adolph Henriques (New Orleans): I cannot say that I agree altogether with Doctor Barrow in several of the statements he made. It is true that Seitz and Johnson are of the opinion that it is a question of the quantity of X-Ray that gets into the tissue, but a great many other authorities are of the opinion that the quality of the radiation plays a great part in the treatment of malignancy. A great many authorities are of the opinion, and I heartily concur with them, that the best results to be obtained in the treatment of malignancy by radio therapeutic measures consist of combining radium with the high voltage X-Ray therapy. I think the results to be obtained will be better by a careful study of the dosage, and by combining these

two agencies. It is a fact that in a number of cases we can cause the disappearance of malignant growth by means of radio therapy. Ewing has called attention to the fact that the reaction of the tissues to these agents is specific, that tissue defects are called forth by these agents which are produced by no other means. Unquestionably the use of a radioactive substance, or radio therapy and the high voltage X-Ray will cause an increasing number of palliations, and an increased percentage of total disappearance of the growth. But I do not think that radio activity and high voltage therapy have solved the problem of cancer. Until we find something which will take care of the metastases we have not reached the solution of the problem. But unquestionably it is a step in the right direction, although there are so many unknown factors in cancer that we have not reached the correct solution. I think the local growth should be treated, but also the matter of hygiene and living considered as well as the local growth.

Dr. S. C. Barrow (closing): I can only say to Doctor Williams that I have no statistics. We are trying to cure cancer and other things and are succeeding to the extent of clearing up some cases for the time being that make us extremely enthusiastic, but we have no cures of cancer that we know of. If we have, possibly we will know it after a lapse of years. In the meantime we are trying to use a measure that is clearing them up more rapidly and apparently more effectively than anything we have used before. We are using radium constantly and regularly, in proper doses, in every case of incipient carcinoma of the cervix, but we so seldom get them when they are incipient that we cannot depend upon radium to reach out and get the malignant cells that have passed beyond the cervical tissue. We did use radium and X-Ray together, but it gave us some distressing results, so we came to the conclusion that we were overdoing the treatment in certain fields and underdoing it in others, so we now use radium only where we know the disease is still limited to the cervix. These are rare cases. But we cannot use these two agents together successfully at the same time.

#### REPORT OF ONE HUNDRED ANESTHETICS ADMINISTERED WITH ETHYLENE GAS.\*

By E. E. ALLGEYER, M.D.  
NEW ORLEANS.

In our search for the best anesthetic in all respects, there has come to us Ethylene, the employment of which is undoubtedly in its infancy, and I have come tonight to point out certain facts concerning this drug.

To Dr. A. B. Luckhart, of Chicago, we must give the credit for discovering from a practical point of view its anes-

\*Read Before the Orleans Parish Medical Society, November 12, 1923.

thetic property. In the American Medical Association Journal, we are told that Hermann and Davy and Müller some forty years ago employed Ethylene and Acetylene in anesthesia, and the older books upon this subject mention this compound. Dr. Luckhart contends that the latter was a combination of Ethylene with Chlorine. All the literature seems to be so undecided that I deem it unnecessary to go further into it.

Ethylene is a gas of ordinary temperature, having the formula  $C^2H^4$ . Its odor as we know it commercially is that of molasses and garlic, and when inhaled in concentrated form, produces an irritating cough, leaving a metallic taste. It becomes liquid only under great pressure. That it is inflammable, can be readily seen when one knows that it is a part of our ordinary illuminating gas, but for practical purposes, unless exposed to a flame, this is nearly negligible. It forms an explosive mixture when combined with four parts to 96 parts of air. It is manufactured by the dehydration of grain of Ethyl Alcohol with Phosphoric Acid, and placed commercially in the large tanks with which we are familiar.

Before going into this subject, a foreword seems timely and necessary. We do not want the impression to be made that this work is to praise this new agent, for if it is to be not practical, we want to condemn it and to do it right now.

Taking the cases as I have seen them in my work, they can be tabulated as follows: Laparotomies, which consist of nearly every variety of work, appendectomies predominating, 36; other major operations which include hernias, breast amputations, amputations of limbs, thyroidectomies, etc., 35; minor operations, those usually done in the treatment room, 29; in other words, a fair assortment of all sorts of surgical work. In this series, records were kept as to time of induction; length of operation; degree of relaxation; whether Ether was required or not; the time for return to consciousness after anesthesia was discontinued; whether the amount of hemorrhage was increased, and the amount of nausea and vomiting following anesthesia.

Induction was in every instance,

rapid, as we note it in Nitrous Oxide anesthesia, the operation being begun usually within ten minutes. In quite a number, we were obliged to have the operator wait for twelve minutes; this, of course, is no improvement on the other methods.

To consider shock and many other points bearing on this important symptom, the length of time of the operation should be stated. The usual range was from a few minutes to, in one case, three hours and ten minutes. Eighteen of our cases were of over one hour's duration. The other average longer procedures were from 30 minutes to one hour.

The much flaunted relaxation so widely spread the whole country over, I am afraid can not be corroborated in all instances. In eighty of the cases, the relaxation was very satisfactory and all work could be done deliberately. In the remaining twenty, eight of these were slightly difficult, but by increasing the dose, surgical anesthesia was obtained and maintained. In ten cases, Ether was necessary to produce thorough relaxation, the amount given ranging from one-half an ounce to two and one-half ounces. These patients gave us considerable trouble and strained without the addition of the more powerful relaxant. It is interesting to note that six of these were upper abdominal operations involving a gall bladder region, one respected by all of us and quite a test as to the capability of an anesthetic drug to abolish reflexes. In two patients, it was necessary to push anesthesia to a near dangerous overdose. These were for unprepared patients in both instances and should warn us that the danger dose must be anticipated at times.

The general opinion that comes to us is that quite deep anesthesia is obtained with a usually low percentage of Ethylene (85-80) and a high percentage of Oxygen (15-20 Oxygen). Unfortunately, my observations have not proved this to be a fact. The records show that the average was 86-92 per cent Ethylene, the remainder Oxygen (14-8 Oxygen). This, I believe, is of great interest to all because any method which necessitates the exclusion of all air should recall the vital necessity of Oxygen, and the more we can allow, the more safety to our patient. We are all well ac-



quainted with the cyanotic patient when Nitrous Oxide is used and we know that not often were we able to do work with this anesthetic and a percentage of Oxygen greater than 5 per cent on up rarely to 10 per cent. Since practice shows us that we are infrequently required to reduce this percentage to lower than 8 per cent for continued lengths of time, which my records show, it is a striking advantage gained over the older method. That prolonged anoxemia is a danger, we must appreciate and by all means foster all research which will eliminate this condition.

Having considered the two most advertised points in this form of anesthesia, we must consider the effect on the circulation as we see in on the operating table. As a foreword, actual blood pressures were not taken, but the pulse rate was charted every five minutes and any change apparent to the finger in the volume of the pulse was noted. The condition known as shock was not considered unless the rate was increased to above 120 and the volume perceptibly decreased. In only nine cases was this rate exceeded, nor did I consider these patients shocked. Two of these were operations on the thyroid with a bordering failure of circulation when started. Three were cases of acute appendicitis with considerable toxemia when the operation was undertaken. Reviewing these latter records, I find that the remainder show only a mild degree of circulatory failure, if any. In no case was it necessary to infuse the patient in order to support the circulation. The striking observation of the pulse is its slowness which I have no doubt is caused by direct action of Ethylene. What the physiological reason for this is, has as yet been undetermined; still it is an interesting fact in following up the cases after anesthesia, to find that the degree of depression to the circulatory system is minimum as compared to our results with previous methods. In other words, patients who have been operated under this drug to produce insensibility were found less drained of their vitality, a necessary requisite for a speedy convalescence.

To show a few of the effects when prolonged administration has been undergone, I can cite the long cases:

1. One of 2 hours and 45 minutes duration which shows a chart with the pulse at the start, 76, rising in 45 minutes to 110, then falling back rapidly to 90 and remaining so until its termination. The pulse was full and regular throughout.

2. Another case of 3 hours and 10 minutes; a pulse of 110, remaining so for 1 hour and 35 minutes, then increasing to 134 for 15 minutes, returning to 100 until the end of the operation.

3. The above is quite the usual picture in the average long procedure and one which I am sure teaches us a great deal.

In all but one record, did we find that consciousness did not return almost immediately upon discontinuing the anesthesia, even when Ether was used as a relaxant. This, to my mind, will show that if the latter drug must be employed, only a small amount is usually required.

One of the most disagreeable symptoms that patients complain of following operation is that of nausea and vomiting. Has this new agent improved this condition? I shall leave this matter to your own judgment when you have seen our results. The records used show what the patient did the first eight or ten hours following, after which lapse of time all of the drug employed had been eliminated. The results are as follows:

1. In nine cases only do we see the patient made considerably sick by being nauseated and vomiting several times.

2. Thirteen others were bothered with considerable nausea, having only one or no emesis.

3. Five others suffered with a negligible nausea, the remainder being free of any such complications.

It must be stated that in some, the patient was permitted to return home practically at once and such a follow up was impossible. This only happened eight or ten times. In my opinion, the records will show a decided advantage over the former methods and we hope in the future such good results will be maintained.

So far I have presented the praiseworthy facts concerning the employment of Ethylene. Now, let us look into its disadvantages. The bad odor of this compound is one most complained of by

both patient and attending staff and which should certainly be eliminated if possible.

A decided disadvantage from many points of view is the increased amount of bleeding at the site of operation. This is explained as a vasomotor relaxation. In the face of exsanguination or congestion and also in certain individuals with a low coagulation time, this would be a decided contraindication for its use.

Physiologic experimentation has only been begun and a great deal of work will be necessary before conclusions can be made as to its effects upon the vital systems of the human organism. Still we can state some clinical observations of what we think will be the results. The respiration is usually slow throughout, some remaining within the normal limit of 18-24 and some considerably slower than that. This is due most probably to a depressing action upon the respiratory center. I believe that experimentation will uphold this contention. Air passages are not irritated under Ethylene and administration with acute bronchitis pre-existing, did not in any way increase the severity of the inflammation.

The heart rate is slow, some coming down to as low as 50, in a few instances, and many times I have seen the pulse beat between 60-70, in spite of considerable operative manipulation. Whether this is a stimulation of the centers slowing the heart or a depression of the accelerators has not as yet been determined. Simultaneously, the blood pressure shows a fall, again a vasomotor depression and relaxation along with the slowing of the heart. In a few cases where continuous blood pressure was taken, the charts show from 10-30 mms mercury drop in the systolic at first and gradually rising towards its original level. These records though are only too few for a study of this fact. It seems safe to say that in the presence of myocardial degeneration, Ethylene is safer than Nitrous Oxide on account of the lessened anoxemia required to produce anesthesia. The kidneys, a part of the cardiorenal system seem to be unaffected clinically, for in the face of extensive disease of this organ, it was administered and less harm was done than

is usually seen when surgical intervention is necessary in such cases.

In summarizing my statistics, I can state that I consider that:

1. Ethylene gas, on the one hand, does produce a deeper anesthesia with accompanying relaxation than does Nitrous Oxide and that it does so without requiring that the necessary amount of Oxygen be nearly as limited.

2. On the other hand it has not been able to produce this relaxation in quite as great a percentage of abdominal work as does Ether, but when this is required, only small amounts will give us the desired results as were shown when we consider the eight of the nine cases so treated were awake immediately, not having any of the effects of the latter drug.

3. Less shock is certainly the prevailing picture presenting itself and one giving incentive to desire to prove this quality without doubt.

4. The unprepared patient whom we must subsequently treat in the office or in the treatment room of the hospital can be given a much safer anesthetic. This class of case so frequently required a dangerous over-dose when Nitrous Oxide was employed that I personally have welcomed any other products which would eliminate such a condition.

5. Hemorrhage is increased, a great possibility for a contraindication.

6. All facts considered so far, it is a safer gas anesthetic.

#### DISCUSSION

Dr. O. C. Cassegrain: I had occasion, about two weeks ago, to use ethylene for the first time. Dr. Allgeyer gave it for me. It was a simple case a DeCe application of Radium but the thing that struck me most was the rapidity with which the patient came out of the anesthesia. About 2 minutes I should say. She was conversing rationally as she left the operating room.

Dr. W. B. Baker: In regard to the slowing of the pulse. Dr. Jackson, a pharmacologist, has done considerable experimental work with ethylene, and believes that the heart is retarded by stimulation of the vagus centers, but that it would be impossible to produce death by this action. He believes that ethylene produces death in the same way as does nitrous oxide by suffocation.

Our experience with nausea and vomiting following ethylene anesthesia has been about the same as Dr. Allgeyer's, but there is one other little point I wish to bring out—patients frequently complained of headache following nitrous oxide, presumably due to anoxemia.



This very rarely occurs following ethylene.

We have in our work a considerable number of blood pressure records, and I have to disagree with Dr. Allgeyer on that point. Ours show a uniform rise of about ten or twenty mm., in the early stages of the anesthetic, followed usually by a return to normal in a short time, which is maintained usually throughout the remainder of the operation.

One of the main disadvantages I have experienced is the lack of uniform results. Many cases are very easy, but I have had several which I was entirely unable to handle without resorting to ether.

Dr. Herb of Chicago has done 900 or 1000 cases up to the present time. At first she used about 80 per cent ethylene and 20 per cent oxygen. At that time she procured her ethylene from Dr. Luckhart, who I understand had it made in the university laboratories. When she began getting it from the present commercial source, she found it necessary to increase the percentage of ethylene to 85 or 90, and cut down the oxygen correspondingly, presumably because of impurities in the gas. We hope that when we can get pure ethylene there will not be so much odor, and that anesthesia can be maintained with a lower percentage of the gas, making it possible to give more oxygen.

Up to the present time, there has been only one death from ethylene reported, and it was from a series of twenty cases. I do not know the details of this case, and can only give it to you for what it is worth. Dr. Herb claims almost 1000 with no trouble of any kind, and several hundred other cases have been done in different places with no fatalities.

I wish to compliment Dr. Allgeyer on the case records. It is a difficult task to chart all the details he has given and administer an anesthetic at the same time.

Dr. E. E. Allgeyer: There were many facts I did not bring out on account of small amount of time. I have noticed the ab-

sence of headaches Dr. Baker mentioned. With nitrous oxide patients often get headaches from low percentages of oxygen required.

As far as the blood pressure is concerned, I stated my records were insufficient to make a statement as I deemed it more necessary to watch the patient than to take the blood pressure every five minutes. This is difficult unless there is someone helping.

I noticed that most of the cases in which we have had unstable results have been usually in laboratories and nearly all were in the upper abdomen, where deep anesthesia must be obtained before there is relaxation of the parts concerned.

We are not getting the absolutely pure product. The Ohio Manufacturing Co., have just written to me saying that they are making every effort to bring it up to standard.

Dr. Cassegrain's case (D. & C application of radium) shows the usual results that we have seen. Those patients are quite nauseated and vomit a great deal where anesthetized by nitrous oxide. I have administered ethylene three times for such applications around the pelvis and they have not suffered hardly any nausea which seems a great improvement.

Contra-indications: I stated that increase of hemorrhage was likely to occur therefore bleeders may have dangerous hemorrhage as a result. I have noticed in the obstetrical work under ethylene (in version and application of forceps) that the uterus was so relaxed that bleeding was quite excessive. I had to turn to nitrous oxide. This did not happen in more than 2 cases.

In the presence of medical conditions such as cardio renal disease, diabetes, mild inflammation of the lungs the gas was administered with no aggravation of the pathology present. It seems that ethylene does not do any harm when such are present and we hope that more work of this character will uphold our present opinion.

# PROCEEDINGS OF ORLEANS PARISH MEDICAL SOCIETY

THURSDAY, SEPTEMBER 20, 1923

## SPECIAL MEETING HELD IN HONOR OF SIR THOMAS OLIVER

### *Introductory Address By Dr. Rudolph Matas*

Mr. President, ladies and gentlemen: I wish it were in my power to speak in adequate terms of the life work of the distinguished guest of the evening, but fortunately for me the achievements of Sir Thomas Oliver are so universally recognized that they speak for him and for his labors far more eloquently than any praise that could be showered upon him by the most gifted orator.

To extol his merits before a medical audience would be very much like "carrying coals" to his home in Newcastle—a superfluous and futile task. It is, however, only right and proper, since Sir Thomas has traveled so far from his busy home on the Tyne, to honor us with this visit, that we should show him as medical men and citizens of an enlightened community, that we share in the sentiments of admiration and respect which are felt for him everywhere for the life of faithful service that he has given to the betterment of the industrial classes of his country and of the world.

In no way has the humanizing influences of medicine been better displayed than in the special field of work in which Sir Thomas Oliver has been engaged.

In fact, in the cultivation of that branch of hygiene and preventive medicine which is dedicated to the study of the relations of the dangerous trades and occupations to health and efficiency, the medical profession has proved the most potent agency for the protection and uplift of the appressed and suffering masses of the underworld of toil.

In the study of the physical ills which affect the health and lives of the in-

dustrial classes the medical profession has had to deal at first hand, with the fundamental causes of poverty and distress. In this way hygiene and sanitary science have inevitably merged the interests of medicine with those of a common humanity, of sociology and political economy; and in this way, again, Medicine has been not only a helpmate but a guide to the Church and to the State.

The dangers and diseases inherent to certain occupations and trades were known in the earliest civilizations and as far back as Hippocrates and Galen. But it was not until the invention of the steam engine and the rapid advance of the mechanical and chemical sciences and arts, in the latter part of the eighteenth century, that the tremendous rise in the manufacturing industries and trades brought before the eye of the world the evils and dangers that beset the swarming multitudes who flocked to the great centers of industry and commerce.

The effect of this rapid concentration of an indigent and improvident population in a crowded and unhealthy environment, and of the indiscriminate employment of men, women and children without sanitary supervision or governmental control, soon became apparent. The working people realized that steam, machinery, electricity and speed had not improved their lot in life and spoke of their conditions as one of slavery and of their factories and sweatshops as "slaughter houses."

The conditions that prevailed in the British industrial centers up to the middle of the last century, 1850 and later,



were a mere sample of the general misery that prevailed among the working classes the world over. Infantile and juvenile mortality was enormous, and those who attained youth became prematurely old and decrepit before manhood. In one manufacturing city, Manchester, in 1863, the average age of the working classes was only 22 years as compared with the 46 years of the higher classes. Even much later the general death rate for the whole of England of 22 per 1,000 was raised to 36 per 1000 per annum in the industrial districts. The squalor, misery and the toll of death exacted of the underworld of toil, as the price of industrial and manufacturing progress, has furnished an inexhaustible theme for the poets, novelists, artists and historians of all countries. These evils need only be mentioned to make us realize in all their vividness the violent social reactions and revolutionary upheavals that they have brought forth in the more oppressed countries of Europe and which are now the subject of anxious concern of the entire civilized world.

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 interests 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 and 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 legislation. 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.

The constantly growing agitation and discussion of the living and social conditions of the industrial classes has led to administrative and legislative reforms which have improved the status of labor all over the world. The trend and tendency of legislation in England, in the continent of Europe, and especially in our own country, has been to limit the hours of labor, to raise the age limit of child labor from 5 to 15 and even 16 years in some states; to exclude women and children from certain industries, especially dangerous to their age and sex; to provide hours of rest and recreation; to provide for adequate ventilation, fire protection, light, heat and safety devices against machinery and other industrial accidents; to protect the eye, ear, nose and skin of the operatives in certain industries in which these organs are especially endangered; to allay dangerous dust in mining, textile factories and other dust-creating occupations; to regulate the manufacture of certain especially toxic products such as lead, phosphorous, mercury and other noxious substances; to provide in some cases for the periodical medical examinations of all employees, and, again, to provide compensation and indemnity for the disabilities and deaths caused by accident or diseases contracted in the line of duty.

In the endeavor to attain these and other beneficent ends the labor leaders have found inspiration and their most effective weapons in the vast storehouse of medical knowledge,—a knowledge which has accumulated in modern times through the painstaking researches and laborious investigations of the master workers of our profession throughout the world. Therefore, of all the agencies that are working for the physical welfare and social uplift of the laboring classes, the physician stands foremost as the guardian of their most vital interests.

It is as an exponent of this splendid function that we welcome and honor our distinguished guest of the evening. In a vigorous medical career bridged over by a span of nearly half a century of unremitting activity, he has devoted his best energies to the investigation of the diseases that are peculiar to the industrial classes and has enriched the litera-

ture of the profession by original contributions on the causes, prevention and treatment of these diseases. Through his studies on metallic and mineral poisonings as developed in the white lead and lucifer match factories, and potteries, and by his researches on the methods of allaying the injurious effects of the dust of mines and textile factories, he has obtained practical results which have minimized the occupational dangers of these industries and thereby saved the lives of thousands of workers engaged in these hitherto forbidding occupations. As an expert in occupational diseases and industrial hygiene he has served as counsellor to his government on several national and international commissions which have directed the measures upon which protective labor legislation has been based.

His earlier essays on heredity, and his quite recent discussion "on the factors which make for efficiency and social uplifting of industry," and "on some social and medical gains of industrial legislation," which appeared last year, show him to be a philosopher and a statesman, as well as a doctor. He has been a pleader all his life for the humanization of industry and for the uplifting influence of work, and through it, raising the standard of mankind and the dignity of labor. On the other hand, he has tempered his enthusiasm with sound judgment in standing for the co-operation of the employer with the employed so that "the program of industrial hygiene shall all be settled in conformity with reason and experience and not by mere sentiment."

In conclusion, Sir Thomas Oliver's writings all clearly show that in spite of his great flights into other neighboring domains, he has remained first and foremost a physician. It is with the practiced eye of a medical man, familiar by long and close contact with the physiognomy and behavior of disease, and as a clinician keenly trained by long hours of observation at the bedside, that he has seen the light which has brought relief and comfort to his suffering fellows. And it is as a doctor of medicine and as a master in his profession that we now hail Sir Thomas Oliver as one of the stalwart knights of our order.

*Sir Thomas Oliver,\* M. D., (Glasgow)  
F. R. S. C., (London) then addressed  
the Society, his subject being: "Some  
Unrealized Possibilities of Preventive  
Medicine."*

Permit me to thank you for the warmth of the reception you have given me. I feel it is indeed a great honor and I deem it a great privilege to address this audience. It is my intention to say a few words about preventive medicine from an industrial point of view. I am pleased to see that in New Orleans, as in America generally, there has been a marked decline in the number of cases of tuberculosis; as the decline commenced before the discovery of the tubercle bacillus it is clearly not due to this circumstance. Material prosperity by increasing the resistance of the individual may have played a part but it matters little so long as the result is secured. Without further preface I pass at once to the subject of preventive medicine from the industrial point of view.

I have always held that a man's occupation should never be a source of illness to him, but be his means of making a livelihood and, as far as possible, a source of pleasure to him. This, however, has not always been the case. In the early part of last century, children of tender years, five or six, were employed in the coal mines in Great Britain. The foremen often found the children asleep, and thrashed them. Children too were employed in factories and had to work 10 or 12 hours a day. All this has changed. There is now no child labor in England under 16 years of age. Occasionally the law is broken and a child of 12 years of age may be found employed. Boys in England leave school at the age of 14 and are not taken on as apprentices in factories until the age of 16. What just to do with these lads during these two years is a difficulty. Formerly many of them worked for small wages as errand and telegraph boys. They helped to raise the family income, but the work led

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nowhere. We are making efforts to establish training schools in vocational work to which these boys can be sent.

In the early part of last century children were taken from the poor houses and hired out to factory owners. These were known as "apprentice" children. After the battle of Waterloo in 1815, England suffered then, as now, from unemployment; one-fifth of the people at that period had become impoverished; there was much privation and as a consequence parents sent their children into the factories. The prentice children leased out by the guardians of the poor were sent out in groups and were housed together in barracks. I have been in one of these houses in the neighborhood of Bradford in Yorkshire and I was struck with the thickness of the walls of the building, practically a prison for children whose delicate hands I feel sure could not wrench the iron bars if they tried to. All of this, however, is a thing of the past.

Talking of boy labor, I remember in my own father's house a boy, not more than eight or nine years of age, coming with the sweep and being sent up the chimney to sweep it. Young as I was, it made me shudder. The practice continued until after the middle of the last century when a boy was suffocated in a chimney. The practice was then forbidden by law.

It is a strange circumstance that with all our unhappy experience in England of child labor the United States of America did not apply it. No nation, it would appear, seems to benefit by the experience of another.

My name has been associated with lead poisoning in the industries—the story of the campaign against it in Great Britain is simply this. Dr. Matas told you I began life as a doctor among cotton spinners. It was amongst these factory workers that I got into touch with the laboring classes and came to take an interest in them. After I was appointed physician to the Royal Victoria Infirmary of Newcastle-on-Tyne, I was struck with the large number of admissions of men and women (particularly the latter) suffering from lead poisoning. Hardly a few weeks would pass without there appearing in the daily newspapers the account of the

death of a young female from lead poisoning. Newcastle-on-Tyne is a center of the white lead industry and after watching the repetition of these sad events I made up my mind that at a meeting of the British Association of Science I would draw attention to the fact and see whether something could not be done. Lead poisoning was also taken by me as the subject of lectures at the Royal College of Physicians in London. It was after the delivery of these lectures that Mr. Asquith, then Home Secretary, appointed a committee to inquire into the subject of lead poisoning and invited me to serve upon it. I did so. At this particular time I had known of ruddy, healthy looking young women going into white lead factories and dying six to eight weeks afterwards. As a result of the deliberations of the home office committee we advised the abolition of female labor in the dangerous processes of white lead manufacture. This was done. The employers attacked me and told me that this would ruin their trade. Women's organizations also asked me what business I had to interfere with women's labor. It was almost impossible for women, if they were pregnant, to go on working in the lead factories without miscarrying. Or, if they went to term, the infant usually died a day or two after birth, in convulsions. I have known of married white lead workers who had followed their occupation during two, three and four pregnancies and their infants dying before or shortly after birth, yet when the women subsequently took up out-of-door work and became pregnant they gave birth to healthy children and these lived. It was because of the appalling loss of infant life that I pressed for the elimination of women from the dangerous processes of white lead manufacture.

In consequence of the reduction in the number of female lead workers and with improved factory regulations industrial lead poisoning in Newcastle-upon-Tyne and elsewhere has considerably disappeared.

I was invited to go to Hungary as there had been several deaths from lead poisoning. When I got there the Minister of Labor graciously received me and placed a government office at my dis-

posal. In Hungary the manufacture of pottery in many places is a home industry. A potter's house is also his workroom. In the kitchen the ware is made and dipped in the lead glaze; here too the family lives. The children are raised in an atmosphere laden with lead dust. We examined the clothes of the children and we found lead in these, also in the ordinary household utensils. The whole family was thus breathing and swallowing lead dust. It therefore was not an unusual thing to find that the potter's wife or children had died from plumbism or that some one of the family was paralyzed. When I reached Hodmezovaserly, a large village, I was received by the master potter and invited to visit one of the potter's houses. Here a sad sight met my gaze: women, men and children paralyzed, one or two of them blind. The people pleaded with me and asked if nothing could be done to help them. That evening we formed ourselves into a small committee, a Hungarian doctor assisting me. It was my wish to report direct to the Hungarian government and the recommendation I made was simply this: that the dipping and drying of the glazed ware should be carried on away from the homes of the potters and be done in a communal house in each village so that a potter's family would be no longer exposed to lead dust. Three years after that I went back to Hungary to see the result. When I got to one of the villages the doctor met me; he had prepared a list of cases of lead poisoning in the village for the last 20 years, and there were, 80, 77, 75, 84, etc., until the date of the establishment of the communal dipping house, when the number of cases fell to 14 and in the following years to eight and three. In addition, the doctor said that he had received a telegram from the Secretary of State requesting him to see whether he could find in the village any cases of lead poisoning in infants, but the doctor, after a careful search, could not find one. This circumstance shows that much can be done to alleviate and prevent industrial lead poisoning.

To one other occupational disease I would like to draw your attention and that is phosphorus poisoning in the manufacture of lucifer matches. Sev-

eral cases had occurred in Great Britain. It is a painful malady. The jaw bones become inflamed and the affected portion of bone dies; the pus secreted, if aspired into the lungs, may cause broncho-pneumonia. When visiting match works in France and Belgium I found among the workers not only cases of necrosis of the jaw bones but a peculiar fragility of long bones, without undue strain the long bones of the body would snap. In Hungary, I saw several cases of phosphorus necrosis, some of which were fatal. I found in a village in Prussian Silesia, in a match factory, one woman working without her lower jaw; it had been removed by a surgeon; all she had was the upper jaw with a small dental plate resting on the floor of the mouth. There was considerable scarring of the neck caused by the operation and yet notwithstanding all this woman had suffered she had returned to the match factory. It seemed to me that the only thing to do was to try to find a harmless substitute for white phosphorus. I went to France and found that the French government was using sesquisulphide of phosphorus. I experimented upon animals and I found that the sesquisulphide was non-poisonous. My colleague, Sir Edward Thorpe, and I, therefore, recommended to the home office the desirability of doing away with white phosphorus and this was done. In factories where they had previously cases of phosphorus necrosis, these now ceased, under the new conditions. This is an illustration of what can be done to transform a harmful into a harmless occupation; we did not abolish an industry but substituted a non-poisonous for a poisonous substance.

We are all, as medical men, more or less interested in the conditions of labor for the working classes. Since I came to the states I have had the opportunity of discussing labor problems with Mr. Secretary Davis in Washington, also with Mr. Samuel Gompers as regards trade unionism. Mr. Gompers told me that when he began his life's career there was no limit to the length of time men could work. They could work well on into the night, but now all this has been stopped; 44 to 48 hours a week is today the average for nearly all trades.



with the result, as Mr. Gompers says, that the longevity of the working classes has distinctly lengthened. To this circumstance higher wages and shorter hours have also contributed. We have no desire to underestimate the good re-

sults which trade unionism has secured; all we say is this: that as medical men we will co-operate and lend our aid to any form of activity which will promote better industrial conditions and improve the health of the working classes.

# New Orleans Medical and Surgical Journal

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### EDUCATION OR LEGISLATION?

It will not be long before the smoke of political combat will have cleared away and the new governor of Louisiana will be sworn in; at the same time, a new legislature will begin to function (or disfunction, as time will tell). Many matters of vital interest to us, as citizens, as medical men and as guardians of the public health, will come up for consideration. While we have an excellent committee on "Public Policy and Legislation," these gentlemen cannot do much good unless they have the whole-hearted support of each and every one of us. It is now a little early; but, in order that we may do better than heretofore, let each member of the L. S. M. S. make up his mind to put his shoulder to the wheel, discuss these matters with his legislators—elect, early and often, and, later, when the session opens, go to Baton Rouge, if need be, and, by personal interview, impress upon these senators and representatives the need of certain things and the absurdity of others.

In this connection, we are reproducing an article by Dr. E. C. Ellett, Memphis, Tenn., originally published in the A. M. A. Bulletin for December, 1923, entitled "Whose Responsibility?"

"A few days ago, I was listening to a man reciting his unfortunate experience with a doctor, by whom he seemed, according to his statement, to have been badly treated, owing to incompetence on

the part of the physician. The patient was a prominent influential and intelligent man, to whom one would naturally listen with respect. He was answered in this manner: 'Mr. T., no one knows better than the doctors that such an experience is possible, and doubtless happens, and efforts have been made for many years to have laws passed whose object is to eliminate such possibilities. Every line in our laws looking to that end has been put there by the physicians over the strenuous opposition of the people, such as you.' He was fair minded enough to see that this was true and to admit it. Now it is strictly true that every line of the law that attempts to regulate the practice of medicine was enacted through the efforts of the regular medical profession. It is equally true that no law has been passed, or proposed for passage, by the profession that in any way sought to work to the advantage of the regular profession. We have only answered for certain educational requirements, possessing which a man could practice medicine as he worshipped God, 'according to the dictates of his own conscience.'

"We read in a recent number of the *Bulletin* (November, 1923), that a society has been formed in the interest of scientific medicine, with laymen at its head. ("The friends of Medical Progress"). It is high time that such a society should spring into being, and that



the doctors be relieved of the physical and financial burden of legislative load, which is intended to work to the benefit of the people and not to the benefit of the medical profession. For the thirty odd years that I have practiced medicine, there has been a continual watch and fight and worry necessary, when the state legislature was in session, to protect the existing laws from harmful onslaughts, and occasionally to add a little to the structure. At the last session, an attempt was made to emasculate the law of one state by doing away with the preliminary requirements. This was done because the son of one of the legislators was unable to enter a medical school on account of lacking of educational attainments.

"The question presents itself. Why should the medical profession take upon itself, or be called upon to fight this battle of altruism? Why not quit, and let all the quacks and skeptics and short horses and faddists that the people want enter the field of healing? A dignified statement of the aims and achievements of the regular profession should be placed before the people, but why summon the doctors to go before legislative committees, and contribute to funds to enact proper laws! To the best of our knowledge, our opinion is not wanted, at least is not sought. We come out in favor of what we think is right, and almost invariably we are accused of self-seeking; the measures we advocate are looked on as measures for our profit and protection. As a matter

of fact, we are the least concerned. We can protect ourselves and families from the incompetent and the unprepared, and this sort of competition probably never hurts us.

We do vast amounts of public work for nothing, in hospitals, dispensaries, state and county institutions, etc., work whose money value is very large, and this service is accepted, but when it comes to asking a hearing on matters in regard to which our experience and position should entitle us to be listened to with respect, we find that our opinions are neither wanted nor heeded. One is almost tempted to advocate a 'strike,' and to demand that if we treat the state's and city's poor gratuitously, and teach in state institutions for nothing we be given a respectful hearing, and that our advice be heeded when it comes to matters of public health and measures looking to its protection from the ignorant and unprepared."

"It is the fashion to combat the appeals of the medical profession on these lines with a recital of cures in cases in which regular medical treatment failed. The treatment of diseases is but a small part of the question. Epidemiology, prevention of disease, sanitation and other large and important questions which are essentially medical are things that can only be dealt with by trained men. With these matters, the faddist, the cults and the thousand and one healing systems do not deal. They are the only concerned with treating the individual sick person and for a fee."

## PROCEEDINGS OF TOURO INFIRMARY STAFF

*Clinical Meeting December, 1923.*

(Dr. Feingold, Presiding)

*Dr. Heninger:* Tonight I wish to discuss the type of irregularity known as "Heart Block". There are two cases which I wish to present; the etiology of the two is different. I regret that I cannot show either one of these cases for certain reasons. The first case (I do not know much about the clinical history) was referred by Dr. Lyons to the Department of Electrocardiography for cardiograms. It was interesting that this lady is known to have had a peculiar heart disease over a period of 30 years and that it was diagnosed as "heart block" by Dr. McKenzie over 15 years ago. She had an infectious disease—I believe Diphtheria. Cardiographic tracings taken in this hospital showed the sino-auricular—that is, there is an altered transmission of the impulse between the pace maker known as the sino-auricular node and the auricles. Normally, the impulse is received at the sino-auricular node, passes down the auricle in a wavelike motion, just like the ripples resulting from throwing pebbles in a pond of water, and they collect at the auriculo-ventricular bundle, and transmitted down the "bundle of His" traveling down to the right and left branches where it further divides into numerous small branches, known as aborizations which run into the muscle substance of the ventricles. Thus you see any conditions pathologic or otherwise which would intercede or delay this impulse anywhere along this conductive pathway would have a tendency to cause a heart block. Necessarily, there are different types of heart block—may be a low grade or a complete block which would give you the Adam-Stokes syndrome. A sympathetic disturbance would probably cause a heart block of a very low grade. In this specific case, the symptoms being of paroxysmal character, it was thought best to determine whether this was a sympathetic block or a true pathological condition. The method used to determine this is to do away with the vague stimulation by the administration of

atropine. This patient was given 1-150 of atropine hypodermically, the exact amount of atropine received by the patient not being known on account of the poor syringe. Cardiograms were immediately taken, 2 minutes, 4 minutes and 6 minutes after the injection with the result that the heart block was not done away with in any of these sets of tracings. Therefore, we came to the conclusion that this was a typical case of pathologic sinu-auricular block, due to diphtheretic infection, progressing very slowly.

The second case of heart block is an exceptional one. This is a case referred by Dr. Matas, of a traumatic arterio-venous aneurism of the right femoral, resulting from a pistol shot wound eleven months ago. The case presented tumor of the right groin, a palpable thrill, and enormous enlargement at that extremity with all the findings of an arterio-venous aneurism. Aside from this most interesting feature, our attention was called to the fact that on deep pressure over the aneurism, there was a marked slowing of the pulse. This case was brought to the Department of Electrocardiography for a complete study of the cardiovascular system. Cardiographs were taken before and immediately after pressure. Instantaneously, after pressure there was a slowing of the heart rate to the extent of thirty beats per minute. The slowing progressed until there was a definite delayed conduction of the impulse from the auricle to the ventricle thus establishing a low grade heart block. On removing pressure, this delayed conduction was done away with. Up to about ten days ago, the cause of the heart block or this marked slowing of the pulse, was thought to be due to a sudden overfilling of the ventricles after restoring the circulation to its normal pathway. Recent work has shown that there is no increase or very little increase in the pressure in the veins but that this is the result of the stimulation of the vagus. It occurred to us that atropine would



do away with this block or slowing of the heart beat in the event that it was due to stimulation of the vagus. Again the syringe failed, but enough atropine was obtained so that the slowing and the conduction time of the impulse was not altered as much as it was previous to the injection of atropine. Further work will be done upon this case and will be the basis for a communication at some future date. On passing, I wish to mention that these are the first electrocardiographic tracings taken on an arteriovenous aneurism in the United States as far as the literature shows:

Dr. Heninger: Case 3. This case is a very interesting one, although it is not a heart block but it represents the first case in this institution of which I know that died following the administration of quinidine sulphate. The patient was a white man 78 years of age, entered inside service Touro Infirmary October 22, 1923, died November 13, 1923. This patient is shown thru the courtesy of Dr. Lemann.

The findings according to the record were that the man was rather elderly looking, marked edema of the lungs and ankles, extreme yspnoea, cyanosis. No general adenopathy, conjunctive suffused, no teeth, lips purple. The heart: Left border extends to the left axillary line 6 interspace. Right Border: 4 cm. from the mid. sternal line in the third interspace. There is no visible or palpable apex impulse. The heart sounds are distant. The radial pulse was irregular, easily compressible, rate 120. The abdomen showed free fluid, liver and spleen not palpable.

On October 27th, electrocardiogram was taken and showed auricular fibrillation. Digitalis was instituted. Up to this time, 2 ozs. of Tr. Digitalis had been administered by mouth. Oct. 30th, cardiogram was again taken—the heart rate was estimated at about 60. Digitalis was discontinued, although the heart at this time was still fibrillating. The spacing between the beats was so marked that the progress sheet shows a diagnosis of premature contractions. Nov. 3rd cardiograph shows fibrillations still present. Auscultation revealed what was thought to be premature contraction. Digitalis was instituted again. On Nov. 5th notes from

the progress sheet show pulse 50; another cardiogram taken at this time shows a marked coupling of beats. Digitalis discontinued. Nov. 12th it was considered that possibly quinidine sulphate would stop the fibrillation, and so was administered in doses of 2 grains three times daily. A total of 14 grains was given. On the morning of the 13th I decided to take another cardiogram to ascertain the results of this therapeutics. On going to the ward to see the patient that morning, he was complaining of most excruciating pain in the abdomen. He had been given an enema without relief. He complained about his treatment in Touro and I thought he was malingering so that he would not be taken to the cardiograph laboratory. At about 10 o'clock that morning cardiograms were taken without any disturbance whatever and patient was returned to the ward within a period of 10 minutes. By noon the pain did not seem to abate, patient was given morphine 1-4 grain. In spite of this the pain still persisted. Patient's abdomen was examined—no evidence of rigidity was found, abdomen was soft, flat, no distension. Pain seemed to be somewhat localized in the epigastrium. The cardiogram was immediately developed and had changed completely from the previous one. It now showed in addition to auricular fibrillation, numerous premature contractions which probably arose in the right ventricle. From this and the excruciating pain in the abdomen, the diagnosis of coronary thrombosis of the left coronary artery was made. In fact, the death certificate was signed this way before autopsy. At midnight, patient became pulseless and died at 3 A. M.

At 9 o'clock next morning, Nov. 14th autopsy was performed by Dr. Bowden, later viewed by Dr. Duval, Dr. Lanford being out of the city. The heart was exposed, coronary arteries were opened and found patent and in perfect condition. The leaflets of the mitral valve were markedly sclerosed and the diagnosis of "thrombosis of the left coronary" was apparently wrong. After the heart was removed from the pericardial sac and studied carefully, there was an area about the size of a dollar found in the left ventricle which resembled

either an old gumma that was healed or an area of the muscle which had degenerated following some previous infarct many years ago. This area was one of fibrosis which completely replaced the muscle tissue of the heart. The remaining muscle fibres were in fairly good condition in comparison. Such an area of fibrosis would clinically represent a condition which would follow a coronary thrombosis and possibly was the cause of these premature contractions arising in the right ventricle. Thus the cardiogram in this case told the truth. The cause of the man's pain was no doubt hemorrhagic infarct of the spleen which was caused by the administration of quinidine, the same conditions having been reported throughout the United States on various occasions and it is one of the frequent causes of death in these cases.

*Dr. Lyons:* Discussion Dr. Heninger's case. I would like to say just a word about the first case because I have had her under observation for about fifteen years. The irregularity began immediately after a bad case of Diphtheria 30 years ago. Every doctor who listened to her heart noted it was extremely irregular. I have watched it for fifteen years. She has gone through one pregnancy 16 years ago without difficulty. She required considerably more physical care than a normal individual but with moderate limitation of physical exertion she is apparently in good health. The interpretation of sphygmographic tracings before we had the electrocardiograms was not clear. There was evidence of some heart block and McKenzie wrote a rather noncommittal letter to that effect. These are the first electrocardiograms that have been made. Sinoauricular block according to the most modern authorities that I have seen in the last year state that you have a total cardiac standstill. The impulse is blocked in the sinoauricular node itself, or if not blocked in the node between it and the auricles. There is, therefore, no auricular contraction or ventricular response.

If you look at the electrocardiographic curve, you simply have an absence of everything. No cardiac movement at all.

This tracing does show P-waves, with

markedly increased conduction time. I personally do not quite understand the exact mechanism of this irregularity. I hoped Dr. Lemann would get Dr. Dr. White of Boston to give him an interpretation on the curves when he was in Boston. The atropine test was not satisfactory for the reason that Dr. Heninger stated. It was in a darkened room and only 1-150 of a grain and probably 1-3 of this was lost. The interpretation of the curve to my mind is not all a simple matter.

*Dr. Lemann:* I wish to answer the question as to the cause of embolism after quinidine. It is thought to be due to the fact that quinidine stops fibrillation, and that when the auricle begins its orderly contractions, a piece of the mural thrombus previously existing in the auricle is swept off into the blood stream. That is the reason they are afraid of quinidine. I heard from Dr. Levine of Boston, who can speak authoritatively on quinidine, that his experience was apparently the same as ours was here in this case. In old hearts quinidine is dangerous.

*Dr. Eshleman:* I wanted to know whether the autopsy had shown any definite point from which the embolus had caused death.

*Dr. Heninger:* When the peritoneum was opened there was a quantity of bloody fluid in the peritoneal cavity. Dr. Duval said it was due to a gas bacillus following death. The real cause of death he thinks was cardiorenal death brought on suddenly by possibly an embolus arising from the leaflets of the mitral valve being thrown off by the peculiar action of quinidine and finally lodging in the spleen.

*Dr. Lemann:* It is only fair to say that this patient was moribund when he came in. He was 72 years old, gasping for breath, and with general anasarca. He was rendered comfortable by adequate doses of digitalis. However, these full doses of digitalis did not bring about a cessation of the fibrillation, as evidenced by the electrocardiograph, even when clinically he had had enough digitalis. I must say that previously I have been a doubter as to the danger of quinidine. Quinidine is a salt of quinine, quite analogous to the ordinary quinine salt we use in malaria, and I



have always asked myself why quinine could be so dangerous when we used quinine so generally in the South. If quinidine and quinine are so dangerous, why have we not seen cases of death due to quinine? Many doses of quinine must have been given to patients with heart trouble who also had malaria, or what was thought to be malaria. I shall proceed with quinidine in the future with considerably more respect.

A case of Poliomyelitis with Normal Spinal Fluid—Ludo Von Meysenbug, M. D., A. B., D. P. boy, aged 2 1-4 years. neg. birth and feeding history—none of the children's diseases.

Spent summer in Evanston, Ill., returning to New Orleans on September 1st. On September 15th, Sat. boy was vaccinated at his home, running about apparently perfectly normal. That night had fever, mother called up to ask if it might be due to vaccination. Was told probably not. Two days later—saw patient again and he had fever up to 103.5-10, was drowsy and listless but no special complaints. Was kept in bed most of time, but allowed to get up to go to stool, etc. Four days after onset patient was very listless, whining, refused food, and resented being disturbed, wanted to be left alone. He seemed to have pain in his leg, but it was difficult to understand which leg and he moved both legs when necessary. Temperature was normal for a day or two, then shot up again to 104. The physical examination two days after the probable onset (the night of the vaccination) showed only a typical grippal throat. Rafeles were all normal. On the fourth day, the vaccination began to take and resulted in a very severe take, the whole upper arm swelling and being very red and tender. Temperature at this time was ascribed to the vaccination and aside from the listlessness and somewhat vague evidence of pain in one or the other leg and the red throat, the boy's main trouble seemed to center about the vaccination. Seven days after the first rise in temperature, he complained of a great deal of pain, and it was noticed that he refused to move, even in his bed. The reflexes at this time showed an absent K. J. on the left, sluggish but present on the right. There was also no plantar response on the left

and there seemed to be foot drop and loss of tone of muscles of the left leg.

A lumbar puncture was done the next day, 8 days after onset of the disease and probably not more than 2 days after onset of paralysis. The fluid was not under tension, dropping out very slowly. It was perfectly clear. The cell count showed 5 cells per cmm. and globulin test was negative. Routine Wassermann was also negative. This spinal fluid finding threw considerable doubt on the diagnosis of poliomyelitis. The only other condition that could have given a similar clinical picture is peripheral neuritis, where pain is the prominent symptom, as it was in this case. In looking up peripheral neuritis in the text books, I found the statement that it sometimes follows an ordinary acute naso-pharyngitis, such as this boy had at the onset. As you can see from the chart, there was no fever while he was in the hospital and the pain in his leg had subsided. There was flaccid paralysis of his left leg, absent k. j. and plantar reflex on that side.

Two days after leaving the hospital he could wriggle his toes, and then motion of the upper leg returned. Toe drop remained also loss of k. j. and plantar response. The interesting and unusual feature of this case is the normal spinal fluid. In considering the pathology of poliomyelitis we know that the earliest change is a hyperemia of the pia and blood vessels passing into the cord and an accumulation of lymphocytes and polymorphs, about them. It is to this that we ascribe the spinal fluid changes.

But in a study of 2000 polio spinal fluids, Neal and Abramson found increased polys in only 37 instances and then not always in the first few days. Of 500 fluids carefully studied by these authors, they found only 23 in which the cytology was normal, but they always found increase in globulin. Of 30 cases showing flaccid paralysis, there were 11 giving no pheocytosis.

Dr. F. W. Peabody, whose name will always be thought of in connection with poliomyelitis, wrote me that a normal spinal fluid is extremely unusual in the pre-paralytic stage, but that a normal cell count occurs in a small majority of instances after the onset of

paralysis. In his experience, a complete absence of globulin in the first week after the onset of paralysis is very unusual.

I was considerably reluctant to make a diagnosis of poliomyelitis with that spinal fluid finding, but clinically there could be no doubt of it. The temperature reaction was masked by the vac-

nation but there appears to have been a dromedary type of curve, such as Peabody describes as occurring in some instances of the disease.

I have asked Dr. O'Ferrall, who saw this boy with me about one week after lumbar puncture, to give you his opinion of the case and also to outline early treatment.



## NEWS AND COMMENT

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At a meeting of the Southern Surgical Association held at White Sulphur Springs, W. Va., on December 11-13, the surgeons of New Orleans were well represented by a large delegation and by a number of valuable contributions to the program and to the discussions. Drs. F. W. Parham, R. Matas, C. J. Miller, H. B. Gessner, S. M. D. Clark, J. A. Danna, I. Cohn and U. Maes (re-elected treasurer) were present.

Dr. Cohn read on "Splenectomy as a treatment for Purpura Hemorrhagica," Dr. Gessner on "Report of cases of the Matas operation for aneurism with a statistical review," Dr. Matas "on the secondary effects of Arterio-venous fistulae on the heart and general circulation," Dr. Miller on "The Cure of Incontinence of Urine in Women."

Tulane graduates outside of New Orleans also contributed notable papers. Dr. DuBose of Selma, Ala., on "Cholecystoduodenostomy and Cholecystogastrostomy," Dr. Dunbar Newell, of Chattanooga, Tenn., on "Bone Sarcoma," Dr. James N. Mason, of Birmingham, Ala., on "The Influence of hemorrhage on the mortality of gunshot wounds and other injuries of the abdomen."

The retiring president, Dr. James F. Mitchell, entertained the association with an interesting and beautifully illustrated lantern-slide travalogue of a naturalists's expedition to the "Galapagos" islands in the Pacific, headed by Mr. Beebe, the well known explorer and naturalist, Dr. Mitchell participating as surgeon of the expedition.

Dr. LeGrand Guerry, of Columbia, S. C., was elected president, and Drs. Royster and Maes re-elected secretary and treasurer, respectively.

Dr. S. M. D. Clark was awarded a prize, a silver cup, in a golf contest.

The next meeting will be held in December, 1924, at Charleston, S. C.

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On Thursday, December 14, Dr. Matas held a surgical clinic at the Johns Hopkins Hospital, in which the Tests for the Efficiency of the Collateral Circulation as a Preliminary to the Occlusion of the Large Surgical Arteries,

were especially discussed and illustrated. Dr. Matas was the guest of honor at a luncheon given by Drs. J. M. Finney, Thayer and members of Dr. Finney's staff.

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On Sunday, December 16, Dr. Matas, Dr. Finney and Dr. Welch delivered addresses at the Memorial Services held at the Johns Hopkins University in honor of the late Dr. William S. Halsted, Professor of Surgery and Surgeon in chief of the John Hopkins Hospital. The services were attended by a very representative gathering of Dr. Halsted's former associates, pupils and friends, who had assembled from many parts of the country to pay a tribute of respect and affection for their chief, the eminent founder of the Surgical School of Johns Hopkins University. President Goodnow presided over the meeting.

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### *Award of the Sofie A. Nordhoff-Jung Cancer Research Prize.*

Dr. Johannes Fibiger, professor ordinarius in pathological anatomy at the University of Copenhagen, has demonstrated, following repeated experimentation, that parasites play an important role in the formation of certain types of tumors in the proventriculi of rats.

Furthermore he has succeeded in effecting papillomata and undoubted carcinoma through the parasite nematode. Where others have failed after years of persistent researches, he first met with success in artificially inducing malignant tumors through external irritations and so thrown wide new avenue to future findings. Though the earlier results of Fibiger's work date back a number of years, he unremittingly labored towards an interpretation of the significance of parasitic irritants in malignant tumor formation, likewise of mechanical and chemical irritants. Fibiger and his associates have contributed generously to the literature of cancer production through the feeding to rats of oats and the application of tar to their tissues. In this

way they have confirmed the successful work of Stahr and Yamagiva.

In a word, Fibiger's advances towards the solution of the problem of the causitive irritants productive of cancer are at the same time most comprehensive and most remarkable.

The Commission on the award consisted of Professors Borst, Doederlein, v. Romberg and Sauerbruch, all of the University of Munich.

The Webster Parish Medical Society met Thursday, November 22, at 2 p. m. in the Scout Theater at Minden for their regular fall meeting. Scientific papers were read by Drs. Butler of Springhill, and Crutsinger, Baker and Martin of Minden. The papers were enjoyed and the subjects discussed by all the members present.

Dr. L. Longino made a very instructive talk on the need of a Hospital for Minden and Webster Parish. After a general discussion a resolution endorsing the hospital was unanimously passed. Dr. Paul Crutsinger and Dr. C. M. Baker were elected members of a committee to aid the movement for a hospital.

The following officers were elected to serve during the year 1924: Dr. W. McDade, of Minden, president; Dr. J. D. Kilgore, of Minden, vice president; Dr. C. M. Baker, of Minden, secretary and treasurer. Dr. B. A. Norman of Sibley was elected delegate to the State Convention, with Dr. J. D. Kilgore as alternate.

At the January meeting of Shreveport Medical Society, the scientific program was furnished by the Charity Hospital staff. It was clinico-pathological and clinical and dealt, especially, with tuberculous meningitis; some of the cases were diagnosed ante-mortem, some post-mortem, only, closing with the presentation of two living cases, one of which will doubtless recover, prognosis in the other being doubtful.

Delegates to the State Society meeting in Opelousas were named, viz: Drs. J. E. Knighton, S. C. Barrow, W. H. Adams, E. L. Sanderson, T. P. Lloyd. Alternates: A. P. Crain, M. S. Picard, J. M. Bodenheimer, J. J. Frater, I. B. Rougon. Inasmuch as there were 122

members on the roll of the society for 1923, it is expected that over 100 will have paid dues before April, in order to entitle Caddo Parish to five delegates.

Drs. L. H. Pirkle and T. E. Williams have purchased a site in the western part of Shreveport, known as Queensborough, and have announced their intention of erecting thereon a modern hospital building.

Dr. C. W. Phillips, formerly of Haynesville, La., has recently moved to Shreveport.

#### *Monthly Bulletin of the Orleans Parish Medical Society.*

The society begins the year with a total membership of 476. There are many physicians who are eligible, and every effort should be made to bring them into our organization.

The President announces the appointment of Dr. Sam Hobson as chairman of the Scientific Essays Committee. Members desirous of reading papers during the coming year are requested to communicate with him at an early date, thereby facilitating the preparation of the program for the coming year.

Delinquents for the fourth quarter are required to pay their dues before February 15th.

Annual dues for the state society and first quarter dues for the Orleans Parish Medical Society are payable January 1st. Prompt remittance will facilitate the work in the office and assist in reducing certain expenses.

The annual meeting of the society was held Monday, January 14th, 1924. Dr. H. W. Kostmayer, the retiring President presented his report, and Dr. S. Chaille Jamison read the President's address. In addition the reports of officers and various chairmen were read, and evidently the society has progressed and had a most successful year. After the meeting refreshments were served. A total attendance at this meeting was over 175.

The joint meeting of the old and new Boards of Directors was held Monday,



January 7th, and plans for the coming year were discussed.

Applications for membership pending: Dr. Larry J. Dupuy, Dr. W. N. Floyd and Dr. Elliott Kiblinger.

Delinquents number eight.

*February Program.*

February 4th, Board meeting; February 11th, scientific meeting; February 26th, scientific meeting.

*Treasurer's Report for December, 1923.*

Total receipts .....\$489.96  
 Total expenditures ..... 479.85

Resources.

Domicile fund, Liberty bonds,  
 par value .....\$30,000.00  
 Library endowment fund,  
 bonds, par value ..... 3,500.00  
 Medical relief fund, savings  
 account ..... 96.23  
 \$33,596.23

*Librarian's Report for December.*

The work of the year has carried the organization of the library well on to completion. Four thousand two hundred books have been added to the records. Of these 133 were received from the New Orleans Medical and Surgical Journal; 131 were added by purchase, 115 by binding and 167 by gift. This brings the total of books as shown in the completed records to 9,600 volumes. There remain approximately 1,000 volumes more. All of these are from the old Charity Hospital collection, the dates ranging from 1750 to 1865. Another three months should completely finish the cataloguing to date.

A pamphlet and reprint collection has been started which we expect to make of unusual value for quick reference work. We have already over 300 on file and shall add to the collection as rapidly as possible.

A noteworthy addition to the library during the past year is a complete set of Guy's Hospital Reports, which we imported directly.

As authorized by the Library Committee, the evening hours of opening

were discontinued on May 31st. In September, Tulane University asked permission to resume the evening hours at their own expense for the use of the students of the Medical School. This permission was granted by the society and the library has been open from 7 to 10 six evenings each week since October; Mr. Leonard Wilson being in charge.

The reference work continued through the summer months to a gratifying extent, the average daily attendance for the year being from 8 to 10. Twenty-five subject bibliographies have been prepared and placed on file for further use.

The library has been the recipient of gifts from the following persons: Dr. P. B. McCutcheon, Dr. J. A. Lanford, Dr. H. L. Johnson, Dr. A. E. Fossier, Mr. Fung y Figueras and the Eye, Ear, Nose and Throat Hospital.

Monthly Bulletin of the Shreveport Medical Society, January, 1924.

January 9th, program by Charity Hospital staff. February 5th, program by North Louisiana staff. March 4th, program by Highland Sanitarium staff. April 1st, program by Schumpert Sanitarium staff.

Willis P. Butler, M. D., President.

I wish to express to the members of the Shreveport Medical Society, my appreciation of the honor and confidence displayed in electing me president of the society for the year 1924.

In making committee appointments I have selected those whom I feel sure will gladly serve and do all possible in support of the officers. The Program Committee is already busy, and we can look forward to interesting meetings.

I expect to serve to the best of my ability and ask that each member give the officers the fullest co-operation because this is necessary if we are to have a successful and profitable year.

Finally, I ask that you attend the meetings, bring others with you, join in the discussions and help keep the attendance record as near 100 per cent as possible.

Officers for 1924:

President—Dr. Willis P. Butler.

First Vice-President—Dr. I. Henry Smith.

Second Vice-President—Dr. E. L. Sanderson.

Secretary—Dr. Robert T. Lucas.

Treasurer—Dr. Lewis Cass Spencer.

Committees for 1924 will be announced in the next Bulletin.

The regular monthly meeting of the Shreveport Medical Society was called to order by President Pirkle at 8 p. m. Thirty-three members were present. Minutes of the last meeting were read and corrected.

Treasurer's report. Dr. Spencer reported that there are eight members who have not paid 1923 dues. There is \$7.89 in the bank and a bill for \$15 outstanding against the society.

Secretary's report. For the year ending with the November meeting there were present at the twelve meetings a total of 348. Average attendance per meeting 29. Present enrollment 123. Deaths two, Dr. S. Y. Alexander and Dr. W. H. Billingsley. New members seven, Drs. Best, Caldwell, Gowon, Gilmer, Heard, Simonton and Sandridge. Transfers one, Dr. R. F. Harrell. Resignations one, Dr. O. B. Hicks. Number who have not attended any meeting during the year, 37.

Election of officers.

For President Dr. Willis P. Butler was nominated by Dr. Heath. The nomination was seconded by Dr. Ragen. Dr. Butler elected by acclamation.

For First Vice-President Dr. I. Henry Smith was nominated by Dr. Hendrick. The nomination was seconded by Dr. Ruthledge. Dr. Smith elected by acclamation.

For Second Vice-President Dr. E. L. Sanderson was nominated by Dr. Herold. The nomination was seconded by Dr. Heath. Dr. Sanderson elected by acclamation.

For Secretary Dr. R. T. Lucas was nominated by Dr. Blackman. The nomination was seconded. Dr. Lucas elected by acclamation.

For Treasurer Dr. L. C. Spencer was nominated by Dr. Hendricks. The nomination was seconded. Dr. Spencer elected by acclamation.

There being no objections the January meeting was decided on for the election of delegates to the Louisiana State Medical Society.

There was no unfinished business.

Dr. Boyce announced that the City Library has taken over the Medical Society's library.

Dr. Sanderson started a healthy general discussion as to how to increase interest in the society and increase its usefulness to its members and to the community.

Dr. Herold announced the meeting of the Tri-State Medical Society at Texarkana on the 5th and 6th.

On motion the society adjourned.

R. T. Lucas,  
Secretary.

#### *Fifth District Medical Society.*

On December 11th at the St. Francis Sanitarium clinic building, was held one of the most delightful and satisfactory meetings of the Fifth District Medical Society ever held. About 60 members attended. A program of unusual interest was given by men over the district. Dr. C. P. Gray gave the president's address. Luncheon was served by the St. Francis Sanitarium and several talks were made, including a splendid, short, spicy speech by Dr. Gaines, of Tallulah. Dr. Fisher, of Choudrant, was elected President; Dr. Perot, of Monroe, was elected Secretary, and Dr. C. P. Gray, of Monroe, was elected delegate to represent the district society. All the meetings of the Fifth District Medical Society are held in Monroe, because of the central location and railroad facilities.

#### *Ouachita Parish Medical Society.*

Ouachita Parish Medical Society has a large membership, the largest in its history. This society holds an annual banquet, usually in December at the time of election of officers. The banquet held this year at the Hotel Monroe was attended by practically the full membership. Officers for next year are: Dr. Hirsch, President; Dr. Peters, Secretary; Dr. Bennett, delegate to state society, and Dr. George Wright, alternate delegate. These banquets are very delightful occasions for the men, and the spirit of fraternalism is always boosted on these occasions.

The staff of the St. Francis Sanitarium holds monthly meetings in the clinical building of that institution.



Short but splendid programs are carried out. Case reports and discussions appear to be more generally enjoyed than papers. These meetings are unusually well attended.

During the past year the Ouachita Flying Squadron, composed of about ten men of Monroe, have visited in a body the Morehouse Society on two occasions, the Caldwell Society for one meeting, and the La Salle Society for one meeting. This group of men in visiting the smaller societies carry with them practically a full program and place it at the disposal of the smaller society. Each of the societies so far visited have treated the Flying Squadron to a splendid banquet on each occasion. Lincoln and Jackson, joint society, will hold a meeting early in the year in some convenient place and the same group of men will attend in a body. The amount of good that is accomplished by these visits we believe, is considerable. The small society maintains its membership; it is stimulated to make a substantial showing and is held together in a way not obtained by any other influence like this one.

#### *St. Tammany Parish Medical Society.*

St. Tammany Parish Medical Society held its regular monthly and annual business meeting Thursday night of last week at the Southern Hotel, with the following members in attendance: Dr. J. K. Griffith, President; Dr. W. R. Singleton, Secretary-Treasurer; Drs. G. R. Pennington, J. F. Polk, F. F. Young, J. F. Buquoi, C. F. Farmer, H. D. Bulloch, R. B. Paine, W. L. Stevenson and A. G. Maylie.

Dr. Stevenson illustrated the Schick test for diphtheria, on living subjects, which proved very instructive and unusually interesting to the members, many of whom saw the operation for the first time.

This being a business meeting scientific papers and discussions were dispensed with and the following officers were elected for the ensuing year: Dr. J. K. Griffith, President; Dr. G. R. Pennington, Vice-President; Dr. W. R. Singleton, Secretary - Treasurer; all three re-elected. Delegate to the Louis-

iana State Medical Society, Dr. F. F. Young; alternate, Dr. A. G. Maylie.

#### *The American Congress on Internal Medicine.*

The eighth annual clinical session of the American Congress on Internal Medicine will be held in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at St. Louis, Mo., beginning Monday, February 18th, 1924.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Twenty-nine thousand Ford workers have defective vision, according to a report made by the Ford management to the Eye Eight Conservation Council of America, which, following investigation of industrial waste of the Hoover committee of the Federated American Engineering Societies, is conducting a survey of the eyesight conditions among the nation's industries.

The Department of Commerce is publishing each week the census mortality reports from the largest cities of the United States.

There are given for each city the total number of deaths reported (still births excluded), the death rate, the number of deaths under one year of age, and the infant mortality rate based on deaths under one year for the week and estimated births for the previous calendar year.

The Department of Commerce announces lower death rates of mothers from childbirth or puerperal causes in 1922 than in any year since 1916.

#### *National Committee for Mental Hygiene.*

Dr. Frankwood E. Williams was re-elected Medical Director of the National Committee for Mental Hygiene at the annual meeting of the Board of Directors, held in New York City, on December 28. The following were elected members of the Executive Committee: Dr. Williams L. Russell, Medical Direc-

tor, Bloomingdale Hospital, White Plains, New York; Dr. Walter E. Fernald, Superintendent, Massachusetts School for the Feebleminded, Waverly; Dr. Stephen P. Duggan, Director, Institute of International Education, New York City; Dr. William A. White, Superintendent, St. Elizabeths Hospital, Washington, D. C.; Dr. Charles P. Emerson, Dean of the Medical School, University of Indiana, Indianapolis; Dr. C. Floyd Haviland, Chairman, State Hospital Commission, Albany, New York; Dr. Arthur H. Ruggles, Superintendent, Butler Hospital, Providence, Rhode Island, and Mr. Matthew C. Fleming, attorney, New York City. Dr. William H. Welch, President of the National Committee for Mental Hygiene, presided.

#### Louisiana Nurses Board of Examiners.

The semi-annual examination of the Louisiana Nurses Board of Examiners was held in New Orleans and Shreveport, December 10th and 11th. Seventy-nine applicants qualified as registered nurses.

The Louisiana Nurses Board of Examiners is composed of the following doctors: John T. Crebbin, President; Joseph S. Hebert, Secretary-Treasurer; George S. Brown, New Orleans; Fred J. Frater, Shreveport; Robert W. Faulk, Monroe.

Removal: Dr. A. J. Newman, from Montpelier, Louisiana, to Hammond, Louisiana.

Died: Callan—On Friday, December 28, 1923, at 5 o'clock p. m., Dr. John Callan.

Dabney—On Friday, December 28, 1923, at 11 o'clock a. m., Dr. Thomas Smith Dabney, aged 73 years, a native of Mississippi, husband of the late Ida Ewing and father of Thomas Ewing Dabney.

The Secretary of the state society announces plans for the Opelousas convention are actively underway, and everything points to a record breaking attendance.

Monthly Radio Health Talks sponsored by the Orleans Parish Medical

Society is given regularly every third Friday in the month, over the Tulane University radio station WAAC. Hour 8:30 p. m. sharp. Dr. Homer Dupuy will be the next speaker.

The societies in the state have just completed one of their most successful years. Help us learn of your activities by sending to the editor of this column news, personal and of a medical nature.

St. Rita's Infirmary in Opelousas has just been completed.

#### STATISTICAL DATA FOR THE MONTH OF NOVEMBER, 1923, OBTAINED FROM THE RECORDS OF THE CITY BOARD OF HEALTH.

Births.	
Male, white .....	357
Male, colored .....	139
Total .....	496
Female, white .....	282
Female, colored .....	163
Total .....	445
By physicians .....	521
By midwives .....	420
Deaths	
	White Colored
Diphtheria .....	4 2
Typhoid .....	0 0
Malaria .....	0 1
Scarlet Fever .....	0 0
Whooping Cough .....	0 1
Influenza .....	6 3
Measles .....	1 0
C. S. Meningitis .....	2 1
Tuberculosis .....	22 23
Cancer .....	30 13
Apoplexy .....	37 20
Endocarditis and Myocarditis .....	8 10
Angina Pectoris .....	3 0
Other Circulatory Diseases .....	76 46
Broncho Pneumonia .....	20 13
Lobar Pneumonia .....	13 21
Other Respiratory Diseases .....	5 3
Diarrhoea and Enteritis .....	9 4
Appendicitis .....	3 3
Other Digestive .....	11 5
Acute Nephritis .....	0 5
Chronic Nephritis .....	18 10
All other Genito-Urinary Diseases .....	3 2
Puerperal State .....	5 5
Malformations .....	3 9
External Causes .....	33 20
Death Rate Per 1,000 Per Annum for the Month—Non-residents Excluded.	
White .....	14.86 12.96
Colored .....	27.71 26.06
Total .....	18.35 16.08
Deaths from premature births, violence, etc., are not excluded.	



Dr. T. I. St. Martin of Houma, La., has been appointed chairman of the Section on Radiology for the approaching meeting of the Louisiana State Medical Society.

## BOOK REVIEWS

Tonsillectomy, By Greenfield Sluder M. D., Pub. by C. V. Mosby Co. St. Louis. 1923.

In this very excellent monograph the collateral problems of embryology, physiology, and pathology, are given a thorough review. This feature alone gives the work a special value. The chapter on Adenoidectomy by direct vision is timely, for the usual technic applied in this operation is hardly the last word in the surgery of the postnasal space. Even if one does not accept the Sluder method for tonsillectomy as the best, this volume, written with the collaboration of Arthur Proetz and I. D. Kelly, Jr., is replete with valuable information relating to the ever interesting tonsil question.

Homer Dupuy.

Rhus Dermatitis (Poison Ivy) Its Pathology and Chemotherapy. By James B. McNair. The University of Chicago Press. Chicago, Illinois, 1923.

James B. McNair's Book, Rhus Dermatitis, proved to be a book of greater depth and greater importance than one would have expected from reading the title only and I do not think it is fair to him that the work be reviewed from the standpoint of Dermatology only; the volume should be of great interest to the Chemist and Botanist as well. I am sure all Dermatologists would have welcomed a final decision that Lobinol was the undoubted cause of this Dermatitis Venenata and also that a specific antidote had been found but, with it all, one must admit that McNair's volume is intensely interesting and should be read by all doctors, those practising in the rural districts particularly, as well as those specially interested in diseases of the skin. The report of many case histories in detail will prove, even to those of us who have seen a fair amount of Rhus Poison, interesting and considerably enlightening.

H. E. Menage.

Diseases of the Skin, Fifth Edition Rev. By Richard L. Sutton, M. D., LL. D. C. V. Mosby Co., St. Louis, Mo. 1923.

The American Dermatologists have written many excellent books on diseases of the skin; the Fifth Edition of Diseases of the Skin by Sutton is certainly an addition to them. The index is unusually complete for a volume of that size, and with its numerous references, the general practitioner as well as the medical student would make no mistake in reading it. The illustrations are numerous and in many instances excellent; to read the book is a pleasure on account of the clear large type and excellent paper the publishers deemed wise to use.

H. E. Menage.

The Examination of Patients. By Nellis B. Foster, M. D., Associate Professor of Medicine, Cornell University. W. B. Saunders and Company, 1923.

As a system of examination, the text is rather differently written by keeping the reader constantly in mind of the fact that a live patient is being examined. Each abnormality that may be noted has its variations listed and the practical significance of the variations is indicated. The book is completely up-to-date, the laboratory findings and interpretations are well thought out and an excellent colored plate brings out the characteristic eye grounds. The actual methods of eliciting the various physical findings and abnormal reflexes are not given in enough detail for undergraduate use, but is still very desirable for advanced workers.

F. M. Johns.

Outlines of Medical Zoology. By Robert W. Hegner, William W. Cort and Frances M. Root, Department of Medical Zoology, Johns Hopkins University. The Macmillan Company, 1923.

This little volume is the outgrowth of the small bulletin issued by the same authors, entitled "Diagnosis of Protozoa and Worms Parasitic in Man", which was published in 1921 and which has gained wide circulation. The new book is along the same lines and contains considerably more material, especially in the treatment of the protozoan infections. Two colored plates depicting the various malaria parasites are exceptionally good. The volume does not cover even in outline quite enough general zoology to supplant any of the more complete books; and as a text-book for medical students I think it is seriously handicapped by not including the life cycle of the various worms parasitic in man. It is still essentially a volume devoted to diagnosis. The addition of the chapter on Arthropods makes the volume of considerably more importance than the earlier bulletin.

F. M. Johns.

Orthopedic Surgery. By Royal Whitman, M. D., M. R. C. S., F. A. C. S., 7th Edition, Lea & Febiger Philadelphia and New York, 1923.

The earlier editions of this book have served for many years as a text book on Orthopedic Surgery. In this seventh edition new illustrations have been added and certain important chapters have been strengthened and lengthened. The wide experience and thorough knowledge of the author have enabled him to produce a book that should be in every medical library. To the general practitioner the work will be valuable for reference, and to the medical student the greatest aid in understanding this specialty; the Orthopedic Surgeon will find many practical points and helpful suggestions, no matter what his own experience may be, and will profit through its reading. Certain procedures that have proved valuable in the experience of the author have been elaborated, and the whole subject has been covered in a masterly way. The last chapter, Collateral Orthopedics, is worthy

of careful study, and will repay anyone interested in the subject.

P. A. McIlhenny.

**Non-Surgical Drainage of the Gall Tract.** By B. B. Vincent Lyon, A. B., M. D. Lea & Febiger, Philadelphia and New York, 1923.

There is no subject in the field of modern medicine which has aroused in recent years a keener sense of interest and stimulated greater effort of closer study and observation than the one which the author has so admirably surveyed and presented in this volume. In introducing the subject, he touched upon the attractiveness of scientific research in a field heretofore unexplored. He succeeded in penetrating the Gibraltar of man, nature's pride. With unlimited zeal, perseverance and enthusiasm, the author pursued his course, weathered the fiercest storms of criticism and stood unflinchingly at his post of duty until he created this volume, a monument to his heroic efforts to explore the filtration plant of the human machine. With the skill of a well trained architect, he rescribes first the foundations of that plant and the functioning capacity of each part. Then, he proceeds to unravel the mysteries of man's most wonderful chemical laboratory. The historical sketch is quite interesting, although it can be traced to an earlier period, the Babylonian school of the Talmud. The plea for an early recognition of biliary disease and its relationship to the gastro-intestinal tract merits our attention. A study of the new diagnostic methods for the detection of liver and gall bladder diseases adds much to the advance in medical knowledge. Many promising features to detect liver and pancreatic diseases with their wide range of influence upon the gastro-intestinal tract are in store by mastering the chapters on quantitative determination of enzyme activity in duodenal fluids, and functional tests of the liver. We may not agree with him on the A B C bile, a few details of his method or the contrary innervation feature for lack of proof by animal experimentation, but the convincing evidence presented of results obtained speak for the fact and fully justify the act. This volume is brimful of interesting though for the internist and surgeon who quite often fail in their efforts to bring relief to the chronic gastro-intestinal invalid whose cause the author has greatly espoused.

A. L. Levin.

**Hygiene and Public Health.** By Lewis C. Parkes, M. D., and Henry R. Kenwood, M. B., 7th edition. P. Blakiston's Son & Co., Philadelphia, 1923.

Parkes and Kenwood's text book of Hygiene and Public Health represents in itself a most complete and efficient exposition of our knowledge regarding those influences which actively contribute to the health of the individual and of the community.

It is divided into fifteen chapters covering the subjects of Water, Excreta and Refuse Disposal, Air and Ventilation, Warming and Lighting, Buildings, Climate, Exercise and Clothing, Foods, Infectious and Communicable Diseases Maternity and Child Welfare, School

Hygiene, Industrial and Marine Hygiene Disinfection and a chapter on Vital Statistics.

The discussion of each of these subjects is most excellent and comprehensive; notably the section of Communicable Diseases. This is very complete and comprises a very comprehensive summary of our knowledge of the acute infectious diseases, their transmission and statistical data of their prevalence. It is notable that this chapter also contains a section on cancer which is of peculiar interest. It includes also a discussion of Venereal Diseases and reflects the attitude of the authors to this subject. The conditions under which venereal diseases in England are combatted and the manner in which this work is carried on is in many ways different from the ones employed in this country. However, it is possible for a central Government to bring pressure of a kind with which we are not familiar.

The whole book is written essentially for conditions as they exist and prevail in England and the British Empire, but there is no doubt that a great deal of the advice could be applied with advantage in this country.

The book has the usual atmosphere of the English author, but it is not distinguished by any particular bias. The chapter on Ventilation, Heating and Lighting presents problems with which we are familiar and which in many instances we solve with greater ease on account of the conditions peculiar to the United States.

No one could read this discussion of these most important subjects without deriving great benefit and a wider vision of the problems which confront the Hygienist and the Public Health Official; It is always worth while to view an object from two or more different standpoints, by so doing we improve our own perspective, this is what the treatises of Parkes and Kenwood accomplish to a marked degree.

Oscar Dowling.

**Pennington's "Diseases and Injuries of the Rectum, Anus and Pelvic Colon."** By J. Rawson Pennington, M. D., F. A. C. S. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, 1923.

Pennington has given us a book of more than usual interest from both a historical as well as a medical standpoint. Each subject is well covered and the illustrations are above the average for a work of this sort. The anatomy, physiology, and pathology is thoroughly covered in a clear, concise manner followed by the author's operative technique and a very comprehensive bibliography. The volume will be found of equal value for both surgeon and practitioner.

C. L. Peacock.

**Obstetrics for Nurses.** By Charles B. Reed, M. D. 2nd., Edition C. V. Mosby Company, St. Louis, 1923.

The text is large, clear and distinct and good for night reading. Cuts are well illustrated, are clear and can be followed easily by the text. The descriptions are short to the point and should be easily grasped by the pupil nurse.

P. B. Salatch.



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### NEPHROLITHIASIS AS A COMPLICATION OF PREGNANCY.

BY AIME PAUL HEINECK, M.D.,  
CHICAGO, ILL.

A somewhat exhaustive survey of the literature of the subject supplemented by a careful analytical study of my private and hospital cases leads me to formulate the following conclusions:

Renal lithiasis associated with, or complicating pregnancy has not received adequate study. Not infrequently, it escapes detection; not uncommonly, it is misdiagnosed and therefore injudiciously treated.

Nephrolithiasis occurs at all periods of the child-bearing age; in primiparae, deutiparae, and multiparae. It may coexist with concretions in other organs. It is observed in pregnancies normal or abnormal in type, location and evolution; it may be one of two more pathological states coexisting with, and influencing or not, the evolution of an otherwise normal gestation.

Renal calculi, associated with or complicating pregnancy, are unilateral or bilateral, single, double or multiple and (like calculi in the non-pregnant) vary in location, shape, size, mobility, chemical composition and other characteristics. Their formation either antedates, is simultaneous with, or consecutive to, the first or any succeeding pregnancy of the patient at hand.

The calculi excepted, the calculous kidney may show but slight structural deviation from the normal; or it may be anomalous in type (single kidney), (fused kidney), b. location (ectopic kidney), or c. structure (polycystic kidney,

hydronephrosis, pyonephrosis). The anatomical anomalies presented by a calculous kidney are congenital, acquired, or both.

If acquired, they are either of independent origin, or determined by the presence of calculi. Renal calculi, sooner or later, provoke structural kidney changes, degenerative, inflammatory, hyperplastic or neoplastic, in nature.

Nephrolithiasis, occurring in pregnant women, determines the same anatomical changes, in the affected kidney as are found in the calculous kidney of the non-pregnant. These structural changes, the resultant of irritation, obstruction and infection, manifest themselves by exudative, proliferating and degenerative processes, often suppurative in character; rarely, neoplastic. Under the influence of stones, the epithelium of the renal tubules may necrose, form cysts or become malignant. In the absence of infection, the lesions presented are those of atrophic and diffuse nephritis. Generally, the aseptic stage of calculus is brief. Infection, sooner or later, supervenes and gives rise to one or more of the following conditions: Pyelonephritis with or without abscess formation, perinephritis, sclerotic or suppurative pyonephrosis, and partial or complete conversion of the kidney into a sclerolipomatous mass.

In nephrolithiasis, early diagnosis leads to the institution of logical treatment before irreparable kidney changes have taken place. An accurate diagnosis presupposes an intelligent interpretation of the subjective symptoms, of the bacterial, chemical and microscopical urinary findings, of the X-ray data and also the combined use of the cystoscope and the X-rays as employed in

pyelography. In every case, there should be a complete roentgenographic exposure of the urinary bladder of both kidneys and both ureters. The skiagraph is a permanent record. Skiagraphy shows (a) whether calculi are present in one or both kidneys; (b) the number, size and shape of the calculi; (c) their location—pelvis, calyx, parenchyma, or pyo—or hydronephritis cavities; (d) the presence of extra-renal calcareous deposits.

Pyelography, a most valuable diagnostic procedure, should only be employed when the dangers attending its use are far outweighed by the information which it offers. It enables us to determine the presence or absence of pathologic changes in the reno-pelvic outline and whether a doubtful shadow is or is not extra-renal.

Pain, local and radiating, is the most important subjective symptom. Its character and intensity are influenced by many factors; size, nature and mobility of the calculus or calculi, degree and acuity of infection, etc. It is provoked by walking, fatigue or exercise, and subsides with rest. Hematuria, intermittent or continuous, scant or profuse, and pyuria are also important symptoms.

In cases of persistent lumbar pain, a radiograph of the kidneys, ureters and urinary bladder is of great service to the clinician. Radiography of the urinary system has limitations, determined to a large extent by:

- a. defective technique;
- b. defective interpretation of shadows seen in the negative;
- c. impossibility of obtaining a satisfactory negative;
- d. defects in negatives;
- e. caseous kidneys;
- f. calcified mesenteric glands;
- g. phleboliths;
- h. bony deposits in the pelvic ligaments.

If the symptoms be mild, obscure, indefinite and identification of the X-ray shadows uncertain, the medical treatment of renal lithiasis is to be instituted and the pregnancy is permitted to proceed undisturbed. After the puerperium, or better, after the period of lactation, operative treatment is to be urged in suitable cases.

As many renal stones are spontaneously expelled, a patient should be kept

under observation for a limited period of time and nature given full opportunity to remove the stone or stones without recourse to surgical intervention. Operations for renal stones give such good immediate and remote results, that treatment with supposed solvents find few advocates.

In the absence of contra-indications, operation can be performed with safety up to the sixth month of pregnancy, to both mother and child. Up to that time in the absence of contra-indications operative treatment is to be instituted in cases.

(a) of renal calculi too large to be spontaneously expelled through the natural channels even if the symptoms be recent in origin, or slight in intensity, nothing is gained by delay. Be not too optimistic as to small renal calculi; of all calculi, they are the ones most apt to lodge and become impacted in the ureter.

(b) of multiple calculi, irrespective of site, size, or number.

(c) of recurring attacks of excessive pain localized to, or radiating from, the renal region.

(d) of profuse or continuous hematuria.

(e) of acute pyelonephritis, of cortical or pericortical pus formation and pus collection, and bilateral pyelonephritis.

(f) of a calculus giving rise to urinary retention within the renal pelvis. Such retention, always a menace to kidney integrity may lead to hydronephrosis, pyonephrosis, etc. A stone in the cortex of the kidney does not furnish as urgent an indication for operation as one in the renal pelvis.

(g) Obstructive calculous anuria. This condition calls for immediate relief.

(h) of bilateral nephrolithiasis. In bilateral cases, first operate on the least involved kidney provided there is no acute pathological process in the other kidney, requiring immediate attention. In from two to three weeks, operate on the other kidney. If one of the kidneys be the seat of acute complications, it should be the first to receive surgical relief.

(i) of stone in one kidney and disease in the other.



(j) of renal lithiasis co-existing with tubercular or neoplastic disease of the same kidney.

(k) of a calculus or calculi in a patient's only kidney; here, the patient's existence depends on the unhampered function of his remaining or sole kidney.

Nephrolithiasis and its complications are subjected for cure to the following operations, each of which has its respective indications, limitations and increasing field of usefulness—pelvolithotomy, nephrolithotomy, nephrectomy, nephrostomy, incision and evacuation of perinephric phlegmons. It may be necessary to supplement any of the fore-mentioned operations with temporary drainage of the renal pelvis, renal paranchyma, or perirenal regions. Always ascertain, before operating for renal stones the functional efficiency of the opposite kidney; as, the necessity for a nephrectomy may arise unexpectedly during the course of any kidney operation.

Pelviotomy or pelvic-lithotomy, the operation most generally used for nephrolithiasis, is well adapted to the removal of stones present in the renal pelvis. With it, dangerous hemorrhage, immediate, consecutive or secondary is of rare occurrence. Pyelotomy does not injure the renal parenchyma. It is unsuited for removal of voluminous or branched calculi. The pelvis is to be incised on its posterior vascular aspect.

Nephrotomy or nephrolithotomy, is attended with destruction of kidney tissue, followed at times by secondary hemorrhage. The friability of the kidney tissue may be such that the stitches tear out. Nephrotomy permits a thorough exploration of the organ and a complete removal of the calculi. It possesses the signal advantage of not entailing the sacrifice of the kidney. It is employed also when calculus or calculi lie just beneath the renal surface, when the renal pelvis is abnormally small or if the kidney is so bound by adhesions that its exteriorization is inadvisable. If pyelotomy be out of the question, nephrotomy is the operation of election for nephrolithiasis. Usually all the calculi can be removed through a large incision; in special cases, several small incisions may be made. If

infection exists, pass a drain through the cut cortex to the renal pelvis, also pass a drain to the kidney.

Nephrectomy is indicated:

(a) In multiple, parenchymatous large coral-shaped calculi unsuited to pyelotomy or nephrotomy.

(b) In renal hemorrhage that cannot be checked.

(c) In cases presenting advanced necrotic, suppurative or destructive renal changes.

(d) When the kidney is reduced to a mere shell.

(e) When the kidney has been transformed into a sclero-lipomatous mass.

(f) If it seems probable that nephrolithotomy will leave a permanent urinary fistula.

(g) In chronic fistulae of the kidney, pelvis or ureter which have not yielded to non-operative treatment.

(h) In malignant disease such as tuberculosis, cancer, etc., in a stone-bearing kidney.

If there be doubt as to the functional integrity of the other kidney, nephrectomy has had to be performed during the actual existence of pregnancy in many cases with satisfactory results as regards the mother, the continuance of pregnancy and the health of the child.

Nephrolithiasis in pregnant women calls for the same operative procedure as in the non-pregnant. In the pregnant these operative procedures have the same indications, limitations, palliative and curative efficacy as in the non-pregnant. During pregnancy, the lumbar route of approach to the kidney is the only one that can be considered. Pregnancy apparently does not unfavorably influence the prognosis of operations for the relief of nephrolithiasis.

Operations for the relief and cure of nephrolithiasis and its various complications do not, any more than other major abdominal operation such as appendectomy, cholecystectomy, etc., unfavorably influence the course of pregnancy. They do not jeopardize the foetal or maternal life.

In the pregnant, after operation performed for nephrolithiasis and any of its various complications, gestation usually follows its evolution undisturbed and is but slightly more hazardous to

mother and child than pregnancy under normal conditions, provided the remaining kidney is functioning normally. Parturition and lactation are uninfluenced. The nephrectomized woman may be permitted to marry, or if married to undertake the risk of pregnancy, provided she is in otherwise fit condition. As a rule, there is no reason to interrupt pregnancy occurring in women with only a single kidney. If the remaining kidney is healthy, the strain of pregnancy can be fairly well borne. The development and persistence of serious symptoms may, if operative treatment be absolutely contra-indicated, call for the induction either of abortion or of premature labor.

CONSERVATISM IN DEALING WITH PELVIC INFECTION.\*

BY THOMAS E. SELLERS, M.D., F.A.C.S.,  
NEW ORLEANS.

The high mortality and dreadful morbidity of pelvic infection is a well known subject. About one-third of gynecology deals with pelvic infection. The records of Charity Hospital show 1,207 cases of pelvic infection out of 3,667 gynecological cases handled in 1921 and 1922. On account of the frequency of pelvic infection I feel that this subject cannot be too often discussed, especially the conservative treatment.

There are three outstanding points in the conservative treatment of pelvic infection.

1. Avoid an abdominal section by rest treatment and vaginal drainage.
2. Conserve tube and ovary (if operated) for reproductive purposes.
3. Conserve as much ovarian tissue as possible for its internal secretion.

A large percentage of cases are cured by the rest treatment. This is shown by a questionnaire sent to three hundred cases of pelvic infection who were handled at the Charity Hospital. One

hundred and three of these answered, giving the following results:

Three of the non-operative cases have become pregnant. To secure the best results, the rest treatment must be properly carried out. The patient should stay absolutely in bed during the febrile stage and then two or three weeks after the temperature is normal; nourishing food, ice bags to abdomen and hot douches when indicated will hasten recovery.

The post abortal and post partal infections should be given a much longer period of rest than the neisserian. They should be confined to bed after the temperature is normal for at least two or three weeks. The patient should then live an inactive life for a period of months, spending as much time in bed as is practical. It is also important that there be sexual rest. At the end of this time if there are many subjective symptoms as well as menstrual disorders, an abdominal section must be considered. Those cases where an abdominal section is necessary, have gained much by the rest treatment. It not only lowers mortality, but makes a conservative operation possible.

As indicated above, the neisserian infection responds more readily to rest treatment. Before considering an abdominal section in this type, the temperature should be normal for two weeks, there should not be a rise in temperature after a vaginal examination and the total leucocyte count must be normal.

The mortality of the neisserian infection is much lower than the post abortal and post partal infections. The record of the Charity Hospital for 1922 is as follows:

Neisserian .....	75%
Post partal and post abortal.....	75%
Undetermined .....	3.75%

These figures should be lower in private practice where a more intelligent class is handled, and where a long rest treatment is practical.

Pelvic infection is often complicated

	Cured or improved	Slightly improved	Not improved	Died
Operated .....	48	33	10	5
Not operated .....	55	39	9	7
				1
				2

\*Read Before the Louisiana State Medical Society, January 24-26, 1924.



by pelvic abscess, this is especially true of the post abortal and post partal types. During 1921 and 1922 there were thirty-eight posterior colpotomies done at Charity Hospital; twenty-three of these were post abortal, three neisserian and twelve undetermined. There were five deaths, three of which had septicemia when they came to the hospital. It was necessary to perform an abdominal section on five, prior to their dismissal from the hospital. The remaining twenty-eight cases were not followed up, but no doubt some were forced to return for subsequent treatment.

Dr. Wharton reports 25 per cent of pelvic abscess cases are permanently cured by vaginal drainage; 23 per cent are improved permanently, and 57 per cent resulted in ultimate failure, in that the patients are not permanently relieved of their symptoms. Personally I consider Dr. Wharton's figures are conservative.

A posterior colpotomy is a simple operation, but not always well done. This accounts for the difference in opinion as to its curative value.

The patient should be prepared as for other vaginal operations. A general anaesthetic should be given, patient placed in the lithotomy position, scrubbed with soap and water followed by alcohol and draped with sterile sheets. Place a weighted speculum into the vagina, then with a tenaculum pull the cervix forward and upward. Insert a long aspirating needle through the vaginal mucosa in the mid line close to the cervix. If pus is located leave the needle in place, incise the mucosa and insert a uterine dressing forcep, using the needle as a guide. Much of the pus can be evacuated in this manner, but the mucosal incision should be well dilated with two fingers, then pass the fingers into the cul-de-sac and search for other pus pockets. After the abscess is opened and well dilated insert two or three iodoform packs into the cul-de-sac for twenty-four to thirty-six hours. The vaginal opening should be dilated every forty-eight hours either with uterine dress forceps or the fingers until the abscess stops draining. Do not irrigate the pus pocket. Now the case should be handled like any

other case of pelvic infection. I consider the exploration of the pelvis with the fingers the most important step of the operation.

2. Long rest treatment before an abdominal section will do more to make it possible to conserve the tubes and ovaries than any one thing. The amount of ovarian tissue and the tubes conserved is almost in ratio to the number of days the patient rests in bed. When the abdomen is opened it is important that the tubes be handled with care, avoiding traumatising them with instruments. The tubes should be examined to determine whether they are open, this can be accomplished by inflating them with air, or catheterization. I will not discuss the plastic operations recommended for obstructed tubes. We should do more plastic work on the ovaries instead of removing the organs. This can only be done to an advantage by using small needles and fine suture materials, being careful not to disturb its blood supply any more than necessary. Before operating on a case of Neisserian Salpingitis, even after a long rest, an attempt should be made to eradicate the focus of infection special attention being given to Bartholin, Skene and endocervical glands. The husband as another source of infection should also be examined and treated if necessary. The failure to remove the focus of infection is responsible for many of our recurrent attacks of salpingitis. A small percentage will be forced to return for further surgery in spite of all precautionary measures. The course pursued necessarily depends somewhat upon the patient; her age, her desire to reproduce and whether or not she is of the laboring class.

3. Often the tubes are badly diseased and for reasons already stated it is necessary to remove them. In doing this it is essential that the blood supply of the ovary is not disturbed any more than is necessary as the function of the organ depends upon its blood supply. This can be accomplished by cutting the meso-salpinx close to the tubes and ligating the vessels separately. The importance of this has been brought home to me after opening a number of abdomens for a second operation and find-

ing a small sclerotic mass instead of the functioning ovary.

The ovarian branch of the uterine is frequently ligated in performing a supra vaginal hysterectomy. An attempt should always be made to conserve this vessel, which can be done by clamping close to the uterine wall thus avoiding the vessel. Even if both tubes are removed conserve the uterus if possible; we must not forget the psychology of menstruation.

My plea first and last is for long rest treatment and more colpotomies which will reduce the number of abdominal sections and make it possible to conserve more tubes and ovaries.

#### DISCUSSION.

Dr. Lucien A. LeDoux (New Orleans): The subject of pelvic infection is one of equal interest to the specialist and to the general practitioner. It is a big subject. We have heard from time to time the mention of the word "rest" in the treatment of pelvic infection, but in spite of all that has been said of the value of rest, we still see cases that if they had had proper rest the ultimate results would have been better.

What do we mean by rest treatment? By rest treatment I do not mean simply ordering the patient home and to bed. That patient should be put to bed and on her back, not allowed to sit up in bed or sit over the edge of the bed; she should have ice bags and hot douches, particular care being taken to have the douche bag at the proper level; she should also have mild laxatives and a nourishing diet. This patient should remain in bed and on her back for as long a time as is found necessary. I remember a case at the hospital a few years ago where, after seven weeks of observation, we found the patient every four or five days running a temperature of 99 to 100, and on close questioning of the internes we found that the nurse had every few days been giving the patient a "good" douche, placing her on the roller and taking her to the treatment room to do this. This evidently was sufficient to cause her temperature and to prolong her treatment in bed. The rest treatment is usually as important as the operation itself, because the results of your operation depend upon the amount and type of rest that your patient has received.

The success of your treatment depends on several things—first the absence of temperature, as Dr. Sellers has brought out, absence of temperature for two or three weeks; normal leucocyte count, and no pain on examination. I have seen cases that were free from temperature, had a normal leucocyte count, but on examination they still suffered pain. These three things form an index as to the patient's condition for operation. Rest makes the operation easier for the surgeon, it allows maximum conservatism at opera-

tion, and very often it postpones or entirely eliminates the need for operation.

As regards the cul-de-sac drainage, this is important, and as Dr. Sellers mentioned, is not done sufficiently. There is some danger in doing it in cases in which it is not indicated, for instance where we have infection of the perimetrium—there little would be gained. The patient whose general condition is poor, who has been carrying infection for many weeks, who is probably in danger of passing out,—too much trauma would be dangerous. It may not endanger her life, but will make subsequent operations more tedious and difficult.

As regards the use of iodoform packs, we have been using a large rubber tube for drainage with the pack around it. We allow it to remain in position four or five days, and after removal we have found a sufficiently patulous opening to allow free drainage.

Dr. P. B. Salatich (New Orleans) I think the most scientific part of gynecology is conservatism. It is all right to talk about conservatism, but there are two points you must adhere to if you are going to get results. First, we all agree that long rest is important, and if you want to be conservative three weeks of a febrile condition is not sufficient. I remember a woman who was anxious to have a baby, but she had first a miscarriage, and then an extra-uterine pregnancy, which became infected. I kept her in bed for four months—two months after the temperature subsided. On opening her up I found the right side entirely destroyed, and on the left side a hydrosalpinx containing four ounces of fluid, and the ovary the size of an apple. I clamped off part of the tube that contained water—split the tube and took out three-fourths of the ovary, and kept the woman in bed a long time, and she is now the mother of two children.

A second matter of importance is careful dissection. If you want conservatism you must operate carefully, more so than if you do a radical operation. Never put an instrument on a structure that is to remain. Try to do as little traumatism as possible, because if you catch any part you will have a raw surface and some adhesions. After the patient is operated on, continued use of the ice bag and having the patient elevated as high as she will stand, is important.

Another point that is important, after you have done all this work many times the uterus sags down to the bottom of the pelvis, and if you catch it up with a suture of catgut it will pull it up and prevent a certain amount of adhesion.

Another thing, it is important to give these patients careful instructions afterwards. Tell them to keep up the douche for a long period of time, tell them to rest a good deal, to be careful about their diet and not eat anything that will cause gas, and make them keep their bowels open, if you want results.

You get better results by resecting the ovary and making a careful suturing, if possible covering the raw surface along the line of the cut. If you have to remove both ovaries and the uterus remains, be sure to save a piece of that ovary. I have had sev-



eral cases in which I placed a piece of ovary to the side of the incision, between the skin and the fascia, for the reason that if the ovary become infected it would be easily removed. You will find a large percentage of patients will not suffer from the disagreeable menopause symptoms, and will continue to menstruate after the operation.

Dr. Paul Michinard (New Orleans): This question of conservatism in pelvic infection is a very broad one, and I will limit my remarks to the Fallopian tubes. Some of the men who follow us in the wards and amphitheatre have a misconception of the behavior of diseases of the Fallopian tubes. They draw a parallel between the Fallopian tubes and the appendix. Bear this in mind—the appendix vermiformis is subject to gangrene, it rarely has an exudate protecting the surrounding tissue; while in the Fallopian tubes, owing to very wonderful circulation, we never have gangrenous degeneration. They are always protected by exudate. Now if that Fallopian tube is protected by an exudate, can you tell whether you are dealing with the perisalpinx or the endosalpinx? We have repeatedly removed tubes from the exudate and found them not badly diseased at all. Those cases of perisalpinx will get well under conservative treatment, irrespective of the quantity of exudate around them.

Another thing, I believe that every case of salpingitis will eventually become well symptomatically if taken in time. We see these at the hospital, the laboring class who have been working, with diseased tubes. We do not meet that class of people in private work. If we could take these people in the hospital, have them remain in bed for two months, we would get better results. But the great trouble in the hospital, we are thinking of the \$1.50 a day it costs, and are filling up our beds. I have been fighting for a long time in my classes to try to save the Fallopian tubes. You remove diseased tubes bathed in exudate, and if you follow those cases you will find that a majority are suffering just as much after operation as before. Have you saved a life? As a rule that Fallopian tube would not have killed her. If I had my way in treating salpingitis I would keep the woman in bed for three consecutive months, and I believe if we did that we would not have recourse to so many surgical procedures.

Dr. M. J. Gelpi (New Orleans): I want to mention a word in connection with conservation of the tubes, particularly with regard to the possibility of pregnancy occurring after a certain type of salpingitis. We are occasionally confronted with the problem of the young married woman who is anxious to have a child, who is operated upon, and at the time of operation presents two hydrosalpinx, though occasionally there may be but a single one. The question arises as to whether it is possible to leave in such a hydrosalpinx and give the woman a chance to become pregnant.

Just as we have two distinct types of pelvic abscess, so we have two distinct types of hydrosalpinx. One is the result of intra-tubal infection, shows lymphoid and plasma cell infiltration extending deeply in the walls,

and if you try conservative treatment on such a hydrosalpinx, you court failure as a rule and your patient will not become pregnant. This type should be removed. If, on the other hand, you have the type that occurs following extra-tubal infection, as after appendicitis, where after sealing of the fimbriated end, the hydrostatic pressure in the tube gradually stretches it into a thin wall, showing nothing abnormal microscopically—in that case the tube can be conserved. You can open that tube, if the woman is anxious to become pregnant, and by a plastic operation you may still have a very good chance of pregnancy occurring. I think that is a nice little pathological point, because occasionally you do find cases where pregnancy is longed for, and in the type of hydrosalpinx where you have a thin wall as described, resection is justifiable, and pregnancy sometimes supervenes.

Dr. P. Graffagnino (New Orleans): There is one point I want to emphasize. Experience has taught the gynecologist no longer to consider acute salpingitis a surgical disease; it is a medical disease, pure and simple, and surgery is only indicated for the complications that follow—accumulations of pus, adhesions, uterine displacement, etc. Yet, despite the reiterated assertions voiced by authorities to this effect and innumerable publications from their pen on conservative treatment, an astonishingly large number of cases of acute salpingitis are subjected to operation without adequate conservative treatment, with a resultant high mortality, as proved by hospital records.

Dr. J. L. Adams (Monroe): Since this paper is heard principally by practitioners and men of lesser surgical experience, I want to call attention to one important point. We are all urging conservatism to-day, but it is very easy for the pendulum to swing from one extreme to the other. I had a case a few days back that illustrates very forcibly what I am trying to bring out. This patient was brought to the hospital, wrapped in ice and given the usual course of treatment, and we thought a little pain was necessary. She was treated for two weeks and allowed to return home, apparently well of the infection, Neisserian in type. But there was a constant dull pain going on. One afternoon it became necessary to rush the patient to the sanatorium and operate. What did we find? We found the appendix had been engaged with the right tube and had undergone gangrenous degeneration. Do not be too sure of what is going to happen under conservative treatment. It is largely a medical rather than a surgical condition in the beginning, but be sure to watch for the dull pain that may follow.

Dr. H. W. Kostmayer (New Orleans): As old as the subject is, I cannot keep still when the rest treatment is talked about, because without it we could not do much in gynecology. I think it is well to emphasize the necessity for conservatism in surgery, but a great many of us do not do surgery and yet we continue to treat gynecological cases. I want to emphasize what Dr. LeDoux said, and that is the correctness of rest treatment.

We go into the ward at the hospital and tell the internes who make the rounds with you that this is a case for rest treatment, that she needs a long rest, and she may not need anything further, but whether she does or not, she needs a long preliminary rest before surgery is done. Go in a few days and look at the patient's chart, the temperature is still the same as before, she still complains of pain, and when you ask what the rest treatment consists of you will find she is being made to go with the nurse to the dressing room to receive a douche, or she is being made by the nurse to go to the toilet—the nurse will not bring her a bedpan. Not because she does not want to take care of the patient but the nurse thinks it is all right for her to get up. I think if the man doing no surgery in gynecology would learn how to give the rest treatment, he would have a big asset. The patient who takes the rest treatment from me must agree that she is not to be propped up to eat; she must not get up to the toilet or to bathe; she is given a douche, by a skilful attendant if possible, or by somebody who will administer the douche after she has been told how to give it. The douche must be hanging just high enough so the contents will flow. Invariably it is suspended at the extreme length of the tube. It saves time, of course, to give a douche that way, but it does not do any good. What is in the douche does not count so long as it is hot. What you want is heat in contact with the abdominal vault. Use iodine, or salt, or anything, as long as it is hot, that is all that is necessary.

When rest treatment is properly applied the results are valuable, both as preparatory for surgery and frequently curative.

Dr. C. P. Gray (Monroe): Just two points on this subject that I wish to call to your attention. First, this is one of the most important subjects that will be under discussion at this or any other meeting, because of the fact that it always has been of great interest and will be as long as we continue to practice medicine.

The next point is, Why, conservative treatment, why all this rest in bed? Why conservative surgery? We are all agreed that conservatism and rest is the treatment par excellence. Let us for a moment consider why it is the treatment. It is because of the fact that this condition is found in the young unmarried female and in the married woman in her child-bearing period. These are sufficient reasons as to why we should give it serious consideration. The woman's future welfare depends upon the treatment she gets during the first few weeks or the first few days of this condition. If we could only look back and follow the trail to the end—the trail that has been made by reckless surgery, the blighted and wrecked lives of women scattered along the trail, due to the radical surgery which has been performed, the desexing of women with all of its consequent complications, we surely would be more conservative in our treatment.

Dr. T. B. Sellers (Closing): I wish to thank Dr. LeDoux and Dr. Kostmayer for em-

phasizing the rest treatment, as time would not permit me to go into details.

I agree with Dr. Michinard, that the longer the rest the better the result.

I want to thank Dr. Gelpi for the point that he brought out. It is one I had not considered, but I think it is worth while.

Dr. Adams mentioned a fact that we must not forget. Practically 50 per cent of the pelvic infections have complicating appendicitis, the appendix is bound down in the mass of adhesions and becomes acutely or subacutely involved. So in cases that do not respond to the rest treatment, and in the absence of a mass in the cul-de-sac, the appendix must be considered as a causative factor.

## HEARTBURN; ITS CAUSES AND TREATMENT. A PRELIMINARY REPORT.\*

By A. L. LEVIN, M.D.,  
NEW ORLEANS.

*Introduction.*—Heartburn is not a disease, but a symptom, even as such. I trust, a free discussion of it will be of value to the practitioner; for as Leftwich wisely expresses himself, "The first thing a doctor sees when called to a patient is not a disease, but a symptom." The physician, when in a difficulty and endeavoring to make a diagnosis, is asking himself the question, "To what disease or condition may this symptom point?" Heartburn is quite a frequent symptom and every practitioner knows how to correct it, but unfortunately, only temporarily. Why? There is an old philosophical expression, "Everything in nature needs a grain of luck." If this also applies to medical science, heartburn is certainly out of luck, for the writer of medical textbooks have failed in their obligations to dwell on this most common, and at times most distressing symptom, indicating the existence of a deranged function somewhere in the digestive apparatus.

*Definition.*—Heartburn is defined as a burning sensation in the esophagus and pharynx, due to acidity of the stomach. In medical parlance, the terms, pyrosis; Fr. *fer chaud*, cremason; Ger. *sod brennen*, Gr. *pyr.*, fire

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and cardialgia; Fr. *cardialgie*; Ger. *magenweh*, are used. The originator of this expression, however, be he a layman or a medical man, certainly furnished a misfit link in the chain of gastric symptoms, for it does not furnish a correct understanding pertaining to the organ affected.

*Literature.*—There are no references in the literature, American or foreign, for a period of 14 years under the heading "Heartburn." It is referred to simply as a symptom complex associated with other conditions. Most of the standard recent medical publications do not mention a word about heartburn. Osler mentions only the terms, *cardialgia* and *pyrosis*, in describing the symptoms of acute gastritis.

Sir James Mackenzie, in a recent publication, states "that it is due to sour or acid stomach contents, regurgitating into the esophagus, or in patients having a history of acute gastritis; it is also likely due sometimes to gall stone colic."

Green states that the peculiar pain in the stomach known as heartburn is most common in functional disturbances of the stomach.

Hutchinson, Shenon and Coleman claim that heartburn is frequently a reflex phenomenon occurring in the pregnant state.

Forcheimer and Billings describe heartburn as a reflex neurosis of gastro-intestinal origin.

Allbutt and Rolleston state, "In dyspepsia, the presence of food in the stomach, instead of being unfelt as in health, gives rise to a sense of epigastric oppression or even pain. The pain may be diffused; it is very often situated at the junction of the esophagus with the stomach opposite the end of the sternum, when it is known as "heartburn." Again they state "in acute catarrh, and in chronic irritative conditions of the stomach, there is pain in the pit of the stomach, as already described under dyspepsia,—e. g. heartburn.

R. C. Kemp describes *pyrosis* or heartburn as consisting in the ejection of chyme from the stomach into the esophagus with which is associated a burning sensation in the epigastrium. As a symptom, it most frequently occurs with hyperchlorrhydoia, also with

chronic gastritis, and has been found with *achylia* and other gastric conditions. It may occur as a neurosis, especially among the hysteric or neurasthenic, with normal gastric contents and is of a mixed type both motor and sensory."

A. L. Benedict, without entering into the complexities of a discussion of the management of the very varied conditions upon which *pyrosis* may depend, suggests remedies to maintain or restore the normal downward alimentary current. In his opinion, then, the phenomenon occurs as a result of a reverse peristalsis which develops from various causes. He also maintains that *pyrosis* depends upon acidity, hydrochloric or fermentative acids, which might be present in the stomach.

J. Katz discusses the causes of heartburn and gastric hyperacidity from a gastroenterologic standpoint and lays stress on the fact that in all cases the cause must be ascertained, removed or treated. He enumerates the following causes:

- (1) All neurological conditions and severe types of mental disturbances.
- (2) Disturbances of vision.
- (3) Nasal obstructions and mouth breathing.
- (4) Defective teeth.
- (5) Hypothyroidism.
- (6) Cardiac disturbances.
- (7) Toxemias of any kind, especially those following influenza.
- (8) Disturbances of the gastro-enteric system, as ulcers, gastritis, appendicitis, colitis, enteritis, and their combinations.
- (9) Gall bladder disturbances.
- (10) Various nephritic disturbances and diabetes mellitus.
- (11) Pelvic disturbances in the female.
- (12) Sexual disturbances and perversions.
- (13) Pregnancy.
- (14) The quantity, quality and kind of food. Heavy meat eaters and those who indulge in highly spiced or seasoned food and sweets will eventually have hyperacidity.
- (15) Drugs, as phenacetin, salicylates and acetanilid.
- (16) Night work or keeping late hours.
- (17) Great indulgence in tea, coffee

or alcoholic stimulants; we may also add the excessive use of tobacco.

(18) Eating of yeast.

(19) Excitement of any kind.

Underlying pathology: It is a remarkable fact that nowhere do we find a description of a definite understanding of the underlying pathology, except for a few scattered remarks that there is a disturbed gastric secretion, that a reverse peristalsis exists and that hyperesthesia is present. From these facts, it can be construed that we are dealing with a possible derangement of the nervous and glandular elements.

*Personal Views.*—The above brief and incomplete review does not furnish satisfactory explanations of the following facts, namely:

1. If heartburn is chiefly dependent on acidity, why do patients with normal acidity, subacidity and even achylia, suffer from it? In my experience, this is the most common group of patients afflicted with heartburn.

2. Why is it that a large number of hyperchlorhydria patients do not suffer from it?

3. The fact that marked hyperesthesia is met with in achylia proves that some other factor is involved in the process.

4. If acid and hyperesthesia are the combined factors, why do we often fail to obtain relief with alkalies and sedatives.

5. We often see cases of chronic severe heartburn after appendectomy and cholecystectomy, in whom ulcer has been excluded and attention was paid to removal of foci of infection. Where lies the secret of this phenomenon?

6. It is a common statement made by patients, "I always get heartburn after eating fried greasy food or sweets." Gastric analysis reveals a normal secretion. Why do these articles of food call forth, in that class of patients, pyrosis?

With the advent in the last few years of nonsurgical biliary drainage, the study of the biliary tract has occupied a prominent place in modern medicine. My attention has been focused on this field of work and I must confess that almost every case with a suspicious biliary infection presents the symptom

of heartburn. I therefore, concluded to make a few interesting observations. With the duodenal tube in the stomach, I injected a quantity of a dilute HCL (.2 to .5) into the stomach. No discomfort was produced. I pulled the tube out and reached the cardia and into the esophagus where I placed the dilute acid solution; a slight sour taste was produced, but no heartburn. I then allowed the tube to enter the duodenum and when the biliary drainage started, I obtained a quantity of bile, pulled the tube into the stomach, and reinjected the bile. Almost in every instance, the typical heartburn was produced temporarily. I have also noted that a large number of cases of chronic biliary infections present definite evidence of an existing reverse peristalsis. In fact, every case with duodenal stasis and regurgitation suffers from pyrosis, in spite of the fact that a subacidity, or approaching normal exists. This led me to conclude that a toxic biliary agent is being absorbed in the blood and following in the path of a reverse current produces that hyperesthesia, gastric esophageal, pharyngeal and even lingual, commonly designated as heartburn. In the early stage of the infection, the toxic agent, biliary or otherwise, may produce an irritative hyperchlorhydria, but later on, if not relieved it causes a downward secretory disturbance; as a reverse current is probably produced by it, these two factors cause nerve irritation along the reverse path, causing hyperesthesia. This is evidently accomplished, not from contact irritation alone, but also through an hematogenous route, the toxic substance being absorbed into the blood. If this be true, then any toxic condition in the body, blood dyscrasias, dietary imprudence, or a neuropathic state which can cause a derangement in the function of the liver, gall bladder and ducts, will eventually produce heartburn. I would recommend the use of a substitute term, "toxic hyperesthesia" (gastric, esophageal, pharyngeal, as the case might be,) in preference to the term, cardialgia or pyrosis; and suggest a classification into the following groups:

1. Transient.
2. Periodic.
3. Persistent.



Transient—when due to temporary biliary stasis, which can easily be relieved by a purgative.

Periodic—when the biliary stasis is the result of a periodic catarrhal inflammatory reaction.

Persistent—when the chronic inflammatory reactions brought about tissue changes through the entire biliary tract, including the liver, the relief in such cases is difficult, and even the surgeon is not the master of the situation.

Treatment: The treatment of the underlying biliary toxemia is in my opinion the most rational way of handling the situation, and not the attempt to change the acidity by mere alkalies, as is commonly practised. Heartburn is nature's warning of a derangement in the biliary apparatus as much as pain is the automatic signal in the human machine. Even in the transient type, steps should be taken to prevent a reoccurrence of a biliary stasis. The golden rules which have been lately adapted in the treatment of gall bladder disease should be equally applied when heartburn is the signal. What are those golden rules?

1. Eradicate the source of the starting point of the trouble wherever and whatever it might be, infection, error in diet, faulty mode of living, overwork, sedentary life, worry, and anything which tends to exhaust or produce a short in the human battery.

2. Give a chance to the biliary apparatus to recuperate.

3. Improve the drainage of bile.

4. Endeavor to keep the bile in a liquified state.

5. Correct an existing reverse current.

6. Prevent, if possible, the absorption of toxic biliary products by taking proper measures early.

All of these can be accomplished in the following manner;

- a. Diet—small and frequent meals, avoiding fried foods, excess of fats and sweets and highly seasoned foods.

- b. Plenty of water, 8 to 10 glasses per day.

- c. Alkalinized fluids, such as Vichy, 3 or 4 times per day.

- d. The bulk of the diet must be vegetables and fruit.

- e. Plenty of exercise.

- f. Sedatives and protective agents for relief.

- g. Periodic exposure of liver and gastric areas to thermo light and probably X-ray.

- h. Correct constipation and prevent intestinal stasis.

- i. Impress the patient with the importance of intelligent co-operation.

The most successful sedatives in my hands are calcined magnesia, sodium bicarbonate and extract belladonna; olive oil, mineral oil and pure vaseline as protectives. Of great importance, is the employment of gastric lavage, every day at first, later on, on alternating days. As the primary aim is to get rid of a toxin, it must be continued for a long time in order to obtain any positive or permanent results. Nonsurgical drainage of the gall tract, in the severer types, plus a transduodenal lavage, is an excellent procedure to restore the normal downward alimentary current. According to Benedict, the stipulation of the salivary secretions by chewing gum, slippery elm or a piece of candy, will check reverse esophageal peristalsis; anodynes should be resorted to for pylorospasm and strychnine should be employed if there is a marked atony of any part of the alimentary canal.

A few words in regard to the use of thermo light and X-ray exposure. Three of my cases of a very stubborn type of pyrosis with pain in the gall bladder area have been materially relieved of their distress by the use of the thermo light, twice or thrice daily, over the gall bladder area, for a period of twenty minutes, in addition to other measures outlined. The German writers have recently advocated the use of X-ray for the reduction of hyperacidity. The impression in some quarters is that it does not aid the healing of gastric or duodenal ulcers, that it does not reduce acidity, and consequently it does not relieve the pain. Will it be of any value in pyrosis? This would be an interesting observation for the radiologist.

#### SUMMARY.

- 1 Heartburn does not primarily depend upon acidity.

2. My observations tend to strengthen my belief that a toxic agent,

biliary or otherwise, is the primary causative factor.

3. The irritation primarily is probably hematogenous, producing an hyperesthesia.

4. A reverse current carries the sensation upwards.

5. Toxic hyperesthesia (gastric, esophageal, pharyngeal, buccal, lingual), is a better term than pyrosis or cardialgia.

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#### DISCUSSION.

Doctor Daniel N. Silverman. Heart burn, as the Doctor stated, is to be regarded as a symptom of reflex origin, due to disturbance of the nervous system as a result of pathology within the stomach or elsewhere. The hyperesthetic conditions of the gastricmucous membrane is productive of numerous other symptoms, underlying cause of which must be sought for. Relative to the part played by the gastric secretion in inducing a burning sensation, it is interesting to learn from the physiologists, Carlson and later Bel, that perfectly normal individuals may have equally high acidities as have been found in any cases of gastric disturbance. Rehfus's report of a series of two thousand analyses has shown that either reduced or absent acidities were the only findings of clinical significance. I do not think that regurgitation of duodenal contents, either normal or pathological, into the stomach has any bearing on the symptom, heart burn. In my studies of normal individuals I have found that the stomach contained regurgitated bile in fifty per cent. Individuals, having had cholecystectomy performed, have a constant regurgitation of infected bile into their stomach; however, very few of such cases will complain of pyrosis; in fact, many become entirely free of symptoms and some are cured following the operation.

Primary disease of the gall-bladder and liver, occasionally of the pancreas, and quite often of the appendix, are some of the causes that are found in the digestive tract producing the various gastric symptoms. Extrinsic causes are found in diseases of the chest organs, urinary and vascular system.

Dr. Hilliard E. Miller. I wish to comment on Dr. Levin's paper only as it relates to pregnant women. Heartburn, and even the condition of hyperemesis gravidarum, appears to me, in the majority of cases, to be due to pylorospasm, which is usually promptly re-

lieved by the administration of sedatives. A few months ago it was suggested in one of the journals of obstetrics that luminum of soda was very efficacious in this condition, and I believe two successful cases were reported. I have followed this suggestion, giving the drug in two grain doses before each meal, and I have promptly relieved several cases of the ordinary vomiting of pregnancy, as well as one or two that approached a condition of hyperemesis.

Dr. E. Denégre Martin. I am sure if an orthopedist were here he would add one more symptom: flat feet.

The doctor spoke of the pancreas as one of the causes—I recall two cases of cancer of the pancreas that suffered from this condition.

I too suffer from heartburn, for some time. I have a simple remedy, soda crackers. Only last night it took four soda crackers to quell the storm. There may be patients who cannot submit to lavage and it would be well for them to know a simple and efficient means of relief.

Dr. A. L. Levin. (Closing): Dr. Silverman's remark that we often find bile in the stomachs of individuals who have no symptoms of heartburn cannot be considered as evidence to refute my theory. He probably misunderstood the contention in my paper. When I said biliary toxemia is the principle cause of heartburn I meant infected bile, not normal bile. Of course normal bile does not contain that particular toxin which pathologic bile does, and that particular toxin in pathologic bile is the cause of the disturbance, hence we may have normal bile in the stomach without any symptoms. Infected bile in the stomach is a pathologic condition.

As far as Pancreatic and Appendicular diseases are concerned, it is possible that they are the contributory factors in the biliary infection, or they might be the primary agents so that it is quite common to find heartburn in chronic biliary toxemias plus Pancreatic diseases and Appendicular involvement. Recent investigations of the relationship of Pancreatic diseases to diseases of the liver and gall bladder prove that a very large number of cases show involvement of both Pancreas and biliary tract.

My main contention is that the heartburn is not caused by an acid radicle, but by a toxin circulated in the blood originating in the biliary tract.

Dr. Simon contends that the presence or absence of mucous plays an important part in protecting the mucous membrane from irritation.

Personally I cannot agree with Dr. Simon in this respect. It is a well known fact that in chronic gastritis we have an excess of mucous. The mucous membrane of the stomach should then be well protected; yet those are the principal cases where heartburn plays a very important part. In most of my cases I have observed a condition of chronic gastritis with a marked subacidity bordering almost on achylia, and heartburn was the principal disturbing element, for relief of which they sought medical aid.



Dr. Martin's remarks can be answered in a simple way. I stated plainly that intelligent co-operation is an important factor in obtaining good results in cases of heartburn, and I am sorry to say that in this respect he is the ideal doctor who usually makes the worst patient.

The most important point, and the one which I want to stress in my paper generally is that the teaching, as we find it in textbooks, that hyperacidity is the main factor in heartburn is unquestionably misleading. In most of my cases I have definitely observed chronic biliary toxemias associated with pyrosis, and I am convinced that a closer study of that most interesting and heretofore unexplained distressing symptom in gastro-intestinal diseases will bear out my conviction as stated in my paper.

### SENSITIZATION OF BREAST FED INFANTS TO FOOD PROTEINS IN MOTHER'S MILK, WITH REPORT OF CASES.\*

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Perhaps the most puzzling problem that has presented itself to the pediatricist in the past has been that of persistent colic, diarrhea or skin eruptions in an otherwise normal breast fed baby. For generations past our forefathers believed that the diet of the nursing mother might affect the infant through her milk, but we have discarded that belief as a superstition chiefly because we were not able to prove it to be true.

To be sure, mother's milk has not escaped investigation when such symptoms existed in the infant, but analysis was usually considered negative because a normal fat, sugar or protein content had been found; and, we blush now to admit it, many an infant has been deprived of the protection of its mother's milk simply because the colic did not yield to the ordinary household remedies or mayhap even to the more stringent measures adopted by the physician in charge.

High fat content has for a long time held the center of interest and forms the basis of Czerny's "exudative diathesis"; and true it is that in some instances a reduction of the fat resulted in an improvement in clinical symptoms. However, that the fat alone was

responsible soon came to be recognized as a fallacy and other investigations were undertaken.

Some years ago Talbot<sup>1</sup> reported several cases of eczema in children and gave us our earliest indications that protein sensitization forms the tap root of the disease. Speaking of the similarity between certain forms of eczema and urticaria he says: "—the earliest lesions to appear are so similar to certain forms of urticaria that it is often impossible to distinguish between the two. As time goes on the urticarial-like eruption becomes a typical eczema. This sequence of events can be produced experimentally or accidentally by giving too much egg to an individual who has an idiosyncrasy to hen's egg. There is little doubt in my mind that this form of eczema is usually a late stage of urticaria." Again: "More recently it has been possible to differentiate the various types of the disease (eczema) by the skin tests with foreign proteins." The work of Schloss had given the impetus to investigation along this line.

That the eczema of nursing infants might belong to the same group of sensitization phenomena had entirely escaped attention. How close many investigators came to the truth has been brought home to me by personal experience. When I was an interne on Dr. Talbot's service, we performed many routine skin tests with food allergens. So often did we obtain positive reactions in young infants to foods, particularly egg albumin, which we knew the infant had never eaten, that we abandoned the tests as worthless and charged the positive reactions to faulty technique. Little did we suspect that we had actually put our finger on the key to a very important discovery.

It remained for Shannon<sup>2</sup>, two years ago, to make this discovery and to prove beyond peradventure of a doubt that food proteins are excreted as foreign proteins in breast milk. So interesting is Shannon's work that it warrants giving you a few details.

He sensitized guinea-pigs to egg white by subcutaneous injection with this solution. Twelve days later these sensitized pigs, together with control pigs were injected intraperitoneally

\*Read Before the Orleans Parish Medical Society, December 10, 1923.

and intrathecally with breast milk from a mother whose infant had eczema and who itself gave a positive skin test for egg albumin. The sensitized pigs immediately exhibited the symptoms of severe anaphylactic shock, those injected intrathecally dying within a few hours, while the controls remained free of any symptoms. Further and similar experiments performed with breast milk from mothers whose infants presented colic or diarrhea, or both, gave similar results. Conversely, breast milk from mothers who had eaten no eggs failed to cause anaphylaxis when injected into egg-sensitized guinea pigs.

Shannon has since extended his work and proven that other proteins besides egg albumin may pass into the mother's milk and cause symptoms in the infant. As corroborative evidence of this allergy theory of eczema we find in the differential blood count an increase in the eosinophiles, often as high as 20%; furthermore, skin tests with food proteins will within a few minutes demonstrate the specific protein to which the individual is sensitized. Removal of such protein from the diet of the nursing mother will quickly result in relief from symptoms.

The technique of skin tests in infants merits a brief description. The back is washed with soap and water and thoroughly dried. Alcohol may be used, but is not necessary. A number of small cuts, about one-eighth inch long, are made with a sharp scalpel, but are not deep enough to draw blood, although they do penetrate the skin. On each cut is placed a protein and to it is added a drop of 0.1 normal sodium hydroxide solution to dissolve the protein and to permit of its rapid absorptions. At the end of 15 minutes the proteins are washed off and the reactions are noted, always comparing the inoculated cuts with normal controls on which no protein was placed. The interpretation of the positive reaction has been the subject of considerable discussion among workers in this field. Walker (3) requires an urticarial wheal one-half cm. in diameter for possible interpretation. In infants, however, this standard is not suitable. A definite erythema, in the absence of a similar reaction in the control, should

be regarded as positive and the lesser reactions should be kept in mind. This is the standard by which Shannon (4) interprets his reactions.

As the food proteins are quite expensive and a large number of them must be used if one hopes to find the offending one, I have adopted another procedure which is admittedly not as scientific and accurate and which does not give the answer within a few minutes as does the skin test. This procedure consists in having the mother keep a record of all food that she eats for a period of several days to a week, no change being made in her diet. A study of such a record will usually show a predominant taste for one article of food. This food can then be eliminated from her diet. It might be argued that the element of chance plays the leading role in one's choice of the food to be interdicted, but my experience has shown me that the method is practical. The chief objection to it is that during those days of recording, the infant continues to be fussy or to have colic or diarrhea and if this takes the form of nocturnal serenading, the parents are apt to become discouraged. However, a little explaining usually clears up this feature. Of course one must be prepared to perform the skin tests, using all food proteins that occur in the mother's diet, if the above procedure does not prove successful.

I will now give you the report of four cases recently coming under my observation. The first case is that of a baby girl first seen when 1 month old. She was three weeks premature, delivered with forceps and was the first pregnancy. The birth weight was not recorded, but at four weeks she weighed 9 lbs. 6 oz. General physical examination was negative, as was the blood Wassermann. The bowels were normal and no skin eruption was noted at this time. The baby nursed one breast two hours and received no other food. She was lost sight of until 6 months of age when she returned with the story that the bowels had been loose for several weeks, numbering 5—6 a day and that there had been a skin eruption for 3 months, which had resisted all attempts on the part of the mother to clear it and a calomine lotion given by a physician had likewise not been of any benefit.



The bowels at this time numbered 3 to 4 a day, there was no colic or excessive crying. The physical examination was negative save for a severe, moist and scaling eczema, covering the entire face and extending on to the neck. The baby was still exclusively breast fed. The mother's diet was investigated and it was ascertained that she ate 3 to 4 eggs a day, two for breakfast, one for lunch and food cooked with eggs for dinner. I told her to exclude eggs and food cooked with eggs from her diet and to apply nothing to the eczema. This she did and returned in 10 days. The skin at that time was entirely clear and the baby was having one or two normal stools a day. The mother then recalled a period about 3 months before when she herself had been sick and had eaten nothing but toast, milk and tea for one week, during which time the baby's eczema had cleared up without treatment, only to return shortly after the mother resumed her usual diet.

Case two, a colored baby first seen in the outpatient department of Touro Infirmary when one month old, was full term, normal delivery, normal at birth, birth weight not recorded. Breast fed to date, no other food given. The complaint was a skin eruption since one week of age, no symptoms accompanying it. Examination of the baby shows normal palms and soles, but large areas of desquamation over the trunk, neck and face, with some crusts. The weight was 8 lbs. 2 oz. Blood Wassermann on baby and mother were both negative. The baby was being nursed irregularly. No treatment was prescribed other than regulation of the nursing interval to every two hours at one breast. When next seen, two months later, the eczema was still present and there was a good deal of colic and some spitting up after nursing. The bowels were regular, one or two a day. A luetin test at this time was negative.

It was learned that the mother ate 3 eggs for breakfast and food cooked with eggs at the other meals. She was instructed to omit all eggs from her diet, but to make no other changes. No medication was prescribed. In two weeks she returned and the baby's skin was entirely clear having begun to improve 2 to 3 days after the mother had withheld eggs from her diet. There

was no more colic and no fussiness. There was some evidence of rickets.

The third case is the boy baby of a physician, seen first when 2 weeks old. The complaint was loose bowels and colic, crying and fussing almost all the time, especially at night.

He was full term, forceps delivered, weighing 6 1-2 lbs. at birth and was being breast fed regularly every three hours. There is abundant milk, the breasts leaking between nursings. For several days the bowels have been very loose, the stools numbering 10 to 12 a day, green, watery, with small fat curds and some mucus, but no blood. He spits up if disturbed after nursing.

Physical examination shows a small, icteric baby with depressed fontanels and overlapping sutures. There is no evidence of rickets and the viscera are negative; no glandular enlargement. Analysis of the mother's milk shows 4 per cent cream and calcium 32 mgs. per 100 cc, which is normal. No treatment prescribed except instruction as to proper method of nursing in order to obviate swallowing of air, nursing too fast, etc. One week later there was still a good deal of colic and crying, but the bowels were not loose. Weight before and after nursing showed that the baby got 3 oz. from one breast. The mother was then asked to keep a record of her food at all meals for one week, but to make no changes in her diet. Examination of the record showed that she ate oatmeal every morning for breakfast and lots of it. She was therefore instructed to omit oatmeal. This she did and four days later the baby began to improve. One week later it had no colic and slept all night without crying. During the day he was happy and playful and cried only occasionally before a feeding was due. He had gained one pound in two weeks since the mother's diet had been regulated. After a time the mother broke over the traces and had to satisfy her craving for oatmeal. This was followed within a few hours by a return of symptoms in the baby, colic, diarrhea and crying. The mother knew the remedy and after that obeyed instructions very carefully. The baby has had no trouble for the past eight months.

The fourth case is a female baby three and one-half months old, full

term, normal delivery, normal at birth, breast fed irregularly to date no other food being given. Past history is negative for any infectious diseases. Present illness dates from the time the baby was three weeks of age, since when there has been a rash on the face and neck. No history of desquamation of palms and soles. The bowels became loose about one week before the baby was brought to the office, the stools numbering 5 to 6 a day, green, watery with white flakes in them. There has been no fever, sleep is normal and the appetite is good.

The mother, questioned as to her diet, admits eating eggs at every meal, totaling 4 to 5 eggs a day.

Physical examination of the baby was negative save for a diffuse papular eczema of the face and neck, with a few papules over the back. The stool showed nothing remarkable. No medication was prescribed, but the mother was forbidden the use of eggs in any form. Five days later she returned with the baby and the eczema had entirely disappeared and the bowels were normal.

These cases need no comment, but they are interesting because they show that no matter what measures one might adopt, short of weaning, no relief from symptoms need be expected unless the offending food be eliminated from the mother's diet. As previously stated, if we cannot pick out the food responsible for the trouble, we must be prepared to perform the skin tests, using all foods that occur in the mother's diet.

The evidence at hand leaves little doubt but that when we encounter obstinate cases of colic, diarrhea with curdy stools, excessive crying and fussiness or eczema in a breast fed baby that is otherwise healthy and gaining normally in weight, we are dealing with sensitization to some article of food that the mother is eating. This fact readily explains an observation that has long been well recognized, namely, that one infant will thrive on breast milk that another cannot tolerate. We often hear the expression: "I had to wean my baby because my milk was poisoning him"—and such weaning is, also, all too often occasioned at the advice of the

attending physician. A little study of such cases would prevent many a feeding disaster.

Therefore it is contended that all cases of eczema, colic, diarrhea, or excessive crying in otherwise normal nursing infants, that do not promptly yield to the recognized simple methods of treatment, must be studied for determination of sensitivity in the infant to all of the foods contained in the mother's diet. Unless the physician has accomplished this, he must be considered as having failed to do his whole duty to the patient.

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#### DISCUSSION

Dr. I. I. Lemann: I can only say pretty much what Dr. Simon has said. On the whole, the sensitization test in my hands has been disappointing. I have been doing them some four (4) years and I have seen very few successful results. Recently, on a trip to Boston, I saw the test being worked out at the Massachusetts General Hospital by Dr. Rackmann. He was able to show us a group of cases of asthma due to orris face powder the ladies use. There were quite a few cases and the most satisfactory cases of positive reaction I have seen.

Dr. Von Meysenbug (closing): I have not had any experience with intradermal tests with foods proteins, but have had with the tuberculin test. It is a rather difficult thing to do, especially with a large number of tests. It requires precision and careful technique to get within the skin. A baby's skin is tender and it cannot always be done satisfactorily, where scratching can be done pretty well without a delicate technique. I am not surprised to hear Dr. Simon and Dr. Lemann say that tests were unsatisfactory because frequently in babies we do not get any results at all. In such cases we simply have to be guided by what might be causing the trouble. In most cases we have found eggs the offending food. It is simple to interdict eggs in mothers' food.

In regard to the way the eggs are cooked, it does not make any difference. Albumin may be excreted in mother's milk and if the baby becomes sensitized to it, trouble ensues. I have also used the group extracts that Dr. Simon spoke of and much time and unnecessary labor is thereby saved.



## MERCUROSAL IN SYPHILIS.

BY CHAS. E. VERDIER, M.D.,  
NEW ORLEANS.

Syphilographers generally are agreed that mercury is still the sheet anchor in the treatment of syphilis.

In order of acknowledged efficiency the various preparations of mercury are divided as follows according to the desired method of administration, beginning with the time-honored pills, then inunctions, intramuscular injections and finally the most refined method, the intravenous administration.

The use of mercury by vapor baths has been practically obsolete for some time.

Whether mercury should be given as an interval injection with one of the arsenicals (Arsphenamines) or whether a course of the former should succeed the latter is a moot question, for experience teaches us that he who is a routinist in the treatment of Syphilis is doomed to disappointment.

For intramuscular injection we have a choice of the soluble or insoluble salts of mercury, both of which are open to the objection of pain following administration, the insoluble salts being the lesser offenders.

For intravenous injection, we have had the objection advanced that veins were sclerosed and that infant administration was prohibited.

Within the past year the writer has had occasion to use Mercurosal, a synthetic organic compound of mercury containing approximately 44 per cent of mercury and having a very low toxic index, the formula being di-sodium-hydroxy-mercuri-salicyl-oxy-acetate.

This preparation has been used with uniformly good results and the following cases are taken from my records as exhibiting the efficacy of this remedy in the different types of Lues reported.

Case 1. White female, examined September, 1920, no history of primary lesion, a few macular spots on forehead and various parts of body, very discreet in appearance; reflexes normal no subjective symptoms, her hair dresser first called her attention to the "spots." Blood Wassermann four plus,

refused spinal puncture and was very irregular in attendance for treatment.

Received during 1920 five injections of nearsphenamine, dose 0.9 grammes each, during 1921 received one course of intra-muscular injections of mercury Salicylate averaging one and one half grains each and numbering in all, twelve injections and during the latter part of that year received four injections of nearsphenamine dose 0.9 grammes each. Wassermann in December, 1921, was two plus with a four plus Tchernugobow. Early in 1922 this patient received twelve intravenous injections of mercurosal dose 0.1 gramme in 5 cc. of distilled water at three-day intervals, one month after taking course the Wassermann was negative, six months later the Wassermann was still negative, with no objective symptoms.

Case 2. Early Lues; white male, age 23, macular rash over entire body, general adenopathy, history of sore six weeks previous, Wassermann four plus positive.

Treatment consisted of nearsphenamine 0.8 gramme doses combined with mercurosal 0.1 gramme, the arsenic being given once weekly and the mercury twice weekly for a period of five weeks at the end of which period the Wassermann was negative and the case symptom free.

Two months later the Wassermann was negative and three injections of arsenic with six of mercurosal as above outlined were administered.

Two months later the Wassermann was negative and two injections of arsenic and four of mercurosal were given, following this course the patient was tonsillectomised.

Two months later this patient presented a negative Wassermann and was symptom free.

Case 3. Acute lues, white male 28, chancre, dark field and India ink positive for Spirochetæ Pallida, inguinal adenitis, bilateral, duration of sore, one week.

Treatment—Eight injections of nearsphenamine 0.9 gramme doses at weekly intervals combined with mercu-

rosal twice weekly in 0.1 grammes doses. Wassermann one week after treatment was concluded, negative and six months later Wassermann remained negative.

Case 4. Late lues. Meningeal type, white male 36 married, all sorts of treatment during last twelve years at irregular periods. Persistent vertico-occipital headache, knee reflexes absent, slight Romberg, negative blood Wassermann, spinal fluid shows a strong leucic curve with colloidal gold set, increased cell count and globulin, positive Wassermann, no increase of pressure.

Treatment—Ten injections of nearsphenamine 0.9 gramme doses at weekly intervals combined with twenty intravenous injections of mercurosal 0.1 gramme doses administered twice weekly.

During the sixth week of the course the spine was again tapped at which time there was an increase of pressure, but a decrease of all other previous findings. One week following conclusion, of course, the spine was again tapped with the following findings, cells normal, slight increase of globulin, weekly positive Wasserman to 1 c. c., slight elevation of gold curve in the 5th, dilution all subjective symptoms improved. This case is again under treatment after a rest period of six weeks and has received six intravenous injections of mercurosal in 0.1 gramme doses at six-day intervals combined with sodium iodide intravenously in 30-grain doses every three days; all symptoms of headache have disappeared and the man is at work and comfortable.

Mercurosal seems to be non-toxic in the dosage as cited, no reactions have been observed, beyond some transitory redness of the gum margins. There has been no occlusion or irritation of the veins noticed following injection.

In practically all of the cases mentioned the same vein, the median basilic of the left arm has supported the entire series of treatments.

It would appear that in this new preparation, we have a form of mercury which is well worth adding to our anti-syphilitic remedies.

## TUMORS OF BONE\*

By F. W. PARHAM, M.D., F.A.C.S.,  
NEW ORLEANS.

Of late years much attention has been given the subject of tumors of bone, largely due to the enthusiastic devotion to their study of such men as Bloodgood, Ewing, Coley and others.

Bloodgood has been for thirty years persistently studying and periodically giving the profession the results of his painstaking investigations. He has brought to this study not only the skill of the trained surgical pathologist, but has utilized the remarkably developed resources of the Roentgen ray.

Ewing, one of the foremost pathologists of the present day has made an intensive study not only by means of pathologic sections but also with the X-Ray in diagnosis and treatment of bone tumors and Coley in the face of much discouragement and ridicule has persisted in his work with an enthusiasm and determination rarely witnessed.

Bloodgood's observations are based upon a personal study of 270 cases made pathologically and by means of the X-Ray. His articles published from time to time in the *Journal of Radiology*, *Annals of Surgery* and elsewhere merit the most careful study by surgeons, pathologists and roentgenologists.

Coley reports the end-results of a series of 251 cases of sarcoma of the long bones observed from 1890 to 1919.

Ewing, whose book on *Neoplastic Disease* is a remarkable contribution, which may be consulted with confidence, has recently given us a most valuable discussion of bone tumors in the *Archives of Surgery*. These works must be carefully studied by all who desire to acquire a comprehensive knowledge of the subject. Yet the whole subject is still in more or less confusion, due largely to the fact that no agreement has been reached by pathologists and surgeons as to a proper nomenclature of bone disease.

The American College of Surgeons is now lending its organized effort to clear up this confusion and put the nomenclature of bone tumors on a rational basis. To this end it has appointed a Registrar, who has established a registry for

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bone tumors. In this work Dr. Bloodgood, of Baltimore, and Dr. Ewing, of New York, are heartily co-operating. This registry is endeavoring to get the history, necessary clinical data, X-Ray examination, and a specimen of the tumor or slides secured by operation or at autopsy, in every case of bone sarcoma, or supposed sarcoma. The data and specimens, with X-Ray plates, thus secured are sent on to Dr. Codman in Boston. He examines the evidence and sends it on to Dr. Bloodgood and Dr. Ewing, who return their findings to Dr. Codman. The case with all data is then registered and filed in suitable envelopes. A copy of the evidence with opinions and any advice desired is forwarded to the surgeon sending the case report and all other cases in the registry will be mailed to him if desired. Surgery, Gynecology and Obstetrics will publish from time to time statements from the registry, so as to keep the profession abreast with the work.

In a letter recently received by me from Dr. Codman he says: "The present status of the registry is this. We have registered 268 cases of supposed-sarcoma and I am at present abstracting and analyzing these cases for publication in Surgery, Gynecology and Obstetrics. The data of each, consisting of history, X-Rays and microscopic slides are filed in Manila envelopes 10x12 inches. Each case has been submitted to as many pathologists as possible who are willing to review the case and state their opinions on its malignancy and on the name under which it should be classified. The need of uniformity in nomenclature is very apparent for the variety of names which one case can accumulate is strikingly shown. In order to crystallize the nomenclature so that it may be more intelligible in different laboratories I have drawn up a diagram found on a printed sheet enclosed. One of these sheets is enclosed in each envelope so that any pathologist or surgeon can write his opinion of any given case on the sheet." With proper co-operation on the part of the surgeons and pathologists in this country you can easily see what may be done in establishing a rational basis for diagnosis and the management of these cases. You can easily see the advisability of such an intensive and systematic study

of this unsatisfactorily cultivated domain of surgery. Greenough, Simmons and Harmer, for instance, in their review of the bone sarcoma cases for a ten year period from two up-to-date clinics, namely, the Massachusetts General and the Huntington Hospital, found 148 listed as bone-sarcoma but on restudy only 66 could be classed as primary malignant new growths of bony origin, the remaining 82 proving to be metastatic tumors (29), sarcoma of bone secondary to sarcoma of the soft parts (28), inflammatory conditions, (11), and non-sarcomatous type, (14 cases). "It is not surprising, therefore," writes Codman, "that the percentage of error in isolated clinics is even greater." In fact, most of the supposed-to-be sarcoma is not sarcoma at all.

For years many cases of bone sarcoma submitted to amputation have subsequently died of metastasis to lungs, because their real nature was not sufficiently early recognized; on the other hand, many benign tumor cases have been subjected to amputation when conservative treatment would have sufficed.

In spite of the fact that in 1824 Sir Benjamin Brody had the foresight to examine the amputated leg of a young woman and found an abscess in the tibia which it was apparent could easily have been cured without the sacrifice of the limb, surgeons have been slow in learning that destructive surgery is to be avoided where less radical procedure would save limb as well as life. So consistently and successfully did Sir William Ferguson strive to do this that he is justly entitled to be called the father of conservative surgery.

In bone surgery this conservatism was especially tardy in manifesting itself, due to the failure of surgeons to grasp the distinction between benign and malignant tumors. This notwithstanding the observations of some forward-looking men of the last century. Ewing notes that as early as 1852 Nelaton and Robin in a well illustrated monograph, clearly pointed out the gross, microscopic and clinical features of the (benign) giant-cell tumor, contrasted it with malignant osteogenic sarcoma and urged conservative treatment. Gross also, he says, in 1868, clearly described

the disease and recognized its benign nature. Thompson, of Galveston, has recently called attention to the very clear description of benign tumors of bones given by Sir James Paget in his lectures on Surgical Pathology in 1854, stating "that they are not apt to recur after complete removal and have not in general any features of malignant disease."

Strangely, such definite teachings were overlooked and the benign tumor became included with the malignant and suffered the same mutilation! In order to change this order of things there must be collaboration between the surgeon, pathologist and roentgenologist as now proposed in the scheme elaborated by Dr. Codman for the American College of Surgeons.

As stated by Ewing, embryology, physiology and pathology of bone, and the study of abundance of clinical material are the most fruitful sources of progress in the future. Clinical study by the surgeon and morphological research by the pathologist must be broadly and systematically planned. The surgeon must provide complete clinical pictures of the different neoplastic diseases of bone, and the pathologist must discover the origin, predisposing anatomic conditions, mode of growth and general etiologic factors. Finally a means of dissemination of this knowledge must be found. The usefulness of such a co-ordinating body as that forming the Registry of Bone Sarcoma becomes at once apparent.

Much of the trouble arises from the variants of the typical tumor. The typical giant-cell tumor, recognized as benign and recovering under conservative treatment would not often in competent hands give rise to difficulty, whereas in another case, apparently benign, metastasis finally closes the scene. An interesting case in point is that of LeConte's reported by Bloodgood. He and other pathologists pronounced it non-malignant and urged conservative treatment. Extensive recurrences in the femur necessitated later a hip-joint amputation. Death finally occurred from hemorrhage from iliac vessels involved in metastasis.

All the energies of the profession must be directed towards improving our means of diagnosis, so that we may

early distinguish the innocent from the malignant tumor of bone.

It would not be possible in the time allotted to a paper of this kind to go into anything like an adequate discussion of the diagnostic means at our disposal. I shall, therefore, only cursorily refer to some of the salient features of the subject.

First I will lay down the now self-evident proposition that some tumors of bone are benign and some malignant. It is also clear from the evidence furnished by Coley, Bloodgood, Ewing and others, that even some malignant disease of bone is amenable to conservative treatment. We are gradually learning to distinguish these.

The remarkable improvements in the technical features of X-Ray apparatus are enabling the skilled X-Ray worker to evolve interpretations from his fluoroscopic and film examinations that are truly astonishing. The clinical history and the roentgenological data are giving us a wonderful insight into hitherto little understood pathologic conditions. Finally, the exploratory incision for direct observation of the tumor and the obtaining of a piece of tissue for microscopic study, now countenanced and advised by the surgical pathologist, is a most valuable expedient for checking the other data and preventing our adopting a wrong procedure.

Bloodgood in his monograph on *The Diagnosis and Treatment of Benign and Malignant Tumors of Bone* goes into the matter very thoroughly. The harmless roentgenologic examination is enabling us to get very early information regarding changes in bone. To this end he recommends repeated examinations at intervals of affected bones. In this way the earliest possible information is obtainable. The age of onset, duration of symptoms, symptoms of onset, such as pain, pathological fracture, swelling, disturbance of function, history of fracture and history of trauma all have distinct significance and often permit of a satisfactory diagnosis.

Bloodgood lays great stress upon examination of any bone subjected to trauma the moment there is any complaint by the individual. If this were done many cases would be recognized early and successfully handled; failure



to do so gives us frequently the information too late, after metastasis is already on its way. For example, only seven of twenty-three of his cases of central sarcoma were operated on within six months of the first symptom. He thinks "this observation gives hope that if these central sarcomas are recognized and treated within a few days or weeks after the onset of the first symptom the probabilities of a cure will be greatly increased." As emphasizing the advisability of repeated examinations at intervals he mentions the case of a surgeon who sprained his ankle July, 1916. X-Ray examinations were made at intervals until August 10 when the lesion was found in the outer condyle of the femur and operation done September 9. Other instances in point are cited. In summing up his experience of twenty-seven years with bone tumors Bloodgood remarks: "At the present time the diagnosis of a bone lesion, especially in its early stage, in the great majority of cases must be made at the exploratory incision and in making this incision the surgeon should be prepared to prevent the dissemination of tumor tissue, especially of myxoma, into the exposed normal tissues. This is most important when the lesion can be removed by local resection rather than by amputation." Myxoma, usually considered benign, is prone to metastasize and in this respect must be considered malignant, although easily extirpated locally.

"The number of cures in periosteal and central sarcomas are too few to estimate the danger of exploratory incision without such destruction." He remarks that "the present results of periosteal and central sarcoma do not offer much." He does not feel prepared to discuss the results of X-Ray, radium and toxins, but "can find no evidence that these agents have any effect upon the lung metastasis and this is the cause of death." The chances of recovery even after amputation are small, being only four per cent. The only chance seems to be furnished by early diagnosis. When his paper was written we know nothing about deep X-Ray therapy. Recent reports extend the hope that this high voltage machine may materially add to our therapeutic armamentarium, even in metastasis to

the lung. Ewing, who has had much experience in the use of radium and X-Ray in the Memorial Hospital in New York thinks the goal to be aimed at is the non-operative treatment. "The main exceptions to this proposal, of which there are many, are found among the early osteogenic sarcomas with which prompt amputation has effected some cures." He thinks the therapeutic test decisive as between certain classes of bone tumors. "Myxomas and diffuse endotheliomas melt down rapidly under roentgen ray and radium," and they control the growth of benign central tumors.

When the clinical data, roentgen ray findings and therapeutic tests have been carefully weighed by an experienced observer," he believes "there will be few cases remaining for exploratory incision." From his experience at the Memorial Hospital he has become a strong advocate of the physical agents. He refers to the case of Jüngling reported cured by the roentgen ray—a large medullary sarcoma of the upper end of the femur. Jüngling records also the spontaneous regression of two other cases located in the humerus and fibula. Ashhurst in a paper read before the American College of Surgeons expresses the view that Coley's toxins should be used in all cases of bone sarcoma.

In conclusion I would say that with early diagnosis and the prompt employment of the roentgen-ray, Coley's toxins and radium most of the benign cases may be cured and many malignant ones greatly benefited if not cured. Operation should be conservative where promising, but amputation should not be delayed longer than necessary for the thorough therapeutic tests.

The X-Ray, properly applied as a therapeutic test, will often render valuable aid in clearing up a diagnosis. I would especially stress the fact that bone sarcomas treated in the most radical manner generally die, not from recurrence, but from metastasis to the lungs. Bloodgood had been able to find in 1920 four cases, two of central and two of periosteal, sarcoma, that survived over five years, the others dying from metastasis to the lungs, some as early as a few months, some as late as two years and more. But in all these

cases the metastasis was already on its way at the time of the amputation. The only hope is early discovery of the disease in the bone. This can only be done by prompt X-Ray examination whenever there is a history of injury followed by complaint localized in a particular spot. Not only one examination, but repeated examinations must be done until there is complete cessation of trouble. I have already mentioned an instance in point. But the surgeon's formula should be: early diagnosis and successful treatment go together.

#### DISCUSSION.

Dr. E. D. Fenner (New Orleans): I cannot add anything to the beautiful presentation made by Dr. Parham indicating the lines on which we may assist in getting information in regard to sarcoma, but I want to record a unique instance of sarcoma in a child whose history record I have unfortunately not been able to furnish to the sarcoma committee. This case was unique because it was a case of a little girl about eight years of age who was brought to the hospital in her early childhood, when about two years old, presenting a very remarkable case of partial gigantism involving the whole lower extremity, not only the soft parts, but the left labia majora. After a few years she received a blow on this hypertrophied limb from which there developed a tumor. She presented herself and I made an exploratory incision and got a piece of the tumor, and got back a report that it was osteo sarcoma. Then the problem arose as to how we should treat it. I finally determined to do an amputation of the limb, removing the lower end of the femoral condyles, for this reason—that provided she in the future should be fortunate to become one of the four living sarcomas five years after operation, and was able to wear an artificial limb, that by amputating through the condyles I would arrest in part the growth of the femur so as to prevent the gigantism from reasserting itself in the upper portion of the limb. Since the operation, from which she recovered without any particular difficulty, I have never been able to get in touch with the patient to find out whether recurrence took place or not. But the instance of sarcoma upon so unique a case as partial gigantism involving the whole lower extremity seems to me quite unusual.

Dr. Rudolph Matas (New Orleans): I regret that I did not hear the paper, although I know more or less the ideas the paper presented. I can only say that the subject is most opportune for the surgeon and for the general practitioner, who has the greatest responsibility in these cases. I am speaking of course, of primary bone tumors in general, and particularly of primary sarcoma, because carcinomas are always secondary to growth elsewhere.

I am sure Dr. Parham has covered the subject thoroughly, but I would like to mention the practical question of the attitude of the

practitioner and practical surgeon in dealing with the problem. He deals with tumors of the bone as the primary growth. What is he to do, I think that rests essentially upon a few points. The first thing when we see a patient with tumor of the bone is to determine what kind of a tumor it is. We are not now dealing with the sweeping rule that primary tumor means amputation. The question is rather that of conservatism—whether conservatism can be applied or not. That question hinges on another point—the nature of the growth and how early we find it. We have now histologically quite decided evidence to show that a large number of tumors which in the past condemned the patient to amputation, can now be treated by simple exclusion of the exudate and allowing the bone to remain without mutilation of the limb. We have other growths in which we must interfere, and even when we do interfere we know they are absolutely fatal from the start. This group is of two types—the small round-cell sarcoma, and the slow-growing, giant cell tumor, myeloid in type, which is essentially benign. The surgeon ought to be conservative, he ought not to amputate if it is the benign type, but if he has a round-cell tumor, even if he operates he knows the results will probably be fatal anyway. It is the greatest kind of a problem. In fact, the question comes to us whether it is worth while to do anything with the small round-cell sarcomas at all. Judging by the late work of Bloodgood it is not worth while to do anything in the way of radical operation because the patients almost invariably die of metastasis to the lung. Scarcely 4 per cent. have survived five years after amputation.

It does not look as if it were possible to accomplish anything therefore beyond mutilation. I think however, we are going too far on that side, and I am thoroughly of the opinion that if we can make a diagnosis early enough, as we should be able to do if the patient complains early, we can accomplish much by conservative treatment. Of course there is no amputation to be done without careful section by a pathologist. The responsibility of the pathologist is enormous—a great weight is thrown on him, and also a great burden on the Roentgenologist, for we depend on these men in the early stages to furnish us the indications for action.

I think in a general way that the thing that really counts in the biological diagnosis is the size of the cells. The tumor which shows proliferation, giant cells of the myeloid type, should be treated conservatively. A central tumor can be treated in a conservative fashion provided the bone has not been so destroyed that it is impossible to preserve it after extirpation of the tumor; but if a large portion of the bone has been destroyed, amputation is better. The old rule that the nearer the cells approach the adult type the more benign, holds true in bone tumors. The smaller the cells the more danger of malignant disease.

I wish I could relate instances to you from my own experience which would illustrate this disease. We have three things in mind—the small cell tumor, malignant; the large



cell tumor, benign; and the mixed type in between. There is a domain here in which we have benign and malignant elements and in which we should give the patient the benefit of the doubt. Where there is a mixed type of cell, large and small, on the border line, we should amputate. I certainly would advise that plan and would follow it myself.

I think Dr. Parham gave you the views accepted today by the best authorities.

Dr. O. C. Cassegrain (New Orleans): I would like to speak especially of the matter of taking more than one X-Ray picture, and also with reference to the incision.

I have in mind a case I saw last winter, a man who came with tumor of the femur. His thigh was very much enlarged, and the first X-Ray picture came back with the diagnosis of sarcoma of the femur. The picture did not impress our chief as sarcoma, and we had another picture made, which cast still more doubt on the diagnosis. So we had the third picture made, and after going over the three pictures there was some doubt in our minds as to whether it was sarcoma or not. An exploratory incision was made, and it revealed a ossifying hematoma seven inches long and three inches wide, shaped like the head of a spear. The hematoma was removed, and the patient made an uneventful recovery. If we had accepted the first report from the X-Ray man we would probably have amputated the man's limb.

Dr. J. A. Danna (New Orleans): I would like to hear more general discussion of this subject because I believe it is one that the surgeon has to deal with often. In listening to Dr. Parham's paper and to Dr. Matas' remarks the picture of the surgeon face to face with a case of this kind struck me very forcibly. You can compile statistics showing the results in certain conditions, but the determination on the operating table as to what kind of case you are dealing with and just what to do for it is not always a very easy thing.

My experience with amputation for sarcoma of the extremities has been that every case I have known of has died. The more recent advances in the treatment of these cases with the help of Coley's toxins, radium and the X-Ray, make one feel that the handling of these cases is comparatively safe. I am always in fear and trembling in the presence of possible malignancy whenever I think of making an incision into that tumor, even though I know I am immediately going to remove the tumor, because incision into the tumor for the purpose of getting a section means the possibility of sending some of the cells into the circulation and the early probability of metastasis somewhere. I would like to lay emphasis on the fact that with the help of radium, and especially the X-Ray and Coley's toxins, sarcoma of bone and of the extremities, sarcoma generally, is not as fatal as it used to be in the past. We are now curing many of these cases. I only hope that deep X-Ray therapy will develop to the point where some day we will be able to give the patient deep X-Ray treatment before the operation and make our field safe for incising these tumors for the purpose of getting sec-

tions without the probability of starting immediate metastasis.

Dr. C. H. Mosely (Monroe): There is just one point that I have been guided by in making up my mind as to the condition that exists. I have never seen a sarcoma that followed a fracture. In the war and since I do not believe I have seen a case where the continuity of the bone was destroyed, where the tumefaction that followed was a sarcomatous condition. It has generally been some other condition that we have to deal with, a tuberculous condition that gives us all the X-Ray findings and the clinical symptomatology that would make us think of sarcoma. A man gets up at night in a hurry and bumps his chin on a chair. To my mind that is a more potentially sarcomatous blow than would be a gunshot or a fracture.

Dr. F. W. Parham (closing): I only want to emphasize one point that was brought out, and that is the necessity of finding out the nature of these tumors as early as possible in the history of their development, and the only way to do that is by means of the X-Ray. When a patient suffers trauma of the bone and continues to complain as a result of that trauma, we should make an examination of that bone at once, and if necessary of other bones in the immediate vicinity, and not only that, but the examination should be repeated at intervals. In the case I related, and which I think is a good illustration, the surgeon sprained his ankle, but it was only by repeated examination from time to time that it was found that the trouble was in the internal malleolus. It was operated and relieved. It certainly was a potential sarcoma, and it was his only chance. In view of the fact that Bloodgood in 1920 stated that only four cases of osteogenic sarcoma are living five years after operation—in view of that fact, and the fact that we know they die, not from recurrence in the bone, but from metastasis to the lung, I think it is important for us to forestall such a termination by finding out at the earliest possible moment by means of the X-Ray what the nature of the tumor is, and let our treatment be determined accordingly. By considering the age of the patient, the onset of the trouble and the various features connected with it, we can gain a very considerable amount of clinical information regarding the case; but the X-Ray is of prime reliance, and with the present perfection of X-Ray apparatus I think it is the duty of the surgeon to employ it early and as frequently as may be necessary in order to make early diagnosis.

### THE DRUG SCOPOLAMIN\*

BY E. HOUSE, M.D.,  
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One is forced with reluctance to accept, as indisputably true the statement, that it is embarrassing to a physician to present personally any research work, or to discuss his achievements.

\*Read Before the Orleans Parish Medical Society.

Such a delicate task is never undertaken without casting a seeming shadow of egotism and conceit. I would have you feel, my desire was to respect modesty and to refrain from self praise.

It is questionable, if there can be found in the United States pharmacopoea a drug entitled to more respect and appreciation. I shall not discuss the treatment of addicts except to say in that field scopolamin stands alone.

For local anesthesia like tonsillectomy, it is used to eliminate, every phase of mental excitement. In this work Scop gr 1-50 is given two hours before the operation.

When scopolamin grain 1-130th is combined with morphin grain 1-4 to grain 1-2 it will ease any type of colic where morphin and atropin fail.

Shockless Surgery is now a proven requirement and for that purpose, scopolamin ranks supreme, notwithstanding all that is said to the contrary. The assertion that scopolamin is more depressing to the respiration than is atropin cannot be proven by clinical tests. In clinical doses, neither drug effects the respiration.

I appreciate scopolamin anesthesia in obstetrics as another one of the mighty good things cast into the therapeutic discard. For this reason, I will only discuss my deduction and technic.

The policy of unwarranted precaution will never develop any idea, and there is nothing more fatal than not wanting to see the principles of truth. For that reason, I went to New York to observe the management of a case of obstetrics by the Gauss method. The men who demonstrated convinced me they had very little, if any, previous experience with scopolamin. I left New York disappointed.

After a digest of my observations, the idea presented itself to me; that there is always a better way to do anything. That throughout nature laws were in pairs, the law of control. If scopolamin would cause blue babies, there was some drug which would prevent scopolamin from producing blue babies, that if scopolamin did not kill the mother, it should not kill the baby, that of morphin was contra—indicated with the newly born baby, it should be

contra—indicated with the unborn baby.

When I returned home my confidence was established, that the strychnin in the old Florence—Rosser addict treatment would prevent the blue baby. Good luck favored me in my first case. My record to date shows six hundred and thirty six cases of scopolamin anesthesia in obstetrics and the finger of criticism cannot be pointed to one death, due to scopolamin.

I improved with each case. I studied each detail and made improvements where I observed they were necessary. After four years of experimenting, I selected the technic I have, so far, never been influenced to change.

I rarely commence scopolamin until I suspect I can finish delivery in four hours. I give first, scopolamin grain 1-130th. In ten to twenty minutes, I inject scopolamin grain 1-200th plus apomorphia grain 1-60th. In twenty to thirty minutes absorption of the drug should be complete, and I then administer chloroform, selected from a careful comparison with cannabis indica, gas, and ether. I invite the patient to count after me slowly, and in a loud voice, to divert her mind, until she can no longer count. The chloroform quickly produces unconsciousness, and its use is then discontinued.

After the chloroform is removed, the patient rapidly passes from analgesia through hypalgesia into the stage called amnesia, and the manifestations of the amnesia can only be estimated from experience. I never permit the nervous phenomena of a patient, or the conversation, to influence me while she is in the throes of a labor pain, but I do note most carefully the condition of the mind in the intervals between pains. If I decide after thirty minutes that the stage of amnesia is not satisfactory, I again administer chloroform and again invite the patient to count after me. The number she reaches tells me accurately the condition of her mind. If the patient can count to forty, I give scopolamin grain 1-200th. It is difficult and slow and requires large doses of scopolamin when used alone to produce unconsciousness, but it is very easy for a small dose of scopolamin to hold the cerebrum depressed after the synap-



ses are contracted with chloroform. Clinical investigation has proven that scopolamin and chloroform act similar upon the nervous system.

The only danger to anticipate with scopolamin in obstetrics is the effect of the drug upon the baby. You cannot get away from the fact, that the baby will be as drowsy as the mother. To prevent the blue baby, inject strychnin sulphate, grain 1-80th deep into the abdominal tissues of the expectant mother five minutes before delivery is anticipated. Babies are very sensitive to the effect of strychnin. This size dose was selected only after many careful tests from grain 1-30th to grain 1-100th. The strychnin as you all know is an antidote to any drug which contracts the synapses of the dendrites of the cortical cells, hence the blue baby only needs stimulation of the pneumogastric nerve.

When the head passes over the perineum, if believed necessary, again permit a few inhallations of chloroform as every mother loves to say I do not remember when my baby was born" The baby leaves a temperature reputed to be one hundred and five degrees. At the moment of delivery, have the room warm and a hot blanket ready. If you will instantly wrap it in the hot blanket, hemostat, cut the cord, then establish regular breathing, there is no reason to anticipate any trouble with the baby so far as scopolamin is concerned. I consider scopolamin grain 1-60th the limit of safety. If that amount (where apomorphia and chloroform are used) is not sufficient for the purpose desired, I allow the patient to appreciate the extra pain. You need at times a patient's help, and when you learn to hold them on the border line, you can depend upon their assistance. I keep my baby awake for an hour and do not nurse for six hours.

It was in my obstetrical practice that I observed my patients would reply correctly to questions, and retain no memory of the query or answer they gave. I worked quietly on this idea for five years, as I respected ridicule, and when I had made three hundred tests without a failure, I deduced the idea that I could take a criminal and rob his mind against his will of the stored content called memory.

Facts should make cynicism capitulate to common sense. I wish to make the unequivocal and emphatic statement that I am not one hundred percent perfect, nor can I ever be, but the drug is one hundred percent perfect. The criminal work is to me a thousand times harder to understand than the use of scopolamin in obstetrics.

I will make no attempt to explain how my work is accomplished. I thought I knew, as I selected a plausible explanation from the latest edition of the physiology, but when men, whose life work is the study of the brain, advise me my explanation is all wrong and that they themselves cannot understand, after witnessing a demonstration, I ask to be pardoned for this apology.

Like myself, most people lack discrimination to arrive at a coherent conclusion. To illustrate: I ridiculed the mosquito theory. No man regrets the attitude I assumed more than myself. I was sincere in my belief that malaria was due to a miasma and displayed no evidence that I was a conservative man. The description of some men, outlining my technic, is antithetical to the facts.

I give first scopolamin grain 1-80th plus apomorphia grain 1-40th. In ten minutes I give scopolamin grain 1-130th then in twenty minutes I commence to test out the absorption of the drug and give scopolamin grain 1-200th every fifteen minutes until memory is inhibited or destroyed. Then to prevent any possibility of malingering, I chloroform to complete anesthesia which is of course beyond unconsciousness. I then await the functioning of the auditory center, and engage the individual in conversation when the tongue can correctly articulate. This condition I have named the "House's Receptive Stage". The criminal work is tedious, slow and so tiresome, as it is very difficult to make the individual understand, the import of your question. Unless a man follows a test to a conclusion, he will have ample grounds for criticism as it is sometimes necessary to present a thought in several different ways, when the memory is vague or the question is too long.

In the examination stage you observe a child-like frankness and a child-like

honesty, where the replies to questions are given without evasiveness and an openness without guile, deceit, or fraud. The idea of placing a criminal by the use of scopolamin in a state of the mind called artificial sleep, is to release facts firmly implanted in the mind, which for various reasons are closely guarded under normal conditions, thereby leaving the mind free for expression unrestrained by motives of self interest.

The interpreter cannot make the individual examined speak what is in the interpreter's mind, but he will give from his own mind, previous experiences stored there as memory, irrespective of whether he would normally wish to do so, and regardless of the thoughts and attitude of the interpreter. The most difficult argument I have had to meet is that a chronic liar cannot be made to tell the truth. The fact is, they have proven my easiest subjects, for the reason: A lie is built around the truth, and you cannot tell a lie, no matter how many hundred of times, without thinking at the same time of the truth. You cannot tangle up a man telling the truth because he does not have to remember what he said, but a liar does have to remember what he said. It is easier to tangle up a deeply intoxicated man than it is to enmesh a sane man in the tangle skeins of his own strings of fabrications. To illustrate such a case:

At San Quentin, two men by the names of Farrer and Carver, under life sentence for murder, volunteered for the test to prove their innocence. Carver went to sleep after the first dose of scopolamin grain 1-130 but awoke when I rolled up his sleeve for the second injection. He came off of the table and refused to continue with the test. To the committee he said "my head is swimming, I can hardly see and I scarcely know now what I am saying, if I took another dose of the medicine, I might not know what I said. He told the committee they had mislead him, that he thought he would be in his right mind and the drug would make him tell the truth anyway. When told that he owed it to science to continue the test, replied he did not owe science a blank thing.

Farrer did not wake up and continued the test. To a reply of many lead-

ing questions, the following story was selected, "Carver and I went to the chinaman's store to rob him. I was in the front part of the store at the cash register, and Carver was in the back part of the store where the chinaman was and Carver shot him twice. I put the money in my overcoat pocket. I had two forty five pistols, but I did not shoot. When I left the store, I went to the bay and dropped in my guns."

Since the Carver episode, I raised my initial dose of scopolamin from grain 1-130th to grain 1-80th. At San Quentin was another chronic liar, who desired to prove his innocence. I do not wish to infer that he was a natural born liar because he was a native son of Louisiana but to tell you that he confessed to robberies all the way from Louisiana to California, giving details of arrest and robberies, the authorities had no previous knowledge of. He was nick-named Six Bits as he had seventy-five years to serve. His one redeeming quality was, he admitted no murders, but confided in me that he shot at and missed three times a negro in New Orleans. His name was John Johnson. (Colored.)

The criminal serves no righteous purpose. His protection constitutes nothing to the public welfare, and he violates all the principles of morals, as well as inhibits the best interests of civilization. By that I mean, the criminal should be the concern of every citizen and every State should create a department of criminology and place a man in charge who has a sympathetic heart and a mind capable of intensely studying the Cause and Cure of Crime. Human destiny is made by man and not the creator.

Let me invite you to consider how very practical some so-called impractical things are. The Cardio Pneumograph Machine is an instrument which accurately measures mental repression and when once the value of the cardio pneumograph machine and the use of scopolamin, checked against one another, are firmly established in the minds of the people, there will be shown a large minority who are seething with a fine idealism for the Constitution? And WHY?. There is no provision in the Constitution for the protection of



the law violator. It is the certainty of punishment that most deters crime, as is shown in the English Courts. These two methods are, to say the least, worthy of consideration.

Were it not for the peace officer, life and property would be of little value. If that be true, then they should have every aid consistent with humaneness. The two methods above mentioned may not be infallible, but with the two methods, I do not believe a criminal could defeat the purpose of the law.

Today, the best the American public can expect for their protection is one conviction in ten trials, and five per cent of those convicted are innocent. I believe sincerely, I could take Dr. J. A. Larson, the inventor of the so-called "*Lie Detector*" and by checking our results, show a percentage, of not less than fifty percent. That would be forty percent, more than all the present day resources of our Government. The value of the two methods, in dollars and cents cannot be estimated when statistics say, one third of every dollar collected in taxes is spent for the control of crime. At Berkeley, California, scopolamin was tested against the machine by the same list of questions, that was used by Dr. Larson on the suspected murderer, Wilkins. The replies elicited, from Wilkins, showed the same as the markings on the carbon sheet. Wilkins was acquitted, the findings of the machine were not presented for legal reasons to the jury. Wilkins volunteered for the scopolamin test, that he might further satisfy those dissatisfied with the finding of the jury.

The lie is the criminal's only weapon of defense. With the lie the criminal is hard to defeat. A weapon that will win nine legal battles out of ten must be a powerful weapon. If the lie is the great problem to handle, then why not try to control it. To control it you must start with children. Their mind is like an empty bottle. It is easy with these statistics to see why the lawyer, with few exceptions, does not want anything which will make a man tell the truth. Here I will offer a statement from the lecture of Dr. Thomas. B. Simms—Head of the Department of Philosophy of Trinity University—"In spite of the fact that some of our fine

men are in the practice of some phase of the law, the legal profession today has the lowest standard of ethics of any of our worthy vocations; They, as a rule, are little concerned with the humanitarian spirit."

I invite your consideration to the O'Leary Case. This was an amnesia case, selected for me at San Quentin, had I known the condition of the man I would have refused him for fear of a failure. As it resulted, it proved a blessing in disguise.

O'Leary was called the walking dead man. He is said to be one of the strangest cases of multiple personality on record. He claimed he was shell shocked in France, although he could not tell where or when. The American Legion at San Francisco then investigated his war record. It was revealed that as Sergeant Eugene O'Leary, he was lost somewhere in France and had not been seen again until he was found in a Government Hospital, after the signing of the armistice, suffering with complete loss of memory.

Under scopolamin anesthesia, he said his name was Burns and his father's name was Pierre Burns and that he was born in Luxemburg, Belgium. When the war broke out he joined the American Army under the name of Eugene O'Leary, and was made a Sergeant in Company D of the sixth Artillery. He said he was wounded five times by a shell at the Battle of the Arganne. Some one spoke up and said "That's a lie" he was not wounded. I said "If you were wounded put your finger on the wouds." He pointed to five places on his hip. I investigated and found the shell scars on his hip.

This case led me to believe that under scopolamin anesthesia, a physician might by a set of test questions trail out every nerve tract, and locate the area of diseased tissue in the brain. Also he might make a diagnosis of a case of insanity as to whether it was curable or incurable.

With those ideas in contemplation, I went to Austin, Texas, to test out again this theory. Dr. Joe Wooten, one of the leading physicians of Austin and a Regent of the University of Texas, to whom my idea appealed, went with me to see Dr. Preston, Superintendent

of the Asylum. Dr. Wooten's persuasive arguments did not appeal to Dr. Preston except as an absurd proposition. I then corresponded with Psychiatrists over the Country and I am now in a position to quote what the other man has to say: Dr. P. R. Vessie, Supt. of the Gowanda State Hospital at Gowanda, New York, in a paper read at Albany, N. Y. Oct. 19th, 1923 reported four cases briefly as follows; "For three months, a man 39 years old remained in bed in a continuous stupor, with no sign of mental activity. He was quite helpless as to his personal care, but permitted himself to be spoon fed. Under scopolamin anesthesia, his delusion was found and discussed with him. The next day he spoke voluntarily, remarking that his belief was probably imaginary. Dr. Vessie says "This case shows what actually was done for a patient when his delusions, otherwise hidden in darkness, was brought to light with the help of scopolamin.

Case number two suffered also with a delusion, that chemicals were placed in his food rendering it unfit for human consumption.

Case number three, Dr. Vessie says, emphasizes the possibility of coping to advantage by means of scopolamin with patients who conceal the ideas which rule their conduct. This patient was under observation for two years and ten months, during which time no information was obtained as to his life history or his delusion. Under the medicine he related the details of his trouble and gave his life history.

Case number four—a young man sent to us from the penitentiary gave a fictitious name as was later proved. He persisted in making funny faces, whistling and laughing in a peculiar way. He defied the attendants and especially resented with a sneer any question. From November the 16th, 1922, until September 13th, 1923, he steadily maintained this secretive, obstinate, impenetrable attitude. On the latter date, he was placed in a state of scopolamin anesthesia in accordance with the method of Dr. R. E. House, the first physician to introduce this revolutionary practice in the field of criminology, as the writer is now employing it in the field of insanity. The patient admitted that he

had assumed in the past, at least eighteen aliases. He then told his right name and gave his life history. A communication was sent to his mother in Ohio to the address he gave. Her reply is as follows":

"Received your letter and was glad to hear from you and that my son is in your hospital and safe, as he left home and we never heard where he was until you notified us."

Dr. Vessie closes his paper in the following words:

"The result obtained in these various cases seemed to prove quite conclusively that scopolamin, judiciously used, may be of great practical assistance to the alienist in the difficult task of penetrating the dark recesses of disordered minds.

Dr. Vessie read a paper last week in Washington entitled "Scopolamin, The Detector of Delusions."

I have reported Dr. Vessie's work as a debt of gratitude and also for what benefit it might offer to any Neurologist who might have desired to hear my paper.

In a recent letter Dr. Vessie writes he conducted a series of ten cases of catatonic praecox and found a blocking, so that replies cannot be obtained. If a psychiatrist should happen to pick as his first case a catatonic praecox, he would fail to obtain results.

The condensed conclusions from my experience in criminology are:

First—The science of criminology should have for its purpose, the protection of the innocent and the education of the guilty.

Second—Our jails are a disgrace to any Christian nation and peace officers are very considerate or very inconsiderate men.

Third—The poor man has a meager chance in a Texas courthouse, as we do not have a public defender, with the liberties of a public prosecutor.

Fourth—Witnesses are all biased. It is appalling to note the percentage of witnesses who lie intentionally or unintentionally.

Fifth—I believe in a punishment for every crime and for every murder, but the punishment should be to teach the beauty of a good action and the deformity of an evil one.



Sixth—Disease is the greatest cause of crime. If the medical profession would concern itself about the *Cause and Cure of Crime* with the same intensity she investigates the cause and cure of cancer, she would reduce the number two-thirds, now being sent to the penal institutions.

The legal status of my idea does not concern me. I have no desire to send any man to the penitentiary, but the innocent has invited my sincere sympathy. I can see no provision being made to care for the children criminally inclined, who will to-morrow prey on society and later to become hogs in a pen.

I would like to see in Texas a Department of Criminology similar to the State Board of Health, with a staff composed of a Minister, a Lawyer, a Teacher, a Layman and a Physician. That staff made up of three women and two men, I make that distinction for the reason, "A mother some how just knows." The potential power of America is not her iron or waterfalls, but the undeveloped character of her children.

I have refused all offers of pay, in no other way, in seeking the recognition of my Fraternity, can I prove my motive is sincere.

If scopolamin anesthesia can be proven ten per cent reliable, its use should be made legal, as a humans "Third Degree" and the administration restricted to those physicians, who can show a record of one hundred cases as assistants.

The liar I have the most contempt for, is the man who turns State evidence. I wish every one of them could be made to prove their contention under scopolamin anesthesia. Some of them I know are honest, but in my work, I have my first one to meet.

This will be my last professional paper, and I am glad I am in the city of my graduation as a physician. My financial condition will not permit me to further neglect my private practice. My patrons are offended, when sickness comes to their home and I am away. Twelve men I have assisted to be set free will always comfort me for the financial outlay, I will need in my old age.

A man may be censured by some and criticised by others, but I still believe

in giving to the world the best you have and the best will come back to you.

### THE USE OF THE STEM PESSARY IN SELECTED CASES OF DYS- MENORRHEA AND STER- ILITY.\*

BY HILLIARD E. MILLER, M.D., F.A.C.S.,  
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Dysmenorrhea and sterility, either singly or associated, are perhaps as common as any conditions which the gynecologist is called upon to treat, and certainly as baffling. As yet we know practically nothing of their primary causes, which have been variously attributed to infectious diseases, bad hygiene in early life, anemias, and mal-function of the glands of internal secretion, particularly the thyroid; not a single one of these contentions, however, has yet been proved. We are most often confronted with cases in which no gross lesion exists, in which the menstrual flow is normal in character, in short, in which there is no reasonable explanation for the presence of these two conditions. The percentage of failures reported from every method of treatment is disheartening, and the variety of treatments advocated is eloquent testimony to the fact that none is uniformly successful, and that the specific remedy is yet to be found.

Men who have investigated the subjects report that dysmenorrhea and sterility are increasing everywhere, with the continued progress of civilization and the added complexities and refinements of life. Norris states that 13 per cent of all foreign and 20 per cent of native marriages in this country are sterile. Macomber places the figure at 10 per cent, with the male responsible in perhaps 50 per cent of these, and Reynolds agrees with him. Arthur Giles, quoting Simpson, gives 10.9 per cent as the figure for village communities and 16.3 per cent among the aristocracy. The percentage of sterility, therefore, ranges from 10 to 15 per cent and is increasing. As to dysmenorrhea, Norris asserts that 75 per cent of all women suffer from it in various forms, while Blair Bell in his recent report, perhaps the most exhaustive on the subject, gives an average incidence of 66.5 per cent. In the face of such figures

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the importance of the subject can hardly be overestimated. Moreover, the frequent association of both conditions in the same patient not only gives an added interest but leads to the inevitable conclusion that common causes are responsible in the majority of cases, and that the same type of treatment will be equally applicable to both conditions.

It might be well at this point to clarify the subject by defining our use of the terms. By sterility we mean inability to bear children by women who have sexual relations and who have done nothing to prevent conception; a woman who becomes pregnant, even though she aborts or miscarries habitually, certainly cannot be considered sterile. A woman primarily sterile has never borne children; a woman secondarily sterile has borne children once, but can do so no longer. Under the average circumstances a marriage may be considered sterile at the end of two years; Ansell, quoted by Norris, reports that 88.1 per cent of a series of 6,035 fertile marriages culminated in pregnancy by this time. He also adds that the first child is usually born within 16 months of marriage, and the majority of investigators agree with him that if pregnancy is to occur, it will usually occur within the first year.

By dysmenorrhœa we mean pain recurring regularly at each menstrual period; it is primary if it dates from the first two years of puberty, secondary if it is of later origin. It may vary from acute discomfort to actual intolerable pain. It necessarily varies, too, with the physical and nervous condition of each individual patient, and of course with individual tolerance of pain. We do not include those cases in which the dysmenorrhœa occurs only occasionally, and then can be explained on the grounds of exposure, undue exertion, or concurrent illness. I think you will find that the majority of cases which seek relief for dysmenorrhœa are women of fairly good general health, with no special nervous symptoms, who are partially or entirely incapacitated for a certain period of time each month.

The subject of sterility is not one that concerns either the life or the general health of women; it has to do, from a social aspect, with the welfare of the state, and from a personal aspect, with

the happiness of the individual. Any procedure for its relief, therefore, is based on the desires of the patient rather than the necessity of the case. This is not true of dysmenorrhœa. The severe type always, and the moderate type frequently, constantly recurring without relief, affect the general health of the patient and often lead to a train of nervous symptoms whereby a vicious circle is set up, and each succeeding period becomes harder to endure than the last, and is less promptly reacted from. Moreover, many of these cases occur in women of the professional and working classes, whose livelihood is dependent on their own efforts. From an economic standpoint they cannot afford to absent themselves from their work regularly, or even to have their output, as it were, materially lessened by their physical disability if they are not entirely incapacitated. In many cases, therefore, the relief of dysmenorrhœa is an urgent problem.

I have been led to consider again the use of the stem pessary for the relief of certain selected cases of dysmenorrhœa and sterility for two reasons: the radical procedures advocated by many of our leading gynecologists under these circumstances, and recent literature unreservedly condemning the stem. I admit that its present status is decidedly indefinite, ranging from unqualified approval, with too often promiscuous use in improperly selected cases, to wholesale condemnation on the ground that it is unsafe and ineffective. Both these attitudes are unfortunate, the latter, I believe, rather more so, because frequently the no-stem advocates give their approval to measures much more radical and correspondingly more dangerous. For example, one gynecologist favors dilatation with Emmett amputation of the cervix; another advises dilatation followed by laparotomy, with the facile comment that it does no harm to open the abdomen when the patient is under anesthesia anyway; and a third advocates anterior hysterotomy. And bear in mind that these very radical procedures are advised for and practised on young, unmarried women. They are questionable, it seems to me, even if they presented an unbroken series of successes. Naturally they do not, and the morbidity, and even mortality, small



though it be, that follows them, certainly cannot be defended in the cure of sterility, which, as we have already pointed out, has no relation to life and health; or in the cure of dysmenorrhea, whose relation is purely relative.

For the purposes of this paper I have reviewed 95 cases in our private practice, covering a period of 10 years, in which the stem was used to correct one or both of these conditions. During that same period probably 2,000 cases have consulted us for similar conditions, but the stem was used in only 95, not quite 5 per cent of the number. Reginald Rawls, in a recent report, gives figures only slightly higher, 1.3 per cent, in his review of the cases in a large hospital service in which the stem was considered justified. I would have you note that it is applicable only in a small number of cases, and that the primary factor of safety as well as success lies in the proper selection of the cases.

It is never applicable in the presence of any gross pelvic lesion. Salpingitis, either puerperal or gonorrhoeal, active or passive, is a positive contra-indication, as are urethritis, endometritis, any inflammatory condition of the cervix, ovarian changes, and a positive Wasserman. In short, in the presence of any sort of infection, demonstrated by history, physical examination or laboratory findings, or merely suspected, the stem is not safe and must not be considered. It cannot be used, naturally, in the presence of any gross pathology, which is either irreparable or demands surgery, such as the congenital absence of any portion of the genital tract, bicornate uterus, uterine or ovarian tumors, or prolapse and procidentia in secondary sterility. General conditions must also be corrected, such as obesity, certain febrile and nerve conditions, and goiter. It follows, then, that the stem can be used only in cases in which no gross pathology exists. These include infantile and undeveloped uterus, pinhole os, the abnormally long and conical cervix, anteflexion, and the constricted internal os. There is frequently in such conditions an increase in the muscle or fibrous tissue about the internal os, sometimes leading to the formation of a distinct ring, which simulates a condition of hyper-

trophic stenosis such as we see in certain stomach conditions. It is surprising to note how often one or more of these conditions will be found in an otherwise normal pelvis, and how, in such cases, the dysmenorrhea is practically always of the type long ago characterized as "spasmodic" or "expulsive", and always indicating relief by mechanical means.

Our procedure in these cases is as follows: A detailed history is taken with particular reference to past medical diseases of the acute infectious type, as well as appendicitis; to the general health, including bowel function and nervous symptoms; and to the dysmenorrhea, including the time of the appearance and the duration of the pain, its character, and the nature of the flow. A careful general examination is then made, followed by a bimanual pelvic examination, except in the case of young girls, when the examination is made by rectum. In no case is the pelvic examination omitted. Infection is ruled out by the physical findings and careful laboratory examination. The husband is then questioned as to his past history, and is examined by a competent genito-urinary specialist. A woman is never subjected to any operative procedure of any sort for the relief of sterility until her husband has been pronounced virile. General conditions such as obesity, constipation, etc., are corrected. Then and not until then dilatation with the use of the stem is advised.

We have found that any period of the month except during the actual flow is equally satisfactory for the procedure. We use the routine pre-operative preparation of oil and enemata, and the parts are clipped. Shaving is not necessary. We prefer gas oxygen anesthesia, which gives satisfactory relaxation and eliminates the unpleasant after-effects of ether, and the strictest asepsis is observed throughout. The patient, when fully relaxed, is put in the lithotomy position, and the parts are thoroughly cleansed with green soap and alcohol. A Sims speculum is inserted, the cervix grasped with a vulsellum, and dilatation done with the Goodell or Hegar dilators up to 3-4 inches. The dilation must be done slowly, to avoid tearing, and very thor-

oughly, as many of these cervixes are extremely hard and unyielding. I do not see how dilatation can be done beyond 3-4 inches without grave risk of laceration. Curettage is not done except in definite cases of hyperplasia, when there is no co-existent inflammatory condition. The endometrium in the majority of these cases is normal, and promiscuous curettage is very often a further factor in the condition of sterility we are seeking to correct. The stem is then inserted, secured with silver wire, a button at each end, and a shot. We have used various types of stems at different times, but have found the Baldwin glass stem the most uniformly satisfactory. It is easy to insert and remove, and is perfectly sanitary.

The patient is kept in the hospital for three days, to observe any post-operative reaction. She is then discharged, with orders to remain quiet for several days longer, then to resume her usual occupations, but to take no violent exercise. The stem is usually worn from four to eight weeks. The patient reports to the office to have it removed, or goes to her own physician if she is from out of the city.

As has been said, this report is based on 95 cases covering a period of 10 years. Thirteen patients were single, or 13.7 per cent, and eighty-two were married, or 86.3 per cent. The duration of marriage varied from 6 weeks (this patient consulted us for severe dysmenorrhea) to 19 years. Only 14 had been married 2 years or less, and of these one had previously been married 8 years and had had 2 induced abortions. The average duration of marriage was 5 years. The ages varied from 20 (3 patients) to 44 (one patient). The majority were between 25 and 30, and the average age was 27.6 years.

The dysmenorrhea was of primary origin in 56 of the cases, or 72.7 per cent. Blair Bell's figures for primary dysmenorrhea vary from 33 per cent to 97.5 per cent, an average of 64.1 per cent. Fourteen patients, or 18.2 per cent developed it after marriage, and 7 or 9.5 per cent developed it at intervals varying from 2 to 17 years after the onset of menstruation. The time was not stated in 18 cases.

In this series 28 patients, 29.5 per

cent, of whom 13 were unmarried, complained of dysmenorrhea chiefly. All were primarily sterile. Nineteen, 20 per cent, complained of sterility chiefly. Of these 2 had had spontaneous abortions 5 and 8 years before; two had had induced abortions; one had had two induced abortions in a former marriage; one had used contraceptive measures. The remaining 46, 48.4 per cent, complained of both sterility and dysmenorrhea, and 2, or 2.1 per cent, complained of scanty menstruation also. All but 5 of the series, it will be noted, were primarily sterile.

Twenty-nine patients, 30.5 per cent, gave a history of previous acute infectious diseases in addition to the usual diseases of childhood. Thirteen had had previous dilatations and curettages (13.7 per cent), 2 of these after abortions. Thirteen had had abdominal operations (13.7 per cent), mainly appendectomies, though all but 4 included work on the uterus or ovaries.

The physical findings included pin-hole os, undeveloped and infantile uterus, ante flexion, elongated cervix, retroversion, kinked canal, and long and short vagina. Twenty cases complained of leukorrhea, 11 had hyperplasia, and 5 endocervicitis. Cases of endocervicitis are no longer treated with the stem, as the risk of infection is considered too great for the possible benefit that might result.

In all cases the treatment was dilatation as described, plus curettage in the cases of hyperplasia, and the insertion of the stem. The Baldwin stem was used 67 times (73.7 per cent); the other types included the Gill Wylie, Watkins and Black, and in one case the gutta percha stem was used, the cervix being too small to admit any other kind. In 8 cases other operations were done, including appendectomy, internal and external Alexander suspensions, puncturing of ovarian cysts, and release of post-operative adhesions.

In 8 cases the stem fell out or had to be removed before the appointed time. In one case it was removed at the end of 2 weeks for temperature, later traced to a lung condition. One Gill Wylie stem was removed in 7 days for bleeding. Three Baldwin stems were removed at the end of 3 weeks for persistent discomfort. Three others fell out



after exertion or falls at 2, 4 and 6 weeks respectively. The other stems were worn from 2 weeks in one case to 6 months in one case, the average time being 7.1 weeks. Three patients reported excessive pain at the periods while the stem was in place. The others reported no discomfort of any kind. No case showed an abnormal rise of temperature or any other condition attributable to its use, and there was not a single case of infection. This is a distinct contrast to Dr. Hirst's report of 7 per cent of infections at the Woman's Hospital and even to Dr. Rawls' report of 3.9 per cent of infections.

Sixty-nine cases out of the 95 have been followed up over a period of one to 10 years, 72.6 per cent. Five other patients reported from 2 to 6 periods after operation painless, but have been lost sight of since and have not been included in this report. Of the 69 followed up, 63 were married, 91.3 per cent. Of these 23 have become pregnant, over 36.5 per cent of the possible cases. Three had only abortions, but the others are known to have had at least one full term pregnancy each. It is interesting to note that the two patients curetted after their early abortions never conceived again, and that the patients who had induced their early abortions and had used contraceptive measures also remained sterile. The patients who became pregnant had been married from 2 to 5 years, an average of 3.6 years. The ages varied from 21 to 36, an average of 28 years. The Baldwin stem was used 15 times, the Watkins 6, the Black once, and the gutta percha once. The findings included undeveloped uterus in 13 cases, pin-hole os in 4, acute ante-flexion in 2, and kinked canal in 1. One of these cases had a profuse endocervicitis.

Of the patients who complained of dysmenorrhea, either chiefly or in connection with sterility, 74 in number, 58 have been followed up, 79.3 per cent. Eleven, 19 per cent, report no relief at all. Most of these gave a history of prolonged nervousness and constipation, and it was realized at the time of operation that these conditions, together with the strong neurotic element present, would make relief a very difficult matter. Twenty-one, 36.2 per cent report

partial or temporary relief; of these 8 report complete relief for periods varying from 6 months to 6 years, and 10 report their general health markedly improved. It might be stated here that many of the patients who were partially or temporarily relieved state that with the relief they secured for several months their general health was so much improved that when the dysmenorrhea did recur it was much more easily endured and the reaction from it was prompt, instead of lasting almost to the next period, as had frequently happened before operation. Twenty-six patients, 44.8 per cent, were completely and permanently relieved. Of these, 2 had previously required hypodermic relief practically every period. Twelve of this group report a marked improvement in their general health, with a gain in weight. The 2 cases of scanty menstruation report no change in the flow.

Of the cases which have been followed up, then, 36.5 per cent have become pregnant, 44.8 per cent have been permanently relieved of dysmenorrhea, and 36.2 per cent have been partially or temporarily relieved. Other advocates of the stem report cures of sterility in from 25 to 70 per cent of their cases, and of dysmenorrhea in from 40 to 90 per cent. In each instance I believe that the lower figures are more accurate. In view of the percentage of good results, however, together with the safety of the procedure in properly selected cases where no gross pelvic lesion exists, its ease of performance, and the very slight discomfort and inconvenience it causes the patient, I believe that dilatation with the use of the stem should certainly be considered in cases of dysmenorrhea, and sterility before any more radical procedure is undertaken.

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#### DISCUSSION.

Dr. E. Denegre Martin (New Orleans): This is a very interesting subject, especially due to the fact that today we are fighting birth control fanatics rather than attempting the cure of sterility. All surgeons have been confronted at times with these cases. Dr. Miller did not mention the Outerbridge drain, which I have used in a number of cases of sterility, and two, I recall, became pregnant within a few months, though sterile for several years after marriage. I personally prefer the self retaining hard rubber stem pessary, though it does slip out occasionally, to the Baldwin pessary which has to be held in place with silver wire. Sterility is not always due to stenosis and flexion alone, often flexion with retroversion or marked retroversion will prevent conception and unless both conditions are corrected failure is inevitable. In girls from 16 to 20 years of age dysmenorrhea is quite common. I do not know whether it is due to the character of exercise they take or to lack of exercise, but many are not only incapacitated during the menstrual

period, but frequently suffer so that a sedative must be administered. In these cases I have given relief in at least 75 per cent and cured 50 per cent with the stem pessary. Best results, I believe, are obtained by leaving the pessary in situ for at least three months. Dr. Miller has discussed the subject so thoroughly and described the conditions calling for the use of the pessary as well as the precautions to be taken in its application, that it would be but a repetition of what was said to prolong the discussion.

Dr. Hilliard E. Miller (closing): in regard to the self retaining stem pessary as mentioned by Dr. Salatich, I will say that the retaining prongs of this pessary are made of steel, and as a rule after a short period of time, become corroded. Also if the prongs are sufficiently separated to retain the pessary, they are apt to bring about a tissue necrosis at the cervical canal. Infection, as I have attempted to show in my paper, must be eliminated by a careful selection of cases, and the elimination of all evidence of infection previous to the insertion of the stem. I have stated that a very careful examination should be made of smears from the cervix and urethra, and the patient questioned carefully regarding the existence of either specific or other infections previous to the operation.



# New Orleans Medical and Surgical Journal

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## DR. PORTMANN.

Dr. Georges Portmann, Professor agrégé of the Medical Faculty of Bordeaux, France, visited New Orleans late in January while en route to Havana. Dr. Portmann was delegated by the French Government to visit the Ear, Nose and Throat Clinics of Canada and the United States, including in his tour Montreal and Quebec, New York, Boston, Philadelphia, Chicago, St. Louis, San Francisco, Los Angeles, New Orleans, and Havana. He lectured in all these cities on his original investigations on subjects related to the specialties of the Ear, Nose and Throat, and gave demonstrations of the original methods pursued in the special Senses Clinics of the Faculty of Bordeaux, which his chief, the eminent Professor E. J. Moure, has directed with great success for many years.

While in New Orleans he operated at the Eye, Ear, Nose and Throat Hospital, performing a successful laryngectomy for carcinoma under local and regional anesthesia by the Moure-Portmann method. As the special guest of the Eye, Ear, Nose and Throat Club of New Orleans, under the chairmanship of Dr. Henry Blum, he demonstrated Moure's method of operating for malignant tumors of the upper jaw, including the ethmoidal and orbital regions. He also presented a summary of his original researches on the functions of the ductus endo-lymphaticus, as studied comparatively in the small sting-ray

fish. In this species, the duct comes up to the surface of the skin, where it is easily accessible to experimentation. The effects of injury, such as cauterization cause vertigo and other disturbances in co-ordination and locomotion characteristic of labyrinth disease was strikingly illustrated by charts, lantern slides and moving pictures. He also demonstrated the fundamental differences between the lesions of the cerebellum and those of the labyrinth.

The lectures and demonstrations were given in a lucid and masterful manner, which made them most instructive and enjoyable.

While in New Orleans, Dr. Portmann was the guest of Dr. Lynch and of the Staff of the Senses Hospital. At the Hospital he was especially interested in the demonstration of the original methods of laryngoscopy by suspension, bronchoscopy, esophagoscopy and other procedures devised by Dr. Lynch. He was also entertained socially by Dr. Chassaignac, Mrs. DeRoaldes, and Dr. Matas.

## TYPHOID FEVER IN 1923.

The journal of the A. M. A. recently published its annual summary of typhoid death rates in the larger American cities. It is evident from the figures there given that the period of rapid reduction in this disease, which began about 1910 and lasted to about 1919, is now at an end. For the last five years the total rate for the whole group of cities with a population some-

thing over 25,000,000 has fluctuated within a rather narrow range, not above 4.0 and not below 3.2.

While some further improvement in typhoid death rates may be anticipated, there is one factor that is likely to make the control of this disease a more serious problem in the near future. There is every reason to believe that the sudden drop in typhoid rates following the war was due in large part to the typhoid vaccination effected on such a large scale in the army camps. The new group of young men now reaching the age of typhoid susceptibility is not so well protected. Possibly also the effect of the army vaccinations is now wearing off, although there is no proof of this. It is, of course, problematic to what extent a typhoid increase for these reasons may be counterbalanced by improved methods of administrative control.

It is plain that the cities in our Southern States are having more trouble in bringing about typhoid decrease than are the Northern cities. Such cities as

Memphis, Atlanta, Nashville and Dallas may, however, well be encouraged to renew their efforts by the success achieved by such cities as Richmond, Baltimore and particularly Louisville, and more recently by Birmingham and New Orleans.

The measures for effecting typhoid control are now about as well known as those for yellow fever: general sewerage, filtration or chlorination of water supplies, pasturization of milk, and wherever these measures are effectually carried out, control of carriers. So long as rural typhoid persists at its present level, the cities will have to suffer for sins of sanitation not their own; but the success already obtained in certain municipalities over a considerable period of years demonstrates that, with methods now known and under conditions now prevailing, the average typhoid rate for this whole group of cities ought to be and probably can be reduced to about half its present figure. This may take a decade or two, but it is surely coming.



## NEWS AND COMMENT

The Mississippi-Louisiana-Arkansas sections of the American College of Surgeons met in joint session for their annual conference at the Hotel Edwards, Jackson, Miss., on January 25-26, 1924. Interesting clinics were held in the mornings at the various hospitals in Jackson, and round table conferences occupied the afternoon and night sessions. The guests attending the meeting were: Dr. W. C. MacCarty, Mayo Clinic, Rochester, Minn., and Dr. J. T. Case, Battle Creek Sanitarium, Battle Creek, Mich., both giving several valuable talks. Dr. M. T. MacEachern, Chicago, and Dr. Allan Craig, Chicago, represented the College. Mr. Robert Jolly, Superintendent, Baptist Hospital, Houston, Texas, made an interesting talk on hospital standardization. Dr. C. W. Allen, New Orleans, and Dr. J. D. Spellman, Superintendent, Touro Infirmary, New Orleans, addressed the meeting. Other Louisiana members of the College in attendance were: Doctors F. W. Parham, C. Jeff Miller, H. W. E. Walther, C. G. Cole, J. F. Dicks, T. B. Sellers, L. H. Landry, W. B. Chamberlin, L. B. Crawford, J. C. Willis, C. H. Mosely, I. J. Newton, and R. O. Simons. The executive committee for Louisiana for the coming year, elected at this meeting, are: Dr. J. C. Willis, Shreveport, chairman; Dr. C. G. Cole, New Orleans, secretary, and Dr. L. B. Crawford, Patterson, counselor.

Monthly Bulletin of the Shreveport Medical Society.

February meeting of Shreveport Medical Society, Tuesday, the 5th, at Charity Hospital, at 8 p. m.

February 5th, program by North Louisiana Staff.

March 4th, program by Highland Sanitarium Staff.

April 1st, program by Schumpert Sanitarium Staff.

### *Committees for 1924.*

Ethics: Drs. S. C. Barrow, A. P. Crain, F. J. Frater, T. R. Ragan, N. W. Sentell.

Program: All of officers and Drs. J.

A. Hendrick, Louis Abramson, S. C. Barrow, A. J. Thomas, A. G. Heath.

Entertainment: Drs. F. H. Walke, J. M. Bodenheimer, W. S. Kerlin, C. C. Rigby.

Memorial: Drs. A. A. Herold, M. F. Smith, T. E. Williams.

Committee on Revision of Constitution and By-Laws: Drs. J. S. Knighton, A. A. Herold, S. C. Barrow, E. L. Sanderson, J. M. Bodenheimer.

Library: Dr. S. W. Boyce.

Charity Hospital, January 10, 1924.

The Shreveport Medical Society was called to order by President Butler at 8:06. Minutes of the last meeting were read and approved. Fifty-one members were present.

### *Scientific Program.*

The Charity Hospital staff had charge of the scientific program. The general subject was generalized military tuberculosis with presentation of histories, physical findings, laboratory data progress, and autopsy findings with specimens of three patients, ages one year, one and a half years, and twenty-four years. One patient from the wards was shown. General discussion by Drs. Thomas, I. Henry Smith, Picard, Gowan, Knighton, Young, W. S. Kerlin, Lucas, Sanderson. Following the general discussion, Dr. Rauls, who had charge of the presentations, read a paper summarizing generalized military tuberculosis.

Dr. Rigby presented a patient, a six-year-old boy, with a tumor of the tongue. General discussion followed.

### *New Business.*

Election of delegates and alternates. Drs. Knighton, Adams, Lloyd, Barrow and Sanderson were nominated for delegates. A motion was made, seconded and passed that nominations be closed and these five be elected by acclamation. Drs. Crain, Picard, Bodenheimer, J. J. Frater and Rougon were nominated for alternates. A motion was made, seconded and passed that nominations be closed and that these five be elected by acclamation.

Dr. Sanderson called attention to the

desirability of the medical profession keeping out of politics and offered a resolution incorporating this. His resolution was seconded by Dr. Heath. Discussion by Drs. Knighton and Bodenheimer. Dr. Herold made a motion that the resolution be tabled. The motion was seconded by Dr. Knighton. The motion to table the resolution was passed.

Dr. Knighton made a motion that the resolutions adopted by the Medical Advisory Board of Shreveport Charity Hospital January 4, 1924, be adopted by the Shreveport Medical Society. Motion seconded by Dr. Herold. Dr. Lloyd made a motion that Dr. Knighton's motion be tabled. Motion seconded by Dr. Bodenheimer. Dr. Lloyd's motion passed.

Following this action the secretary, on request, read the resolution adopted by the Medical Advisory Board of the Shreveport Charity Hospital, January 4, 1924, which incorporated approval of the present system of management of State hospitals and sending of a copy of the resolution to the three candidates for governor of the State of Louisiana. Dr. Sanderson made a motion that the above action of the society be given to the press. Motion seconded by Dr. Rigby. Dr. Lloyd made a substitute motion, which was accepted that the Shreveport Medical Society go on record as taking no action on the resolution of the Medical Advisory Board of the Shreveport Charity Hospital.

The Society was adjourned at 10:45.

ROBT. T. LUCAS,  
Secretary.

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#### *Invitation.*

All those interested are cordially invited to be present at the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, March 3, 4 and 5, 1924; Florentine Room, Congress Hotel, Michigan Avenue and Congress street, Chicago.

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Program of the fifth annual meeting of the Louisiana State Radiological Society at New Orleans, La., January 19th, 1924.

Officers of the Society: Lucien Fortier, M. D., president; C. P. Rutledge,

M. D., vice president; Harold G. F. Edwards, M. D., secretary-treasurer.

Morning session, January 19th, at 10 a. m., at Hotel Roosevelt.

#### *Executive Session.*

President's address, reading of minutes, unfinished business, report of officers and committees, election of new members, election of officers, new business, adoption of new Constitution and By-Laws.

Afternoon session, January 19th, at 2 p. m., X-ray Clinic of Dr. Amédée Granger, at Charity Hospital.

Evening session, January 19th, 7:30 p. m., held at Hutchinson Memorial, 1551 Canal street.

#### *Scientific Program.*

1. Title unannounced, A. J. Pacini, M. D., Chicago.
2. "Report of a Case of Myeloma" (with lantern slide demonstration), C. P. Rutledge, M. D., Shreveport.
3. "The Necessity of Standardization of Radiographic Technique." G. C. McKinney, M. D., Lake Charles.
4. Title unannounced, A. Henriques, M. D., New Orleans.
5. "Therapeutic Application of Roentgen Rays," Harold G. F. Edwards, M. D., Lafayette.
6. "Radiological Findings in Leprosy," L. J. Williams, M. D., Baton Rouge.
7. Demonstration of Films and Slides by members of the Society.

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National Conference on Vocational Rehabilitation of Civilian Disabled, February 4-8, 1924, Washington, D. C., Hotel Hamilton.

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#### *Whisky as Medicine.*

Announcement has just been made by Fullerton Cook, chairman of the Revision Committee of the United States Pharmacopoeia, that standards for whisky and brandy as medicines will be included in the new Pharmacopoeia now being revised. This is in response to a demand by the physicians of the country.

Under the national prohibition laws, whisky and brandy are classed as medicines and as such are legally prescribed in many cases of serious illness, but at



the present time no legal standards exist for their purity.

All physicians of the General Revision Committee, acting as a sub-committee were appointed to study the situation and take the necessary action. This sub-committee has issued the following statement:

"In view of the fact that a large number of physicians in the United States believe alcohol to be a valuable therapeutic agent, and in view of the widespread adulteration of the alcoholic liquors at present available, the members of this Referee Committee feel that for the protection of the public there should be an official standard for medicinal spirits."

By including standards for whisky and brandy as medicines, in the Pharmacopoeia, which is the legal standard for drugs and medicines under the Food and Drugs Act, the machinery of the United States Department of Agriculture and of the Boards of Health and Boards of Pharmacy throughout the country is enlisted in protecting the sick against adulterated and poisonous products.

*State Meeting Reservations.*

The chairman of the Committee of Arrangements for the approaching meeting of the Louisiana State Medical Society requests that members send in their reservation at once for hotel accommodation for the approaching meeting of the Louisiana State Medical Society. By doing this it will simplify very much the designation for room space, and will aid the committee materially in being able to locate every one in a suitable place. The meeting is to be held in Opelousas, April 22nd, 23rd and 24th, 1924. House of Delegates convenes on April 21st.

*Chairmen of Sections for the Approaching Meeting of the Louisiana State Medical Society at Opelousas, La.*

Medicine and Therapeutics—Dr. Geo. S. Bel, New Orleans.

Pediatrics—Dr. Louis I. Tyler, Baton Rouge, La.

Nervous Diseases—Dr. John N. Thomas, Pineville, La.

Bacteriology and Pathology—Dr. E. O. Trahan, Baton Rouge, La.

Health and Sanitation—Dr. E. M. Ellis, Crowley, La.

General Surgery—Dr. R. C. Kemp, Baton Rouge, La.

Gynecology and Obstetrics—Dr. Maurice Gelpi, New Orleans, La.

Eye, Ear, Nose and Throat—Dr. C. A. Weiss, Baton Rouge, La.

Urology—Dr. Paul J. Gelpi, New Orleans, La.

Dermatology—Dr. J. N. Roussel, New Orleans, La.

Radiology—Dr. T. I. St. Martin, Houma, La.

New Orleans, La., February 9.—Nation-wide participation in the competition by the Hibernia Bank & Trust Company of New Orleans to obtain feasible methods of combatting the menace of the boll weevil through prizes offered for the five best essays submitted before March 15th, is indicated by the fact that with the proposition still within five weeks of its completion, answers and suggestions have been submitted from 13 states and the city of Washington.

The President of the Orleans Parish Medical Society, Dr. Chaille Jamison, appointed Dr. Homer Dupuy general chairman of the committee to entertain the Southern Medical Association in New Orleans, during the month of November.

Additions to the hospital facilities of this City will soon be completed. The new building of Touro Infirmary and two floors of the main building of Hotel Dieu are about finished.

Dr. T. M. Van Studdiford has completed a Post Graduate course taken at the Columbia University, Vanderbilt Clinic, and Bernard Skin and Cancer Hospital, St. Louis, Missouri, and is now located in New Orleans.

*Monthly Bulletin of the Orleans Parish Medical Society.*

The Society held two meetings during the month of February.

February 11th, the following papers were presented:

- "Syphilis and Pregnancy" . . . .  
 By . . . . . Dr. E. L. King.  
 "Promotions in the Medical Reserve Corps," by Dr. Robert Shackelford, Major, U. S. Army.  
 "Relative Value of Percussion and X-Ray in Cardiology"  
 By . . . . . Dr. A. E. Fossier.

February 25th, the following papers were presented:

- "The Value of Roetgen Ray in the Diagnosis of Gall Stones"  
 By . . . . . Dr. Leon J. Menville.  
 "Further Observations of the Operative Cure of Colitis Ani and Vulvae"  
 By . . . . . Dr. Carroll W. Allen  
 "Some Suggestions in Physical Diagnosis"  
 By . . . . . Dr. O. W. Bethea.

New Members. The Board of Directors, at its last meeting, elected Dr. W. N. Floyd and Dr. Elliott Kiblinger to active membership, and Dr. Larry J. Dupuy to associate membership.

The Chairman of the Scientific Essays Committee has sent out a circular letter. Prompt replies will facilitate the preparation of the program for the year.

Dues for the Louisiana State Medical Society were payable January 1st. To date very few of our membership have qualified. Your attention is called to this very important matter.

#### *Librarian's Report for January*

The work of the Library, coincident with the first of the year, has been particularly heavy. 65 volumes of journals have been prepared and sent to the National Library Bindery Co., of Atlanta, whose work has been formally approved. 120 books have been cataloged. Of these 22 were received by 1923 subscription, 1 by purchase, 1 by bindery, 12 by Gift and 23 from the New Orleans Medical and Surgical Journal. 164 pamphlets have been added to our files.

A meeting of the Library Committee was held on January 19th at which three

members were present. A budget of \$1,975 was presented, based on the expenditures of 1923, and approved by the Committee, with the proviso that effort should be made to live within the actual income of the securities. It was decided to renew the subscription to the American Institute of Medicine abstracts, at the special price of \$160.00 which had been made to us as a subscriber to the entire series.

#### *Bulletin of the Louisiana State Medical Society.*

The meeting of the Louisiana State Medical Society to be held in Opelousas, April 22rd, 23rd, and 24th, House of Delegates convening on April 21st, will no doubt be one of great scientific opportunities, and accompanied by unusual entertainment. It would be natural to presume that visiting such a remarkable and historical part of our State, that each and everyone of us contemplating attending the sessions should arm ourselves with a review of its history, so that we may be in a position to enjoy and appreciate them. With this object in view, through the generosity of the Journal Committee and its editor, Dr. H. W. E. Walther, it has been arranged that the April issue of our Journal will be made a special feature carrying an abundant supply of information concerning Opelousas, St. Landry Parish, and a review of the picturesque Southwest Louisiana.

Through the activities of Dr. Fred J. Mayer, Chairman of the Arrangement Committee, unusual plans are being made for our entertainment. A detailed account of these will be published in the April issue of the Journal. You may rest assured that the social entertainment will be all one might desire. The Arrangement Committee are now actively engaged in making preparations for the comforts of all those attending. *Dr. Fred J. Mayer requests that all those desiring to attend the session should communicate with him at once, so that he may see that suitable quarters may be reserved.* It is essential that you attend to this at once, so that the committee may not be handicapped in its functions. We are especially fortunate at this Annual Meeting to have with us two representatives from the American Medical Associa-



tion. Their names have not yet been supplied, but will be announced as soon as I am informed. This will afford the members of our Society the opportunity of having a personal contact with some of the Board of Directors of the American Medical Association. Their presence and influence should be of material assistance to us, both in the legislative and scientific affairs of our Society. The headquarters for the Annual Meeting will be at the Court House. Registration room will be on the lower floor of the new Court House.

*Partial Program of Opelousas, Meeting*

*Section on Medicine and Therapeutics.*

Dr. George S. Bel, Chairman, New Orleans.

- 1.—“Pneumonia From the Standpoint of the General Practitioner,” Dr. S. B. Wolf, Opelousas.
- 2.—“The Acute Abdomen,” Dr. A. A. Herold, Shreveport.
- 3.—“Case Report of Tumor Involving Carotid Sheath Presenting Some Interesting Diagnostic Problems,” Dr. J. E. Knighton, Shreveport.
- 4.—“Splenectomy For the Cure of Purpura Hemorrhagica,” Dr. I. I. Lemann, New Orleans.
- 5.—“The Clinical Diagnosis of Pancreatic Disease,” Dr. Daniel N. Silverman, New Orleans.
- 6.—“Percussion of the Heart,” Dr. A. E. Fossier, New Orleans.
- 7.—“Lobar Pneumonia,” Dr. C. W. Johnson, Monroe.

*Section on Pediatrics.*

Dr. Louis I. Tyler, Chairman, Baton Rouge.

- 1.—“Epidemic Vomiting in Children,” Dr. M. S. Picard, Shreveport.
- 2.—“Feeding Problems,” Dr. C. J. Bloom, New Orleans.
- 3.—“Clinical Observations On Prevailing Grippal Infections Among Infants and Children,” Dr. M. Loeber, New Orleans.  
Collaborating: Drs. J. E. Pollock and F. W. Dearman, Jr., New Orleans.

*Section On Nervous Diseases.*

Dr. John N. Thomas, Chairman, Pineville.

- 1.—“The Rehabilitation of the Recov-

ered Patient,” Dr. David H. Keller, Medical Director, Louisiana Hospital for Insane, Pineville.

To open discussion, Dr. John D. Young, Shreveport; Miss Betty C. Britton, Social Service Worker, State Hospital, Jackson, La.

- 2.—“Some Observations from the Neurological Clinic,” Dr. L. L. Cazenavette, New Orleans.

To open discussion, Dr. Joseph O'Hara, New Orleans; Dr. C. V. Unsworth, New Orleans.

- 3.—“Syringomyelia and Possibilities To Be Learned From the Study of Its Pathology in Regards to Neurosurgery,” by Dr. John D. Young, Shreveport.

To open discussion, Dr. W. J. Otis, New Orleans; Dr. E. McC. Connely, New Orleans.

*Section On Bacteriology and Pathology.*

Dr. E. O. Trahan, Chairman, Baton Rouge.

No program received to date.

*Section On Public Health and Sanitation.*

Dr. E. M. Ellis, Chairman, Crowley.

- 1.—“Analysis of Some Morbidity Reports,” Dr. Oscar Dowling, New Orleans.
- 2.—“Malaria in the Seventh District,” M. A. Farber, Ph.D., Crowley. Special Expert, U. S. Public Health Service.
- 3.—“Tuberculosis,” Dr. Wallace Durel, Covington.
- 4.—“Crude Statistics,” Dr. George Dempsey, New Orleans.

*Section On General Surgery.*

Dr. R. C. Kemp, Chairman, Baton Rouge.

- 1.—“Minor Injuries of the Hand,” Dr. E. Denegre Martin, New Orleans.
- 2.—“Anastomosis of the 11th to 7th Cranial Nerves to Correct Facial Paralysis,” Dr. J. T. Nix, New Orleans.
- 3.—“Resection of the Rectum With Normal Restoration of the Bowel at the Anal Outlet,” Dr. Carroll W. Allen, New Orleans.
- 4.—“Appendectomy Under Local Anes-

thetia," Dr. R. B. Wallace, Alexandria.

- 5.—"Acute Obstruction of the Bowels," Dr. E. M. Ellis, Crowley.
- 6.—"Fractures of the Base of the Radius: Method of Treatment and End Results," Dr. Isadore Cohn and Dr. Paul G. Lacroix, New Orleans.
- 7.—"Diagnosis and Surgical Treatment of Congenital Hypertrophic Pyloric Stenosis, with Report of Cases," Dr. Thomas B. Sellers, New Orleans.

*Section On Gynecology and Obstetrics.*

Dr. Maurice J. Gelpi, Chairman, New Orleans.

- 1—"Extra Uterine Pregnancy," Dr. O. P. Daly, Lafayette.
- 2—"Diagnosis in Gynecology," Dr. Paul Michinard, New Orleans.
- 3—"Speaking of Caesarean Sections," Dr. Louis B. Crawford, Patterson.
- 4—"Version Versus Forceps," Dr. Lucien A. LeDoux, New Orleans.

*Section on Eye, Ear, Nose, Throat, and Stomatology.*

Dr. C. A. Weiss, Chairman, Baton Rouge.

- 1.—"Stricture of Esophagus Produced by Lye," Dr. R. C. Lynch, New Orleans.  
To open discussion, Dr. A. I. Weil, New Orleans; Dr. A. B. Moise, New Orleans.
- 2.—"More Recent Ophthalmic Progress," Dr. Charles Bahn, New Orleans.  
To open discussion, Dr. D. C. Iles, Lake Charles; Dr. F. C. Bennett, Monroe.
- 3.—"The Eye and the Clinician," Dr. T. J. Dimitry, New Orleans.  
To open discussion, Dr. A. L. Whitmire, New Orleans; Dr. Brown Larose, New Orleans.
- 4.—"Dysphonia, As Expressing Disease Remote From the Larynx," Dr. Homer Dupuy, New Orleans.  
To open discussion, Dr. J. F. Mouton, Lafayette; Dr. E. R. Gardy, Alexandria.
- 5.—"Mastoid As a Problem of the General Practitioner," Dr. Edwin Whitaker, Baton Rouge.  
To open discussion, Dr. M. P. Boebinger, New Orleans; Dr. G. W. Blackshear, New Orleans.

*Section On Urology.*

Dr. Paul J. Gelpi, Chairman, New Orleans.

- 1.—"Three Renal Cases With Uncommon Pathology," Dr. P. Jorda Kahle, New Orleans, La.
- 2.—"A Plea For More Frequent Operative Interference in Urethral Stricture," Dr. Abraham Nelken, New Orleans.

*Section On Dermatology.*

Dr. J. N. Roussel, Chairman, New Orleans.

- 1.—"The Use and Abuse of X-Rays in the Treatment of Common Skin Disease," Dr. Earl D. Crutchfield, Galveston, Texas.  
To open discussion, Dr. J. N. Roussel, New Orleans.
- 2.—"The More Common Dermatoses due to Occupational and External Irritants," Dr. R. T. Van Studdiford, New Orleans.  
To open discussion, Dr. Henry Menage, New Orleans.

*Section on Radiology.*

Dr. T. I. St. Martin, Chairman, Houma.

- 1.—"Radio-Dermatitis and its Treatment," Dr. A. U. Desjardins, Rochester, Minnesota.
- 2.—"Important Physiotherapeutic Principles," Dr. A. J. Pacini, Chicago, Illinois.
- 3.—"The Roentgen Ray Treatment of Diseased Tonsils and Adenoids," Dr. Harold G. F. Edwards, Lafayette.  
To open discussion, Dr. S. C. Barrow, Shreveport.

Removals: Dr. C. W. Lewis from Chattanooga to Eunice, La. Dr. G. M. Harris from Magde, to Cheneyville, La. Dr. R. J. Mailhes from 4115 Dumaine street to 1525 Hillary street, New Orleans, La.

Died: On January 22nd, at Biloxi, Mississippi, Dr. J. O. Pratt, formerly of New Orleans, aged 42 years.



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### POSTOPERATIVE PULMONARY EMBOLISM.\*

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SHREVEPORT, LA.

Pulmonary embolism is a postoperative complication with which all surgeons are familiar and although occurring in only a small number of operated cases, the certainty with which death soon follows its unexpected and sudden development, interrupting an otherwise uneventful convalescence, establishes it as one of the most dreaded complications.

Postoperative pulmonary embolism may be caused by a dislodged blood-clot, the entrance of fat into the circulation or a combination of both, but only blood-clot embolism is considered in this paper.

It is not the purpose here to add anything new in the way of diagnosis and treatment of such a familiar and rather hopeless condition, but to try to determine just what type of case and operation produce the most frequent occurrence of such a fatal postoperative complication.

Embolism has been recognized and studied from all angles since the year 1846. Virchow<sup>1</sup> working from 1846 to 1856, put the doctrine of embolism upon a sound basis. The next most important work upon this subject was carried out by Cohn<sup>2</sup>, and later by Cohnheim<sup>3</sup>. The writing of Welch<sup>4</sup> upon Thrombosis and Embolism is a classic.

#### *Symptoms and Diagnosis.*

Fortunately, since it is usually fatal, pulmonary embolism occurs in only a very small number of operated cases.

It is a condition for which little can be done, when once the surgeon is sure of the diagnosis in cases that live for several hours, and most cases die within such a short time after the appearance of symptoms that the surgeon seldom reaches the bedside. The occurrence is probably more frequent than is generally thought, since many cases that complain of pain in the chest with comparatively no physical findings are mild pulmonary embolus. Such cases are often wrongly diagnosed pleurisy, myositis and broncho-pneumonia and it is highly probable that many cases that are diagnosed broncho-pneumonia are pulmonary embolism of moderate severity.

Wyder, quoted by Ochsner and Schneider<sup>5</sup>, thinks that atheroma of the coronary arteries may simulate pulmonary embolism, but there is usually the history of previous attacks. Schumacher, quoted by Ochsner and Schneider<sup>5</sup>, thinks that sudden internal hemorrhage, also myocardial degeneration may produce a similar picture. In the series of cases reported here, the diagnosis has frequently been confused with myocardial degeneration. Myocardial degeneration and pulmonary embolism may produce very similar pictures, but in cases which have had a very thorough preoperative examination with no previous history of cardiac trouble, the diagnosis would be much more in favor of pulmonary embolism.

The usual picture of postoperative pulmonary embolism is a patient with an uneventful convalescence, usually somewhere within the first or second week after operation, while engaged in some form of physical exertion, as walking about, taking a bath, or straining at stool, suddenly feels faint and falls to the floor. They often complain of precordial pain, or a tightness

\*Read before Fourth District Medical Society, Shreveport, La., Oct. 16, 1923.

\*Work done while a Fellow in Surgery, Mayo Clinic, Rochester, Minn.

through the chest, dyspnea is marked, respiration rapid and labored, with marked cyanosis. The pulse is rapid and of poor quality. Cold sweat often stands out on the face, which bears a very anxious expression. The extremities are cold and clammy. Death often follows within five to twenty minutes.

Precordial pain, a pain through the chest, or a feeling of tightness through the chest is a fairly constant symptom. Sudden pain in the chest occurred in a high percentage of the cases here, and could probably be found in a larger number, should the patient, being rational enough to answer intelligently, be questioned regarding it.

The presence of noticeable varicose veins, or a previously existing thrombophlebitis lends much weight to a diagnosis of pulmonary embolism.

#### *Prevention and Treatment.*

When once a pulmonary embolism has developed, even if there is enough time before death to do anything, the treatment is rather discouraging. This being true, the most of the surgeon's attention should be given to measures which may prevent as far as possible, such a fatal complication.

Conditions favoring the development of postoperative embolism may be grouped under two general heads: Faults in the patient, and faults in the operative technique and postoperative care. Under the former head may be mentioned such conditions as anaemia microorganisms in the blood stream, and general physical conditions below par, excess of white blood cells (Anningson, quoted by Ochsner and Schneider<sup>5</sup>), and excess of calcium salts in the blood.

Kretz<sup>6</sup> was able to find some primary infectious focus in every case of fatal pulmonary embolism from primary thrombosis. In some cases the walls of the veins were inflamed, but in others the intravascular coagulation was due to infectious organisms in the blood.

Gibson<sup>7</sup> mentions infection from the intestinal canal, sepsis which may exist before operation, and concentration of the blood, as some of the predisposing causes of pulmonary embolism.

Lenormant<sup>8</sup> in 792 operations, reported pulmonary embolism in 0.5 of 1 per cent. He ascribes the thrombosis

to infection not necessarily occurring during operation, but possibly due to paralysis of some part of the digestive tract with absorption of septic matter.

In reviewing the literature on the subject he states that 106 out of 233 cases of pulmonary embolism proved fatal.

He thinks that prevention is the only treatment, and advises digitalis before operation when the pulse is small and the heart action weak, and also in cases of large abdominal tumors. Injections of salt solution are indispensable, he believes, before attempting any operation, when the patient is anemic from profuse hemorrhage, or arterial tension is much reduced.

Anesthesia should be as brief as possible.

Such conditions as have been mentioned under faults with the patient, as far as possible should be guarded against and combated as far as it is practical, but the surgeon is often compelled to operate upon a case that is in poor physical condition, knowing that such a case is a poor operative risk. All foci of infection should be cleaned up as suggested by Wilson<sup>9</sup>.

Many faults of operative technique and postoperative care have been mentioned by many writers, each man thinking that he has the proper solution of the problem. Looking through the literature on the subject, one finds that the use of the Trendelenburg position is mentioned a number of times as a predisposing cause of postoperative embolism. Many surgeons think that any position which interferes with the circulation in the veins of the lower extremities, is a predisposing cause.

Zweifel, quoted by Ochsner and Schneider<sup>5</sup>, reported eighteen deaths due to pulmonary embolism in 1,832 cases operated upon a table which interfered with the circulation of the lower extremities, or one death in every 100 cases operated, and only three deaths in 860 cases operated upon a table without this feature. He advises the precaution be taken to avoid all pressure upon the veins of the lower extremities as occurs when the legs hang over the table, and the Trendelenburg position.

Further statistics by him showed five deaths from thrombosis in 450 lapa-



rotomies, although the extremities were not traumatized during the operation, but following a change of technique, which change consists in the absolute control of the oozing of blood and the application of a purse-string suture covering all raw surface in the pelvis. He had five deaths from thrombosis in 2,060 laparotomies and one death in 484 operations for fibroids of the uterus.

Olshausen, quoted by Oschner and Schneider<sup>5</sup>, calls attention to the frequent occurrence of pulmonary embolism in cases operated upon in the Trendelenburg position, reporting fourteen cases of thrombosis in 2,443 operations. Five hundred and seventy-one of these were fibroids with seven cases of thrombosis. Abandonment of a position which compressed the veins of the lower extremities gave very gratifying results.

Eberth and Shimmelbusch, quoted from Cumston<sup>10</sup>, showed with their experiment that a single uncomplicated slowing down of the flow of the blood, whether it causes migration of the leukocytes toward the vessel wall, or forces the blood corpuscles toward it can not in itself result in the formation of a clot within the vessel when no other lesion is present; that when the vessel wall is injured the blood plates may appear in the upper strata of the stream, due to a slowing of the latter, and as they come in contact with the injured portions of the vessel walls, they become adherent there, and more or less agglutination of the blood plates results; the blood plates in the development of these thrombi are the integral etiologic factors. With a circulation in good condition, the development of obstructing thrombi is rare unless there are some further local complications.

Zurhelle<sup>11</sup> discusses the connection between postoperative thrombosis, infection, and the depositing of fibrin. His conclusions from much research were that a retardation of the blood stream is the main factor in the production of a thrombus, and that there is a mechanical piling up of the blood plates in the more sluggish blood stream. This conglutination of the blood plates is entirely different from coagulation of fibrin, and the latter is not necessary for the formation of

thrombus; when it occurs it is secondary. His experiments show the uselessness of attempting to prevent thrombosis by reducing the coagulability of the blood, since one is unable to act on the blood plates. All that can be accomplished is to prevent the blood stream from becoming sluggish.

Aschoff<sup>12</sup> suggests that it may be possible to prevent thrombosis by changing the physical conditions in the circulation, by combating any tendency to a slower pulse rate. He does not believe that thrombosis is always of an infectious origin, but superimposed infection transforms a primary insignificant thrombus into a dangerous thrombophlebitis.

Fromme, quoted from Oschner and Schneider<sup>5</sup>, put into the jugular veins of rabbits silk threads impregnated with bacteria. The threads impregnated with any form of bacteria regularly produced thrombi. Sterile thread produced thrombosis only in anemic animals or those in bad physical condition.

Talke, quoted from Oschner and Schneider<sup>5</sup>, placed cultures of staphylococci near thirteen arteries and thirty-one veins in thirteen animals. The removal of these vessels after nine to twelve hours showed eleven arteries and twenty-two veins to be thrombosed.

McCann<sup>13</sup> thinks that the transfixion of pedicles and tissue is a cause of pulmonary embolism. He especially condemns the transfixion of the broad ligaments, omentum and mesentery, avoiding unnecessary clots and hematomas, which often become mildly infected. He warns against stitching too tightly and cutting into blood vessels, and stresses the point that vessels should be picked up cleanly and ligated without encompassing masses of tissue. He recommends the adoption of a technique and the use of instruments that cause the least trauma to vessels and surrounding tissue, stating that he has had no case of embolism since adopting this method.

A. L. Smith<sup>14</sup> believes that pulmonary embolism is due to a hyperfibrinous condition of the blood. He takes pains to let his patients drink freely, sees that the full normal proportion of water is in the blood, and keeps up the fluid after operation. He advises the

reduction of the length of time on the operating table, and the use in so far as possible of round pointed, flat-eyed needles, to reduce hemorrhage. He believes in free early movements of the patient after operation.

Wilson<sup>9</sup> stresses as precautionary measures, the reduction of vascular traumatism to a minimum at operation and the encouragement of very early free movement on the part of the patient.

As a cause of femoral thrombosis, injury to the edges of the wound by retractors has been mentioned.

Symonds<sup>15</sup> thinks that enforcement of dorsal position and knee-pillows after a laparotomy, favor thrombosis by starving the circulation. He has abandoned enforced dorsal position in all but grave cases of peritonitis and encourages free movements. He has not had a case of pulmonary embolism in many years.

Lenormant<sup>8</sup> calls attention to the careful management of veins while operating. Veins of any size should be ligated separately, rather than in a bunch. In abdominal work especial care should be exercised in avoiding injury to the epigastric veins. After operation he recommends stimulants for the heart, saline injections, and copious intake of fluids to combat thickening of the blood. An early purge is used by some surgeons to combat stasis in the intestines. The patient should not be allowed to lie perfectly still, since this favors the formation of thrombus. Patients should not be out of bed too early. In regard to some forms of anesthesia Lenormant states that Ranze advises preliminary scopolamine and morphine to reduce the amount of chloroform. Witzel prefers ether which is less depressing.

Otte<sup>16</sup>, assistant at Rissman's Maternity Hospital, believes that the technique for general anesthesia which has been in use for several years there has prevented any serious complication. The special features of this technique are a disinfecting of the air passages and prevention of chilling the patient. The mouth is repeatedly washed out with a disinfectant and steam inhalations of a mixture of thymol, salicylic acid, alcohol and water is given. This is again given after the operation,

while the patient is still asleep. Ether is used for the anesthetic. He states that even in patients with pre-existing respiratory infections no aggravation has occurred since this technique was introduced.

Mauclaire<sup>17</sup> reports a case of bilateral phlebitis of the spermatic veins and slight pulmonary embolism following inguinal herniotomy. He summarizes twenty-five cases in the literature with twenty-five others briefly mentioned, and seven cases of femoral phlebitis. The mortality in twenty-five cases of which the details were known, was 50 per cent. He states that embolism is usually tardy with sudden onset, and generally with hemoptysis. If phlebitis develops in the spermatic vessels the region must be immobilized, and he suggests that embolism might be avoided by injections of hirudin, the spermatic veins high up. In urgent cases he does not hesitate to ligate the femoral and iliac veins for the prevention of embolism.

According to Trendelenburg, quoted from Meyer<sup>18</sup>, coagulation of the blood and recurrence of embolic accident can be avoided by injections of hirudin. Trendelenburg's assistants, Rimaun and Wolf, investigated the problem and found that 1 mg. of hirudin prevents the coagulation of 5 cc. of blood for four and one-half hours. This would mean for a patient of average weight, 1 gm. about 15 grs., a rather expensive procedure as the cost of 1 gm. is about \$20.00. The drug injected intravenously in large quantities proved harmless.

Some surgeons recommend the excision of varicose veins previous to operation, thus eliminating as far as possible a fertile field for the formation of an embolus.

Trauma to tissue and infection must play an important part in the formation of embolus, since both, depending upon the extent and severity, cause thrombosis in venous trunks and plexuses, the veins, more thin walled and less resistant than the arteries, usually being affected. And the more thrombus formation present, the more chance there is of a piece being broken off and carried as an embolus to the lungs. Neoplasms also, and any condition which causes a congestion or slowing



of the blood stream in veins and venous plexuses must favor thrombosis.

A large percentage of cases of pulmonary embolism die within a few minutes after symptoms appear and the time between the first appearance of the symptoms and death is so short that little can be done.

When death does not follow immediately, the patient should be elevated so as to favor respiration. There should be plenty of fresh air and even oxygen inhalations may be given.

Venesection has been recommended for dilatation of the right heart. Hot water bottles may be applied to the extremities for the failure of the peripheral circulation.

Rapid stimulation with caffeine, camphor, strychnin, also ammonia, ether and brandy hypodermatically may be used. Morphia can be given in doses sufficient to counteract shock and relieve pain, which is often present.

Most authorities divide pulmonary embolism into three groups:

Group (1), in which there is immediate death occurring when only a small portion of the pulmonary circulation is obstructed.

Group (2), in which death follows within a few minutes after symptoms appear and is due to a more or less blocking of the pulmonary circulation.

Group (3), in which death is delayed hours, and in some cases two or three days, and is the result of an increase by thrombosis, of a blockage of a portion of the pulmonary circulation, starting with an embolism.

Mann<sup>19</sup> was able to produce death experimentally in animals only by a more or less complete blocking of the pulmonary circulation. He states that it was impossible to produce death or seriously endanger the animal's life unless the pulmonary circulation was greatly obstructed. He also used animals with much depressed circulation, subjected to hours anesthesia, dogs practically moribund with distemper, under local and general anesthesia, and dogs that had been starved. All results were practically the same.

Trendelenburg, quoted by Meyer<sup>18</sup>, thinks that about 50 per cent of cases of pulmonary embolism have only one branch of the pulmonary artery obstructed at first, and may live for an

hour. This type of case he considers suitable for his operation, in which the clot is removed from the pulmonary artery. The operation is described in detail by Meyer. Exposure is obtained by a horizontal incision 10 cm. in length over the second left rib. The inner end of this incision is crossed by a perpendicular incision, starting just below the sterno-clavicular articulation, passing the third rib cartilage about one inch outside the sternal border, avoiding the internal mammary artery. The second rib and cartilage are cleared from the field of operation and the third cartilage is divided. The pleura is opened with an incision corresponding to the outer incision. The pericardium is exposed and opened with an incision inside the phrenic nerve and vessels at the level of the third rib. With Trendelenburg's special sound, a rubber tube is passed through the transverse sinus, and around the ascending aorta and pulmonary artery. The assistant pulls upon these for compression just before the artery is opened. The artery is opened about one-half inch longitudinally, and special curved forceps are used to remove the embolus. Not more than forty-five seconds can be consumed while opening the vessel and removing the clot, since the interruption of the circulation here is not borne longer.

With special forceps, the edges of the vessel wound are lifted and closure made temporarily with a clamp. The elastic compression may now be released, and the circulation re-established. The vessel wound is closed with interrupted silk sutures.

Trendelenburg's assistants, quoted from Meyer, found that the aorta and pulmonary artery could be compressed only forty-five seconds, but the vena cava could be compressed for six to eight minutes with no serious consequences.

Läwen and Sievers<sup>20</sup>, working in Trendelenburg's Clinic, made experiments on rabbits. They found that with simultaneous constriction of the pulmonary artery and aorta, the heart and brain suffer most. The heart is more resistant and adapts itself more readily to changed conditions. The heart can stand simultaneous constrictions of the pulmonary artery and aorta for six minutes. The animals tolerated this with-

out apparent injury for one minute. By releasing the constriction for a short time and reapplying, more time can be consumed. Experiments proved the same when the arteries were constricted separately. The heart tolerates constriction of the large veins better than the large arteries. The heart resumed its function after the vena cava had been constricted for nine minutes, but irreparable disturbances had occurred in the brain. Rabbits were able to tolerate, without apparent injury, constriction of the large veins for three or four minutes.

Jeger working with this information, by compressing the two veins, found that he could lesiurely open the vessel and remove the clot. Incision of the pulmonary artery brought immediately relief to the distended right heart.

Trendelenburg<sup>21</sup> removed a strip of lung 15 cm. long by 1 cm. thick from one calf and passed it through the jugular vein onto the left branch of the pulmonary artery of another calf. The animal rapidly recovered after the removal of the artificial embolus.

He calls attention to the fact that after one embolus has been removed, one that has been easily overlooked causes death. He and his assistants have done this on human subjects and one case lived several days, but finally died of pneumonia. He has never had a recovery after this operation.

Ritzman<sup>22</sup> found that from numerous experiments on cadavers this operation from an anatomic standpoint was practicable. He mentions the difficulty of operative procedure on account of failure to recognize the complication in time.

#### *Analysis of Cases at Mayo Clinic.*

The cases of postoperative embolism occurring at St. Mary's Hospital, Rochester, covering the period from the opening of the hospital in September, 1889, to and including December, 1911, were reported by Wilson<sup>9</sup> in 1912.

From 1899 to and including 1911, there were approximately 57,000 major operations, with forty-seven fatalities from postoperative embolism.

Autopsies were performed on forty-one of forty-seven fatalities and the diagnosis was confirmed. In the remaining six the clinical diagnosis was quite positive.

The total number of deaths in the hospital for the period concerned was 864. The mortality from embolism based on 63,573 operations was 0.07 of 1 per cent, or 1 death in every 1,352 operations.

Cerebral and pulmonary embolism were considered in Wilson's report, but only pulmonary embolism is considered in this report. Only thirty-six of Wilson's cases were pulmonary embolism, of the remaining, ten were cerebral and one coronary.

In twenty-eight of the forty-one cases posted, the location of the original thrombus was found in the field of operation or femoral vein.

Wilson thought that following operation on the blood vessels, alimentary canal, and genito-urinary organs, from 1 to 2 per cent of all cases give more or less distinct evidence of emboli, 70 per cent of which are in the lungs of cases that come to autopsy. He states that about 80 per cent can be determined as venous in origin, 10 per cent cardiac, and 10 per cent scattered or undetermined.

From the year 1912 to 1920 inclusive, there occurred at the Mayo Clinic 104 cases of postoperative embolism. Infarcts were not included, only cases of gross embolus or thrombosis in the pulmonary artery were accepted. Of the 104 cases, five recovered, the clinical symptoms being sufficient to warrant a diagnosis of pulmonary embolism. There were several other cases, not included, in which the symptoms were very similar to those found in pulmonary embolism, but the symptoms presented would not justify a diagnosis of embolism. Autopsy was performed on ninety of the ninety-nine cases that died, and the diagnosis was confirmed.

In this period there were performed at St. Mary's and Colonial Hospitals 125,164 operations. This includes the last four years of operations performed at the Colonial Hospital. Pulmonary embolism occurred once in every 1,203 cases operated upon, or a percentage of 0.08 of 1 per cent. In this period there were 104,360 patients operated upon. Of these 60,755 were females and 43,605 were males. There were seventy-three cases of embolism among females, or an occurrence of one in every 832 women operated upon. There were thirty-one cases among males, or an occurrence of



one in every 1,406 men operated upon. In this period there were 2,654 deaths following operation. Ninety-nine cases of embolism were fatal, or one in every twenty-six deaths or 3.7 per cent. The oldest of the 104 cases of pulmonary embolism was eighty-two years, and the youngest six years. The average age was fifty-three years. Eighty-three were married, eleven were single and ten were widowed. Fifty-one of the 104 were in good physical condition when operated. Thirty-seven were in fairly good physical condition, and sixteen were in poor physical condition. The anesthetic was ether in ninety-nine cases, novocaine was used in two, cocaine in two, combined novocaine and ether in one. Only seventy-four of the 104 cases had hemoglobin readings. Of the seventy-four cases fifty-three had a hemoglobin below 50 per cent. Fourteen had a hemoglobin between 50 per cent and 70 per cent, and seven had a hemoglobin below 50 per cent. The longest time between operation and death was fifty-eight days. The short-

est time between operation and death was six hours. The average time between operation and death was ten days. In thirty-three cases the time between the first appearance of symptoms of pulmonary embolism and death was recorded. Eleven of the thirty-three cases lived more than an hour after symptoms developed. One case lived three days, one lived one day, and two lived twelve hours. Most of the cases lived only ten to thirty minutes after the appearance of symptoms.

In table No. 1 all cases are given with the total number of operations for nine years in each particular type of operation, the number of cases developing pulmonary embolism and the proportion of occurrence.

Thus it is seen that pulmonary embolism occurred proportionately most frequently in cecostomy. There were twenty-one cases on which this operation was performed in nine years, with one case of pulmonary embolism occurring, or one case in every twenty-one cases upon which this operation was

TABLE 1.

Type of Operation.	Number of Operations for nine years.	Cases of Pulmonary Embolism for nine years.	Frequency of Occurrence of Pulmonary Embolism.
Cecostomy .....	21	1	1-21
Abdominal Exploration for Carcinoma.....	190	4	1-47
Resection of Bladder.....	190	3	1-63
Arthroplasty .....	75	1	1-75
Mikulicz Operation .....	231	2	1-115
Laminectomy .....	118	1	1-118
Suprapubic Cystostomy for Stones.....	327	2	1-163
Resection of Rectum.....	549	3	1-183
Abdominal Hysterectomy .....	3,751	18	1-208
Resection of Stomach.....	934	4	1-233
Umbilical Herniotomy .....	482	2	1-241
Splenectomy .....	279	1	1-279
Craniotomy .....	596	2	1-298
Prostatectomy .....	1,313	4	1-328
Vaginal Hysterectomy .....	1,594	4	1-398
Bovee Operation .....	450	1	1-450
Gastroenterostomy .....	5,056	9	1-561
Salpingectomy and Oophorectomy.....	2,404	4	1-601
Cholecystectomy .....	9,344	15	1-622
Fracture of Long Bones Reduced.....	625	1	1-625
Alcohol Injection of Fifth Nerve.....	710	1	1-710
Varicose Vein Operation.....	745	1	1-745
Bowel Resections .....	803	1	1-803
Nephrectomy .....	1,736	2	1-868
Amputation of Breast.....	2,624	3	1-874
Osteomyelitis Operation .....	894	1	1-894
Choledochotomy .....	1,019	1	1-1019
Inguinal Herniotomy .....	3,313	3	1-1104
Perineorrhaphy (Simple) .....	2,134	1	1-2134
Appendectomy .....	8,944	4	1-2237
Hemorrhoid Operation .....	2,277	1	1-2277
Ligation of Thyroid Artery.....	4,145	1	1-4145
Thyroidectomy .....	14,911	3	1-4970

done. Abdominal exploration for carcinoma shows the next most frequent occurrence. There were 190 operations in this group and four cases of embolism, or one case in every forty-seven explored, etc., down the table.

explored, and four cases of embolism. The frequency of pulmonary embolism in this type of operation seems very high to yield four cases of pulmonary embolism in only 190 cases operated.

The other types of operations in this

TABLE II.

Type of Operation.	Number of Operations for nine years.	Cases of Pulmonary Embolism for nine years.	Frequency of Occurrence of Pulmonary Embolism.
Resection of Rectum.....	549	3	1-183
Abdominal Hysterectomy .....	3,751	18	1-208
Resection of Stomach.....	934	4	1-233
Prostatectomy .....	1,313	4	1-328
Vaginal Hysterectomy .....	1,594	4	1-398
Gastroenterostomy .....	5,056	9	1-561
Salpingectomy and Oophorectomy.....	2,404	4	1-601
Cholecystectomy .....	9,344	15	1-622
Amputation of Breast.....	2,624	3	1-874
Inguinal Herniotomy .....	3,313	3	1-1104
Appendectomy .....	8,944	4	1-2237
Thyroidectomy .....	14,911	3	7-4970

In table No. II only types of operations are considered in which 300 or more operations have been performed in nine years and in which three or more cases of pulmonary embolism have occurred. From this table it is seen that resection of the rectum shows the most frequent occurrence. There were 549 operations performed with three cases of pulmonary embolism, or an occurrence of one case in every 183 operated.

Abdominal hysterectomy is second with 3,751 cases operated. Eighteen cases of embolism, or an occurrence of one case of embolism in every 208 cases operated, etc., down the table.

table show close to a thousand or more patients operated.

From table No. I it is seen that cecostomies yield the most frequent occurrence of pulmonary embolism, or one case in every twenty-one cases operated. Other types of operation would seem to yield a high occurrence of embolism according to this table, but the number of cases operated upon is too small to draw a fair conclusion.

A fair idea of the real frequency is given in table No. II. Here the number of operations and the number of embolism cases are large enough to make a fair estimate of the true frequency of occurrence.

TABLE III.

Type of Operation.	Number of Operations for nine years.	Cases of Pulmonary Embolism for nine years.	Frequency of Occurrence of Pulmonary Embolism.
Abdominal Exploration for Carcinoma.....	190	4	1-47
Abdominal Hysterectomy .....	3,751	18	1-208
Resection of Stomach.....	934	4	1-233
Prostatectomy .....	1,313	4	1-328
Vaginal Hysterectomy .....	1,694	4	1-398
Gastroenterostomy .....	5,066	9	1-561
Salpingectomy and Oophorectomy.....	2,404	4	1-601
Cholecystectomy .....	9,344	16	1-622
Appendectomy .....	8,944	4	1-2237

Table No. III shows only types of operations for nine years in which four or more cases of pulmonary embolism occurred.

Abdominal explorations for carcinoma are first with only 190 patients

From a glance over the preceding tables it is easily seen that pulmonary embolism is practically an insignificant proposition except in cases where the abdominal cavity is opened. It is easily seen that operations about the



pelvis give the highest occurrence, due doubtless, to the fact that operations in this region are performed in the midst of large plexuses of veins with the close proximity of the large iliac veins, which are often found thrombosed at autopsy. It is interesting to note that in thirteen of the 104 old cases reported here, were varicose veins of the legs noticed in the physical findings.

Varicose veins are commonly thought to be predisposing factors in the occurrence of pulmonary embolism, but it is highly probable that thirteen cases of varicose veins would be found in any series of 104 operated cases picked at random.

Thirty-four of the ninety cases upon which an autopsy was performed, showed a gross thrombosis of veins other than the pulmonary vessels. The most frequent site was the iliac veins.

Seventeen cases showed a thrombosis of the iliac veins; occurring nine times on the left, five times on the right and on both sides in three cases.

In seventy-one of the cases the pulmonary embolus was bilateral or including the pulmonary artery, and in twenty-nine cases the embolus was unilateral.

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## DUODENAL ULCER AND ITS SURGICAL TREATMENT.\*

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Duodenal ulcer is to-day more frequently observed than gastric ulcer because of better diagnosis, as the cases of so-called "nervous hyperacidity", ptosis and stomach dilatation are really duodenal ulcers and the cases of pyloric stenosis show only an enormous muscular hypertrophy and duodenal ulcers as cause of the disease.

Up to 1914 I observed 90 gastric ulcers and pylorus stenosis and only 29 duodenal ulcers, later more duodenal ulcers were found. (163 gastric ulcers, 353 duodenal ulcers and 38 cases with combined gastric and duodenal ulcers).

Ulcer of the *posterior wall* is more frequent than that of the anterior wall. If it penetrates into the pancreas, very severe pains are observed which are constant (formerly the pains were periodical) and can hardly be alleviated by morphine. Hyperacidity is almost always present, but it is necessary to use not only a test breakfast, but also a testmeal with ordinary food, because in cases of anacidity after breakfast, hyperacidity could be proven after a test meal. In my own material I had 94 per cent hyperacidity. In the cases with anacidity a gastric ulcer, penetrating into the pancreas was found besides the duodenal ulcer. This hyperacidity seems to be of great importance for the beginning of gastro-jejunal ulcer after gastro enterostomy and for the fact that a malignant degeneration is very rare in duodenal ulcer (I never observed in my material a malignant degeneration of a duodenal ulcer).

Diagnosis can easily be made in chronic ulcer, but, confusion with appendicitis, cholelithiasis, etc., is possible, also with cancer of the stomach, as hyperacidity, hunger pains, etc., in cases of cancer can be observed (two personal observations).

The *fresh* ulcer should be treated first by *internal* measures. I never operated upon a fresh ulcer, most of my patients were sick from ten to

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thirty years, none of them for less than six months.

In *chronic ulcers operation* is the best method of treatment. In *acute perforation*, resection can be performed if peritonitis is not yet present; otherwise perforation is sutured over, a posterior gastroenterostomy performed and the abdomen cleaned by sufficient irrigation with salt solution up to 40 litres.

*Acute profuse hemorrhage* I consider as an indication for *immediate operation* because the *early operation* started within the forty-eight hours after the beginning of severe symptoms forestalls the fatality by erosion of a large vessel (Art. pancreat. duodenal, etc.), prevents the perforation into the free abdominal cavity which can happen very quickly. I operated on a case ten hours after the beginning of the profuse hemorrhage; during the laparotomy the bleeding duodenal ulcer perforated and much blood entered the abdominal cavity; the patient could be saved by a typical resection of the duodenum and stomach. In another case the perforation happened forty-eight hours after the beginning of acute hemorrhage. This patient came too late (ten hours) for operation, therefore he could not be saved.

*The early operation gives the best results if resection is performed.* I have performed twenty resections in the stage of profuse hemorrhage without any deaths. The best method is the resection of the duodenum with ulcer, the pylorus and a large part of the stomach. In ulcers of the anterior wall the resection is always possible; in the ulcers of the posterior wall only if the penetrating ulcer does not reach as far as the papilla and if the common ducts can be isolated from the indurated base of the ulcer.

The resection of the duodenal ulcer has become a typical operation which I perform always under local anaesthesia with 1½% novocain solution. In exact conductive anaesthesia of the abdominal wall, median laparotomy is performed, then splanchnic anaesthesia from the front is done with 1½% novocain solution.

After separating the duodenum from the pancreas, the duodenum is blindly closed, then two-thirds of the stomach is removed, the upper third of the

stomach opening is closed and an anastomosis between the lower part of the stomach opening and jejunum is performed. In penetrating ulcer the bottom of the ulcer is left behind and the abdomen drained.

If the duodenal ulcer cannot be resected on account of its anatomical extension, I perform the resection of the stomach for exclusion of the duodenal ulcer, which method I published and recommended in 1918 in *Zentralblatt für Chirurgie*. In my method the stomach is cut through near the pylorus, the distal lumen closed, then at least two-thirds of the stomach are removed and the anastomosis between jejunum and the reduced opening of the stomach stump is performed typically.

*The immediate results with resection of the duodenum are good.* I have among my 272 resections of the duodenum and stomach, ten deaths—3.6% mortality—During the war the mortality was higher (54 resections with 5 deaths—9.2%); since 1919 I had among 218 resections only 5 deaths—2.3% mortality.

With my method of *stomach resection for exclusion of the duodenal ulcer*, I have a mortality of 1.6% (61 operations with one death). These good results are due to using local anaesthesia; under this I had never observed a death after operation due to so-called operative shock or cardiac paralysis, nor did I observe a death by pneumonia, although 52 patients were 60 to 76 years of age. For these old patients an exact after-treatment is very important. No morphine in order to avoid retention, deep breathing exercises and expectoration, besides every two hours 2 c. cm. of camphorated oil are injected subcutaneously.

*The permanent results are better with resection than with gastroenterostomy.* I have among my resections 94% good permanent results; the patient eats everything without pain, can work like normal people. Six per cent have some little trouble from big ventral hernias, etc., but these patients are also satisfied with their condition as the former symptoms have disappeared. I have until now no recurrence or gastro-jejunal ulcer. These good permanent results have to be attributed to the *extensive stomach resection* (two-



thirds of the stomach) and not to the removal of the pylorus. I had among my thirty-eight radical operations for gastro-jejunal ulcers six cases, in which the duodenum with the pylorus and the antrum one-third of the stomach had been removed by other surgeons and in spite of pyloric resection, a large gastro-jejunal ulcer was found which I had to resect.

*I never observed a gastro-jejunal ulcer among my 253 resections of the duodenum with the typical anastomosis.*

With my method of *stomach resection for exclusion* of duodenal ulcer which cannot be resected, the permanent results are as good as with duodenal resection if a large portion (at least two-thirds—three-fourths) of the stomach are removed and retrograde filling of the duodenum and excluded stomach stump is prevented. For this reason it is very important to use not the method *Reichel—Polya*, but the method *Hofmeister*, in which the stomach is cut through obliquely to the stomach axis, the upper part of the opening is closed, and the anastomosis performed with the lower part. In my material I had 94% absolutely good results, in 6% I observed recurrences in cases in which *only one-third* of the stomach was removed. All these cases were operated in 1919, when I had found that acidity was produced by the extensive resections which I believed to be detrimental to the patient. I am convinced that these gastro-jejunal ulcers could have been avoided if a greater part of the stomach had been removed.

With gastroenterostomy the permanent results are not so good (only 60-80%), therefore I refuse the proposal of Habern to make a simple gastroenterostomy in not radically operated ulcers.

The resection of the penetrating ulcer is very difficult, great experience is necessary in order to get good results. My method of stomach resection for exclusion is no more difficult than a gastroenterostomy. Therefore it would be a great benefit to perform this method instead of gastroenterostomy, as the permanent results are almost as good as with the resection of the duodenum and stomach.

## A REVIEW OF A SERIES OF CASES OF FIBROIDS OF THE UTERUS FROM THE RECORDS OF CHARITY HOSPITAL.\*

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Because the patients with fibroids of the uterus at Charity Hospital present problems not generally encountered elsewhere, and because this institution has such an abundance of material, it occurred to me that it might be a matter of information and interest to review a series of these cases. Moreover, the work is done by a large number of surgeons, and it was a matter of curiosity to me to find out just how much in accord they were in the indications for operation and the technique employed. The inadequacy of the records prevented my carrying out my original intention of reviewing the cases for a period of years, and I have, therefore, analyzed 150 cases admitted during the first months of 1921, when the records are rather more complete, which gives us a series large enough to base definite conclusions upon, and have studied them as to types of disease, methods of treatment, and immediate operative results.

The relative incidence of disease in the colored and white races has always been a matter of interest, and the variation in fibroids of the uterus is particularly noteworthy. Of the 150 cases analyzed for this paper, over 91% per cent were colored. A study of the incidence from 1913 through 1922 shows practically the same divergence, there being 2,353 colored patients admitted, against 263 whites, or over 90%, and Hoffman, in his statistical study based on 10,000 cases, gives about the same figures. Roughly, therefore, nine colored women have fibroids of the uterus for every white woman so affected.

The youngest colored patient was 20 and the oldest 76, while over 51% were between 30 and 40, the average age being just over 36 years. The youngest white patient was 21, the oldest 57, and the majority, 38.5%, were between 30 and 40, the average age being 38 and a half years.

Special attention was paid to the early menstrual history, with the idea of

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determining whether the presence of fibroids coincided with previous menstrual irregularities. Previous dysmenorrhea has long been listed as one of the significant symptoms in fibroids, but our records at Charity Hospital do not bear this out. Only 39.4% of the patients gave a history of previous dysmenorrhea, which is considerably under the figures of such men as Norris and Blair Bell, who give a general incidence of from 60 to 75%. Nearly 14% of the colored patients complained of menorrhagia always, and 3% complained of scanty menstruation always, with long periods of amenorrhea. Nine colored patients, nearly 7%, had passed the menopause from 2 to 20 years, while two white patients had passed it 14 and 19 years ago. None of these patients gave a history of bleeding since the cessation of menses, but sought relief for pain, discomfort, or pressure symptoms.

The marital history is interesting in view of our generally accepted belief that patients with fibroids show a high percentage of sterility. Ninety-five per cent of the colored patients had had marital relations, and 85% of the white. But among the married colored women 44% were sterile, and among the white 18%, a total of 41%, which is considerably higher than the general figures for sterility recorded by Rongy, Norris and Arthur Giles, whose highest estimates do not run over 20%. Moreover, only 81% of the various colored women had had full term pregnancies, and 89% of the white, while the number of children borne is noticeably lower than the average. Nearly half of the colored women had but one child each, and only seven had more than three, while practically the same figures hold for the white patients. Among the colored women more than three-quarters of the pregnancies had occurred more than 10 years before, and over half more than 15 years before, the average being nearly 14 years, while the average for white patients was 23 years. This is of interest as showing how a patient, fertile in early life, becomes sterile over a period of years with the insidious development of the uterine growth.

The duration of the tumor naturally could not be arrived at accurately. The known duration varied from one month

to 22 years, and was over a year in 65% of the cases aware of the growth. Eighteen per cent of the patients had been told of the existence of the tumor just prior to admission, and 10% entered the hospital entirely unaware of its existence. These figures are almost incredible in view of the fact that in the majority of the colored patients the tumor was distinctly visible on casual inspection of the abdomen, and in nearly every case was easily mapped out on palpation. To illustrate, in 19 cases the growth extended to the umbilicus, and in 26 others it extended from two to six inches above; in 14 cases it was the size of a six months pregnancy, and in seven others the size of an eight to nine months pregnancy. The average colored patient, as is well known, avoids hospital treatment until driven to it by pain or actual incapacity, and in spite of the extreme discomfort which mere size alone must have caused, these women carried these enormous growths over long periods of time until grave symptoms appeared or until, as in many instances, an acute attack of pelvic disease forced them to apply for treatment. In none of the white patients was the growth reported to be visible on inspection or on abdominal palpation.

The symptoms complained of may be divided roughly into four classes, pain, menstrual irregularities, bladder symptoms, and general symptoms, but it should be borne in mind that the majority of these patients had adnexal disease also, and differentiation of the symptoms was almost impossible. Pain, varying all the way from intolerable discomfort to a mere sense of weight, was complained of by practically every patient, but acute pain in every case was associated with adnexal disease. Sixteen per cent of the patients complained of dysmenorrhea since the known onset of the growth, while 50% complained of menorrhagia or metrorrhagia, and 7% complained of amenorrhea followed by metrorrhagia. Fifteen per cent also stated that the mass increased in size at the time of their periods. In all, 55% complained of some variation of the flow. Forty per cent complained of bladder symptoms, chiefly frequency with pain, while two patients were admitted with acute suppression of urine



due to pressure. The group who complained of temperature, chills and digestive symptoms were found in every instance to have pelvic peritonitis, usually associated with salpingitis.

The prevalence of venereal disease in such an institution as Charity is taken for granted, and it is not surprising to find that nearly 17% of the patients, all of them colored, had strongly positive Wassermanns. Thirteen per cent, the majority colored, had positive smears, and three colored patients had both syphilis and gonorrhoea. In no case in this series was the hemoglobin below 40%, and in only 11 cases was it below the safe normal of 70%.

Of the 150 cases 23, 15.3%, were not operated for various reasons. Six refused operation, and in the remaining 17 operation was not advised by the staff because of other conditions present, including active syphilitic lesions, and cardiac, pulmonary and kidney disease.

Supravaginal amputation was done in 66% of the cases, complete hysterectomy in 21%, and myomectomy in 8%, while the remaining operations included vaginal removal, colpotomy, exploration, and curettage followed by radium. It will be noted at once how small a number could be subjected either to myomectomy or to radiation, both because of the size of the tumor and because of adnexal complications. To consider the latter phase first, in 64 of the cases, 53% of the laparotomies, it was necessary to remove both tubes and ovaries in toto, and in 8% unilateral removal was necessary. Bilateral salpingectomy was done in 13%, and unilateral oophorectomy in 15%. To sum up, over half of the patients had conditions necessitating the entire removal of the uterus and the adnexa, while nearly all, 93%, had some form of tubal or ovarian disease. The tubes were involved in nearly 75% of the cases, the conditions including in the order named chronic salpingitis, pyosalpinx and hydrosalpinx, while the ovaries were involved in 80%, the conditions including cystic oophoritis, and dermoid, hemorrhagic and intraligamentary cysts. Additional operations included appendectomy in 57% of the series, cholecystectomy twice, each time in a colored patient with gallstones, umbili-

cal herniotomy, perineorrhaphy, and suspension. Drainage was done in 5% of the cases, usually for persistent oozing, but in one case for a grave appendiceal abscess, which almost overshadowed the pelvic condition. These 127 cases were done by 27 surgeons, of whom one did 24, without a fatality, and 11 did one each.

The location of the growth is of interest because of the variations in technique demanded. In 42 cases it was found in the lower uterine segment, and in 18 of these cases it was intraligamentary. In nine cases it was found in the fundus, involving the adnexa, and in 11 in the posterior culdesac, while in two cases it encroached on the vagina. In one case it was adherent to the stomach, in one to the liver and gallbladder, and in one it was parasitic and attached to the omentum. The cervix was markedly displaced in 22 cases, and the bladder in 12, and the pelvis was reported completely blocked in 13 cases. One patient, a white woman, had but one tumor, but in every other instance the growth was multiple, varying from 2 to 17, with an average of possibly nine. All types were represented, practically every case showing more than one kind. Ninety-eight per cent showed intramural growths, and 15% were submucous; 26% were pedunculated, 36% calcareous, and one had a twisted pedicle. Seven were infected and six were soft, four sloughing, and two necrotic. Sixteen weighed between 5 and 10 pounds, four between 15 and 20 pounds, one weighed 25 pounds, and two weighed 30 pounds.

Associated carcinoma of the cervix was found in three cases, and fibrosarcoma in one. Of the carcinoma cases, one was discharged without treatment, the condition being inoperable, and radium out of the question because of a clearcut history of acute salpingitis. The second was treated with radium. The third was discovered at operation, following supravaginal amputation; excision of the cervix and a portion of the vagina was done at once. The case of fibrosarcoma showed in addition to the large, myomatous growth a retroperitoneal tumor arising from the fundus and involving all the abdominal viscera. The condition was inoperable, and immediate closure was done.

An attempt was made to analyze the immediate operative results in view of the long disputed question as to whether supravaginal amputation or complete hysterectomy gives the smoother convalescence. In the 85 supravaginal amputations there was a 25% morbidity, including a staphylococcal infection of the cervical stump, thrombo-phlebitis with associated pneumonia, broncho-pneumonia, bronchitis and pleurisy. Sixteen cases required catheterization, of whom three developed cystitis; one patient had a vomiting spell on the eighth day and tore the wound open, so that re-suturing was necessary; one case had a vaginal hemorrhage on the fifth day, necessitating packing and suturing; and one case developed a rectovaginal fistula.

In the 27 complete hysterectomies there was a 27% morbidity during convalescence, including thrombo-phlebitis, broncho-pneumonia, cystitis, and two hemorrhages; one of these patients had to be packed three times, and finally transfused.

The hospital stay days were practically the same for both operations. Comment on this point, however, is not exactly fair, because of the conditions in such a hospital as Charity, where the colored patients are tempted to malinger because they are more comfortable than they would be at home; where they must wait for absolute recovery before attempting train trips that are frequently long and tedious; and in some instances where they must even wait for money for the expenses of the trip.

Eighty-three per cent of the supravaginal operations, and 85% of the complete hysterectomies did not rise above 101 during the first three days. After the third day, 63% of the supravaginal cases ran temperature over 99, and normal was reached as an average on the eleventh day. In the complete operations, the same percentage ran temperature over 99 after the third day, and normal was reached as an average on the thirteenth day. This temperature may be explained in several ways—by the poor general condition of so many of the patients, due to delay in treatment and to an unhygienic mode of life, as well as by the fact that in all services inflammatory conditions are not

allowed to cool off thoroughly before operation.

Five cases in this series died, a mortality of 4.1%; all were supravaginal operations, giving a mortality of 5.9% for that particular series. To analyze the deaths, the first occurred in the case of fibro-sarcoma already described, the patient dying in three days from shock. The second case died in 24 hours, following the removal of a sloughing myoma; the third died of broncho-pneumonia in five days; the fourth died of peritonitis; the fifth died in 48 hours, following a two hour operation, and the loss of a quantity of blood by rectum just before death.

In conclusion, I would point out these facts:

1. Fibroids of the uterus at Charity Hospital form an unusually interesting group of cases, not only because of the frequency of this condition among colored women, but also because of the size and number of the growths, as well as the associated adnexal disease.

2. Either we have less malignancy complicating fibroids than is reported from other clinics, which is not borne out by a study of the cancer statistics of the hospital, or we need more careful study of our specimens. I mention this, not with the idea of reflecting on the pathological department, but to provoke a discussion of this point.

3. In the hands of the experienced surgeon, the supravaginal and the complete hysterectomy are equally safe; in the hands of the occasional operator the supravaginal operation is the safer, because there is less risk of injury to the bladder and ureters.

4. While our mortality is steadily declining, having been reduced from 11.2% in 1913 to 5.5% in 1922, it is still higher than it should be, and we cannot attribute it altogether to the condition of our patients or the pathology they present. We need a clearer conception of the principles of pelvic surgery and a more carefully standardized technique on the part of the occasional operator if the mortality is to be reduced to the 2% reported from representative English and American clinics.

#### DISCUSSION.

(Opened by Dr. E. L. King). There are two points which I would like to mention; first, the question of the combination of gall



bladder disease with this condition. I would call attention to the fact that colored people do have gall stones. We do not need to be reminded of that here in New Orleans, but in other parts of the world the impression seems to prevail that colored people are immune to this trouble. The records of the Charity Hospital show that this is not so. Secondly, if the cervix is not in prime condition, and its removal can be easily accomplished, I feel that complete hysterectomy is preferable. We see patients in the clinic later that present better results than others upon whom supravaginal hysterectomy had been performed. They do not complain of leukorrhœa as do many who still carry the cervix with them. If the cervix is lacerated or markedly cystic I believe, from the evidence we see in the clinic, that it is better to take it out.

(Dr. E. H. Walet) : I want to ask Dr. Miller his experience with sloughing fibroids. I have not encountered them very often myself, but recently a woman of about 40 came into my service at the Charity Hospital presenting symptoms of a fibroid tumor about the size of a small cocoon. She had been running a temperature for some time, showed pronounced secondary anaemia and was having a very marked purulent vaginal discharge. Under rest and general treatment she improved. The uterus was explored without anesthetic and she was relieved of a sloughing mass in process of expulsion. Since then her progress has been very noticeable. Her red count, which was 1,700,000 is now (three weeks after first count) 2,700,000.

(Dr. J. A. Danna) : As Dr. Miller's paper is almost wholly statistical and the question of percentage of fibroids in the colored population comes up, I think we ought to take into consideration the fact that the number of colored patients treated and operated in Charity Hospital represents nearly all of the colored people operated on in New Orleans and vicinity. For there is very little surgery done on colored women in this region outside of Charity Hospital, and the colored cases operated are more serious than the white, only the sicker ones being admitted owing to lack of room in the colored wards.

In order to make a fair comparison, therefore, the number of white cases operated on in the other hospitals in this region should be added to the white statistics. This would mean at least three times as many whites in the city alone.

(Dr. S. Chaille Jamison) : I see a gentleman among us who probably has had the widest experience in the diagnosis and treatment of fibroids of any man in the United States. I do not think this paper would be complete unless Dr. E. S. Lewis says a few words about it.

(Dr. E. S. Lewis) : As Dr. Danna stated the paper of Dr. Miller deals chiefly with statistics regarding the preponderance of fibroids in the colored race. This was my experience during my active life. The weight of the tumors mentioned in his paper recalls to my mind their enormous size in the early days of fibroid operations, the average weight being between 45 to 60 pounds. As to

whether a complete operation is preferable to a suprapubic amputation, if the cervix is small and healthy I prefer to preserve it for the better support resulting to the bladder. If diseased the complete operation is advisable thereby avoiding the possibility of cancer or of annoying discharges.

(Dr. C. Jeff Miller, closing) : Several of the points brought out in the discussion were eliminated in my paper because of the short time allotted. In regard to the question of whether or not the cervix should be removed, I would say that it depends largely on the history the patient gives. If the woman is nulliparous and the cervix is normal, with no suspicion of pathology, I should be rather inclined to leave it in place. But in the case of women who have borne children, who have lacerations of the cervix and pathology of the cervical mucosa, I prefer to do the complete operation. Many cases return complaining of leukorrhœa and a bloody discharge when the cervix has not been removed, and for that reason I have been doing the complete operation very frequently. I think my report shows conclusively that it is quite as safe and the convalescence is quite as smooth as in the supravaginal amputation. There does not appear to be any more contraction or shortening of the vagina after the complete operation if the cervix is removed properly and a large portion of the vagina is not removed with it. We have sufficient material at hand now to judge the merits of complete hysterectomy, and I think we are coming to do it more and more.

### AN UNUSUAL FOREIGN BODY FOUND IN URINARY BLADDER.\*

T. H. WATKINS, M. D., AND O. W. MOSS, M. D.  
LAKE CHARLES, LA.

This case was referred to us by a colleague practicing in Cameron Parish. His letter stated that a piece of marsh grass had been lost in the urethra and that he was referring case to us for removal.

Mr. K., a Creole, speaking only French, whose general appearance did not measure up to the normal mentally, stated that four negroes had caught him, thrown him down and inserted the marsh grass into his penis, breaking it off so that he could not remove it. He stated that they were enemies of his and did it for meanness. On questioning him we ascertained that it had been in the penis for at least three weeks and because of the pain and bleeding he wanted it removed.

Physical Examination—White male, age 19, no general adenopathy. Head, teeth in good condition, no enlarged tonsils seen. Eyes—pupils equal and react to light and accommodation. Chest—full and equal expansion of lungs, no

rales heard. Heart—not enlarged and free from murmurs. Pulse—regular, full, rate 72, blood pressure systolic 120 diastolic 72. Abdomen—liver not enlarged, spleen not palpable, tenderness and rigidity over bladder region.

Genitals—Urethra was enlarged, easily admitting a No. 27 F sound which slid into the bladder by its own weight. A stone was easily detected by movement of this sound conveying the usual grating sensation to the fingers.

Extremities—Showed no abnormalities.

#### Urinalysis:

Reaction—Alkaline. Specific gravity, 1.016. Albumen—Trace. Sugar—None. Pus cells—Many. Red blood cells—Many. Bacteria—Many. Casts—None. Epithelium—Present. Triple Phosphate Crystals—Present.

#### Blood Count:

Total White, 10,450. Differential. Small Lymphocytes, 17. Large Lymphocytes, 6. Polymorpho—Leucocytes, 75. Eosinophilis, 2. Wassermann, negative.

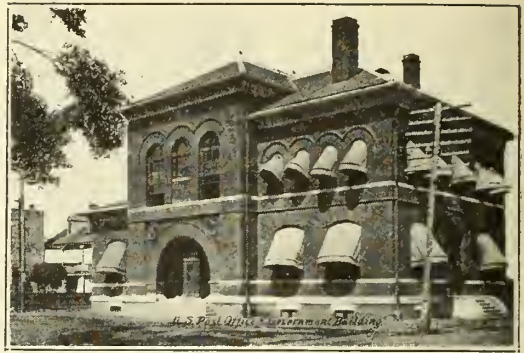
October 5, 1923, under gas-ether anesthesia a suprapubic opening was made into the bladder which revealed a large piece of marsh grass, 1-8 inch in diameter and about 12 inches long, coiled in the bladder, this was calcified and covered with lime salts. It was removed with some difficulty as both ends were embedded into the bladder wall. The bladder was then irrigated with warm sterile saline and a smaller rubber catheter inserted in the suprapubic opening for drainage and wound closed in usual manner. He had an uneventful recovery and was discharged from hospital on October 15, 1923.

#### COMMENT.

This boy who unquestionably is subnormal mentally evidently was in the habit of producing sexual excitement by introducing objects into the urethra thus tickling the *vera montana*. In his excitement he evidently introduced the marsh grass too far thus entering the bladder where the sphincter gripped it and in his attempt at removal broke it off.

### OPELOUSAS AND THE ATTA- KAPAS COUNTRY.

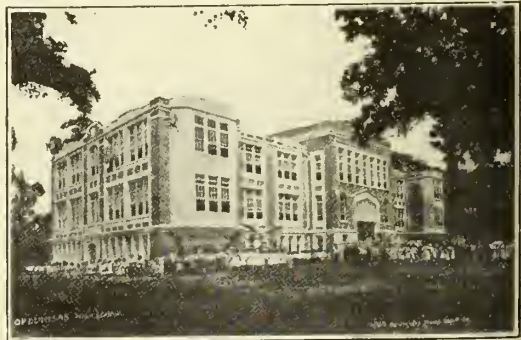
The St. Landry Parish Medical Society, in inviting the State Medical Society to meet in Opelousas, was in-



U. S. Post Office and Government Bldg.

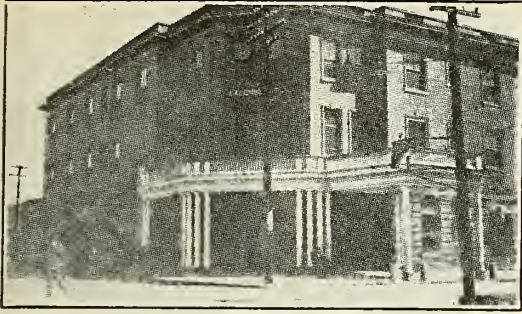
fluenced by two motives: first, to stimulate medical organization, to arouse the medical fraternity from the lethargy existing in medical circles throughout southwestern Louisiana, and to teach them the value and necessity of medical organization. Second: to give the fraternity in north and central Louisiana an opportunity of visiting this section, and by personal observation note the unrivaled resources of soil and climate of the Attakapas country, of which Opelousas, the third oldest town in the State, is the center.

The Attakapas from the northern boundary of old St. Landry (i. e., St. Landry before its division) in Lat. 31 to the Gulf Coast in Lat. 29½, measures nearly one hundred miles; from the east line of Iberia to Lake Arthur (an aneurism of the Mermentau river) on the west line of Vermilion Parish, measures eighty-five miles, the sea marsh of this region averages miles in width; within this area lie the parishes of St. Landry, St. Martin, St. Mary, Iberia, Lafayette, Vermilion, Acadia and Evangeline. Some writers include old Calcasieu and the parishes



Opelousas High School

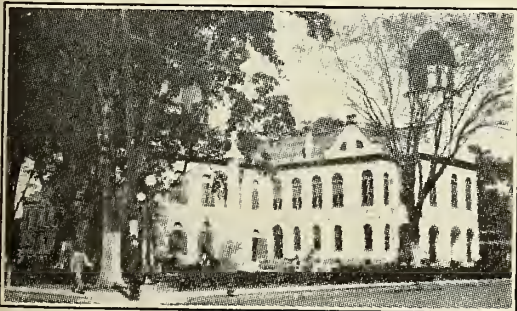




Lacombe Hotel

recently carved from it. Excluding the latter, the eight parishes contain over three and a quarter million acres of some of the most fertile lands on earth, adapted to all the staple crops, cotton, corn, rice and sugar cane, and all the fruits and vegetables of the temperate and sub-tropical zones especially the orange and other citrus fruits, together with the fig of every variety. Seventy-five percent of the swamp area and much of the sea marsh is reclaimable, and is suited to rice, cane and sea island cotton on the shell ridges of the marsh. A heavy belt of cypress, "the wood eternal," divides the marsh from the tillable lands. These lands grow higher from the Gulf line north; in the Cotegele hills of Lafayette, and on the banks of the Vermilion river the elevation is forty feet above sea level; in St. Landry from forty to seventy-five feet above the Gulf. The highest elevations are found on Belle Isle, Cote Blanche, Grand Cote, and Petit Anse, where the elevation reaches from 160 to 185 feet above sea level. Professor Hilgard in his geological report on this section says:

"Few sections of the United States indeed can offer such inducements to settlers, as the Prairie region between



Court House

the Mississippi bottoms, the Nez Pique and the Mermentau rivers; healthier by far than the prairies of the northwest fanned by the sea breezes, well watered, etc., while the exuberantly fertile soil produce both sugar cane and cotton in profusion, continuing to do so in many cases after seventy years' exhaustive culture. Well may the Teche country be styled by its inhabitants the "Eden of Louisiana." The editor of the *Chicago Tribune*, years ago, after visiting this section, wrote:

"If by some supreme effort of nature, southwestern Louisiana, with its soil, climate, and production, could be taken up and transported north, to the latitude of Illinois and Indiana, and be there set down in the pathway of Eastern and Western travel, it would create a commotion that would throw the discovery of gold in Colifornia in the shade at the time of the greatest excitement. The people would rush to it in countless thousands, every man would be intent in securing a few acres of these wonderfully productive and profitable sugar places. These Teche lands if in Illinois, would bring from \$300 to \$500 per acre (See W. H. Perrins Works, Southwestern, Louisiana), and yet on the little Teche in St. Landry, and all the way down the lower Teche, along other streams and in the prairie lands, land can still be bought for from \$20 to \$100 per acre.

The mineral resources of this section are great, the largest deposit of almost pure chloride of sodium and sulphur in the world are here. And as to petroleum, it is believed that a vast underground lake of oil at unknown depth exists, and that heretofore only little pools have been struck. All of the oil discovered has been of salt dome variety. Going from West to East from Mexico, the oil changes from an asphaltum to a parafin base. Some of the oil from Arse LaButte, in Lafayette, has positively an aromatic terebinthic odor, and oil from Belle Isle is whiter than kerosene. It is strange that manufacturing chemists have not had their scouts investigating here, in their search for oil of suitable viscosity. With sulphur and salt, the bases of organic chemistry, there ought to be a line of chemical factories in all these Attakapas towns, west to Sabine. The waste

of raw material in the Attakapas, not to speak of its neglected resources, would enrich and build up prosperous principalities in Europe. The magnificent hardwoods, burned in open fireplaces, the sawmill waste, the destructive distillation of which into alcohol, would supplant gasoline as in Sweden, 100 square miles more favored than any the pine stumps left to rot instead of conversion into turpentine, these afford possibilities that ought to pay the public debt. The lack of scientific and intensive methods of cultivation that could make sixteen stalks grow where one grew before, the indifference to seed selection, rotation, drainage, and then when in despite of all, bounteous harvests are garnered, lack of co-operation in marketing depletes the farmers's exchequer that ought to be full to overflowing, in order to meet the taxation that amounts to \$1.00 per acre. The failure to exploit the fig, orange, and pecan possibilities would amaze a foreigner, or even one of our own people from a state like California, that has gone the limit on exploitation. An acre of orange land in California sells for more than a farm in Louisiana, and yet the finest sunkist citrus products of California is an insipid joke along side a Louisiana sweet grown in the Attakapas. But of all the neglected possibilities, the greatest of all is the climate. The towns of the Attakapas, properly sewerred and paved, ought to furnish a chain of health resorts for Northern visitors in winter, and summer resort for the people of this State who have neither time nor money to go to some mountain resort, and even then unless they reach an altitude not less than



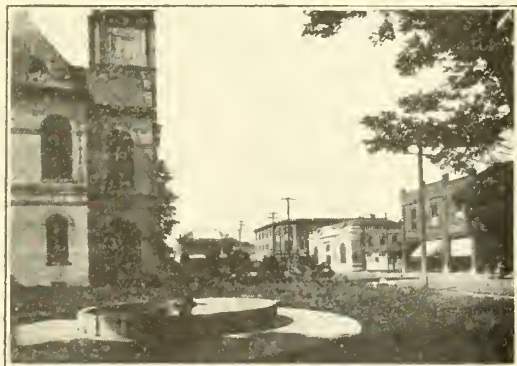
Landry Street

Sewanee or Asheville they will be cooler at home. It is hard to make our friends in the north and central Louisiana believe that this section is warmer in winter and cooler in summer than the rest of the State—there is a reason. An observant citizen (W. H. Cline, of Lake Charles), asked "Why is this particular other section of equal extent in the same latitude?" and he answers his own question:

"1st. The Gulf of Mexico reaches its northernmost latitude, west of the Mississippi river on the coast of southwestern Louisiana."

"2nd. The inner Gulf stream, a stream with a current of two or three miles an hour flowing parallel with the coast, makes its nearest approach to land at the mouth of Calcasieu Pass, this brings the warm water of the south to our shores, tempering the atmosphere as it comes in contact with it."

"3rd. Large bodies of water, in the form of lakes, are distributed along the coast, from five to forty miles inland. These bodies of water, connected with the Gulf as they are, tend to modify the atmosphere, cooling it in summer and warming it in winter. As the sun heats and rarifies the air on land, the air that has become cooled by contact with the water passes inland to fill the vacuum, thus producing a constant succession of delightful breezes, which reach inland about one hundred miles. Then north of this region, which is mostly prairie, stretches a vast forest of stately pine, magnificent oak, beautiful pecan and tall hickory, with many shrubs and smaller trees in the intermediate spaces. This forest reaches up through this State and Arkansas to the



Court Street



Missouri line, where it has in its front as a line of breastwork against the northern blizzards, the Ozark mountains. Sheltered behind the great natural barrier, composed of the forests and mountains, you can understand how it is that we enjoy a better climate than our neighbors, who are from behind the shelter. When the blizzard from Minnesota and Dakota starts southward, it meets an obstruction in the Ozark mountains, is still further obstructed, and modified by the forest, so that by the time it reaches southwest Louisiana, it is but a cool wave, producing rainfall, but rarely frost. The main body of the blizzard being divided, one wing sweeps down through Indian Territory and Texas, and is called a norther, much dreaded even in southern Texas. The other wing tears down the Mississippi Valley as through a tunnel, producing a prodigious rainfall, reaching seventy-five inches per annum in New Orleans, while only fifty in Lake Charles (Opelousas, Lafayette, and other towns within the blessed area).

The temperature of this region is more even than it is east or west of us. During the blizzard of January, 1887, the lowest temperature reached here was 25° above zero. At the same time in Houston, Texas, it was 18° above zero, and 100 miles west of Houston 11° above zero. East of us, 100 miles and upward, the thermometer marked 23, 19 and 18 degrees above zero. The difference in temperatures from one month to another is rarely more than 5° to 8°, and the difference from noon to midnight not more than 5° to 10°. The temperature in the hottest month rarely rises over 90° F. The prevailing winds in the spring and summer, in fact nearly all the year around, are from the south. The hottest months are June and September. The temperature not very high in June, but the wind is usually from the north and is uncomfortable. Great relief is experienced when the wind changes to the south. The first two-thirds of September is quite uncomfortable for the same reason, and for the further reason that the system, as all over the south, is below par after a long summer. It is then when the cotton pickers go out in the chill morning dew that the Aestevo autumnal types prevail in malarial spots. The

Equinoxial winds soon freshen up things and usher in a delightful October, the beauties of Indian summer lasting until Christmas and New Year. All summer is pleasant in the shade, the Gulf breezes in the evening laden with salt tang of the sea and the odor of the Antilles and the perfume of the orange groves, the magnolia *fiscaeta*, and *grandiflora*, the roses and other flowers of the Attakapas are as delightful as those from "Araby the blest," and have earned the title of the "Eden of Louisiana."

There are but few days in summer at night when a light cover is uncomfortable after 10 o'clock and a necessity after midnight, i. e., if the sleeping chamber has a southern exposure. Every room in the house would be comfortable if the people would only adopt the Spanish-American style of architecture, with its central patio, every room opening to the outside or to the central patio, or still better to both. The prevailing type of building, whether the old plantation, the colonial, or the modern bungalow with low pitched roof, or the Queen Ann front and Mary Ann back, all maximize the heat and discomfort with their dead air spaces and thin walls, and minimize the comfort which the natural salubrity of the climate affords. For the reasons already given, the Attakapas has a practical immunity from tropical tornadoes and cyclones which its proximity to the Gulf might lead one to infer, would be an annual occurrence. There is but one storm cellar in all this area, and the wealthy citizen who built it has never had occasion to use it. Our sister States east and west and even sections of our own State are not so blessed.

Opelousas, third oldest town in Louisiana, incorporated as a town February 14th, 1821, incorporated as a city June 20th, 1906, has paved sidewalks, so constructed as to give any part of the city a good walk to any other part of the city; has wood block and gravel streets on every principal street. The main street leading north to south is the Pershing Highway, Landry street, leading east to west is the Evangeline Highway. Present population 5,918, waterworks system installed 1898, electric light system installed 1898, sewerage system installed in 1912, fire equipment and fire alarm system installed

1914. Fire equipment motor truck used in 1917. Banks: Opelousas St. Landry State and Trust Company, Planter's Bank and Trust Company, Parish Bank and Trust Company. Combined capital: Surplus and undivided profits, \$471,822.17; total deposits, \$4,552,053.60; total resources, \$5,056,063.67. Courts: Sixteenth Judicial District, Federal Court, City Court. Manufacturing plants: Ice Factory, Compress Moss Factory, Broom Factory, Sawmills, Mattress Factory, Ice Cream Factory, Pop Factory, Oil Mill, Syrup Factory, Wood and Coal Yards. Municipality owns: electric light plant, fire department, sewer system, fire alarm system, paved sidewalks, wood block and gravel streets. Anticipated 1924: City Hall and Auditorium, a children's playground, a tourist park, a white way. Schools: Opelousas High School, Opelousas Elementary School, Academy Institute. Also suitable schools for negroes. Civic organizations: Civic League of Opelousas, Woman's Club, Evangeline Highway Association (now called the Opelousas Chamber of Commerce), Rotary Club. Fraternal organizations: Masons, Elks, Knights of Columbus, Woodmen of the World, Catholic Daughters of America, Eastern Star, Columbian Mutual Association. Mercantile businesses: 160 firms, including five drug stores, two sanitariums, two printing offices, one newspaper, one photo studio, two hotels, four restaurants, many rooming houses. Opelousas is the county seat of St. Landry parish, has a population of 5,918, and a trading population of over 100,000. It is important that those who intend to come to the meeting in April, should advise the Committee on Arrangement to make room reservations, stating whether accompanied by ladies or not. If this is done, every visitor will be assured of comfortable and clean sleeping quarters. It is the intention of the com-

mittee to have a room census taken of all rooms in easy walking distance of the meeting place in the center of town. These rooms must be listed and rented at a reasonable rate, and charged up to the committee with whom the visitors will settle, so that the visitors will be absolutely under no social obligations whatever to the householder. This is necessary because private homes want to entertain free of cash. The committee realizes that the medicos have no time to spare for social entertainment, save that provided by the committee. Private homes must charge for rooms, the only exceptions being that they entertain relatives, family and consulting physicians. This will obviate the objection that doctors have to lodging anywhere save in hotels. They will secure more privacy and comfort than in over-crowded hotels. The committee would like to see a larger attendance of ladies than is usual at these conventions. Everything will be so arranged that if there is any discomfort it will be entirely the fault of the visitor, and not that of the committee. The convention will meet in the Court House, which has a seating capacity of 600. Judge Henry Pavy has kindly cancelled all cases on the docket for the dates of the convention. There is ample space there for any scientific exhibits. The commercial exhibits will be featured to the extent of securing a special building near the House of Delegates. If clinical material presents, there are sanitariums with operating facilities. The entertainments will consist of the usual complimentary lunches, banquet, auto-rides, and music. Opelousas has never fallen down on entertaining the stranger within her gates, and she is not going to do so now. No delegate need hesitate about coming for fear of not being housed. All that is asked is that you notify the committee in time. The local Committee on Arrangements has as its chairman Dr. Fred J. Mayer.



# New Orleans Medical and Surgical Journal

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## FREE CLINICS.

Recently there appeared in the *Medical Pocket Quarterly*, issued by the firm of Reed and Carnick, an article which we consider presents some pertinent facts in so lucid a manner as to deserve reprinting in our columns. The fact that hospital abuse has been a subject widely discussed in our community and because the matter is claiming the attention of the profession elsewhere makes an exposition such as this worthy of careful perusal. The article follows:

"The free clinic idea is fundamentally sound. But, like many other good ideas, it can be worked to death; and when doctors spend all day in a free clinic and are in their offices only in the evening—they should not kick because business is rotten."

"Clinic work is like love—it is only worth while when undertaken by a novice. The moment a physician becomes a professional "clinician," his value to himself and to his regular patients is diminished."

"In all of the large cities there are many thousands of doctors doing clinic or free work—some for the city, some for churches, some for the Veteran's Bureau. Go to their offices or homes and you will be told that they will return at seven and may be consulted between then and 10 o'clock. Fine way to build a large practice."

"As an economic problem of the individual doctor, the free clinic is a drag upon his time, an acid that etches away

the valuable years of his life without appreciable return, a cord that ties his hands and deprives him of the opportunity to build a large practice."

"The medical profession is becoming insane on the subject of charity treatment. Certain leaders with a handsome income piling in, start free clinics, and all the younger fry, who ought to be in their offices attending to their own patients, are attracted like the moth to the flame—they spend the day at the clinic administering to so-called charity patients."

"Why is it that the medical profession is the only one to give its services—the only thing it has to sell—free to the public? Do young lawyers band together and offer to try suits or damage cases for poor people? Are there legal clinics where a man can take a sick lawsuit and have it brought to life? Then why should physicians be so eternally anxious to part with their time?"

"The doctors of the United States give away \$1,000,000 worth of time every day in the year. And easily half of this time goes to grafters who congregate around the clinic—who are attracted by anything that has the word "Free" in it, like steel filings to a magnet. No attempt is made, at most of these clinics, to separate the sheep from the goat—if you have a shawl around your head or a seam has parted in your coat, and you look "poor," you get the services of a Class A physician in almost any city in the country."

"Free service to those that de-

serve it—yes. And administered by those doctors that can afford it—yes. But when young doctors who need every dollar they can rake and scrape in, give up eight out of ten of their daily hours, waiting upon and serving people who probably have more money in currency in an old sock at home than the doctor who is attending them can earn in a year—then we see what fools we doctors be. Laughing up their sleeve, these “charity” patients go home and write back to the folks in the country about how soft these Americans are—no sense of the dollar at all—pay big wages—give you medical treatment free. “Come on over, and in a few years you can go back with a sockfull of money.”

“Let’s quit this silly frittering away our time. Let us remain humanitarian—rendering free medical service to those that assuredly are in need of it and who cannot pay—but let us look up their records and be certain first that they cannot pay.”

“This free clinic business is a drag upon the whole medical profession—and especially hard on a young man who has just hung out his shingle. People who know that they can get the services of specialists, X-ray examinations, and everything that goes with it—for nothing—are not going to sit in the anteroom of some young struggling doctor and pay him \$2.00 for his services. Pay clinics are a step in the right direction. But there are many more steps to take. Let’s take them.”

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#### POST-GRADUATE STUDY.

This is a very frequent topic for medical writing—both editorial and otherwise—and for good reasons. If one will stop to think of it, there is no profession or trade in which it is so necessary to “keep up” as it is with ours. Formerly, the only way in which to get even a short refreshing or en-

lightening course was at one of the post-graduate medical schools; for the past decade or so, however, if one has only a few days to spare at a time, he usually arranges to “take in” one of the big medical centers. It has been frequently observed, of late, that these are getting too numerous; that what we need is quality and not quantity, in this regard. Probably with this idea as a basis principle, two splendid organizations have been perfected in the last few years; we refer to the “Clinical Congresses,” which offer those attending them, not only the latest thoughts in surgery and medicine and allied branches, but also an excellent week’s postgraduate course in clinical work.

The Congress on Surgery, held last fall in Chicago, and the one on Medicine, which recently met in St. Louis, afforded those attending great opportunities of observing what is “going on.” It is true that the complaint is heard about the older organization, which applies to most societies national in scope, and that is that it is getting most too large to be of the value that is intended; this objection, we feel sure, will be overcome in some manner—by splitting up, if necessary, so that the meetings may be more easily handled. For anyone desiring short postgraduate courses, we commend these most highly, not, however, to the disparagement of the postgraduate schools, which have more to offer than ever to those having a sufficient length of time to spare.

Doctors in these days of progressiveness in medicine and surgery “brush up” time and money is well spent, in keeping up with the procession and in getting a broader point of view. The following limerick, written many years ago, does not apply to-day, viz:

“There was an industrious M. D.,  
 Who traveled to take a P. G.;  
 Now, he returned busted,  
 Found instruments rusted,  
 And patients gave him the G. B.”



## NEWS AND COMMENT

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The discovery and development of Insulin by Dr. F. G. Banting, Mr. C. H. Best and other co-operating investigators has brought relief to a multitude of sufferers from diabetes throughout the world. At a low price this boon has been placed within reach of all. But it is well known that only a beginning has been made in alleviation even of this one malady. Notwithstanding the magnificent advances that have been effected in arresting or averting many of the most grievous attacks of disease on human life, mankind is beset by enemies. Their strategy must be discovered and circumvented. This can be done only by patient research conducted in the main by skilled investigators who devote their lives to scientific enquiry. For these investigators the public at large must provide the means of support, for they it is who benefit immensely thereby. Such work has been going on quietly all over the world. Laboratories in the universities have groups of investigators working in cooperation under the direction of competent scientists. But only now and then does a result such as Dr. Banting achieved strike the imagination of the world. It is, therefore, but appropriate that advantage should be taken of it to appeal to the grateful public for support in making possible the continuance and prosecution of this work and of other investigations in medical science. To effect this and to signalize the discovery and the development of Insulin, the Banting Research Foundation has been created.

The purposes of this Foundation have been defined to be: (a) To provide, in the first instance, further funds for the support of the Banting and Best Chair of Medical Research at the University of Toronto.

(b) To establish a fund for the adequate financial support of such scientific workers as may have proposed definite problems of medical research, and for whom funds are not otherwise available. Such assistance may be given to persons working in the University of Toronto or elsewhere.

All financial arrangements in con-

nection with the collection and reception of the principal and subsequent expenditure of the income of the fund have been vested in a Board of Trustees, the members of which are appointed for a term of three years subject to reappointment at the end of their respective terms of office.

The Trustees propose to make an appeal to the public for funds in the immediate future. In the meantime they desire to bring these facts to our attention and they hope that we will be good enough to communicate them to our patients and friends who might be disposed to aid so worthy a cause.

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Monthly bulletin of Shreveport Medical Society.

The March Meeting of the Shreveport Medical Society was postponed! The March program will be given at the April 1st Meeting.

The regular meeting of the Shreveport Medical Society was held at the Charity Hospital. Called to order by President Butler at 8:10 P. M. Thirty-four members were present. Election to membership Dr. M. D. Hargrove. The president called upon the Committee on Revision of the Constitution and By-Laws, composed of Drs. Knighton, Herold, Barrow, Sanderson, and Bodenheimer to report at the next meeting if possible.

Communications.

A copy of the resolutions recently adopted by the Charity Hospital Staff of New Orleans was presented. A letter from Dr. Lester J. Williams, President of the Louisiana State Medical Society calling attention to the bill pertaining to the proposed reduction of taxes was read. A letter from Dr. C. C. Bass, Dean of Tulane School of Medicine, was read calling attention to the urgent need of aid for German Medical Scientists. A communication from Dr. Oscar Dowling, State Chairman American Society for the control of Cancer, was read.

A committee of three was appointed to draw up resolutions based on the

communications received from Dr. Lester J. Williams.

Application for membership, Dr. R. C. Young and Dr. V. Simmons. Scientific Program.

This part of the program was by the North Louisiana Sanitarium Staff. The subject was Acute Abdominal Conditions. Dr. Abramson read a paper on general surgical aspects. Dr. Regan read a paper on the obstetrical and gynecological phases. While Dr. Herold dealt with the medical and laboratory features.

Discussion by Drs. Hendrick, Lloyd, Thomas Rauls, Rutledge, Barrow, Boyce, Crow, Cassity, W. S. Kerlin.

Dr. Herold made some remarks on bloodpressure and demonstrated a new type of sphygmomanometer.

Dr. Butler introduced to the Society Dr. Durham, surgeon-in-chief at Shriners Hospital for Crippled Children, who extended a cordial invitation for those present to visit the hospital.

Dr. Sanderson introduced Dr. L. W. Gorton who has recently located here for the practice of diseases of the ear, nose and throat.

Dr. Butler introduced and the Society was glad to have present: Drs. Page, Lawrence, and Wren who have recently returned from New Orleans where they have been doing post graduate work.

On motion the Society adjourned.

Robert T. Lucas, Secretary.

New Orleans to Opelousas.

Those who have attended conventions in the past know that a large portion of the enjoyment going to and from the convention lies in traveling in groups and parties. Two plans are submitted which should appeal to the New Orleans men who are going to Opelousas.

One is an automobile trip. A complete itinerary is being prepared. The tentative start will be April 21st, 7 A. M. Walnut Street Ferry. This attractive trip through South Louisiana, Morgan City, Franklin, and Lafayette, will put us in Opelousas in time for supper. The return trip begins April 25th at 7 A. M., through Port Allen and Baton Rouge will enable us to reach New Orleans by night fall. Road

conditions allow us a pleasant trip which can easily be accomplished in the time scheduled.

Should twenty-five apply, a special Pullman will be attached to the regular Gulf Coast line train leaving the City the morning of April 21st, and will be parked in Opelousas during the time of the meeting. This will enable those who are on this car to make it their headquarters during the convention.

Those who are interested in either of the above plans should make known their wishes before April 15th, to Dr. Lucien A. LeDoux.

Opelousas Meeting.

From present indications, the State Convention at Opelousas is going to be largely attended. The attractive program both Scientific and Social should influence a large number of us in desiring to put away for three days our work and spend them with our medical friends.

Allen Parish Medical Society.

The last regular meeting of the Society was held at Oberlin, with a large number of the doctors of the Parish present. Meeting was held in Kinser Hotel. Dr. O. W. Moss of Lake Charles presented some case reports on treatment of diabetes with insulin. He stressed its indications and use. His presentation was very instructive and well received by everyone. General discussion followed. The meeting was one of the best held by the Society, and all who attended voted it a success.

Officers for this year, Dr. S. M. Scott, Oakdale, President; Dr. A. J. Heflin, Oberlin, Vice-President; Dr. I. R. Fowler, Emad, Secretary-Treasurer. Next meeting to be held in the New Elizabeth Hospital, Elizabeth.

*Monthly Bulletin of the Orleans Parish Medical Society.*

The membership on March 1st, 1924 totals:

Active Members..... 456  
Associate Members ..... 24

The Society held two meetings during the month of March. March 10th, the following papers were presented:

"Cod Liver Oil as an Addition to the Dietetic Regimen of the Under



Nourished Diabetic."

By:.....Dr. J. Birney Gpthrie.  
 "Further Observation in Relation to  
 the Intestinal Flora."

By:.....Dr. C. C. Bass.

March 24th there was a joint meet-  
 ing of the Society with the Charity  
 Hospital Staff in the Miles Amphi-  
 theatre, Charity Hospital at which  
 time there was a very good attendance.

The average attendance during the  
 month was 90

Dr. A. B. Wilbur and Dr. H. Lee  
 Johnson were dropped for delinquency.  
 Letters addressed to their last known  
 addresses have been returned.

There are three applicants for mem-  
 bership pending:

Dr. John R. Evans, Dr. Chas. W.  
 Kibbe and Dr. George Neves.

*Treasurer's Report for February.*

Total Receipts .....	\$ 1,186.60
Total Expenditures .....	1,394.38

*Resources.*

Domicile fund, Liberty	
Bonds, par value .....	\$30,000.00
bonds par value .....	3,500.00
Medical Relief fund, savings account .....	96.23
<b>Total Resources .....</b>	<b>\$33,596.23</b>

*Librarian's Report for February.*

The Assistant Librarian has com-  
 pleted the cataloging of 280 books and  
 30 pamphlets during February, bring-  
 ing the totals of the collection as shown  
 in the records to 10,000 books and 500  
 pamphlets. Of the books added to the  
 Library in February, 66 were bound  
 journals, 10 were received by purchase  
 and 5 by gift from the New Orleans  
 Medical & Surgical Journal.

The interest in the approaching  
 meeting of the State Medical Society  
 is shown by the greatly increased num-  
 ber of reference and study calls in the  
 preparation of papers.

Dr. Edward Plaut, president of Lehn  
 and Fink, Inc., New York has pres-

ented the Harriman Research Labora-  
 tory with the sum of \$3,000 for the  
 year 1924, to be known as the "Plaut  
 Research Fund for Studies in Internal  
 Medicine." This fund is to aid in the  
 investigation of the effects of certain  
 therapeutic agents, especially the  
 endocrine glands. Dr. K. G. Falk has  
 been placed in charge of the work by  
 Dr. W. G. Lyle, director of the Harri-  
 man Research Laboratory.

The following Louisiana physicians  
 attended the recent Clinical Congress  
 on Internal Medicine in St. Louis, viz:  
 Drs. C. C. Bass, New Orleans; J. E.  
 Knighton, T. P. Lloyd, F. G. Ellis and  
 A. A. Herold, Shreveport. Drs. Lloyd  
 and Herold were installed as F. A. C.  
 P. at the convocation of the College of  
 Physicians.

Another new private hospital for  
 Shreveport has been started; ground  
 has been broken for the "Tristate Sani-  
 tarium," Drs. Pirkle and Williams,  
 owners.

Dr. W. McDade, Minden, president  
 of the Webster Parish Medical Society,  
 has recently been quite ill with an in-  
 fected finger.

Louisiana Railways Surgeons' As-  
 sociation at Opelousas Meeting.

The Louisiana Railways Surgeons  
 Association, will meet on the night pre-  
 ceding the first day of the meeting of  
 the State Society and have a banquet  
 at which informal talks will be made.  
 We hope in this way to be able to dis-  
 cuss things pertaining to railway in-  
 juries and railroad surgeons in gen-  
 eral, more as a family gathering.  
 Those who are desirous of attending  
 please communicate with Dr. A. K.  
 Duncan, Secretary, 3521 Prytania  
 Street, New Orleans. Charges of the  
 banquet, etc., can be obtained from  
 him.

The Faculty of Medicine of Stras-  
 bourg, through Professor L. M. Pau-  
 trier, announces that the program has  
 been completed for the Clinic in Dis-  
 eases of the skin, which will begin on  
 or about September 22nd, 1924. This  
 complimentary course will be given at  
 the City Hospital of Strasbourg.

The most serious medical problem that Russia is facing today is the great prevalence of malaria. Last summer in one district alone, this disease incapacitated 80 per cent of the population. Twelve malaria clinics have been established to combat the disease.

American Society for the Control of Cancer.

Annual Meeting March 1st, 1924.

The date for holding the Annual Meeting is fixed by law as the first Saturday in March. This falls on March 1. The meeting will be held in the office of the Society, 370 Seventh Avenue, 16th floor, at 4 o'clock in the afternoon.

Announcement, Refresher Courses, Shreveport Charity Hospital, 1924.

During the past two years the Staff of the Shreveport Charity Hospital has been considering the best means of increasing the value of the hospital to the medical profession of the Community.

The organization of the staff and of the work of the hospital has now reached a point at which they feel justified in offering to the profession a short post-graduate or "refresher" course.

The first class will begin on Monday, January 14, 1924 at 9:00 A. M. in the Lecture Room of the Hospital and will continue daily sessions 9:00 to 12:00 M. and 1:30 to 3:30 P. M. until Friday, February 8, 1924 at 12:00 A. M.

There will be no fees charged for attendance on the course as the staff conceives it to be their duty to lend all assistance possible to the profession of the State.

The Staff has announced that a second session of the course will be given April 28, to May 23rd, inclusive.

Inter-State Post-Graduate Clinic Tour to Canada, British Isles and Paris in 1923 is now being arranged under the supervision of the Managing-Director's office of the Tri-State District Medical Association, leaving time about middle of May.

On account of the great demand for reservations, applications should be made as early as possible to Dr. William B. Peck, Managing-Director, Freeport, Illinois. Preference in the

assignment of Hotel and Steamship accommodations will follow the order in which the applications are received.

The American Climatological and Clinical Association will meet at the Ambassador, Atlantic City, for its annual convention, May 1st, 2nd, and 3rd. 150 doctors are expected to attend.

The American Urological Association has also completed arrangements to return to the Ambassador where it met two years ago. This association will spend two days at the shore, June 3rd and 4th.

The Seventh District Medical Society.

The Meeting was called to order by President Iles at 7:30 P. M. in the dining room of the Egan Hotel where a delicious banquet was served by the Acadia Parish Medical Society during which the following Scientific Program was presented.

1. "Report of a Case of Pyloric Stenosis," Dr. H. L. Gardiner, Crowley.
2. "The proper Evaluation of Local Anesthesia," Dr. Urban Maes, New Orleans.
3. "The Therapeutic Application of Roentgen Rays," Dr. H. G. F. Edwards, Lafayette.
4. "A Paper," Dr. J. W. Faulk, Crowley.

Election of officers. President, Dr. J. C. Moody, DeRidder; Vice-President, Dr. H. L. Gardiner, Crowley; Secretary-Treasurer, Dr. R. J. Young, Neame; Delegate to State Meeting, Dr. E. M. Ellis, Crowley. Next meeting to be held at DeRidder.

St. Martin Parish.

At a meeting of the St. Martin Parish Medical Society held in Breaux Bridge, on March 11, 1924, the following members were elected:

President, Dr. J. S. Martin, St. Martinville; Vice-President, Dr. J. L. Beyt, St. Martinville; Secretary-Treasurer, Dr. P. H. Fleming, St. Martinville; Delegate; Dr. S. D. Yongue, Breaux Bridge. Dr. O. P. Daily of Lafayette made an interesting talk on the "Therapeutic Uses of Alcohol." Refreshments were served by the personnel of the Boring and Yongue Sanitarium.

Labor saving devices for the home



costing less than \$1 were prominently featured in the welfare exhibit conducted by the Metropolitan Life Insurance Company during the annual convention of superintendents and managers. In the effort to promote good health and prolong life, the company is endeavoring to lighten the burden of the worker in the home.

Died: On March 5th, 1924, Dr. John L. Purser of New Orleans, aged 45 years.

#### *Louisiana State Medical Society Meeting.*

Our president, Dr. Lester J. Williams, has asked that it be announced that all meetings of the House of Delegates, also the meetings of the Scientific Session of the Convention will be called to order on time as specified in the program. Your co-operation in this regard is earnestly requested so that the sessions of the House and the Scientific Session may not be delayed and will be completed as planned.

As you will observe, we have a very large program, and it will be only by strict punctuality and adherence to time limits of papers and discussions that we will be able to complete same.

#### *Plan of Entertainment.*

Monday, April 21st, 1924.

Luncheon, 12:00 p. m.

Tuesday, April 22nd, 1924.

Complimentary lunch, 12:00 p. m., on Court House Square.

Banquet, 8:00 p. m. Cards must be presented.

Film theatre party for ladies.

Wednesday, April 23rd, 1924.

Complimentary lunch, 12:00 p. m.

A smoker.

Thursday, April 24th, 1924.

Complimentary lunch, 12:00 p. m.

Auto rides for ladies and guests.

Hotels.

New LaComb, Old LaComb, Waldorf, Mrs. Barr, Mrs. Guidry, Miss Titard, and Mrs. Moreau.

Headquarters.

Court House. House of Delegates in Knights of Columbus Hall.

Registration.

Lower floor of the Court House.

Mail.

All mail addressed in care of Convention will be taken care of at Registration Office, and a daily notice will be posted of letters and telegrams received.

Information Bureau in Registration Office.

#### Clubs.

The following clubs have extended the courtesies of their lodges to all members of the association wearing the official badge, and no admit card will be necessary.

The Elks Club, corner Main and East Belyue.

The Knights of Columbus, Main street.

The Masons, Main street.

#### Committees.

Dr. Fred J. Mayer, chairman, Arrangement Committee, Opelousas, La.

Dr. R. M. Littell, chairman, Reception Committee, Opelousas, La.

Dr. O. Pavy, chairman, Ladies' Reception Committee, Opelousas, La.

Dr. Frank E. Shute, chairman, Finance Committee, Opelousas, La.

Dr. Charles F. Boagni, chairman, Auditing Committee, Opelousas, La.

Dr. B. A. Littell, chairman, Hotels and Rooms Committee, Opelousas, La.

Dr. Albert Pavy, chairman, Registration Committee, Opelousas, La.

Dr. W. S. Boudreau, chairman, Halls Committee, Opelousas, La.

Dr. Leon J. Menville, chairman, Scientific Exhibits (State) Committee, New Orleans, La.

Dr. Charles Lewis, Dr. M. D. Lewis, Dr. B. A. Littell, Dr. S. B. Wolff, Dr. Albert Pavy, Scientific Exhibits

(Local) Committee.

Dr. E. Lafleur, chairman, Commercial Exhibits Committee, Opelousas, La.

Dr. J. N. Brown, chairman, Signs and Decorations Committee, Opelousas, La.

Dr. Lionel Bienvenu, chairman, Advertisements and Publicity Committee, Opelousas, La.

Dr. S. B. Wolff, chairman, Entertainment Committee, Opelousas, La.

Dr. R. M. Littell, chairman, Transportation and Autos Committee, Opelousas, La.

All those desiring to contribute Scientific Exhibits for the Annual

Meeting of the Louisiana State Medical Society should get in touch with Dr. Leon J. Menville, chairman. Your prompt attention is earnestly requested.

Dr. Fred J. Mayer, chairman of the Arrangement Committee, wishes it announced that unusual entertainment is being made for all ladies in attendance at the Annual Meeting. He wishes, therefore, that all physicians who will be accompanied by their wives or daughters, notify him at once, so that accommodations may be arranged.

Those who have not received replies to their requests for reservations should send in a complaint card at once to Dr. Fred J. Mayer, chairman of the Arrangement Committee.

Social Workers, clergymen, physicians, nurses, teachers, club-women, and members of administrative boards of charitable and civic institutions throughout the state are expected to attend in large numbers the fourth annual Louisiana State Conference for Social Betterment in New Orleans April 20, 21, 22, and 23.

Invitations have been sent to all statewide organizations to hold their annual meetings in New Orleans during the same week, and a special period, known as the "Agency Hour," has been set aside in the program of each working day to accommodate such meetings and provide a time for round table discussions of special problems.

Child Welfare and Financial Federation will be the chief subjects brought out in the general program. Speakers of national prominence invited to attend include Dr. Thomas Green of the American Red Cross, Washington, D. C.; Hon. H. L. Fuqua, Governor-elect of Louisiana; Prof. J. W. Fletcher of the University of Iowa; C. W. Areson of the Child Welfare League of America, New York; Mrs. A. H. Reeve of the National Parent-Teachers' Association, Philadelphia; Miss Marjorie Warren of the American Association for Organizing Family Social Work, Louisville, Kentucky; Miss Virginia L. Kelly, of the National Association of Travelers' Aid Society, New York; W. H. Parker of the National conference for Social Work, Cincinnati.

Louisiana speakers will include Prof. Alvin Good, Natchitoches; Prof. R. H. Bolyard, Lafayette; St. Clair Adams, New Orleans; Rev. H. S. Johns, chaplain of the Louisiana State penitentiary; Miss Dagne Sunny, New Orleans; Miss Addie Webb, Shreveport; Miss Lydia Finley, U. S. Veterans' Hospital, Algiers, and many others.

Governor John M. Parker is honorary president, with Dr. J. W. Newman as active president; Miss Willis Sullivant, secretary; Mrs. William Petrie of Mansfield, recording secretary, and Walter Lemann of Donaldsonville, treasurer. There are eight vice-presidents, representing the congressional districts, as follows: First and Second District, Dr. Maud Loeber, New Orleans; Third, Mrs. Albert Storm, Morgan City; Fourth, J. M. Redmond, Monroe; Fifth, J. B. Ardis, Shreveport; Sixth, F. J. Heintz, Covington; Seventh, Miss Maud Reid, Lake Charles; Eighth, Mrs. C. A. Hunter, Alexandria.

Prof. G. P. Wyckoff is chairman of the Program Committee; Dr. David Fichman, of Ways and Means; Dr. W. J. Otis, of Publicity; Mrs. A. Hartman, of Entertainment; Dr. Maud Loeber, of Housing and Halls; Charles H. Patterson, of Churches and Speakers.

#### *United States Civil Service Examination.*

Specialists in maternal and infant hygiene, \$3,500 a year.

Assistant in maternal and infant hygiene, \$2,000 to \$3,000 a year.

Expert in maternal and infant care, \$3,000 a year.

Receipt of applications will close February 26. The examinations are to fill vacancies in the Children's Bureau, Department of Labor, at the entrance salaries named above, and vacancies in positions requiring similar qualifications. Appointees at an annual salary of \$2,500 a year or less, may be allowed the increase of \$20 a month granted by Congress. Appointees will also be allowed actual traveling expenses and \$4 a day for subsistence when away from headquarters on official business.

Conference of Maritime Quarantine authorities of the West Coast of South America.



Doctor Belisario Porras, the President of the Republic of Panama, has called a conference to meet in Panama, R. P., on February 25, 26, 27, 28 and 29, for the purpose of considering the international standardization of maritime quarantine on the west coast of South America and the prevention of international spread of communicable disease in that littoral.

#### *Summer Work in Public Health.*

The United States Public Health Service takes pleasure in announcing that, in response to an extensive demand for summer school work in public health, it has arranged with Columbia University, the University of California, the University of Michigan and the University of Iowa to conduct public health summer schools this year.

The faculties of these various summer schools will include many such leading specialists of the United States as Michael M. Davis (dispensary management), Robert H. Gault (criminal psychiatry), Emery Hayhurst (industrial hygiene, William J. Mayo (non-communicable diseases), E. V. McCollum and H. C. Sherman (nutrition), William H. Park (laboratory methods), Earl B. Phelps and George C. Whipple (public health engineering), M. J. Rosenau and Victor C. Vaughan (epidemiology), Thomas W. Salmon (psycho-therapy), John H. Stokes (syphilis), Philip Van Ingen (child hygiene), C. E. A. Winslow (public health administration), and Francis Carter Wood (cancer).

Millions of school children are handicapped in their studies by defective eyes. Thousands of children are suffering from eyestrain, and large numbers are forced to discontinue their endeavors to acquire an education because of this same physical defect. It has been proven conclusively that poor eyesight is an important associate cause of backwardness, stupidity, apparent laziness and truancy.

A survey of statutory provisions in the United States and territories for testing the sight of school children has been made by the Eye Sight Conservation Council of America, Times Building, New York City. The results of the

study are published in report form in Eye Sight Conservation Bulletin No. 4.

#### *United States Civil Service Examination.*

Physician.

Receipt of applications to close February 29th, 1924.

On account of the needs of the service, papers will be rated as received and certification made as the needs of the service require. In the absence of further notice, applications for this examination will be received until the hour of closing business on February 29, 1924. If sufficient eligibles are obtained the receipt of applications may be closed before that time, of which due notice will be given.

Certification will be made to fill a vacancy as acting assistant surgeon at \$2,400 per annum in the United States Public Health Service, Quarantine Station, Quarantine, La., qualified in the destruction of vermin by cyanide fumigation. To be considered for this special position applicants must state clearly that they are applying for this position and must establish at least six months' experience under proper supervision in the use of this vermicide. Certificates to establish this claim from the health board or other organization under which the experience was acquired must be filed with the application.

Applicants for the above-named examination should be filed without delay with the secretary, Tenth Civil Service District, Customhouse, New Orleans, La.

Warning as to the deadly hazards of gas in unventilated rooms and garages is again sounded by the Department of the Interior, through the Bureau of Mines. Seldom a day passes at this season of the year but the press records the death of one or more persons by asphyxiation in their homes or in their garages, the bureau's statement recites. The past week has been especially prominent in this respect, particularly in the natural gas belt of Pennsylvania, Ohio, and West Virginia; while the fatalities from exhaust gas from automobiles is widespread. It should never be forgotten that in burning natural gas, carbon monoxide may be given off;

while in the exhaust from an engine this gas is practically always present in exceedingly dangerous amounts.

Many house heaters have no flues for carrying off the waste gases, which then simply pass off into the rooms. If all windows and doors are closed, as they generally are in cold weather, the effect of these gases sooner or later becomes apparent on the occupants, who become dull and sleepy, and sometimes die. If a gas heater without a flue is used, a window should be partly open all the time—that is, up a half inch or so. The Bureau of Mines has found that the atmosphere in a room should be changed at least once an hour—that is to say, the foul air should be displaced by fresh air during that period, but if there is a continuous fresh inflow, this takes care of the gases being given off, unless the individual is so close to the source of the waste gases as to breathe them before they are sufficiently diluted.

*Physio-therapeutic Week in Kansas City, April 10 to 18.*

The sixth annual meeting of the Western Electro Therapeutic Association will be held in the Little Theatre, Kansas City, Mo., Thursday and Friday, April 17th and 18th, under the presidency of Dr. Harry H. Bowing of Rochester, Minn. A cordial invitation is extended to the medical profession of nearby States.

*The Exhibit.*

An elaborate exhibit of physio-therapeutic apparatus will be held as heretofore in the lobby of the Little Theatre; this exhibition alone will be well worth the trip to Kansas City.

Clinics and demonstrations of technic each afternoon and evening. For program address the secretary, Dr. Charles Wood Fassett, 115 East 31st street, Kansas City, Mo.

**IMPORTANT NOTICE TO MEMBERS OF STATE SOCIETY GOING TO OPELOUSAS.**

A reduction of ONE AND ONE-HALF for the round trip on the "CERTIFICATE PLAN" will apply for members (also dependent members of their families) attending the meeting of ANNUAL CONVENTION, LOUISI-

ANA STATE MEDICAL SOCIETY to be held at OPELOUSAS, LA., on APRIL 21-24, 1924.

The arrangement will apply from the following territory: From all points in Louisiana under jurisdiction of S. W. P. A.

The following directions are submitted for your guidance:

1. Tickets at the normal one-way tariff fare for the GOING JOURNEY must be purchased on any of the following dates (BUT NOT on any other date).

Dates of sale for going tickets April 18-24, inclusive.

2. Be sure when purchasing your going ticket to ask the ticket agent for a Certificate Receipt. Each delegate should have a separate Certificate Receipt covering ticket he purchases. One receipt for more than one ticket will not be honored or validated. If, however, it is impossible to get a certificate receipt from the local ticket agent, a regular receipt will be satisfactory and should be secured when ticket is purchased. See that the ticket reads to the point where the convention is to be held and no other. See that your Certificate Receipt is stamped with the same date as your ticket. SIGN YOUR NAME to the Certificate or Receipt in ink. Show this to the ticket agent.

3. Call at the railroad station for ticket and certificates at least 30 minutes before departure of train.

**TO APPLICANT:**

4. Certificates are not kept at all stations. Ask your home station whether you can procure certificates and through tickets to the place of meeting. If not, buy a local ticket to the nearest point where a certificate and through ticket to place of meeting can be purchased.

5. Immediately upon your arrival at the meeting, present your Certificate to the endorsing officer, Dr. P. T. Talbot, as the reduced fares for the return journey WILL NOT APPLY unless you are properly identified as provided for by the Certificate.

6. Joint Agent of the carriers will be in attendance on April 23-25, inclusive, to validate certificates.

*NO REFUND of fare will be made on*



account of failure to either obtain a proper certificate, or on account of failure to have the Certificate validated.

7. It must be understood that the reduction for the return journey is not guaranteed, but is contingent on an attendance of not less than 250 members of the organization and dependent members of their families at the meeting holding regularly issued certificates from ticket agents at starting points showing payment of normal one-way fare of not less than 67 cents on the going trip.

8. If the necessary minimum of 250 regularly issued certificates are presented to the Joint Agent, and your Certificate is validated you will be entitled to a return ticket via the same route as the going journey at one-half of the normal one-way tariff fare from place of meeting to point at which your Certificate was issued up to and including April 28th, 1924.

9. Return tickets issued at the reduced fare will not be good on any limited train on which such reduced fare transportation is not honored.

**EXTRACT SOUTHWESTERN PASSENGER ASSOCIATION CONVENTION CIRCULAR NO. 33-1924.**

**FARE AND ONE-HALF** of the **CURRENT ONE-WAY FARES** on the **CERTIFICATE PLAN** will be authorized for the following meeting:

**OPELOUSAS, LA., APRIL 21-24, 1924, ANNUAL CONVENTION, LOUISIANA STATE MEDICAL SOCIETY.** (File 15-247).

**DATES OF SALE:** April 18-24, inclusive.

**FINAL HONORING DATE:** April 28th, 1924.

**TERRITORY:** Reduction will apply from all points in Louisiana under jurisdiction of S. W. P. A.

**RAILWAY SECRETARY:** Dr. P. T. Talbot, New Orleans, La.

**JOINT AGENT:** Mr. G. J. Gourbeois, T. A., Southern Pacific Lines, Opelousas, La., will validate certificates on April 23-25, inclusive.

**SPECIAL NOTE.**

The following Southwestern lines are **NOT PARTY** to the reduced excursion fares herein announced:

- Arkansas & Louisiana Missouri Railway.
- Fort Smith and Western Railway.
- Graysonia, Nashville & Ashdown Railroad.
- Jonesboro, Lake City & Eastern Railroad.
- Kansas, Oklahoma & Gulf Railway.
- Louisiana & Arkansas Railway.
- Mississippi River & Bonne Terre Railway.
- St. Louis, El Reno and Western Railway.

**STATISTICAL DATA FOR THE MONTH OF FEBRUARY, 1924, OBTAINED FROM THE RECORDS OF THE CITY BOARD OF HEALTH.**

Births—			
Male, white	.....		332
Male, colored	.....		117
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Total white	.....		449
Female, white	.....		287
Female colored	.....		141
<hr/>			
Total colored	.....		428
Stillbirths—			
By physicians	.....		478
By midwives	.....		399
Deaths—			
	White	Colored	Total
Diphtheria	3	0	53
Typhoid	0	0	13
Malaria	0	0	3
Scarlet Fever	0	0	26
Whooping Cough	0	0	..
Influenza	17	14	..
Measles	10	7	431
C. S. Meningitis	1	1	..
Tuberculosis	25	31	83
Deaths—			
	White	Colored	
Cancer	28	13	13
Apoplexy	36	15	15
Endocarditis and Myocarditis	10	11	11
Angina Pectoris	5	1	1
Other Circulatory Diseases	109	50	50
Bronchopneumonia	17	21	21
Lobar Pneumonia	16	28	28
Other Respiratory Diseases	6	2	2
Diarrhoea and Enteritis	6	3	3
Appendicitis	3	4	4
Other Digestive	11	9	9
Acute Nephritis	4	6	6
Chronic Nephritis	22	11	11
All other Genito-Urinary Diseases	4	4	4
Puerperal State	1	5	5
Malformations	6	2	2
External Causes	39	25	25
Death rate per 1,000 per annum for the month—non-residents excluded:			
White	.....	17.72	15.61
Colored	.....	33.51	29.55
<hr/>			
Total	.....	21.69	19.19
Deaths from premature birth, violence, etc., are not excluded.			

## PUBLICATIONS RECEIVED.

The C. V. Mosby Company, St. Louis, *Methods in Medicine*, by George R. Herrmann, M. D., Ph. D. *The Anti-diabetic Functions of the Pancreas and the Successful Isolation of the Anti-diabetic Hormone-Insulin*, by J. J. R. Macloed and F. G. Banting.

The University of London Press, Ltd., London, *Diseases of the Breast*, by Willmott Evans, M. D., B. S., B. Sc., F. R. C. S.

W. B. Saunders Company, Philadelphia and London, *Operative Surgery* by Warren Stone Bickham, M. D. and Phar. M., F. A. C. S.

Washington Government Printing Office, *Public Health Reports*, Vol 39, Nos. 6, 7 and 8. *United States Naval Medical Bulletin*, February, 1924. *United States Abridged Life Tables*, 1919-1920.

Miscellaneous: *Report of the Health Department of the Panama Canal for the Year 1922*, by H. C. Fisher. *A Lepra*, by Dr. H. C. de Souza Araujo. *The Johns Hopkins Hospital Reports*, Vol. xxi. *Annual Report of the Library Committee of the College of Physicians of Philadelphia for the year 1923*.

## REPRINTS.

*Children's Upper Respiratory Abscesses Descending Into the Neck and Mediastinum*, by Otto Glogau, M. D. *Multiplex Pathology and the Cancer Problem*, by William Seaman Bainbridge, Sc. D., M. D., C. M. *Cancer of the Tongue*, by William Seaman Bainbridge, M. D. *Double Salpingo-oophorectomy with Partial Auto-ovarian Transplantation, Followed by Twelve Years of Menstruation, a Normal Pregnancy and an Uncomplicated Menopause at Fifty-one Years of Age, and Transplantation of Human Ovaries; Present Status and Future Possibilities*, by William Seaman Bainbridge Sc. D., M. D., C. M. *Oxygen in the Peritoneal Cavity, with Report of Cases*, by William Seaman Bainbridge, M. D., Sc. D., C. M., A. M. *Kala Azar in the Sudan, with Special Reference to Its Treatment by Tartar Emetic*, by R. G. Archibald. *An Unusual Case of Vitiligo in a Native of the Sudan*, by R. G. Archibald, D. S. O., M. D.

## BOOK REVIEWS

*Surgery of the Spine and Extremities*. By R. Tunstall Taylor, B. A., M. D., F. A. C. S. P. Blakiston's Son & Co., Philadelphia, 1923.

Dr. Taylor expresses, in the opening lines of the first chapter of his excellent book, the wisdom of his rich experiences, by explaining the difference between the ancient and modern definitions or interpretations of the term "Orthopaedic." In recent years the scope of this branch of surgery has become so greatly broadened that this careful explanation is essential. Not only does Dr. Taylor explain that the present orthopedist is one who deals with the nature, cause and prevention of deviations from the normal; but he drops the term orthopedies because it is a misnomer and uses in its stead "surgery of the spine and extremities." Further he points out the common error of spelling orthopedic instead of orthopaedic and the consequent belief that it has its application to disease of the feet, from the Latin *Pes* or *Pedis*. This error is found to exist as frequently among the medical profession as the lay people.

A continuation of this first chapter is an interesting and very enlightening resumé of the history of surgery as related to the earliest references to surgery of the spine and extremities. This chapter alone justifies the existence of his book, which is so arranged throughout as to be of great value to the under graduate and a thorough guide and reference for the practitioner.

The reviewer does not agree with the author's description of the manufacture of plaster bandages. The hand method has been superseded by the roller and box, driven either by hand or electricity. A great deal of time and labor is saved if the crinoline is cut on the bias in a mortise box after it is rolled and before the plaster is worked into it.

Calling attention to the uses for plaster splints is important and never too often mentioned. In a book of this kind it brings to the reader's mind the varied uses for such splints which are often forgotten.

The chapter on muscle spasm and traction is well worth reading and should be carefully studied by all medical students and the majority of general practitioners. It brings out many sound principles which one sees violated almost daily.

The author's review of Blake's work on compound fractures including the principles of the Balkan frame and traction with suspension are included and are most essential in any modern work on Surgery of Bones and Joints.

The chapters on miscellaneous orthopedic technique and general bone and joint conditions are excellent and give the reader an exceedingly good working knowledge of such subjects.

It is impossible in the short space allotted to a review of such an excellent work to do more than mention the strong points. Taylor has given in a very concise and at the same time very interesting manner a great deal of information on the subjects of bone tubercu-



losis, other diseases of the spine and extremities and the ailments of the feet.

I can cheerfully recommend his book to both students and practitioners of medicine and surgery.

J. T. O'Ferrall.

Mental Disorders, by Francis M. Barnes, Jr., M. A., M. D. C. V. Mosby Company, St. Louis, 1923.

The advent of this, the Second Edition, marks an epoch in literature dealing with psychiatric problems. It presents in an eminently satisfactory manner the up to date method of preparing one's self for the approach to the study and care of mental disorders which must be met with in the daily life of the busy physician. The author has brought forth material which is beneficial, and has placed the same in a manner that can be easily digested so as to be of use to the reader. Chapters one to six are illuminating, historically and scientifically, especially Chapter Three dealing with Mental Hygiene and Social Psychiatry, which today is necessary for those coming in contact with social problems in all its phases. Chapter Nineteen (Treatment) teems with a resume of practical importance. In this chapter, Psychotherapy is handled in a common sense manner in which no one could take offense. It is interesting to note that the author has given place to the term "Constitutional Inferior", the type of the herd which only this sub-division of nomenclature describes, and which so few neuropsychiatrists see fit to include when discussing defective states. To sum up, the book is just the thing for the progressing practitioner who is unable to wade through volumes of neuropsychiatric literature. It is an excellent adjunct to the library of the neuropsychiatrist and a *Vade Mecum* to the medical student who already has been allowed too little time in the college curriculum to intelligently learn his *Principia* of neuropsychiatry. Nurses' training schools and social service workers should have a copy as collateral reading. The War has taught us the necessity of psychiatric observation and the intelligent handling of mental cases. This volume is the means to that end.

W. J. Otis.

Cleft Lip and Palate. By Truman W. Brophy. P. Blakiston's Son & Co. Philadelphia, 1923.

This is a concise and handy volume on cleft lip and palate. Many beautiful anatomical drawings by Spalteholz are first presented which will be much appreciated by the reader. The text furnishes complete description of every operative detail, including after treatment and infant feeding which may be looked for not only by the experienced surgeon but also by the student. There is an unusual number of instructive illustrations most of which are original.

Brophy impresses upon his readers the importance of adopting a classification and order of procedure in the treatment of cleft lip and palate into three stages so that the tissues can be best manipulated and anatomical normality most nearly approached. He

then described most interestingly each detail of the various stages.

It is a treat to read this volume and the profession is indeed fortunate to have the views of this master placed so conveniently at their hands.

J. J. Ryan.

The Treatment of Diabetes Mellitus. Elliott P. Joslin, M. D., 3rd Edition, Lea & Febiger, Philadelphia & N. Y.

Former editions of this work have always been regarded by the medical profession as the last word in the treatment of diabetes. The present edition is no exception; and containing not only the history of the discovery of Insulin but also detailed methods of administering Insulin, can be looked upon as the very latest authority on the treatment of diabetes. Written in the usual easy style of Joslin, it is a pleasure to read it, and short reports of cases from time to time add interest and emphasis to the text. Several new sections are included, besides one hundred pages devoted to the treatment of diabetes with Insulin. Every physician should read Dr. Joslin's book before attempting treatment of a diabetic patient with, or without Insulin.

Allan Eustis.

Practical Dietetics, with reference to Diet in Health and Disease. Alida Frances Pattee. 14th Edition—Completely Revised. A. F. Pattee, Mt. Vernon, N. Y.

The fact that this work is in its 14th edition is proof of its popularity. It fills the needs of a dietetic text book for nurses rather than physicians. For the former, its paragraphs of quantities accompanying most of the chapters recommends it especially as a class-room text book.

Allan Eustis.

The Medical Department of the United States Army in the World War. Vols. 1 and 5. Prepared under the direction of Maj. Gen. M. W. Ireland, M. D. By Lieut. Col. W. Weed, M. C., U. S. Army. Col. Chas. Lynch, M. C., Loy McAfee, A. M., M. D.

An appropriation of \$50,000 was obtained from Congress in 1920 for the publication of the History of the Medical Department of the United States Army and Navy in the World War. The stipulation was made that the cost was not to exceed \$150,000 and it was also stated that the edition was to be limited to about 3000, available only to libraries and institutions. The work is under the direction of the Surgeon General of the two branches of the service.

We have before us Vols. I and V. Volume I is prepared under the special care of Col. Charles Lynch, M. C., Lieut. Col. Frank W. Weed, M. C., and Loy McAfee, A. M., M. D., and deals specially with the Surgeon Generals' office, from its organization its evolution, through its function in the World War. Of special interest is the chapter on the "Development of the Red Cross Medical Department Units." These will be found interesting to those of us who served in these units.

The remainder of the volume is divided into

three Sections:—Section 1, by Col. F.W. Weed describes the Relationship of the Medical Department within the War Department. The various activities of the Organization of the Surgeon General's office with its Divisional activities are taken up by the men who were in charge of these various departments and among them we see both civil and military contributions. There is a Chapter by De-Schweinitz, one by Vilray P. Blair and one by Frank Billings, to mention only a few.

Section III. deals with some of the Professional and Civilian Activities which played such an important part. Such organizations as the American Red Cross, The Council of National Defense, The National Research Council, The American Medical Association, and The Commission on Training Camp Activities. The activities of these organizations are briefly told. It would be impossible to fully detail the tremendous amount of work done by such a body as the Committee on Medicine, of the Council of National Defense.

An Appendix, which is nearly half the volume, relates the various casualties of the Medical Department, also the many General Orders, Bulletins and Circulars and Special Regulations promulgated by the War Department, Surgeon General's office, etc. There are also a number of well selected charts which will be of value for reference. The plates are few, there being one of General Gorgas and one of General Ireland with some prints of the plans of various parts of the Surgeon General's office.

Volume V.—has been prepared largely by Lieut. Col. Frank W. Weed and a corps of associates who have contributed special chapters. The volume is largely historical in the way that a description of all military hospitals of which records are available are given. There are descriptions with excellent photo-

graphs and drawings of the many hospitals that were in use during the World War, with detailed accounts and illustrations of these. Organization, Administration, and control of military hospital are taken up in detail.

Both volumes have an excellent index which will aid those using them for reference. The printing and illustrations are excellent and are a credit to the medical department of the Army.

Urban Maes.

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Principles of Bacteriology, by Arthur A. Eisenberg, A. B., M. D., 2nd edition. C. V. Mosby Company, St. Louis, 1923.

The second edition of Eisenberg *Principals of Bacteriology for Nurses* is clearly written but contains much information which is unnecessary. The pages devoted to the theories of bacteriology and immunity, most of the laboratory technique and the cultural characteristics and finer points of distinction of micro-organisms are of little practical value to nurses, and yet not sufficiently complete to be used as a text book for medical students.

M. Couret.

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Chemistry for Nurses, by Fredus N. Peters, A. M., Ph. D., 2nd. edition. C. V. Mosby Company, St. Louis, 1923.

The second edition of Peter's *Chemistry for nurses* is very clearly written. The outline preceeding, and the questions following, each chapter and the chapter devoted to the poisons are especially good. This book answers its purpose very well but it is unfortunate that more attention is not given to the practical application of Chemistry as applied to nurses. It is too elementary as a reference text for the medical student or practitioner.

M. Couret.



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### MALFORMATIONS

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Nothing in nature furnishes a more interesting field for study than animal cell growth, from fertilization to the completed structure. Our attention is called to the subject by frequent congenital defects and anomalies of development which may destroy life, or, to a varying degree, impair comfort and usefulness.

Certain defects are minor, such as hoarseness, caused by straining the voice, and yet in these cases examination reveals paresis or paralysis of the left abductor or adductor due to overstretching the left recurrent nerve which passes around the arch of the aorta and back to the larynx. Over-tension creates trouble in but 3 per cent of persons. Both recurrent nerves arise at approximately the same level from the vagi. The heart, with its apex forward in early development, becoming enclosed in the chest with its apex downward, passes over the left recurrent nerve. This condition renders adenoma of the thyroid, either in the right or left lobe, a possible cause of increasing the tension on an already impaired nerve.

The theory of a change of the invertebrate stomach and intestines to a wholly new system in the vertebrate is plausible. The cephalic stomach, however, in the invertebrate has become the ventricles of the brain. The infundibulum of man was the primitive pharynx and mouth, and the straight invertebrate gut in which the contents are propelled by cilia has become the central canal of the spinal cord of the vertebrate. The human embryo, in early life, has broken off cilia filling the lower part of the neural canal, which are later absorbed. The essential difference between the

vertebrate and invertebrate is that in the vertebrate the intestinal tract is in front of the nervous system, and in the invertebrate, behind the nervous system. The cerebrospinal fluid is formed in the choroid plexus, and the limited digestion of the higher invertebrates, many of which are blood suckers, is carried on by digestive cell secretion from what is now the ependyma and the choroid plexus in the ventricles of the brain in man, and it is claimed that there are occasionally found in this tissue cells which resemble liver and pancreatic cells. With proper stimulus this might account for a possible increase in the cerebrospinal fluid, greater than that normally made and absorbed.

In spina bifida leaking fluids often create the irritative changes in the skin resembling those caused by the fistulous drainage from the pancreas. Spina bifida occurs but rarely in the upper part of the cord, being more common in the lumbar region because of later closure of the bone. Such tension distends the membrane and prevents the union of the posterior laminae, and the sac fusing with the skin is left projecting. In many instances spina bifida occurs after the bony covering is complete, or nearly so, and may cause absorption anteriorly, posteriorly, or extend as a cord membrane, with fluid lower than normal, into the sacral canal. The occult variety of spina bifida, if anterior, or even if posterior, in many cases, may only be seen with the X-ray. Small ones may spread out and produce little or no elevation of the skin, but a thickening of the skin over them with an unusual hairy area, as seen in adults. Large hairy plaques of the skin of the limbs or lower part of the body should have a spinal X-ray test for the occult varieties of spina bifida.

Spina bifida may involve the nerves to one or both feet, and club foot may be associated. Should the terminal filament become detached from the coccyx at the same period of development, either a single club foot or double club feet would result. Should such conditions occur, or should spina bifida occulta produce the same tension on certain nerves, the result would be congenital failure of development of the bladder and rectum at the cloacal stage, exstrophy of the bladder, imperforate anus, with attachment of rectum to vagina, or posterior urethra or bladder. Rapidly growing spina bifida may sometimes be accompanied by acephalia, or, in a few cases, by hydrocephalus. Successful removal of spina bifida is sometimes followed by hydrocephalus. The agent producing such an overstimulus in this early developmental period is possibly a variation in the salts in the amniotic fluid. It is noted that there is usually an excess of amniotic fluid in monstrosities, and in experimenting with frogs' eggs it is found that if they are developed in a 0.6 per cent of a 1 per cent salt solution, a high percentage of spina bifida and ventricular deformities result; 0.7 per cent of a 1 per cent solution gives a still higher percentage. The sea salmon undoubtedly seek fresh water in which to spawn in order to preserve their young.

In the human embryo at an early stage of development the size of the neural tube and the developing colon are the same. For a brief transitional period there is a connection between the lower neural canal and the developing hind gut. The lower limbs budd off from the lower part of the body at an early date, when the growth of the spine is one-third faster than that of the spinal cord. A terminal filament attaches the neural canal and the fused cord membranes and dura to the region of the coccyx, and this removes all strain from the nerves which supply the lower part of the body, the bladder and rectum, and the lower limbs during this period of active growth of the spine. All of these nerves, as they leave the cord, pass downward and then out of the bony foramina. If, in an early stage, the terminal filament should pull loose while the spine was making its rapid growth, there might be increased tension on certain of the

nerves passing through the bony exits in the spinal column. It is possible that club feet are formed in this way, and defects in the development of the proctodeum uniting with the rectum, also changes of the cloaca, causing various types of exstrophy of the bladder and imperforate anus. This nerve tension may also be brought about by the occult variety of spina bifida now so often found by means of the X-ray. The attachment of the dilated neural canal with a few nerves fused to the dura and dragged downward by the more rapidly growing spinal column, causing increased tension on such nerves, might result in various malformations of the feet, one or both, or of the developing bladder and rectum. With enough nerves still viable to afford bladder control, others could effect the changes noted in the so-called *cord bladder*, such as occurs in disease of the spinal cord, and is often unexplainable in patients without. Club foot is occasionally found with spina bifida and also occasionally with exstrophy of the bladder. At the point of attachment of the terminal neural filament a very common anomaly is a dimpling of the skin where the anus of an invertebrate would have been. Vestigial remnants of embryonic nerve tissue are found around the sacrum and the coccyx, and not infrequently dermoids and sinuses, all of which have their origin in defects in the terminal filament and attached embryonic nerve tissue, or dermal tissue tractured inward and buried.

It is apparent that anomalies of the human body are normal conditions in certain lower types of life, or the mechanical effects of delay, or difficulties in transition of tissues with a shorter heredity. What other condition could produce exstrophy of the bladder? The work of Brehmer shows that certain placenta have imperfectly developed glomeruli, thin plates of epithelium covering tufts of capillaries which serve for a time as the urinary delivery of the fetus to the mother. The wolffian body (mesonephros) is an excretory structure, and delivers to the wolffian duct and into the allantois in the early period when it is part of the cloaca. The allantois forms the bladder, the upper part of which connects with the umbilicus by the urachus. In the latter cysts may rarely be found, should it, in obliteration



tion, contract first next to the wall of the bladder. In the transition from the mesonephros to the permanent kidney there is an intermediate period in which the placenta of the mother performs the function of the kidney. This occurs in man, rabbits and guinea pigs, but never in sheep, pigs or cats. In rats the placenta furnishes the entire urinary secretion until birth. Possibly failure of the human placenta to function, thus forcing on the developing bladder excretion greater than its capacity, at the time when the union of the pubic bones should occur, prevents that union, and later splits the entire collecting surface from the umbilicus to the end of the urethra. In one-fourth of the cases of exstrophy of the bladder skin is seen between the normal umbilicus and the exposed wall of the bladder. In three-fourths of the cases the umbilicus is at the upper border of the exposed bladder, but does not exist as an umbilicus if the child lives.

While some of the possible causes of the few defects considered in this discussion have been presented many times from many different viewpoints, others are new suggestions. However, my opportunity to see so many patients with exstrophy of the bladder (eighty-nine) and many allied defects of bladder and intestines, as well as a great number with spina bifida, has strongly fixed in my mind the belief that the defects of the nervous system are first, and those of the bladder and intestines second in importance, and that both may be associated with or without defects of development of the feet. I am directing attention to the subject so that those who have opportunity to study such cases, and to secure specimens, will do their utmost to see that these specimens reach some true scientific observers, or anatomists connected with the medical schools of universities, in order that all may profit, and ultimately facts will replace beliefs and hypotheses. Obviously much more can be derived from an examination of fetuses than from an examination of adolescents or adults when tissues that were present in early life have disappeared through atrophy. It is very evident that in the transition from vertebrate to invertebrate is to be found the cause of many of the anomalies of development.

I have in the hospital at present the following illustrative cases: Case 1. A man, aged thirty-two years, with exstrophy of the bladder, non-union of the pubic bones, complete epispadias, and no umbilicus. Case 2. A girl, aged four and one-half years, with exstrophy of the bladder, non-union of the pubic bones, and a slightly clubbed left foot, a later defect. The umbilicus in this case was in the normal position, and there was an area of the skin between it and the border of the exstrophy. In both of these cases the ureters were transplanted into the upper rectum, and the left sigmoid and the bladder were removed. Case 3. A boy, aged fifteen years, in whom tension on the bladder had not appeared until the pubic bones were united. Epispadias was present. There were no sphincters, and there was constant soiling from leaking urine. The ureters were transplanted to the rectum and sigmoid; the bladder was not disturbed. Case 4. A baby boy, with imperforate anus, on whom it was necessary to perform colostomy a few days after birth. The lower end of the rectum was connected by a small opening with the membranous urethra. The left foot was clubbed.

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#### METHOD OF EXAMINING THE NEPHRITIC PATIENT.

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There is a distinct tendency today in medicine to replace old, tried, simple methods by new, rather complicated methods and laboratory tests. This is unfortunate for two reasons: Often the new give no more information than the old; the physician loses his skill with the old and so cannot apply them to greatest advantage when conditions arise which reduce his possible methods to the simplest types. Methods and tests too complex to be carried out by the physician himself always are at a disadvantage when it comes to interpretation of the results in relation to the patient, especially because the physician who does not know how to do the test fails to appreciate its limitations, and the doer of the test, knowing nothing of the patient, is equally handicapped. This is not to say that these newer, more complicated methods are of little value. Many are of very great value in their

proper relationship to individual patient and other methods. Their use requires intelligence both in application and interpretation. When this is lacking perhaps the patients profit most in their omission. I believe that for the majority of patients perfectly adequate study can be made with relatively simple methods. As an example of this I will run over what seems to me to be the best methods for the examination of nephritic patients.

#### *History and Physical Examination.*

A careful, complete history and thorough general physical examination should be the first step in the study of every nephritic. Study of the heart and blood vessels is particularly important. The size and rhythm of the heart should be determined. X-ray examination of the heart usually is not needed, for simple methods tell us quite accurately its size. If X-ray examination is made the tube should be at least six feet from the plate to give parallel rays so as to prevent distortion. Rhythm usually can be analyzed satisfactorily without electrocardiogram if the examiner understands cardiac arrhythmias. The electrocardiograph, of course, gives more accurate information, but practically it can usually be dispensed with to no detriment to the interests of the patient. The same applies to the polygraph. Certainly the patient of moderate means should not be urged to pay for either X-ray or electrocardiographic study.

Much can be learned from the study of the pulse. It is most unfortunate that the clinician of today so often has lost the keen touch of the older generation who had to depend on their simple senses and common sense for so much of their information about their patients. I have been interested to find that at times I can detect a pulsus alternans which tries the patience and technical skill of my assistants to demonstrate with any type of polygraph. The pulse must be studied to determine changes in vessel wall, variations in pulse wave and the characteristics of the rhythm. As stated above, most arrhythmias can be accurately diagnosed with stethoscope and palpating finger. A manometer is needed to record blood pressure; both systolic and diastolic pressure should be recorded. The manometer often will detect a pulsus alternans missed by finger

and polygraphic tracing. In fact, to recognize pulsus alternans feeling the pulse, use of the manometer and a polygraphic tracing are often needed, for sometimes the one or the other gives the evidence. In using the manometer the auscultatory method is best for pressure determinations; it is well to remember that at times silent zones occur below the actual systolic pressure, and so the true pressure will be missed unless the pressure is pumped up high and observations made of the level of pressure of the first appearing sounds with both a rising and a falling pressure. Such silent zones probably arise from temporary spasm of the wall of the artery.

Ophthalmoscopic examination should be a regular part of the routine physical examination of the patient. Much of the greatest value in diagnosis and prognosis is thus learned. The modern electric ophthalmoscope is so simple that all practitioners should use it. Periodic weighing of patients is important. It gives the best index of variations in edema. It is an indication of the adequacy or inadequacy of the diet. A progressively falling weight when the patient is given a diet of sufficient calories is a sure sign that the disease is progressing unsatisfactorily.

Hemoglobin estimations and red cell counts are other methods of following progression of nephritis, as a progressive anemia is a definite sign of a downward course in the patient's illness.

#### *Urine Analysis.*

Much is to be learned from study of albumin content and the casts and cells in the sediment. There is a very unfortunate tendency to neglect this, especially the latter, and to do it carelessly. Sediments must be studied in freshly passed specimens, for they often disintegrate quickly, particularly in alkaline urines. The very general custom of having urine sediments examined by technicians probably is the cause for the very general neglect of the valuable information to be obtained from such study. If physicians would study the urinary sediments of their patients for themselves instead of having technicians do it, they would know vastly more about what is going on. No description given you can possibly replace personal observation of casts and cells in the urine. The cast and cell picture gives us our most accurate



knowledge of the degree of activity of renal disease.

Glucose should be tested for and the specific gravity taken. The twenty-four-hour amount of urine of patients under study should be measured and recorded. The value of this information is greatly enhanced when similar observation of fluid intake is made. The important thing to know is whether there is a normal balance between fluid intake and urine output. The output of urine should be about two-thirds to three-fourths of the fluid intake. This varies with temperature, for in hot weather much more water leaves the body as sweat.

Except for albumin, glucose, casts and cells, specific gravity and amount, little else can be learned from the study of the urine. Other observations on urine, so often reported from laboratories, are of no real help in studying the nephritic and represent an unintelligent waste of money and energy.

#### *Tests of Renal Function.*

Three tests are worth while carrying out. The others may be of use in investigation but add no knowledge of practical value for the nephritic. Of course this statement only holds true of present knowledge; better tests may supplant these three later. One of these tests is of use only with slighter degrees of nephritis; with more advanced stages only two are needed. The three tests are (1) the two-hour or concentration test, often, though incorrectly, called the Mosenthal test; Mosenthal merely modified the diet to suit Americans; (2) the phenolsulphonophthalein test, and (3) the determination of the total non-protein nitrogen or of the urea nitrogen of the blood. Only one of these determinations is needed.

The following is the best way of procedure: If it is not evident that the patient has very mild nephritis, the phenolsulphonophthalein test should be done, and before breakfast in the morning blood be taken from an arm vein for chemical analysis. Urea determination on the whole is easiest as to technique and yields perhaps a little more information than total non-protein nitrogen. However, either is satisfactory. If the values for 'phthalein excretion and blood nitrogen are about normal, the two-hour, or concentration test, should be done.

This may be done at the outset in the obviously mild nephritis.

A single test of renal function may be misleading. By repetition one learns much more, for it is the trend of renal function over a period of time that is important in the nephritic case. Repetition, too, eliminates the errors of faulty technique.

With the 'phthalein test failure to empty the bladder, either because of prostatic enlargement or nervousness, is the most frequent source of error. This easily can be checked by catheterization. When there is a considerable discrepancy between blood nitrogen and 'phthalein excretion values this should be done or, at least, the test be repeated. Blood nitrogen values are influenced by diet. This needs to be kept in mind in interpreting results. Also this fact enhances the value of the results as a guide to proper protein intake in the diet and an index of progress in the patient.

The two-hour test requires nothing more than a three-meal diet with the largest proportion of the protein and salt in one meal. Specimens at two-hour intervals during a twelve-hour day are collected and measured. Separate specimens are not needed at night, only the total night amount. Specific gravity is recorded for each two-hour day specimen and for the night amount. No test could be simpler.

The 'phthalein test in simplest form can be carried out by any physicians on office or house patients. Blood nitrogen determinations require skilled laboratory technique. Fortunately very much can be learned without using the latter, especially when all of the other methods spoken of above are carefully carried out.

Except for the blood nitrogen determinations there is nothing needed in a thorough study of the nephritic patient beyond what any physician can readily learn to do; in fact, should know how to do, and should be expected to do. These methods are relatively simple and not time-consuming if intelligently planned. They yield, when completed, knowledge indispensable for a proper handling of nephritic cases. The only complex one, blood nitrogen determinations, can be dispensed with without any great loss to the patient. I should prefer to see its omission rather than imperfect carry-

ing out of the other simpler measures as is so often seen.

What I have said of the nephritic patient applies to other groups. Simple methods of study are the most valuable ones we have. Undue multiplication of tests tend to obscure the picture, especially when the interpreter of results is none too familiar with the tests or the patient. It is better for the practicing physician to adhere to methods thoroughly tried out. The trial out of new methods rightly belongs to the teaching and investigating clinics, and they need to be more cautious than at present in putting their stamp of approval on the new. By all means be sure not to make your patient pay for some examination of only problematic value to him.

*Peter Bent Brigham Hospital.*

## THE STORY OF THE X-RAY.\*

LESTER J. WILLIAMS, M.D.,  
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Tracing the science of medicine from its earliest recorded period, there has appeared as a seemingly vital part of it some mysticism and a great deal of romance. The drugs were prepared at certain phases of the moon with weird lights and solemn incantations. A man of medicine was marked as one who possessed supernatural power and was set apart from his brethren as one of a higher order.

What would the ancients have thought if they could have returned to our planet in 1895 (not thirty years ago), when the X-Ray was presented to the world?

To actually have an apparatus that had the power to penetrate objects opaque to ordinary light was not even a vision with our most distinguished scientists a few years prior to this epochal discovery.

And the fact of its practicability constitutes the greatest wonder that medicine has produced. The operation of the machine itself is almost uncanny. It is as if a fairy dwelt within the confines of the transformer ready to do the bidding of the doctor.

From the first day that this fairy located the key within the closed book, the demands of the doctor have become more and more varied.

The location of foreign metallic bodies and the diagnosis of fractures has become a most ordinary procedure. The examination of the gastro-intestinal tract by means of the opaque meal is now a routine measure. Every specialty has need of the X-Ray and there is no physician who would care to practice medicine without the aid and assistance of the X-Ray's penetrating eye.

In an address recently delivered Dr. William J. Mayo paints a vivid picture of what would happen if a surgeon became blind. He then refers to the X-Ray as the eye of the surgeon, and adds that when the X-Ray is discarded the surgeon is as blind as if he had lost his eye-sight.

During the war with Germany the X-Ray proved its worth time after time. The rapidity of its work among the wounded, the facility and ease with which the wounded soldiers were rayed and diagnoses made were astonishing.

The Germans shipped from America quantities of contraband articles hidden in bales of goods, and after America declared war infernal machines were likewise hidden, timed to explode in mid-ocean. Again the X-Ray proved its worth, and instantly located the articles without the necessity of further search.

Even the battle planes were made safer from accident by the examination of the plane with the X-Ray to discover imperfections in the materials used.

In one of the late novels—*Black Oxen*—the authoress makes of her heroine a woman who has been rejuvenated by the Steinach method, which is an X-Ray treatment, utilizing the stimulating effects of the X-Ray. The story is rather far-fetched and yet Holzkecht of Vienna reports of some of the cases treated in collaboration with Steinach that "The lassitude had disappeared and full physical and mental vigor had been restored; a decidedly more youthful appearance had been noticed, as evidenced in the better circulation and greater firmness of the skin."

But are we any nearer the fountain of youth with the X-Ray than Ponce de Leon was? Conservative thinkers reply in the negative.

It is admitted, however, that in treatment the X-Ray has shown a most wonderful growth. From the treatment of

\*Presidential address delivered before the Louisiana State Medical Society, Opelousas, La., April 22-24, 1924.



facial blemishes it has progressed through the treatment of diseased tonsils, until now, thanks to our German friends, the X-Ray with its Deep Therapy has entered the lists to war on cancer.

Before the war the Germans had done some work in Deep Therapy, but it was not until 1920 that news reached us that they were using with good results a machine with a penetration of twenty inches. Immediately the American manufacturers investigated the German apparatus, with the result that the best Deep Therapy machines now on the market are of American design. This was made possible by the efforts of Coolidge, an American physicist, who perfected a tube that was capable of carrying this enormous voltage.

He has now made a greater stride by reducing the time of treatment. For deep seated conditions the time necessary for treatment was obviously quite long, but with the new water-cooled Coolidge tube with the capacity for increased milliamperage the time factor is lowered.

Coolidge as well as many other investigators in this field are indebted to Wilhelm Conrad Roentgen, whose discovery made these wonders possible, and whom medicine has honored by naming for him the rays to which he applied the algebraic symbol X.

Roentgen the only child of wealthy parents was born in Lennep, Prussia, in 1845; while most of his life was spent in Germany his early scientific education was received at an engineering school at Apeldoorn in Holland. At the age of twenty he was graduated from the university in Zuerich, Switzerland, with the degree of Doctor of Philosophy. With Prof. Kundt he went to Wuerzburg, a place he was later to make famous by his discovery of the X-Ray. An assistant professorship in physics in Strassburg was his next position, and at the age of thirty he began teaching mathematics and physics at the Agricultural Academy in Helenheim. Later he returned to Strassburg and as Prof. Kundt's associate he taught theoretical physics.

For nine years or until he was forty-three years of age Roentgen was professor and director of the institute of physics at Geissen, leaving this position to accept the directorship of the depart-

ment of physics at the University of Wuerzburg, and while there in 1895 discovered the X-Ray or Roentgen Ray as it is now called.

But the entire credit should not be given to Roentgen alone, for there are others, whose discoveries were important steps making the ultimate goal possible. And to these scientists should we accord their just share in this honor high enough to include all contributors.

Particularly should we honor Crookes, an Englishman, for his tube, and without doubt Crookes was really the first to produce X-rays.

In the discovery of the X-Ray we can almost imagine that the stage was set for the act, each scientist entering and acting his part, making his discovery a part of the drama, leading to the climax of the play or the final discovery.

First to enter on the stage is Otto Von Guericke with the air pump to produce a vacuum, this in the year 1650; then came a high tension electric current to send through this vacuum. For the production of the high tension current we are indebted to Faraday in 1838. Twenty-one years later Geissler studied the effect of passing a high tension current through a vacuum tube, but failed to produce the X-Ray because the degree of vacuum necessary was lacking. This deficiency was supplied by Herman Sprengel in 1865, who invented the mercury air pump, permitting high rarefaction with more rapidity.

Then upon the scene came England's son, Sir William Crookes, who in 1875 exhausted tubes to the required degree of vacuum and without a shadow of a doubt produced the X-Ray.

This was the cue, to continue the phrases of the stage, for Roentgen of Wuerzburg to enter with a coil, a small cylindrical-shaped tube, and a screen consisting of a piece of card-board with some crystals of barium platino-cyanide deposited on it.

He actuated the Crookes tube, when to his amazement the crystals on the cardboard, which had been placed on a table some distance away, fluoresced. Again he actuated the tube making doubly sure that all light was excluded and again the fluorescence appeared.

"What did you think when you observed this phenomenon?" was asked of

Roentgen. "I did not think" replied the discoverer "I investigated."

Like the frontiersman who blazed the path with his ax, so did Roentgen in his investigation open the way for added exploration, until now the Roentgen Ray has become so much a part of our lives that even the children are familiar with some of its wonders.

Since 1895 the X-Ray has passed through many cycles beginning with an extreme optimism when everything was expected of it and nothing seemed impossible. Then the pendulum swings back equally as far to the stage of pessimism, when it was found to have limitations, and the X-Ray considered without value on account of these limitations. Now the pendulum is stationary at the stage of conservatism. The minor limitations are recognized and discounted, for the impossibilities of the past have become the routine work of the present, and who among us has the prophetic vision to forecast the future wonders of the X-Ray.

When Roentgen died in 1923 thousands of physicians in all parts of the world were enrolled under his banner as Roentgenologists engaged in the work founded by this scientific genius.

To these men engaged in this hazardous branch of medicine I am paraphrasing the words of Guy de Chauliac who in the 14th century addressed the following to the surgeons of France:

"Let the roentgenologist be bold in all sure things and fearful in all dangerous things; let him avoid all faulty treatment and practices. He ought to be gracious to the sick, considerate to his associates, cautious in his prognostications. Let him be modest, dignified, gentle, pitiful and merciful; not covetous nor an extortionist of money. But rather let his reward be according to his word, to the means of his patient, to the quality of the issue and to his own dignity."

### THE PROPER EVALUATION OF LOCAL ANESTHESIA.\*

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Local anesthesia has a large and helpful place in surgery and its use is

to be encouraged, but in spite of this there are certain factors which make a more detailed analysis of its status necessary at this time. In the beginning, let me apologize for seeming in any way to detract from this most valuable surgical adjunct, and let me say that my purpose is merely to weigh some of the evidence, and to urge its use only in properly selected cases.

Fixed ideas and dogmatic statements are not conducive to medical progress. The physician with the single-track medical or surgical brain will soon collide with some obstacle. I can illustrate this in no better way than by recalling to your minds that there was a time when the surgeons in this section were considered extremists in the use of chloroform as a general anesthetic. We were almost the last to abandon the universal use of this drug, in spite of the fact that all the commissions which had investigated the comparative statistics gave a much lower mortality to ether. It took several deaths in quick succession to make us see the light. I may say in justification of this stand, however, that I have been informed by naval surgeons working in the tropics that they get a better anesthesia in those hot climates with chloroform. This may be due to the low boiling point and too rapid volatilization of ether; indeed, in one institution in New Orleans, during very hot weather, the ether to be used on a given day is "frapped" by being kept in a tub of cracked ice to reduce its boiling point temporarily.

While the general anesthetic in use at the present time, such as ether, nitrous oxid and ethylene, have a definite mortality, Hare pointed out long ago that this is very low, and that the risk is scarcely greater than is incurred in the pursuit of one's daily routine. People do not hesitate to take an ocean voyage for pleasure, yet the incidental risk is rather greater than that of being put to sleep by a competent anesthetist. I dare say that the increased number of automobiles in our urban communities jeopardize life much more than does a well-administered general anesthetic. Now a favorite argument of the advocates of local anesthesia is that there is no direct mortality dependent on its use. This may be true, but there is an attend-

\*Read before the Seventh District Medical Society, Crowley, La., March 6, 1924.



ant morbidity and mortality which certainly must be considered. In my own experience local and general anesthesia divide the honors as far as mortality is concerned. I have lost one goitre patient on the table under ether from the collapse of a sabre trachea, and one nephritic died after a very satisfactory operation for hernia under local anesthesia. Both patients were in good condition, and in both instances the anesthetic seemed to be the factor which precipitated the unfortunate termination.

Before considering the disadvantages of local anesthesia, let us review in a general way some of the more important indications for its use. Certainly one of our fundamental present-day difficulties is the securing of trained anesthetists in any but large surgical clinics where sufficient salary can be offered to make this specialty attractive. As a rule, in most of our institutions we are compelled to depend upon an ever-shifting class of internes who are not interested in this branch of surgery, as they do not intend to follow it. The long induction period with the patient held down by several attendants, the discomfort of the surgeon who operates on a struggling patient, and the consequent stormy post-operative course have compelled us in many instances to resort to local anesthesia. For this reason, if no other, it is well for the general surgeon to acquaint himself with the technique of local anesthesia, which will not only add to his usefulness, but will be an incentive for him to keep himself informed in anatomy, for it has been well said that for a man to be proficient in local and regional anesthesia he must be a competent anatomist.

It is all the more imperative to be familiar with all phases of local anesthesia as it does not seem likely that the supply of general anesthetists is likely to increase at any time in the near future. Let me say parenthetically that this is an important reason why legislatures should be discouraged from passing laws limiting the administration of general anesthetics to registered physicians. We all know many nurses who are fully competent to look after this procedure. Whenever I am asked to favor such an act, I always answer by assuring the professional anesthetist

that I shall be glad to play the game his way as soon as he can keep me supplied with men of specialized training who will not gouge my patients with exorbitant fees, who will furnish a routine brand of service, and who will devote their time and energy to the patient's anaesthesia and not to my operation. This usually puts a quietus on the argument.

The use of local anesthesia makes one a profound student of temperament as well as a good anatomist and physiologist, and the recent demonstration of Professor Hans Finsterer of Vienna would seem to lead to the conclusion that its possibilities are unlimited. To see this master of surgical technique demonstrate his splanchnic and mesenteric anesthesia and resect two-thirds of a patient's stomach seems more than dramatic. The wonderful work of Braun, followed by Crile, Cushing, Bloodgood, Allen, Hertzler, Labat and Farr, makes us realize the far-reaching possibilities of the regional and neuro-regional methods, the latter exemplified in the work of Kulenkampff, Kappis, Schlosser and Hartel, to say nothing of our own great pioneer, Dr. Rudolph Matas. But in spite of this, there are other factors to be taken into consideration, age, sex, race and temperamental characteristics. Except for the brilliant results of Bevan, Lewis and Downes in operating on infants with congenital pyloric stenosis by the Fredat-Ramstedt technique it is questionable whether satisfactory work can be done under local anesthesia on any but starved and many times moribund infants. Certainly women are poorer patients than men, and such temperamental races as the Italians and French make undesirable subjects. Also, I still hold the view which I advanced before a society meeting some years ago, that local anesthesia should usually be the method of choice in old people, in all operations for strangulated or incarcerated hernia, and in physicians, for this last group of patients always has a dread of losing consciousness.

In so far as actual operations are concerned, it is usually agreed that in those surgical procedures where anatomical lines can be followed, such as hernioplasties, removal of tumors and dissec-

tion of nerves and blood vessels, regional and neuro-regional methods of anesthesia have their greatest field of usefulness. It is doubtful whether we should employ either of these methods where there is danger of diffusing cells from malignant disease, or bacteria from infected foci. During the World War we learned very early that debridement could not be done with the same high percentage of primary union when a local anesthesia was used in preference to ether narcosis. The toxic thyroid is another contra-indication unless some other form of anesthesia is used, such as nitrous oxid, to "take the patient out of the operating room." This may seem to be a paradoxical statement in the face of the brilliant work of Crile, but I have always felt that the greater part of Crile's anoci-association was Crile himself, who is certainly a master technician and in whose hands even less drugging than his present method demands would be necessary to obtain his brilliant results. Again, a sub-total gastrectomy in Finsterer's hands seems easy, but I doubt whether many of us could do so well.

Most of the deliberate operations on individual abdominal organs can be successfully performed under local, including the appendix, the gall-bladder, the organs of the female pelvis, and the kidneys, but we must remember that in at least 35 per cent of patients with intra-abdominal disease there is more than one condition present, and a certain amount of exploration is always indicated. Opening and closing the abdomen is simple enough, injection of the mesentery of any single organ will control local pain, but an attempt to work beyond a limited area is always accompanied by a sickening feeling referred to the epigastrium, and almost invariably followed by vomiting, and partial or complete evisceration with its usual serious consequences, often necessitating a general anesthesia to replace the extruded organs. The early work of Matas in the resection of both superior maxillae in one patient after blocking the second division of the trifacial was a brilliant achievement which antedated the subsequent work of Hartel, Schlosser and others who used the same or a similar technique in their respective procedures for alcoholization of the

branches of the trifacial in tic douloureux. The injection of large nerve trunks, either without or with exposure, is helpful in many operations, but as I have already pointed out, it is much more useful when we follow anatomical lines. It is for this reason that the repair of hernias lends itself especially to the use of local anesthesia by the regional or neuro-regional method, and again for this reason I have chosen to make an analysis of a series of operations for the cure of this condition to show that we should be elective in the choice of our anaesthetic agent.

In operations for the cure of hernia the avoidance of recurrence must be our prime consideration, and it is an admitted fact that the incidence of recurrence is in almost direct proportion to the number of deep infections following the operation. There are other factors, of course, but the greatest number of recurrences follow infection. The figures collected for me by Dr. A. B. Pitkin from the record room of Touro Infirmary show that suppuration is just three times as frequent after local anesthesia as after general, and this in spite of the fact that operators are usually more careful in handling tissues when patients are awake. This is fairly conclusive evidence that the use of local anesthesia does reduce local resistance to infection. The fault does not lie in any one agent. Some years ago I began observing the local effect of such drugs as cocain, novocain, tropocain, etc., in respect to local inflammatory reactions, and I could see no material difference. One manufacturer added a chemical antiseptic to his product, and this seemed to cause more local redness. The local reaction of tissues to the double salt of quinine and urea has led to its use being abandoned by nearly everyone. Adrenalin is a necessary addition to all solutions which are used, and the temporary anaemia and reactionary hyperaemia may be the cause of some of our bad results. It is useless to remind you that small blood accumulations separate the tissues, thereby preventing close union, and at the same time act as pabulum for any micro-organisms that may be carried in by the many needle punctures or the skin incision. While the deep anesthesia can be secured by the method of Cushing and Bloodgood, cre-



ating an oedema of the analgesic solution around the ilio-inguinal and ilio-hypogastric nerves, the skin of the area must be anesthetized by local infiltration, and it is this procedure which is fraught with danger. In working with this neuro-regional method, now advocated with slight modification by Labat and others, I attempted to minimize the amount of solution, thinking that the odematization might be the cause of lowered resistance, and I found that an average of one ounce of a  $\frac{1}{2}$  per cent solution of novocain was sufficient for most cases, but this did not seem to influence the results materially. It is probably no single factor, but a combination, which gives us three times as many infected patients when local anesthesia is used.

The figures cover a period of eighteen months, ending October 24, 1922. The operations were performed by some fifteen surgeons, hence bad results cannot be charged to the carelessness of any one operator. There were 457 operations tabulated, with 222 under local and 235 under general anesthesia. Fourteen were femoral hernioplasties, six under local and eight under general, and in this group there were no infections, just why I cannot say. The other operations were all inguinal hernioplasties. In the whole group there were 56 infections following local anesthesia (usually  $\frac{1}{2}$  per cent novocain with 4 m. adrenalin to the ounce), and 20 infections when gas, ethylene or ether was used, that is 25.2 per cent for local as against 8.4 per cent for general anesthesia. The Bassini or Ferguson-Andrews operation with only slight modifications, was done throughout the series.

In conclusion, let me emphasize again that age, sex and race must be considered, as well as anatomy and pathology, in the selection of an anesthesia for a given patient. Then, when local anesthesia has been selected, we must be prepared for infection three times as often as when general narcosis is employed. Careful technique may reduce this figure somewhat, but we must not lose sight of the fact that we cannot expect the same immunity from local inflammation when we have so many factors predisposing to supuration in the use of local anesthetics.

## LUMINOL OF SODA IN THE TREATMENT OF HYPEREMESIS GRAVIDARUM.

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The high hospital mortality which is reported for the severer types of hyperemesis gravidarum, variously estimated at from 10 to 20 per cent, is easily explained on the ground that a large number of the cases are admitted in an extreme degree of starvation and highly toxic, while others are actually moribund, so that no form of treatment, including the induction of abortion, can be expected to avail. On the other hand, the condition is a serious one, even under the most favorable conditions in private practice, and because as yet no theory has been advanced to cover all its phases, the treatment remains largely empirical and correspondingly unsatisfactory.

As yet no specific toxin has been isolated as the causative agent, but it is generally accepted that the liver is unquestionably the organ which is primarily involved, though just what brings about the dysfunction has not been satisfactorily explained. The best explanation yet offered is that in some manner it becomes incapable of storing glycogen and because of this inability is also incapable of detoxifying substances from the intestinal tract. Logically, therefore, the administration of glucose should rectify this condition, but that it does not is proved by the fact that practically all that is injected is eliminated through the kidneys very shortly after its entrance into the blood stream.

Possibly the glands of internal secretion, acting directly through the sympathetic nervous system, are partially responsible, but we cannot say definitely that any particular gland or group of glands plays a specific part. In our hands the administration of various glandular extracts, particularly corpus luteum, as advocated by Dr. B. C. Hirst, has proved very disappointing, and I am strongly inclined to believe that any

cases which improved under this treatment would have improved in the same degree under any other form of suggestive treatment.

For a long time it was believed that Williams' theory of the rise in the ammonia coefficient, while it did not explain the causes, would at least aid us in the differentiation between the toxic and neurotic types, but it is now generally believed, and Williams himself takes this view, that this rise is the sequel of starvation, and therefore is of no value in diagnosis. Recent investigations of the liver function in the phenol-tetrachlorothalein test seem to indicate that we may expect considerable assistance from it in determining the degree of liver involvement and the toxicity of the causative agent, as well as in differentiating the types.

Kidney involvement is apparent only at the last, and is usually manifested by a slight trace of albumin and occasional casts, proving that whatever pathology does occur is in the convoluted tubules. Acetone is of common occurrence, but merely indicates a condition of acidosis, the result of starvation and dehydration. Experiments on the carbon dioxide combining power of the blood have been uniformly negative.

Undoubtedly the larger group of these cases is neurotic rather than toxic in origin, but the differentiation as yet is obscure, and even the neurotic group does not respond readily to treatment in all instances. Personally, I am firmly convinced that in the early stages both morning sickness and pernicious vomiting are the result of pylorospasm, though whether as a reflex from the pregnant uterus or from the glands of internal secretion I am not prepared to say. Moreover, the mortality is always directly in proportion to the duration of the symptoms. Therefore, every case of the so-called morning sickness of pregnancy should be regarded as a potential case of hyperemesis gravidarum, and should be treated accordingly. The institution of simple measures, such as the regulation of diet, frequent small meals, the correction of constipation, exercise, and the administration of small doses of sedatives will cure a very large proportion of the early cases. Too many patients, however, regard this condition as an integral part of their pregnancy, and

delay consulting their physician concerning it. They should not be alarmed unduly, but they should certainly be informed that this is not the case, and warned that it may develop into something very much more serious if it is not checked.

I have been led to consider this subject again for two reasons: In the course of another investigation I happened to have my attention called to the results in the treatment of this condition in one of the Charity Hospital wards, and was reminded anew of how serious a complication of pregnancy it may become; and I desire to record the very successful results I have had from the use of luminol of soda (phenolbarbital sodium) as advocated by Dr. Ralph Luikart in the April, 1923, issue of the *American Journal of Obstetrics and Gynecology*.

During the period from 1920 through 1923 38 white women were admitted to ward 65 at Charity Hospital with a diagnosis, afterwards confirmed, of the vomiting of pregnancy. The ages ranged from 15 to 42. Fifty per cent were primiparae, but one patient was pregnant for the thirteenth time. The stage of gestation ranged from 6 weeks in 3 patients to 7 months in one, following dengue fever; 55.3 per cent were pregnant about 3 months. Eight patients had had the same condition in previous pregnancies, and in one case it had occurred 3 times; that is, over 21 per cent of the multiparae, who formed 50 per cent of the series, had experienced this trouble more than once. The duration varied from 1 week in 3 patients to 3 months in one. With the majority it had lasted about 2 months. Eighty-two per cent had temperature above normal, the great majority being below 102. Twenty-four patients, 63.3 per cent, showed a pulse rate over 100, and in 16 of these cases it was over 130. Thirty-nine per cent showed changes in the urine, including albumin, casts, acetone, indican and diacetic acid. The highest blood pressure was 135-85, the lowest 84-60. In 4 cases the hemoglobin ranged from 50 to 30 per cent. Six patients had positive Wassermans, and one had a gonorrhoeal infection. Eight were markedly emaciated, two having lost 20 and 50 pounds, respectively, and 10 showed definite evidence of dehydration. Three



patients had goitres, 2 being definitely toxic. Three had pulmonary tuberculosis. Other complications included acute parotitis, measles, a streptococcal leg abscess, appendicitis and jaundice. Every possible method of treatment was used, including rest in bed for all cases, proctoclysis, hypodermoclysis, infusion, transfusion, purgation, alkalization, gastric lavage, tube feeding, bromides, opiates, glandular extracts—one patient had 25 corpus luteum injections without result—and 5 therapeutic abortions, 3 by catheters, 1 by catheter and bag, and 1 by hysterotomy.

In 23 cases the vomiting was checked entirely in from 5 to 40 days, the average being from 12 to 15 days. Eight patients left the hospital against advice, improved but not cured; one of these had remained 35 days. Seven died, a mortality of 18.4 per cent, and an analysis of the deaths is interesting. The first patient had a positive Wasserman, pulmonary tuberculosis, and a streptococcal leg abscess, which had to be drained; she aborted spontaneously a month after admission, at 5 months, and died one hour later. The second had a toxic goiter, with a pulse never under 140; she died suddenly on the fifteenth day, when she was three and a half months pregnant; the vomiting had never been checked. The third case had a hysterotomy 2 months after admission, at 5 months; she died on the third day. Case four had an induced abortion after a month, at 4 months; she died in 3 days. Case five had an induced abortion after 2 weeks; she was 4 months pregnant, and died in 12 hours, before delivery. Case six was admitted practically moribund, and died in convulsions in 48 hours; she was about 4 months pregnant, and had pulmonary tuberculosis, as well as a marked anemia from malnutrition. Case seven had an induced abortion 3 weeks after admission; she developed parotitis and died in 12 days, being about 3 months pregnant.

A survey of these figures proves certain facts very definitely. The cases admitted early responded to treatment with a fair degree of promptness, but the longer treatment was delayed, the less hopeful was the prognosis. Every known therapeutic agent was employed, but no one method was uniformly successful, and the results in general were

most discouraging. An analysis of the deaths, omitting those in which other complications were present, shows that if therapeutic abortion is to be of any value it must be performed early; otherwise it simply hastens the fatal issue. In justice to the staff it should be pointed out that in many instances the patients, because of religious convictions, rejected the proposal to empty the uterus, and the delay should be charged up to this fact, and not laid at the door of the service.

I admit that the records from a public institution are in no way comparable to those in a carefully supervised private practice, but every obstetrician at some time runs across neglected cases in his private work, or even carefully supervised cases which have gotten out of hand. At various times, therefore, in private work I have been called upon to meet these problems, and I have used every method of treatment, only to discard them all. I obtained particularly unsatisfactory results with the Paddock treatment by duodenal tube. I found that the difficulty of swallowing the tube increased the nervousness of patients already extremely excitable, and it was rarely retained long enough to get into the duodenum. I have carried possibly 15 cases along by the starvation method, hospital treatment, isolation in the charge of a competent nurse, complete starvation for 24 or 36 hours, the fluid balance being maintained by hypodermoclysis of normal saline solution, and proctoclysis, with a return to a graded milk and cereal diet, and then to solid food. I never permit a patient to go longer than three or four days with a pulse over 100 without advising termination of the pregnancy. This is one of the signs of increasing toxemia, and a thorough respect should be paid to it. This treatment, as I have said, has been fairly successful, but it is long and tedious, and I am never certain what the outcome will be.

Acting upon Dr. Luikart's suggestion, for the last year I have been using luminol of soda in all cases where the vomiting of pregnancy was not amenable to simple measures, and so far I have had unqualified success. To date I have used the treatment in 10 patients. Five were retaining possibly a third of the food ingested, but were losing strength and

weight. The other five were undoubtedly instances of pernicious vomiting, but whether toxic or neurotic I cannot say. All of the latter group had been under hospital treatment in other services and had had the routine measures of proctoclysis, hypodermoclysis, glucose infusions, starvation treatment and glandular therapy, with little or no result. One of them, at least, was quite as ill as any patient I ever saw under the same circumstances in a public service. The same treatment was employed with all. Two grains of luminol of soda was given one hour before each meal, with the same dose at bedtime, all by mouth except in 3 cases, where the first doses were given by hypodermic, and the patient was instructed to resume her ordinary diet. In one case, about three-quarters of the food taken during the first 24 hours was retained, after which there were no further attacks of vomiting; in every other case the relief was immediate. Within a week they had all gained weight and strength, their color was improved, and their outlook on life was very different. The number of doses was diminished after four or five days, and within three weeks the drug was discontinued entirely. In no instance has there been a recurrence of the trouble. At the present writing 5 of the patients have been delivered without difficulty of live babies, and the others are within one or two months of term.

The only untoward symptom following the administration of the drug was one case of urticaria, which was relieved by applications of soda paste. Several patients stated that they had had wild dreams, but none complained of restless nights due to drowsiness during the day, which Dr. Luikart mentioned as an objection in his report.

I can give no explanation for the success of luminol in the treatment of this condition except that it checks the pylorospasm, which I believe is largely responsible for the trouble. There may also be an indirect effect on the nervous system. I have not, of course, used it in a sufficiently large series of cases to make any statements of value concerning it, but certainly it has been the most satisfactory agent I have found as yet to combat this always annoying and frequently serious complication of pregnancy.

## WHAT PRODUCES THE SHADOWS IN THE AORTIC AND HILAR REGIONS.\*

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Because there existed a great diversity of opinion as to just what anatomical structures produced the shadows at the base of the heart and in the hilar regions, Drs. L. Delherm and Robert Chaperon undertook a painstaking and exhaustive anatomico-radiological study of the large vessels at the base of the heart and of the hilar structures, bronchi, pulmonary arteries and veins, with the hope of finding the correct answer to the following questions:

1. What produces the right border of the median shadow in normal subjects?
2. Where does the ascending aorta pass?
3. What produces the superior curve or the radiologic aortic arch?
4. What is the median curve, and what produces it?
5. What produces the hilar shadows?

In brief, their aim was to determine with precision the course of the aorta, the superior vena cava, the pulmonary artery and veins, the trachea and larger bronchi, and what relations these bear to each other on posterior-anterior views of the thorax.

Dr. Chaperon (1) made over 175 radiographs of 14 cadavers before and after injecting opaque material into the larger vessels, the trachea and the larger bronchi under fluoroscopic control. To avoid disturbing the thoracic organs and structures, the thoracic cavity was never opened, the opaque material being injected by way of the neck and abdomen. The youngest subject injected was 20 years old, and the oldest 83 years.

### *Aortic Shadow.*

Up to this time the majority of the authors (2) stated that the right border of the median shadow was formed from below upwards by the right auricle, the superior vena cava, and the ascending aorta. And that the left border of the median shadow was formed from above downwards by the first portion of the

\*Read before the Orleans Parish Medical Society, November 26, 1923.



descending aorta, the pulmonary artery and the left ventricle.

As a result of their studies on the cadaver, Delherm and Chaperon (3) furnish indubitable radiographic evidence that the right and left borders of the median shadow are formed as follows:

The right border is composed of four portions from above down:

1°. Passing obliquely across the sterno-clavicular angle, the shadow of the right innominate veins.

2°. Below is the external border of the superior vena cava, sometimes straight, but more often with a slight convexity outwards. It terminates in a slight notch. The point D.

3°. Below that point, the shadow of the right auricle, with convexity to the right is seen. A well-defined notch marks its lower end at the point D'.

4°. Finally, below this point D' a shadow usually vertical, but sometimes directed obliquely outward, reaching to the diaphragm is seen. This shadow is formed by the interior vena cava.

The left border is composed of five portions:

1°. The upper end, which varies in size with the age of the subject and the position of the arch of the aorta, has a straight course and is formed by the sterno-vertebral shadow. Rarely it runs obliquely upward and outward and is then produced by the left subclavian artery.

2°. A curved shadow with convexity to the left, the aortic hemi-circle or terminal portion of the transverse arch of the aorta.

3°. The first portion of the descending aorta, usually vertical, sometimes slightly oblique downward and to the left; its length is variable, normally in adults 1 to 2 cm. It may reach 5 cm. in cases of senile aortitis.

4°. Below the Median Curve of the Authors is seen. Its course runs obliquely downward and to the left in a slight notch at the point G. Delherm and Chaperon believe that in normal subjects this shadow is produced entirely by the trunk of the pulmonary artery, but they are willing to admit that when the heart lies in an exaggerated horizontal position, the lower portion of the median curve may be produced by the shadow of the left auricle.

5°. Below the point G the left border

of the median shadow is formed by the shadow of the left ventricle.

Contrary to the opinion generally held, the aortic shadow in none of their subjects, two of whom were 73 and 83 years old respectively, and had well marked senile aortitis, extended beyond the right border of the superior vena cava, and they were forced to conclude that heretofore the diameter of the whole or part of the superior vena cava has been included in the measurements of the transverse diameters of the arch of the aorta.

In one of their subjects the radiograph made before injecting the large vessels with the opaque solutions, showed a marked increase in the size of the shadow at the base of the heart, and the radiograph made after the large vessels had been injected under fluoroscopic control, showed that the aorta was only slightly enlarged, lying entirely behind the sternum, at some distance from the superior vena cava and in no wise responsible for the enlarged shadow noted above.

In a recent work, (4) to demonstrate the relationship of the heart and its valves to the anterior thoracic wall, Le Wald shows that the ascending aorta is situated behind and entirely hidden by the sternum, and that the right border of the upper portion of the median shadow is formed by the shadow of the superior vena cava.

#### *Hilar Shadows.*

De la Camp, Kraft, Arnsberger, Schellneberg, Juageas, Cottenot, etc., attribute the hilar shadows to the bronchial tree; Riedre, Albers-Schoenberg, Cohn, Barjon, Gauducheau, Bordet, Garcin believe that they are of vascular origin. Cowl, Groedel, Albert Weil attribute them in part to the vessels and in part to the bronchi. Finally, a large number of practitioners believe that they are of lymphatic origin.

As a result of their anatomico-radiological studies of the hilar shadows on cadavers injected under fluoroscopic control, Delherm and Chaperon conclude (5) that the normal hilar shadows and lung markings are produced almost entirely by the pulmonary arteries and their branches.

On good radiographs of living adults, these ramifications can be followed almost to the axillary zones of the lungs.

On the other hand in radiographs of cadavers of normal subjects when these arteries are empty and have not been filled with opaque material, the hilar shadows and lung markings are either absent or but slightly visible.

The larger bronchi produce clear band-like shadows nearly always visible either in the Postero-anterior or Oblique positions. Their absence suggests that pathological changes have taken place in the bronchi or the peri-bronchial glands.

The pulmonary veins usually invisible in children and adults can be seen in radiographs of elderly subjects and in certain pathological conditions.

When normal, the tracheo-bronchial glands are not visible, but when enlarged as the result of inflammation or disease, they may modify the shape and dimensions of the hilar shadows to a considerable degree. Under those conditions, the pulmonary arteries are no longer clearly visible, but become partially or totally submerged in a more or less dense shadow in contact with the cardiac shadow and usually having a flou or hazy outline, and the clear band (bronchial shadow) normally seen between the shadows of the heart and the pulmonary arteries disappears.

The authors believe that a correct interpretation of the hilar shadows is not possible without a minute study of the course of the pulmonary arteries and their branches, of the larger bronchi, and especially of their relations to the median shadow.

They have no doubt that in many instances the ramifications of the pulmonary arteries when unusually well brought out, have been diagnosed as peri-bronchial infiltrations and fibrosis.

The writer had many opportunities both in his hospital and private work to verify these landmarks, and he believes with the authors that as they become more generally known and appreciated, the diagnosis of enlarged aorta and of peri-hilar and peri bronchial infiltration will become fewer.

The measurements on tele-radiographs of the vertical diameter of the aorta (the aortic hemi-circle) in the Post-Ant. view, and of the transverse diameter of the ascending aorta in the oblique view, remain the same as before but the trans-

verse diameter of the aorta in the Post-Ant. view becomes much less than 4.5 cm. to 8 cm. varying with age of the subject, which is given by the majority of the authorities.

Just what this new measurement should be we are not prepared to state definitely at this time, but we are led to believe from measurements made on tele-radiographs of numerous subjects that 2.6 cm. at 20 years increasing with the age to 5 cm. at 70 is about right.

In our hospital service, we consider anything over 4 cm. in a subject 40 years or less, and anything over 5 cm. at 60 years, as pathological. These findings have been corroborated in a sufficiently large number of cases to convince us that the measurements given above are not very far from the correct ones.

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#### DISCUSSION.

Dr. I. I. Lemann: So important a presentation should not go without comment. To those of us who have seen what were apparently large median shadows, a change of the interpretation means a recasting of our ideas and a re-studying of the things we have seen in the past, as were as a proper viewing of the cases we see in the future. I have been a warm defendant of the idea, for a good many years, that mediastinae abnormalities of more frequent occurrence than most of us realize clinically. This piece of research, however, begins to shake my assurance and conviction, and if what Dr. Granger has brought to our attention to-night is correct, I am sure we must have made diagnoses of aneurisms when these did not exist. I hope he will continue his work on the cadaver and particularly on patients who later may come to autopsy and obtain still further evidence



on the subject. I hope also he will continue work on the fluoroscope and skiagraph in line with evidence he has to present to us tonight. There are so many patients in the Charity Hospital who later come to autopsy that I think he will find in New Orleans a great wealth of material.

I am also interested very much in the hilar shadows, and shall study them with new zeal and interest. I would like to ask Dr. Granger if it is true that there are more hilar shadows observed since our experience with the late war than before. If this be true, have we not been correct in attributing some of these shadows to the effects of "gassing" and of the great influenza epidemic?

(Dr. Granger) in closing said, in answer to Dr. Jones, that the measurements of the Aorta only apply to plates made with the patient in the upright position, and with a target-plate distance of 6 feet or more. According to Vasquez and Bordet, the transverse diameter of the arch of the Aorta under these conditions is from 4.5 cm. to 8 cm., varying with the age of the patient.

Basing his measurements on the new landmark for the shadow of the Aorta given by Drs. Delham and Chaperon, he found that the transverse diameter of the arch of the Aorta varies from 2.5 to 5 cm., according to the age of the patient. At 40 years he believes that 4 cm. is the maximum, and does not consider the Aorta enlarged unless its transverse diameter exceeds those dimensions.

He has studied carefully the median shadow in all the chest plates made at the Charity Hospital for the last six months, and in all of them the clear space which separates the Aortic shadow from the right border of the upper portion of the median shadow can be clearly seen, except in the cases of Aneurism, and he cannot help wondering why he did not make this observation before.

The work of Delham and Chaperon emphasizes the fact that a knowledge of the normal anatomic-radiological appearance of the various parts of the body is essential to make correct interpretations of radiographs. He shares Dr. Leman's opinion, that since the last war and the several flu epidemics enlarged hilar shadows are more frequently seen than before, but he is convinced that in many cases, intensified or slightly exaggerated hilar shadows and lung markings are incorrectly interpreted as peri-bronchial thickening and fibrosis, because it is not generally recognized that normally these shadows are produced by the pulmonary arteries and its sub-divisions, and that they vary considerably in subjects of different types and ages.

## TREATMENT OF PURULENT ARTHRITIS.\*

ISIDORE COHN, M.D., F.A.C.S.  
NEW ORLEANS.

*Professor of Clinical Surgery, Tulane University;  
Associate Senior Surgeon, Touro Infirmary.*

I wish to briefly discuss a treatment

for purulent arthritis which has revolutionized past ideas, and completely changed the prognosis in this class of cases. I refer to the Willems plan of treatment.

Five years have passed since Willems advocated the treatment of purulent arthritis "by wide arthrotomy followed by immediate active mobilization."

It is interesting to note that in his original contribution he states "no therapeutic law has been more firmly established than that which has made immobilization obligatory for every joint injury from the mild to the most severe."

We are all familiar with the old methods of treating joint suppuration. One has but to turn to the recent address by Professor Bastianelli (before the American College of Surgeons), in October, 1922 to find the following statement: "If we were asked what is the ultimate fate of an articular infection, almost everyone would answer that the result is the loss of function, if life and limbs are not destroyed."

He further states that "we must fight this opinion most strenuously, as the surgeon who believes this is like a general who believes that he will lose the battle."

"Let us say instead that the aim of treating lesions of the joints is to preserve function, and if certain rules are followed it is possible to do this in a great many more instances than is believed generally."

Bastianelli credits the late John B. Murphy with having demonstrated that distention of synovial membranes by exudation must be promptly relieved. Doubtless all are familiar with the fact that Murphy advised puncture, aspiration and formaldehyde and glycerine injections. Thus we find recognition of the early efforts to outline a method to prevent ankylosis.

It is surprising how few contributions to the subject of acute suppuration of joint lesions have been made in the last few years. Many of these which have been written have not taken into account the epoch-making work of Willems.

One may read in recent works devoted to joint conditions such statements as the following: "Willems advises in addition to the opening in the capsule early active motion to accom-

\*Read before the Orleans Parish Medical Society, January 28th, 1924.

plish drainage. Opinions differ as to the efficacy of this treatment. The Carrel-Dakin treatment has its advocates. Whatever method of drainage be adopted, care must be taken that it is thorough." (Ely.)

Ober advised against the abandonment of immobilization of septic knee joints.

One who has seen beneficial results from the use of the present method, which seems revolutionary, can agree in every word with the expression of Bastianelli. "It seemed impossible at the beginning of the war that purulent arthritis could be treated by small openings and by active mobilization, but now clinical experience has shown that mobilization according to Willems has stood the test of time."

The reason there has been so much skepticism about this latest development in joint surgery is a general lack of appreciation of the great ability of the synovial membrane to deal with infection.

Steward (in a recent issue of the *British Medical Journal*) claims that synovial membrane can deal with infection more efficiently than the peritoneum. Further, we sometime forget that absorption from synovial membrane is slow because of the absence of lymphatics within the joints. This slow absorption means distention of the capsule and a consequent loss of tonicity of the capsule; retention of infection within the joint results in destruction of the joint cartilages.

In order to avoid destruction early treatment must be instituted, and this following the old rule where there is pus it must be evacuated.

Referring once more to the work of Bastianelli, we find the statement "we are coming back to the old, venerable tradition, nature healing efforts."

Willems recognized that immobilization, and introduction of drainage tubes followed by frequent irrigation, meant only one result—ankylosis. Most of us can point to some such result in our experience.

All of us recall cases of acute supuration within joints which has resulted in ankylosis, whether from punctured wounds or metastatic infection. They will also remember that ankylosis has followed even when drainage was

established. We do not have to look back many years to recall the time when the master surgeons would incise and drain a joint and introduce several rubber tubes, after which a plaster cast would be applied. The prognosis for motion was always bad.

When Willems first suggested his plan many could hardly believe the truth which he stated.

At the Belgian congress in 1919 this new method was hailed as "the most valuable acquisition that the surgery of the war has given us."

1. The method consists in incision of the joint capsule as soon as pus is found to be present.

2. Drainage tubes are not used.

3. Immediate active mobilization is instituted.

4. Weight bearing is permitted as soon as the patient's temperature is less than 100.

The results are marvelous. I have patients with gonorrheal joints, and other acute purulent types, operated by this method who have perfect functioning joints now.

There are some details which it is well to observe when using the method:

1. Drainage. After incising the capsule there is a tendency for the synovial membrane to unite unless something is done to prevent closure. This is easily done by suturing the capsule to the skin margin on either side. This will make a gaping wound. No drainage tubes are used. No irrigating fluids should be used. Willems states: "I am of the opinion that irrigations are more harmful than useful."

Nature provides the best possible antiseptic in the form of an increased supply of synovial fluid.

Active mobilization of a joint increases the synovial fluid output. Mobilization of the joint diminishes pain; of this the patient must be assured. Pain results from distention of the capsule.

Movement approximates muscle planes thus forcing out fluid which may have "laked" in the inter-muscular planes. After the patient is convinced of this truth you will have little trouble with active motion. The character of the fluid changes rapidly from purulent to sero-purulent and then a clear serous fluid. It is surprising how quick these



joint wounds heal, and how stable the joints are.

This method is useful not only in the treatment of the purulent arthritis but also in the elective operation on joints. I have found it chiefly useful in arthrotomy, and arthroplasty where a closed joint which becomes distended is painful. If in these cases one leaves a small opening for the discharge of synovial fluid the patient is thereby made more comfortable and the surgeon feels a sense of security against infection.

By this method one can almost confidently predict that the patient will have a useful joint in a type of case previously considered hopeless for anything except an ankylosed joint.

#### DISCUSSION.

Dr. Urban Maes—I cannot refrain from discussing this very important subject. We cannot call attention too frequently to the brilliant results of the open treatment of suppurating joints. A review of the recent literature also points out the fact that other forms of synovitis may be benefitted by Willem's treatment.

It was my good fortune in the World War to see many of these cases, and in the majority of instances, the knee, the largest joint in the body, was the one involved and is the joint which is specially adapted to Willem's treatment.

I would like to stress two points, (1) that passive motion will not do. Our early failures were due to the use of passive rather than active motion. (2) It is a question in my mind, whether we should suture the capsule to the skin. The reason for this modification of Willem's original suggestion is probably because we have placed our openings in bad positions, where free drainage could not take place. The gross anatomy of the knee joint must be considered and our openings placed in such a way that the various pockets can empty themselves. The action of the hamstring tendons must be taken into consideration. I have sometimes thought that direct infection from the sutured skin to the capsule might mix our infection by guiding in skin organisms into the joint in the intervals of rest, when drainage was not forcing secretions out, and in this way were prolonging convalescence.

The afrebrile patient should be encouraged to walk. This should be done when the temperature is under 100. In those patients where the endothelial lining of a joint has been destroyed and adhesions are bound to form, these will be stretched and still give a certain amount of function whereas adhesion with a fixation dressing means ankylosis.

Willem's treatment may be briefly described as drainage plus active motion. The latter to be in the walking patient when the temperature is under 100.

Dr. Cohn—There is mightily little to add. Willem's method, it is agreed, is a good thing

and the only point of discussion which has arisen between Dr. Maes and myself is whether we should put in a couple of cat gut sutures, or whether we should be afraid that by so doing infection would be introduced from without. It is not everybody who is able to make the incision so that it will remain open. Most of us had better stick to putting a couple of sutures in.

### THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

#### *An Historical Sketch.*

MARY LOUISE MARSHALL,  
NEW ORLEANS.

*Assistant in Charge, Orleans Parish Medical Society Library.*

On this, the eightieth birthday of the *New Orleans Medical and Surgical Journal*, it is with pardonable pleasure that we allow ourselves to review its romantic history, so indissolubly interwoven with the careers of our great physicians and the advance of medical science in the South.

When Drs. E. D. Fenner and Abner Hester issued the first number in May, 1844, there was not a single medical journal published in the Southern states, and only two in the middle West, at Cincinnati and Louisville. It was Dr. Fenner's enthusiastic belief, as expressed on various occasions, that Southern medical schools and Southern journals could best serve Southern doctors and help them in the solution of problems distinctively their own. In pursuit of this principle he was one of the founders and the first dean of the New Orleans School of Medicine in 1856. His biographer says: "He was a zealous laborer in medicine . . . the first to establish in this country the system of real clinical teaching. . . The fount of his heart was almost illimitable, and the great stream flowed silently, deeply, on through life to that ocean of eternal happiness not seen by human eyes, but which is at best the reward for labors well performed." Of Dr. Hester, Dr. Fenner says, at the time of his death in 1854: "It will be conceded by all who knew him that he was a physician of rare skill and judgment, of ample resources, bold and prompt in action and untiring in his attention to the sick. . . He was ever willing to consult with his honorable brethren when desired, but most of his patients were content to trust their lives to his skill and judgment. He was remarkable for his fine

personal appearance and the urbanity of his manners. . . We see in his life an illustration of the triumph of talent and perseverance over great obstacles! He came here a stranger oppressed with poverty; he died possessed of a hand-

city of New Orleans, and finding our fortunes alike desperate, a fellow-feeling gave rise to an intimacy between us which it is hoped will endure through life. Without money, with but few acquaintances and dependent on a precarious practice, which barely afforded the most economical support, we determined to project the hazardous adven-

NO. 1.

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VOL. I.

## NEW-ORLEANS MEDICAL JOURNAL,

DEVOTED TO

## THE CULTIVATION OF MEDICINE,

AND THE

## ASSOCIATE SCIENCES.

(BI-MONTHLY.)

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### ARRANGEMENT.

- 1.—Original Communications, Cases, and Surgical Operations occurring in Private Practice.
  - 2.—Health of the City, with Reports from the New-Orleans Hospitals.
  - 3.—Periscope of Practical Medicine—or Spirit of the Medical Journals, Foreign & Domestic.
  - 4.—Brief Notices of Recent Medical Literature.
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EDITED BY

ERASMUS D. FENNER, M. D.

AND

A. HESTER, M. D.,

*One of the Physicians to the New-Orleans Charity Hospital.*

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*"Summum bonum Medicinæ Sanitas."*  
(GL.)

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MAY 1844.

**NEW ORLEANS,**

PRINTED BY J. DOL.

some competence, beloved and regretted by a large circle of admiring friends."

Dr. Fenner's account of the beginning of the *Journal* is most interesting. He says:

"Happening to be thrown together in the

ture of a *Southern Medical Journal* and trust to the liberality of the medical profession for its support. The field was ample, rich and entirely unoccupied, but it was difficult to see how the experiment could succeed without having one cent of capital to start with. We actually had the prospectus



printed on credit, one of our book-sellers being willing to go that far at all hazards, and we paid the bill—three dollars—out of the first spare money we had. The prospectus being out and distributed throughout the country we were fairly committed to bring out the work; but as yet, could find no person willing to undertake the publication. All we had to give was our own labor, which was cheerfully offered, but something more substantial was required. We appealed to the booksellers, to the proprietors of the City newspapers, and finally, to the Medical College, and leading physicians of the city for a guaranty of \$500, but all to no purpose. The enterprise was conceived in poverty and finally poverty brought it forth! At this stage of our gestation, we had the good luck to meet with a poor French printer who had a handful of type and nothing to do. Him we persuaded by means of flattering promises to bring out the first number, and thus the *New Orleans Medical Journal* saw the light! Each number made out to pay its own way, but left no surplus on hand. In this manner we struggled through the first volume and were entering on the second with prospects somewhat improved when an unexpected rival appeared in the field. The Professors of the Louisiana Medical College issued a prospectus announcing the early appearance of a new medical journal from their school. A union was effected between the two and the late Prof. Harrison and Carpenter joined us in the publication of the *New Orleans Medical and Surgical Journal*. In 1848 we voluntarily withdrew from the Journal and in less than two years Drs. Carpenter and Harrison were removed by the hand of death, leaving the present worthy editor (Dr. Hester) alone in his glory.”

The *Journal* was published regularly until the outbreak of the Civil War, when both its publication and the New Orleans School of Medicine were discontinued. At the close of the war, owing to reconstruction conditions, publication was not resumed, and in May, 1866, the first number of the *Southern Journal of Medical Sciences* was issued with Dr. Fenner as editor-in-chief. He says at this time editorilly:

“Impressed with a sense of the paramount duty of coming now to the work of humbly assisting in the rapid redemption of the minds of our people from the thralldom incident to a state of war, especially impressed with a sense of the duty we owe to Society in a proper cultivation of the most important of earthly pursuits, we present this undertaking to our professional brethren for their patronage and fostering care. Our time, our labor, our money, all are expended in the enterprise, and all more for the benefit of every individual patron than they can possibly be for us. The editorial career is nothing new to us, and we know full well, in the incipency of our enterprise all the difficulties to be encountered. One of us was a founder of the first medical journal that ever existed in New Orleans. The others have had ample ex-

perience in the conduct of the second. We would gladly have seen this work conducted by others, and we waited long after the cessation of the war, in the hope that a good journal would be issued from New Orleans. It has not been done, however, and we now buckle on the harness once more, determined to do our humble part towards the maintenance of a southern medical literature and opening wide the door for all our brethren to do likewise.

The importance of a periodical medical literature, no man can question. It is one of the striking and important features of the age in which we live, that besides our innumerable daily issues of newspapers, the now indispensable vehicle of general information throughout the civilized world, the progress of the arts and sciences is distinctly measured by the size of the current of periodical literature. These are the vehicle which carry to every man's door, at short intervals and at cheap rates all the useful information of the day. From these, the best of books are ultimately made; their circulation is comparatively limited and they transmit the mass of knowledge in a digested form to after ages. . . . .”

Nothing has more clearly given an impetus to medical progress in the South than the establishment of medical journals. Formerly there were but few medical writers in our country—Heustis, Cartwright, Boling and J. C. Nott standing almost alone. Since 1844 and most able writers have appeared before the profession and our Southern medical journals have been quoted everywhere.”

By unfortunate coincidence, Dr. Fenner died, following a short illness, on the very day the new journal made its appearance.

Contrary to expectations, the *New Orleans Medical and Surgical Journal* resumed publication in July, 1866, under the editorship of Drs. Warren Stone, James Jones, Stanford Chaille and W. C. Nichols. In November, 1867, a union was brought about between the editorial staff of the *Southern Journal of Medical Sciences* and that of the old journal, under the title *New Orleans Medical and Surgical Journal*, New Series, and regular publication has continued until the present time.

In 1922 the *Journal* was purchased by the Louisiana State Medical Society, and since July of that year has been directly controlled and published as the official organ of the Society.

The roster of editors of the *Journal* since its incipency includes the names of many notable in the history of medicine who are no longer with us. Among these we may mention, in addition to its

founders, Drs. Fenner and Hester, Drs. William M. Carpenter, Warren Stone, James Jones, Samuel Bemiss, Josiah Nott, Samuel Logan, Stanford E. Chaille, John W. Mallett, T. G. Richardson, Joseph Holt, A. B. Miles, P. E. Archinard, A. McShane, A. W. de Roaldes and Isadore Dyer.

It has been the policy of the administration of *The New Orleans Medical and Surgical Journal*, from its earli-

est beginnings, to voice Southern medical thought and to serve at all times Southern medical interests. This is an ideal well worthy of sincere praise, and its field of service at the present time is in no sense diminished. Owned and administered by the Louisiana State Medical Society, its future is linked with that of the Society, and therefore is deserving of the whole-hearted support of every exponent of organized medicine.



# New Orleans Medical and Surgical Journal

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## A REVIEW OF THE HISTORY OF LOCAL ANESTHESIA.

In reviewing the subject of local anesthesia for our eightieth anniversary number it is to be noted that it had its beginning just half this number of years ago, when Karl Koller made his notable announcement of the discovery of cocaine before the Ophthalmological Congress at Heidelberg in 1884. It is also of interest to note that the entire field of anesthesia has been developed during the lifetime of our journal. Ether was still in its swaddling clothes, having been introduced but two years previously by Crawford Long, and chloroform had not yet made its debut into the surgical arena. And with Lister and Pasteur yet to illuminate the medical firmament it may be truly said that the life of this journal reaches back to primitive medical times when viewed from the standpoint of present-day medical knowledge.

The writer began his medical career during the experimental period of local anesthesia. The enthusiasm which followed Koller's revolutionizing announcement had already abated, the result of many fatalities following the rash and indiscriminate use of a dangerous drug. Following the lull there remained a few enterprising and courageous leaders gifted with prophetic vision who had not lost faith, who by their persistent efforts in the clinic and experimental laboratory laid the foundation and upon it built the structure of local anesthesia as we know it today. Schleich, Reclus, Halstead, Corning, Matas, Crile, Cushing,

Barker, Braun and others comprised this noble band. We note with pride the Americans among them.

Schleich has been called the father of local anesthesia, and probably did more than any one man to popularize its use through his discovery that edematization of the tissues with extremely weak isotonic solutions (1 to 10,000) was sufficient for surgical anesthesia. As a consequence, the Schleich solutions soon became popular and were in use in all clinics.

The use of cold and constriction in numbing the sensibilities had long been known, but it remained for J. Leonard Corning to introduce the constrictor and his ischaemic methods into local anesthesia where his name had already become well known by his many valuable suggestions. The same Corning was later to discover spinal anesthesia.

At this stage local anesthesia had reached a point where a greater degree of refinement of technic was to be looked for, and it was here that George Crile and Rudolph Matas each contributed a rich and voluminous chapter. Dr. Matas conceived the idea and outlined and defined the use of the intra-neural, peri-neural and para-neural methods, and by these methods first amputated a thigh by blocking the sciatic, anterior crural and obturator nerves. He later worked out his intra-orbital injection of the foramen rotundum for resections of the upper jaw and the infra-malar route for reaching the third division of the fifth nerve at the foramen ovale.

About this time Dr. Matas was perfecting his infiltrating apparatus. This was probably the first of its kind, and had its beginning in a nursing bottle and later a pop bottle charged with a bicycle pump, and finally developed into the perfected metal apparatus with pump attached, a relic of which is still to be seen on a shelf of the instrument room of Touro Infirmary. It was in this apparatus that the Braun solution of Eucain B was largely used, and for a time displaced the Schleich formulae.

Dr. Matas was also the first to call attention to and utilize the blocking of the three nerve trunks at the elbow, median, ulnar and musculo-spiral, for operations on the forearm and peripheral parts.

It is thus seen that the achievements and accomplishments of Prof. Matas fill a large chapter of local anesthesia, and its history cannot be written without their enumeration. While they may have been forgotten by some it is a pleasure for one who worked under him and was guided by him for so many years and who, among others, shared the contagion of his enthusiasm, to look back upon what seems but yesterday and record our labors.

It is of interest that nearly at the same time that Dr. Matas was amputating a thigh under local anesthesia, Prof. George Crile amputated an arm by blocking the brachial plexus and perfected many of the finer points in local anesthesia, giving us the term "nerve blocking," and later his anoci method.

It must be remembered that all of this early work and practically all of the fundamental principles upon which local anesthesia has been established were accomplished through the use of cocain and before the days of adrenalin. These men had to be constantly alert to the dangers of the drug they were using.

It may not be uninteresting to recount some of the practices resorted to in avoiding toxicity. Corning having discovered the value of ischemia and the use of the constrictor for this purpose, it was common practice to first render a limb ischemic and then apply a constrictor proximal to the field. After injecting the parts with the anesthetic solution, they were massaged to aid its diffusion; this was necessary in the absence of all circulation. In this way the duration of the anesthesia was limited

only by the time it was safe to allow the constrictor to remain in position.

Corning also devised a set of rings to use on the head which later gave place to an ordinary piece of rubber tubing snugly drawn around the head above the ears.

It is seen from the above that the value of retarding the circulation to prevent absorption of the anesthetic and to intensify its local action was early recognized. These methods were not applicable to the trunk, and here ice was called into use. In the days before rubber bags, bladders filled with ice were often placed over the field after infiltration to chill the parts and still the circulation.

The introduction of adrenalin about 1900, the result of years of search by numerous investigators, and finally perfected by Takamine, marked the beginning of a new epoch and furnished a great stimulus to local anesthesia. This theurapeutic constrictor, well named by Braun the "chemical tourniquet," revolutionized the older methods. The introduction of novocain, that great achievement of the synthetic chemist's art, occurred about this time, and in combination with adrenalin rapidly displaced the cocain and eucain solutions from the general surgical amphytheatre.

Following the advent of the novocain adrenalin solutions other young and stalwart champions entered the arena and numerous converts flocked to their standards. Many of these enthusiastic disciples of local anesthesia had received their training at the hands of the great masters and were schooled in the use of the more dangerous cocain. Thus equipped, they were well prepared to "carry on" with the newer and safer novocain-adrenalin solutions and began the conquest of new territory by daily widening its scope and multiplying the applications of local anesthesia. In this country we are proud to acknowledge as foremost amongst them such men as Hertzler, Shelton, Babcock, Mitchell, Harris Bramsford Lewis, Gellhorn, Farr and Smith (dental surgery).

Abroad, the original workers and investigators were equally as numerous, and innovations and major undertakings of the first magnitude became the order of the day until as page after page



is unfolded, each illuminated with new material, it would seem that there is little left in major surgery that has not been done with local anesthesia.

The intra-spinal, para-vertebral, intra-sacral, para-sacral, intra-venous and intra-cranial injections (5th nerve) are a few of the more notable additions to our armamentarium.

In reviewing this work I cannot pass over the recent visit of our distinguished foreign guest, Prof. Finsterer, without pausing to note the part he has played in developing local anesthesia. Always an ardent advocate of these methods and a bold and original investigator, he has done much to popularize its use. Some years back he was quite active with para-vertebral methods for intra-abdominal operations with which he was quite successful. These methods, however, never appealed to the writer as sufficiently feasible or practicable for routine clinical use, and it was gratifying to note that Prof. Finsterer had dropped them for direct intra-abdominal injections, which method he recently demonstrated here with such brilliancy as to meet the approval of the most exacting critic.

The subject of spinal anesthesia has not yet been referred to, and has always been regarded by the writer as a separate and distinct field. It should not, however, be omitted even in this brief review, as it is distinctly an American discovery, for which we are indebted to Corning, already referred to, whose name appears so frequently and creditably in the earlier history of this subject.

Corning, who was an original and constructive thinker, conceived the idea of making injections of local anesthetics (at that time cocain) deep into the back around the spinal column, thinking that they might be carried by the circulation into the spinal cord and result in anesthesia. Just how the circulation was to do this he does not explain, but he thought it worth a trial and selected a dog for his first attempt. He finally succeeded and was able to completely paralyze sensation in the posterior half of the dog's body. Motion was but little affected; as the animal was able to walk about with unsteady, wobbly use of his hind quarters. Sensation was completely paralyzed as demonstrated by the appli-

cation of forceps and cautery to the hind parts, to which the dog seemed to offer no objections, as his only response was a not uncontented wag of his tail. After several successful demonstrations on animals he applied it successfully on patients on whom he performed intra-urethral, rectal and other operations. The results of these investigations were published in the *New York Medical Journal*, October 31, 1885. It will be noted that this was just one year following the introduction of cocain. Corning at this time was not prominently known as a surgeon and had but little opportunity to give this method a wider application, and after creating a mild degree of interest among his American confreres, the incident was soon forgotten. Foreign investigators were, however, more alert and quickly realized its possibilities. Quinke, Bier and Tuffier developing the idea, soon perfected intra-spinal technic which for a time became popularly known as Bier's intra-spinal anesthesia.

Thus furnished with a foreign veneer and creditable recognition abroad, it soon found its way back into American clinics. To Prof. Matas is due the credit of having first used this method in America, as far as can be determined by any records. An unsuccessful attempt having been made on November 10, 1899, with eucaïn, resulting in only partial anesthesia. A suitable subject was again selected a few weeks later and with the assistance of Professors Felix Larue and H. B. Gessner, with myself as interne, a patient from Ward 1 (colored male surgical), Charity Hospital, was taken to the dressing room and an intra-spinal injection of cocain made which resulted in immediate and complete anesthesia of almost the entire body. A few days later, December 18, 1889, the same patient was operated on for hemorrhoids at the regular surgical clinic with the same complete and thorough anesthesia. Following this, it was used extensively for a time by Prof. Matas and his staff. Prof. Chassaignac early adopted the method as a routine in his clinic, and with his assistant Dr. S. P. Delaup, used it almost daily. Dr. Delaup later succeeding Dr. Chassaignac as professor of Genito Urinary Diseases in the New Orleans Polyclinic, continued in its use up to the time of his death,

when he had made many thousand injections, a record probably not equalled by anyone in this country. During the earlier days of spinal anesthesia Prof. Barker of London undertook an elaborate and extensive study of the subject and did much to elucidate many disputed points regarding the movement and diffusion of the injected solution within the dural sac.

A brief mention should be made of a visit of Prof. Jonnesco of Bukharest to this country some years ago, following a tour of the principle clinics of Europe, in which he demonstrated his high spinal injections in the dorsal and even cervical region in an attempt to bring the entire body under the influence of spinal anesthesia. The method was extremely dangerous and resulted in many near accidents on the table. These injections were tried by a few following his visit, but were soon abandoned.

The growing importance of local anesthesia is now evidenced by the fact that it is in use in all large clinics in this country, even where it was formerly looked upon with disfavor or of little consequence.

Its general use has so increased, and with it the inevitable mortality, that the American Medical Association has deemed it expedient for some years past to appoint a committee to study these fatalities. This committee, under the guidance and direction of Dr. Mayer of New York as chairman, has rendered distinguished and creditable service. Their last report, a complete and valuable document, has but recently been published with a tabulation of a long list of fatalities, which, as has been the experience in the past, have occurred in the specialties where strong solutions of cocaine are in common use. The careful study of this report is recommended to all who make use of local anesthesia in any way.

The disturbing feature of this report to the writer was the fact that in several cases in which ether has been used as an antidote it was apparently without effect in warding off the fatal termination. This is contrary to my experience in a fair number of cases. I am glad to say that only one occurred in my own practice. In the others I was called in by my confreres to assist, and all cases, five or six in number, recovered.

A typical case is as follows: Mr. Y. had had several teeth extracted by a neighboring dentist. Anesthesia was difficult to establish, and repeated injections (amount and strength not obtainable) were made. Following the extractions he was quite faint and nauseated, and in a few minutes went into general convulsions. I was near by and was notified. I grabbed a bottle of ether and was there in a few minutes. During this delay two other convulsions had occurred, each harder and of longer duration than the preceding one. On arrival the patient was lying across a couch unconscious, pale, clammy, pulse rapid and feeble, respirations shallow and irregular. I lowered his head slightly below the level of his body and placing a cone over his mouth and nose, began to slowly administer ether. In a few minutes he began to have another convulsion, but by slightly quickening the flow of ether he soon relaxed, after which the ether was lessened to a very slow drop, and in a very little while it became evident that he was improving. The pulse became slower and of better volume and tone, the respirations were deeper and his color began to slowly return. After about fifteen or twenty minutes, the patient's general condition appearing much better, I suspended the ether. In a few minutes there was another convulsion which was again controlled with the ether, and following this it was slowly continued for about twenty minutes. The patient appearing nearly normal, though still unconscious, it was again suspended. In about five minutes there was slight evidence of a beginning convulsion which a few drops of ether controlled. The ether was then continued intermittently for about twenty minutes longer, making in all nearly an hour during which it had been administered. After a further wait of about fifteen minutes there was evidence of returning consciousness with pulse and respiration about normal. I remained with the patient in all about an hour and a half and left him semi-conscious. I instructed those with him to allow him to remain recumbent with head down for another hour and to administer the ether as they had seen me do on the first return of any trouble. I learned next day that he had gotten on without further disturbance, and aside from being a little weak



and nervous, was none the worse for his experience.

This and similar cases have convinced me of the value of ether as an antidote when administered slowly by the drop method just short of the stage of excitement.

In poisoning from local anesthetics we have in mild cases depression of the respiratory, circulatory and vaso-motor centers. In severe and lethal cases we have paralysis, respiration usually stopping first. In seeking an antidote we must either find one which neutralizes the poison in the centers (and we have no such agent) or one which stimulates these centers as long as they are capable of response and until the poison can be eliminated. In absolutely lethal cases where paralysis sets in early there is, of course, no hope from stimulants. A patient showing decided symptoms of poisoning from a local anesthetic is pale and clammy, respirations shallow and irregular, pulse rapid and weak, and he is usually anxious and restless. If we now picture to ourselves a patient going under ether anesthesia just before the stage of excitement sets in, the face is flushed, respirations deep, with pulse full and bounding, just exactly the opposite picture to the above. We may argue that in mild cases where the centers are only depressed but still capable of responding to the effects of ether, that these cases may have gotten well if left alone, and that in lethal cases where the centers are paralyzed, nothing does good, but this does not detract from the merits of ether in being a quick-acting, uniform stimulant of the respiratory, circulatory and vaso-motor centers, and it is the only one I know which meets all these requirements, and until something better is found I feel it should be given further trial. This question could be further settled by a few animal experiments, and I hope that the above-mentioned committee will institute such investigations. We have in digitalis, strychnine, caffeine, camphor, morphine, adrenalin, amyl nitrite, etc., drugs which meet the indications only partially or have other objectionable effects which makes them of but little avail in serious cases.

One point which has impressed the writer when in conversation with many surgeons otherwise well informed and

skillful in the technical use of local anesthesia, is their lack of knowledge of the fundamental principles which underlie its use, and I feel that much good can be accomplished by disseminating a knowledge of these facts. All local anesthetics are universal protoplasmic poisons affecting all protoplasm alike by combining with it and forming a definite chemical combination resulting in its paralysis and this paralysis of the protoplasm of the sensory nerve tissue results in the anesthesia which we utilize surgically. To accomplish this combination the anesthetic must be kept in contact with the tissues at the point of injection for a sufficient length of time (a few minutes). It is broken up by the constant flow of blood through the part and is practically capable of maintaining anesthesia as long as the circulation can be controlled. When broken up it is not liberated in its original form, but is disintegrated into its constituent parts, some of which possess a similar though lessened degree of toxicity. This means that the anesthetic can act but once, and if exhausted locally, there can be no central or constitutional reaction. The protoplasm of any given area of tissue is capable of combining with and fixing a much larger quantity of the anesthetic than that which is needed to produce complete paralysis of all nerve tissue, motor as well as sensory, provided the circulation can be controlled.

This is the key to the situation and is the solution of the successful use of local without toxicity. This means that whenever toxic symptoms have occurred it is the result of an excess of the drug having been used above what was needed to completely saturate the tissues, or of it not having been held at the point of injection sufficiently long to accomplish fixation.

Much could be said about the formulae of solutions in accomplishing the above purpose by aiding their penetration into the tissue cells, but as this subject cannot be completely reviewed in the limited space allowed, reference is made to the now quite numerous and excellent textbooks on this subject.

Before closing, two drugs which exercise a synergistic action should be given brief mention. Adrenalin (the chemical tourniquet, Braun) accomplishes the purpose of contracting all small vessels

and thus arresting the circulation in the injected part and for general use should not exceed three or four drops to each ounce of local anesthetic solution. It is a toxic and dangerous drug if used too freely and may produce alarming symptoms which I have frequently seen and which may be misinterpreted as toxicity from the anesthetic. The patient's face is usually quite flushed, there is a painful sense of constriction about the heart with a throbbing, bursting headache. Amyl nitrite, or a few drops of chloroform, have usually worked well in relieving the condition. Morphine sulphate is a valuable synergistic drug when properly used, and from my observation I believe materially lessens toxicity. The anxious, nervous and apprehensive patient is more likely to develop toxic symptoms. One-quarter grain of morphine given hypodermically

one hour beforehand relieves this nervous tension and makes the patient more apathetic and indifferent to his surroundings. Scopolamine gr. 1/150 as an adjunct to the morphine produces a further favorable effect.

Another effect of the morphine which has seemed to me quite probable in lessening toxicity, though difficult of demonstration, is that when once the centers are brought under its influence, they are less responsive to other drugs, and in this way it increases tolerance or resistance. Administered as an antidote after the toxic symptoms have occurred and the anesthetic has made its impression on the centers, it does not exercise the same effect, and when used has been found of little value and at times has complicated the situation.

CARROLL W. ALLEN.



## PROCEEDINGS TOURO INFIRMARY STAFF

Dr. M. Feingold, presiding.

*Dr. C. L. Eshleman:* Case 1. I first saw this patient V. S. in May, 1911. She was 43 years old at that time and was complaining of nervousness, exophthalmos and enlarged thyroid, swelling of feet and legs.

*Family History* was negative.

*Past Illness.* Never sick before.

*Present Illness:* In 1903 she was called out of the theater and told that her husband had suddenly died. The shock was very great and she was nervous for a long time afterwards. She thinks this was the beginning of her trouble and shortly afterwards noticed tremor of her fingers when trying to thread a needle. Some months later she noted undue prominence of her eyes. After three years of nervousness and other symptoms she was finally advised that she had exophthalmic goiter. This about 1906.

From 1906 to 1911 she was treated by many physicians. This treatment consisted of X-ray application to the thyroid once or twice a week for two or three months. Also the use of Roger's serum then advocated. In addition many different drugs were used. During these five years she was confined to bed frequently for long intervals on account of weakness and a bad heart. Her lower extremities were dropsical. She was short of breath on slight exertion and had frequent attacks of palpitation. Her nervousness, tremor and exhaustion continued. She lost much weight.

On May 13, 1911, when first seen by me, her physical examination showed very noticeable exophthalmus. Nystagmus was marked, the eyeballs did not co-ordinate well, and the upper lid failed to readily follow the eye-ball downward while observing a moving object. The thyroid was only moderately, but symmetrically, enlarged, both lobes and the isthmus being involved. Her neck measured 12 3/8 inches; all the vessels in her neck pulsated visibly and a distinct thrill could be felt over the thyroid gland.

The precordial region was prominent and distinct, heaving was seen and felt. The heart was markedly enlarged both to the left and right, the apex being well outside of the left nipple line. The heart

sounds were very irregular and a loud systolic murmur was heard widely over the anterior chest. P 2 was accentuated, pulse rate was 130 per minute; systolic blood pressure, 175.

Liver much enlarged and very tender from passive congestion: Legs edematous to the knees. Urine showed a trace of albumin; otherwise negative. There was fine tremor to the fingers, marked nervousness and evidence of considerable loss of weight. She was a typical and severe case of Exophthalmic Goiter with dilated heart.

*Treatment:* She was put in bed and given large doses of Digitalis. Quinine Hydrobromate was being used extensively at this time and was given her in five-grain doses four times daily. Several months later quinine was discontinued and she was given four grains of chromium sulphate three times a day for about two months. No special improvement was noticed in her thyroid condition as the result of these medicines. Her heart improved under rest and Digitalis but was always badly damaged. In October, 1912, about a year and a half after she had first been seen by me, her nervousness had improved, the thyroid was distinctly smaller and tremor was less noticeable. About Christmas, 1912, she had an attack of cardiac dilation with blood streaked sputum and great dyspnoea, which confined her to bed for many weeks. In February, 1913, her heart was better and she was able to be up and about. The thyroid symptoms were subsiding. In July her only daughter died of typhoid. She stood the shock well and without any special nervous symptoms developing. In August, 1914, her condition was still improving. She was less nervous and gaining weight, but still had a badly damaged heart. In August, 1915, her condition was about the same. In May, 1915, she was shown at a clinical meeting here; 1915 to 1918 she was seen at long intervals chiefly on account of her heart symptoms; oedema of legs was always present with dyspnoea on slight exertion. In January, 1918, the thyroid could be felt but would hardly be called enlarged, and it is doubtful whether she would have been considered a thyroid case if it were not for the striking exophthalmos which

still persisted. There was no tremor and no nervousness. She had gained 40 or 50 pounds in the preceding few years. From 1918 to the present time she has complained only of her heart. At times she has been forced to take to bed for several weeks of rest. The last serious attack of heart weakness occurred in April, 1923, when her condition was so bad as to make me advise her to send for her son who was in Washington. However, under rest and Digitalis she improved again after a month or more in bed. In May, 1921, her Basal Metabolic rate was plus 35. In February, 1922, it was plus 44.2. This in spite of the complete subsidence of all the toxic manifestations of hyperthyroidism.

I present her because she is a very interesting case of Grave's Disease which has gradually subsided, not as a result of any particular treatment so far as I can see. Mild cases quite often have periods of improvement, but it is rare for a severe case of this type to show spontaneous recovery without operation. At the present time she has none of the acute manifestations of hyperthyroidism; she merely shows the residual damage, chiefly to her heart. The exophthalmos also remains as it frequently does.

*Dr. Maes:* What did her kidneys test show?

*Dr. Eshleman:* Her urine has showed albumin at times, nothing else. It has been merely passive congestion of the kidneys associated with cardiac disease. Her blood pressure has varied between 140 and 175. There has been nothing to indicate a nephritis; all of the oedema has been that of a cardiac condition.

*Dr. Guthrie:* Dr. Eshleman mentioned several very interesting points. Digitalis in thyrotoxicosis is of very little value. Another phase of the case as it strikes me is the extreme dilation of the aortic arch. There is a horizontal pulsating behind the notch and a width about 11 cms. at the level of the first interspace, and I would suspect aneurysm.

A recent experience I have had in a limited number of cases in controlling tachycardia with quinidine sulphate is of interest. I have been able with this drug to add to the comfort of the patient by the slowing of the pulse. If we can relieve the heart of work by slowing the rate appreciably, we have done good

work in these cases. If by administering harmless drugs we can accomplish this, it is worth while. I am not opening the question of jinidine in other heart conditions. Quinidine is an isomer of quinine which was isolated by Pasteur in 1854. There is much fear, and I believe unnecessary fear, connected with the use of quinidine. Personally, I do not feel there is any more risk in its use than quinine in the same dosage. There occurred a marked diminution in sweating, nervous symptoms and a decided slowing of the pulse in four cases in which we tried it.

*Dr. Eshleman:* As far as aneurysm is concerned, she has none of the classical signs of aneurysm. On inspection, there is no lift to the sternum, no tracheal tug. While we might figure that the widening of the arch is too wide to be normal, X-ray plates and fluoroscope have not shown it to be aneurysm. Aneurysms are much more fusiform in shape and more prone to produce marked symptoms.

*Dr. Maes:* How long ago treated with X-ray, and how much?

*Dr. Eshleman:* It was apart of the treatment carried out some time between 1906 and 1911 before she came to me. She thinks it was in 1908. Once or twice a week for two or three months the thyroid was exposed to the rays.

*Dr. Maes:* How long did she have edema?

*Dr. Eshleman:* She has had it from 1911 to the present time. When first seen in 1911 she was a violently toxic individual. Dr. Matas thought her too bad for an operation. At that time she had a humming, pulsating thyroid with a dilated heart and oedema. About 1913 her toxic symptoms began to subside and continued to subside until 1918. Since 1918 her hyperthyroidism has disappeared, and you will note that the gland can no longer be seen or felt. Her heart has been the only remaining feature in her case. She is now 56 years old, has oedema of legs, dyspnoea on exertion and a bad heart, but her thyroid intoxication has gradually subsided and is no longer an essential feature of the case.

Case No. 2. *Dr. Eshleman:* This patient, O. B. D., who is 57 years old, was referred to me by a laryngologist in November, 1923, on account of hoarseness of seven weeks' duration. You will note



that he has complete aphonia, being unable to raise his voice above a whisper. He has a paresis of the left recurrent laryngeal nerve. I was asked to examine his chest to determine, if possible, the cause of this condition.

Nearly all cases of *left* vocal cord paresis, not due to local diseases in the larynx itself, are caused by aneurism of the aortic arch. This is on account of the anatomy of the parts, the left recurrent laryngeal nerve passing down the left side of the neck, hooks around the aorta and passes back upward to the larynx. On the *right* side the recurrent nerve does not pass near the aortic arch, but hooks around the subclavian artery. A right vocal cord paresis is, therefore, rarely associated with aneurism. Without quoting definite statistics, I would say that probably from 90 to 95 per cent of the cases of left vocal cord paresis are due to aortic aneurism. I was, therefore, careful to look for an aneurism in this case.

History is as follows:

Family history and previous illnesses of no special importance. A few months ago, before his present illness, he noted general weakness and a slight tendency to dyspnoea on exertion. There was no cough.

*Present Illness:* Seven weeks before I first saw him, while drinking some orange juice, he noted that it "didn't seem to go down the right way," but no choking occurred. Thirty minutes later he stopped to talk to a friend on the street and noted that his voice was decidedly husky, in fact almost gone. No improvement took place and he consulted a physician who examined him and had his sputum examined with negative results. He was finally referred to a laryngologist, who found the left vocal cord flaccid and referred him to me for examination. His examination showed marked pulsation, heaving in character, lifting the left clavicle and second rib with each impulse. No tracheal tug, no diastolic shock, and no thrill was felt. On percussion dullness extended from the right sternal margin 4 inches to the left; in fact, the entire left infra-clavicular region above the third rib was dull. Posteriorly, dullness on the left extended downward to the level of the fifth dorsal vertebra. On auscultation the heart was negative and no bruit was

heard. The breath sounds over the dull area were slightly diminished, there was no increase in the vocal fremitus; a few barely perceptible fine crackling rales could be heard. These rales were not any more than might be produced by slight compression of the lung by an aneurism. The blood pressure was equal in the two arms, systolic 160, diastolic 110. The radial vessels were sclerosed. His total and differential blood count was normal. Wassermann was negative. He had lost from 6 to 8 pounds during the preceding weeks.

I examined him several times before any X-ray examination was made, finally concluding that he had an aneurism of the arch projecting into the left chest, causing pressure on the left recurrent laryngeal. I think that with his history the vocal paresis, and the physical signs of dullness and pulsation in the region mentioned, that this diagnosis would be correct 95 times out of 100. We then X-rayed him and found the condition shown in these plates which Dr. Samuel says is not an aneurism, but a growth in the upper lobe of the left lung. This is of course causing the pressure on the nerve trunk. At first I was not inclined to accept the X-ray diagnosis, but after observing another X-ray made fifteen days later, I am ready to accept the diagnosis. The nature of the growth is undetermined, but it is in all probability a carcinoma.

*Treatment:* Has consisted in one application of high voltage deep X-ray therapy. He also has taken 20 drops of K. I. three times daily. It is too soon yet to note any change in the condition. His interesting because ordinarily he should have had an aneurism. The pulsation seen must be transmitted to the growth by the aorta. I would like some of the internists here to come and confirm the fact that marked pulsation is present. Dr. Samuel will explain the X-ray to you. (X-ray pictures demonstrated.)

*Dr. Simons:* Any glands?

*Dr. Eshleman:* No glands are palpable. Wassermann is negative. X-ray says it is not an aneurysm. We take it to be a glandular condition of unknown nature. He had had K. I. since.

*Dr. Nelken:* What is the pulsation you say is to be seen?

*Dr. Eshleman:* I can see it lift his up-

per chest, but do not know why the fluoroscope does not show it. It must be aortic pulsation transmitted to the tumor mass.

*Dr. Bamberg:* What about the breath sounds?

*Dr. Eshleman:* The breath sounds are not well detected over the mass. No increase in voice sounds. There are a few crackling rales to be heard which could easily be produced by slight compression of the lungs. He does not cough to any extent. On swallowing, the food does not always go down right, but he says he never chokes on food.

*Dr. Maes:* Any aneurismal bruit?

*Dr. Eshleman:* No. We practically pay no attention to bruit in diagnosis of aneurism. When I was a student the diagnosis used to depend on bruit. Now the heaving impulse and wide area of dullness combined with symptoms are the diagnostic points. Bruit is not present in 50 per cent of the cases.

*Dr. Nelken:* Any difference in pulses?

*Dr. Eshleman:* No, but when this sign is present it is a valuable sign of aneurism.

*Dr. Gessner:* Is it possible that this is

an aneurism being cured by deposit of layers of clot?

*Dr. Eshleman:* Dr. Samuel says no. Clotting might explain the lack of pulsation under the fluoroscope, but he believes that there is a distinct disconnection between the shadow and the aorta. In the lateral view he says he can see that the shadow is not connected with the aorta. That is the chief reason why, he says, it is not aneurism.

*Dr. Eshleman:* There was no loss of weight since he first came under my observation on November 28th.

*Dr. Keareny:* Any improvement in his voice?

*Dr. Eshleman:* None since sudden aphonia took place about seven weeks before I saw him.

*Dr. Eshleman:* I believe the diagnosis of aneurism would be correct 99 times out of 100, but in this case I believe Dr. Samuel's belief is correct, and we are dealing with a malignant growth of the carcinomatous type. I do not think it is luetic. I do not think it is any benign tumor of the lung such as fibroma, lipoma, dermoid cyst.



## NEWS AND COMMENT

Medical activities of the past month have centered preparing for the State Medical Convention at Opelousas. There has been little of special interest reported, but the Convention activities should furnish much interesting news and comments for our next issue.

There is one division of the U. S. Veterans Bureau that the general public hears little or nothing about. It is taken for granted. This Division is the Mail Sub-Division.

It has been said that this Post Office, with the possible exception of the Central City Post Office, is the largest one in the City of Washington.

Medical Advice by Radio to Vessels at Sea.

While most large passenger vessels carry physicians, there are few ships other than such vessels that do. The Public Health Service is often called on for medical advice in the case of persons who are ill or injured on board vessels where there is no doctor.

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### *Philadelphia Academy of Surgery.*

The Samuel D. Gross Prize, Fifteen Hundred Dollars. Essays will be received in competition for the prize until January 1st. 1925.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens".

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care

of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1st, 1925.

The organization of a new division in the U. S. Veterans Bureau to handle all matters pertaining to guardianship has been authorized, it was announced today by General Frank T. Hines, Director of the Bureau.

The new division will function under the Control Service which is headed by Major Davis G. Arnold, Assistant Director.

Dr. Mary Griscom, a well known Philadelphia physician, who has spent the last nine months in relief work for the American Friends Service Committee in Austria, has just returned to America.

Dr. Griscom had charge of the anti-tuberculosis work for the Service Committee in accordance with a program supported by that organization and the Austrian Department of Health in a fight against the menacing plague which threatened the lives of tens of thousands of their children.

With the health of her child population sapped by years of undernourishment during the war, Austria was unable to check the invasion of tuberculosis. Very young children are infected with the disease and the government has not been able to provide treatment.

Dr. Griscom has been associated with Dr. von Pirquet, the famous child specialist in Vienna. Teachers are trained in anti-tuberculosis and child-care methods in Dr. von Pirquet's clinic, then are sent out into the remote districts of the provinces to give instruction in the homes and schools.

The Austrian government is fast regaining her ability to cope with her gigantic health problems, says Dr. Griscom. The Friends Service has been able to save the lives and health of hundreds of children by making it possible for them to have medical attention and suitable food.

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The dangerous fallacy that the atmosphere in a closed garage is safe as long as an automobile engine continues to function has been disproved by a test conducted by engineers of the Interior

Department at the Pittsburgh Experiment Station of the Bureau of Mines.

Jackie Coogan will forsake the movies for ten weeks this summer in order to lead a modern "Children's Crusade" throughout the United States in an appeal to the children of America for a million-dollar shipload of foodstuffs for the destitute orphan children of the Near East and then will sail in person to deliver the goods to the Near East orphans in Greece, Palestine and Syria, it became known here today when Charles V. Vickrey, general secretary of the Near East Relief, made public a letter from Mr. John H. (Jack) Coogan, Jackie's father, giving his consent to the trip.

U. S. Veterans' Bureau.

Dr. Edgar O. Crossman, manager of District No. 1, U. S. Veterans' Bureau, has been appointed Acting Medical Director, in charge of the Medical Division, according to an announcement made today by General Frank T. Hines, director of the bureau.

Dr. Crossman is a well known specialist on mental diseases, and General Hines expressed his satisfaction in being able to make a greater use of his medical skill in the new position.

#### REMOVALS.

Tarleton, Dr. T. T.—From Jeanerette to Grand Coteau, La.

Patterson, Dr. G. C.—From Verron to Ruston, La.

#### PUBLICATIONS RECEIVED.

C. V. Mosby, St. Louis: "*Applied Pathology in Diseases of the Nose, Throat and Ear*," by Joseph C. Beck, M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York: "*Radium Report of the Memorial Hospital, New, Second Series, 1923*."

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Miscellaneous: "*A Comparison of Soap-Containing and Soapless Detergents in their Effect on the Reaction of Saliva*," by H. H. Bunzell, B. S., Ph. D.

#### REPRINTS.

"*The Story of Insulin*," by Dr. Edwin Slosson; "*Selling a Heritage for a Mess of Fertilizer*," by Edwin Dakin; "*Is It Murder?*" by W. S. Gregory, D. D., St. Joseph, Mo.; "*Provision for the Care of Convalescents in New York City*," by the Public Health Committee of the New York Academy of Medicine; "*The Gall-Bladder: Its Past, Present and Future*," by J. E. Sweet, A. M., M. D., Sc. D.

#### BOOK REVIEWS.

The Tonsils, by Dr. Harry A. Barnes. Published by C. V. Mosby Co., St. Louis, Mo., 1923.

This second edition is a most creditable contribution on a subject ever ancient, ever new. We are now in a position to approach the question of focal infections with lessened over-enthusiasm and sounder judgment. This volume reflects such an attitude. All the details in the technic of the modern methods for the removal of tonsils are thoroughly described. It is an up-to-the-minute review of the all important tonsil problem.

HOMER DUPUY.

Manual of Proctology, by T. Chittenden Hill, Ph. B., M. D., F. R. C. S. Published by Lea & Febiger, Philadelphia and New York, 1923.

Though handicapped in his effort to be brief, Hill has a book which will be found to be very serviceable to those desiring to make a rapid survey of Proctology. All non-essential matter has been omitted. The author tells us in the Preface that he describes only those operations which he uses in his own work. The little volume is replete with useful information and is amply illustrated. Clearness and conciseness are noted throughout. The chapter on Radical Operation for Cancer of the Rectum was written and illustrated by W. Ernest Miles of London.

MAURICE LECALÉ.



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## THE EDUCATION OF THE DEAF CHILD.\*

MAX A. GOLDSTEIN, M.D., F.A.C.S.,  
ST. LOUIS.

In New Orleans, as in every large municipality, there is an awakening interest in the problems of the handicapped child and the more satisfactory measures to be employed by the larger community in coping with these handicaps.

The question that confronts us tonight is the intelligent disposal of the Deaf and Defectives in speech in this community.

To my colleagues in Oto-laryngology in New Orleans, I want to emphasize the fact that we in the medical profession and not this special field, owe responsibilities to the community which are as important as the medical and surgical efficiency which we offer as our handicraft. The doctor must share with the teacher, with the parent, and with every organization and individual in a community, the trust imposed upon him in the care, education and proper disposal of the deaf child and the child handicapped by defects in speech, as well as in the normal child. If we in the medical profession have not as yet equipped ourselves to render such service to the congenitally deaf child, it does not relieve us of our responsibilities to him. Oto-laryngology must include in its field a better understanding of all of the conditions that apply to the deaf child, including an analysis of the types of deafness, degrees of deafness, his peculiar psychology, additional methods and possibilities, and the end

results that can be expected of modern pedagogic methods. In the evolution of methods of education, the teacher of the deaf has also participated, and the exploitation of the sign-language is becoming more obsolete year by year as a better understanding and more efficient application of speech-training is developed.

Another phase of the question which the Oto-laryngologist must not overlook is legislative measures for the benefit of the deaf child in the municipality and in the state.

Committees on education in the state legislatures must familiarize themselves with the care and the best form of training for the deaf so that they may intelligently enact the necessary measures for this large and growing class of the handicapped. The Oto-laryngologist must contribute his quota and his influence toward a better understanding of these problems. In some states there is more effective legislation and larger appropriation for the care of sick cattle and for the disposal of hog-cholera than for the intelligent disposal of the deaf child.

The program that is now carried out by the public school system of every large city is to establish special classes for the teaching of deaf children in conjunction with one of the public schools or assign an entire school in the system where the deaf child may be taught by modern pedagogic methods. Such modern pedagogy consists in teaching the child fluent, flexible, audible speech and making his further contact with the normal community possible by efficient lip-reading. We advocate beginning the deaf child's instruction at an early age when the speech mechanism is still pliable and plastic

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and when the active little brain is in its most receptive state for the acquisition of oral speech.

New Orleans has already made an auspicious beginning in this work and a class for the speech teaching of deaf children by oral methods is already in operation under the administration of the public school system.

The Permanent Committee on the Deaf Child of the American Medical Association, of which I am the secretary, presented a resolution at the annual meeting of the A. M. A. in St. Louis two years ago, as follows:

“Resolved, That we recommend exclusively oral instruction of deaf children and that the oral teaching of the congenitally deaf child and the acquired deaf child be made a part of a department of the public school system in all larger cities.”

With one or two exceptions, this resolution has been carried out in every large city where day-schools for the deaf in conjunction with the public school system have been established.

To give you a practical demonstration of what is being done in the oral training of the deaf child, I have asked a group of deaf children now being instructed in New Orleans together with their teacher to give you a few exercises in speech and lip-reading. These children have been selected at random and at short notice and no effort at a systematic demonstration has been made, but for those unfamiliar with this form of training there will be much food for thought and I hope some stimulation to participate in these activities in the future. To efficiently train a totally deaf child by speech methods that will result in intelligent, fluent speech, we need specially trained teachers. There are but few training schools in the land where such teachers can qualify. There is a scarcity of good teachers because it requires an unusual combination of characteristics to make a successful teacher of the deaf. She must have a world of patience; a sympathetic understanding of the handicap which the deaf child faces; a comprehension of his peculiar psychology; a knowledge of the principles and the anatomy and physiology of the hearing

and speech organs and experience in the class room with practical pedagogy under the supervision of qualified seasoned instructors.

The teacher of the deaf is woefully underpaid and that is one reason why intelligent men and women who could apply themselves to this noble cause, seek other avenues for their brains and energies.

Another constructive criticism which I desire to submit is that the teacher of the deaf to produce successful speech results with her pupils, should not have inflicted on her an ungraded class of from 12 to 15 pupils as is the case in New Orleans today; she should be required to concentrate her energies on a graded class of not more than 6 or 8 pupils per teacher. So much of the instruction imparted to the deaf child becomes an individual equation, and only by limiting the class to a small working field can the best results in speech be obtained.

Active co-operation must be developed in every community and in every school for the deaf between the teacher in charge of these groups of children and the Oto-laryngologist. Your local Ear, Nose and Throat Society should select one or two of its members who are kindly disposed to assist in the development of this problem; these men should visit the classroom at least once a week for an hour or two, become more intimately acquainted with the teaching methods of the deaf child in the classroom, and confer with the teacher on the problems that arise in the pedagogy and scientific conduct of these pupils. Only by such co-operation will improvements in the methods of instruction be made and the utilitarian value in the training of the deaf child be increased.

The medicine of the state will not be the highest attainments of surgical technique and profound therapeutics, but all intelligently applied measures for the prevention of disease. Here again the Oto-laryngologist must perform his duty more effectively. The community must be taught through this branch of the medical profession about the causes of deafness, the tendencies of hereditary transmission, the effects of diseases such as tuberculosis, syphilis,



rickets, scarlet fever, measles, etc.; the disposal of mechanical defects and obstructions such as adenoids, hypertrophied tonsils, obstructing turbinates and septum. There is an almost limited field of activity for the Oto-laryngologist; he can be of inestimable service, not only by his surgical training, but because of his knowledge of the pathology of the ear, and his training as an advisor to the family in which such handicaps are presented for consideration.

The force of public opinion sways the machinery by which the community is developed. You members of the special medical profession are an important factor in shaping public opinion and must assume this responsibility in the future more effectively than in the past. Education is the keystone to the greater development of a nation and it is the vital underlying principle in the development of every movement for progress. This education is as necessary to an understanding of the deaf child as it is to the normal child. Educate the community, therefore, in those phases of the problem with which you are qualified to assert your authority because of your training and of your experience; help educate the educators and the legislators. Incidentally, study the deaf child more closely and get additional education yourselves.

Not only is the congenitally deaf child a subject for your serious consideration but the school child who acquires deafness of a rather profound degree is seriously handicapped in his further instruction. A child of 10 or 12 years of age who develops scarlet-fever or measles and has his drum membranes or ossicles gradually sloughed away by chronic suppuration or whose auditory nerve is seriously affected as the result of poliomyelitis, meningitis or typhoid fever, is no longer in a condition to be placed in the normal school room under normal environment. When the hearing is very materially depreciated in this large group of children, he should be taught efficient lip-reading so that he may go back into the normal school room and again take his place with normal fellow-pupils. This child of course, has a tremendous asset which the congenitally deaf child only acquires mechanically, that is, fluent oral speech.

Another type is the hard-of-hearing child who can still hear conversational voice at a distance of less than 10 ft. These children should be placed in smaller groups than are found in the normal school room where more individual attention may be given by the teacher. Instead of receiving reprimands by teacher and parents for what is presumed to be inattention to his studies, this child should be considerably cared for and the handicap of his defective hearing constantly borne in mind.

Not only the deaf child but also the deaf adult claims a share of our consideration. If a survey were made of adults who have become deafened as a result of disease or injury,—deafened to such a degree that otological skill may no longer offer promise of improvement or arrest of the defective hearing, the sum total of such a survey throughout the land would go into the hundred-thousandths. Otologists are today in a position in a large percentage of such cases to make a differential diagnosis of the types of deafness and to offer honest advice as to whether further treatment should be undertaken. I hold that if a diagnosis of clinical otosclerosis can be made by functional hearing tests together with a history of the case that the most honest advice that an otologist can offer such a patient is to discontinue further treatment and take up lip-reading.

Lip-reading or speech reading is not a convenient thing for the otologist to shift his professional responsibility on, but a real asset to the deafened. If lip-reading is systematically and earnestly studied and the instruction given by a competent teacher, the average deafened person who so applies himself, may in the course of from 4 to 6 months become an efficient lip-reader and thereby develop a splendid asset and substitute for his defective hearing or even complete deafness.

I cannot conclude these considerations of the handicapped without mention of another large group of children who until comparatively recently have received no dignified pedagogic and scientific study of recognition, namely, the child handicapped by one of the several defects in speech such as stammering,

stuttering, lisping, baby-talk, lolling and other cognate speech defects. If the law of average holds good in every large community, about 10% of the entire number of school children in every large community are afflicted with some form of defective speech, varying from a slight impediment to a serious handicap. By far the largest proportion of these speech defects are amenable to correction by special pedagogic and speech exercises and the adoption of efficient, corrective measures by specially trained teachers and specially selected centers to which such children should be sent for this training is a matter to be seriously considered by every large metropolitan city, especially in its public school system.

The demonstration of the group of children to illustrate some of the feature which I have emphasized in presenting this matter for your consideration, tells its own human interest story. Many of you have never before realized that a congenitally deaf child could be taught to speak and to speak fluently, distinctly and with good voice inflection.

You have called these children "Deaf and Dumb." Dumbness, as a pathological entity is very rare. A congenitally deaf child uncared for and untrained by special pedagogy, is dumb because speech is but an imitation of sounds heard by our human fellows and a child born deaf cannot imitate spoken language because he cannot hear it. To the totally deaf child, speech must be taught mechanically by properly trained teachers and this mechanical speech can be developed to such a degree of smoothness and naturalness as in many instances not to be distinguished from normal speech by the untrained ear.

In conclusion, I appeal to the splendid municipality of New Orleans and to the State of Louisiana more consideration on the part of parents, teachers, social service workers, the medical profession, Boards of Education, and Legislators, for a greater degree of consideration, more substantial appropriations, the selection of an adequate staff of trained teachers for the education and development of the Deaf child and his handicapped neighbor, the child with defective speech.

## INCORRECT DIAGNOSIS OF RIGHT ILIAC SURGICAL CONDITIONS; REPORT OF CASES AND GENERAL REMARKS.\*

A. C. KING, M.D., F.A.C.S.

NEW ORLEANS.

The diagnosis of appendicitis and other surgical conditions of the right iliac region is easy,—sometimes. The difficulties confronting us are many and varied, and it is not surprising that errors are frequent, especially since many competent physicians persist in making rapid fire diagnoses. I mean diagnoses from some of the clinical symptoms, omitting perhaps the most important.

Certainly each case should receive the most careful consideration, no matter how easy and simple and clear cut the diagnosis appears. In addition to the routine abdominal examination by palpation, the blood count, urinalysis, etc., every case, where possible, is entitled to a carefully made gastro-intestinal and genito-urinary x-ray examination. We owe such a careful going over to both the patient and to ourselves.

In spite of all this, however, we are going right along making mistake after mistake, some of them excusable, and others not. The difficulties of making correct diagnoses in all cases are numerous, as some of those reported in this paper will show.

We may be fortunate in diagnosing case after case by the mere process of laying on of hands, but if we persist in this superficial method, we will err sooner or later. Often we even omit the hand method and are guided by the pulse and temperature alone. Listen to Sir D'Arcy Power. He says, "Many have died because the surgeon has trusted the pulse and temperature, when he ought to have examined the abdomen." Eventually we slip.

In reference to chronic appendicitis, there are two groups of symptoms, Iliac and Gastric. We pass over the iliac for the present. The gastric symptoms are those of "chronic dyspepsia", gas in the stomach, loss of appetite, coated tongue and nausea; or again, symptoms of peptic ulcer, acid eructations, gnaw-

\*Read before the Orleans Parish Medical Society, January 28, 1924.



ing sensations in the epigastrium and "hunger pains", relieved by eating.

Moynihan has aptly said, "There is now no longer any doubt in my own mind that the commonest site of gastric ulcer is in the right iliac fossa. That is to say, in the majority of cases, where the symptoms would justify or compel a diagnosis of ulcer, the patient is suffering from a lesion elsewhere, and more often than not, from a lesion in the appendix."

So much from this renowned authority. Some of us can recall cases of vomiting of blood which, at operation, revealed nothing further than a chronic or subacute appendix.

If we accept the five signs of appendicitis as emphasized by Murphy, namely pain, nausea and vomiting, local sensitiveness, leukocytosis, and temperature, then add a sixth, Meltzer's leg-raising test, we have a combination by which one should invariably arrive at a correct conclusion; yet by disregarding one or more of these symptoms, and omitting the gastro-intestinal and genito-urinary examinations, not a day passes that some one of us is not guilty of committing a diagnostic error.

Meltzer's sign is a most valuable confirmatory sign, especially useful in chronic appendicitis, and fails only where the appendix is either high up, near the kidney or gall bladder, or below the pelvic brim. Under these conditions, other symptoms also fail, as witness the many gall bladder incisions through which nothing but a chronic appendix is removed, or a mid-line incision below the umbilicus, through which and appendix is found behind the right broad ligament or in Douglas' pouch. No doubt many of the old time pelvic abscesses were of appendiceal origin.

Now let us dissect these symptoms, and try to ascertain why we err; then let's shake them together again, and compliment ourselves that we are not mistaken even more frequently.

Case I. Young white female, ill three days. Temperature 102, pulse elevated, marked rigidity, and pain in right iliac region. No blood count, no microscopic examination of urine. Diagnosis by the attending physician and myself, as consultant, acute appendicitis. After reaching the hospital, a second consultant was called in as a matter of safety, who not only agreed to the diagnosis, but added, "You have not only an acute appendix,

but a ruptured appendix, with a belly full of pus".

Immediate operation. A perfectly normal appendix brought out of the incision, and removed. A perfectly clean and normal peritoneum throughout, and not a drop of pus in sight. Further search revealed no pathology. Temperature ran on for three weeks, varying from 101 to 104. Patient comfortable. Several negative Widal and malarial reports. No urine examination for pyelitis, as at that time pyelitis with us was not a recognized pathological condition. I believe now that this was a simple case of pyelitis, which recovered under rest in bed, proper diet, free fluids, and appendectomy.

Thinking over this and other cases diagnosed as typhoid fever, and running a prolonged course, I feel sure that in years gone by, hundreds, or even thousands, of typhoid fever cases were not typhoid at all but pyelitis. Please note that typhoid is infrequent at the present day as compared with the number of cases twenty and twenty-five years ago.

Case II. Colored female. Age nineteen. Right-sided pain upon pressure and some nausea if pressure was continued. No temperature. No leukocytosis. Pelvic examination, casually made, negative. Diagnosis, chronic appendicitis. Right rectus incision with a normal appendix presenting itself for removal, which was done. Further search revealed the right ovary lying at McBurney's point and attached to the parietal peritoneum by a band one inch wide. This was severed and the ovary replaced in the pelvis. Thus this case of chronic appendicitis was cured. A careless diagnosis was certainly made in this case, by the writer.

Case III. White female. Age thirty. Pregnant for the fourth time. Right-sided pain at intervals for three years, always more pronounced during pregnancy. No nausea or vomiting; no blood count made at any time. "Laying on of the hands" diagnosis, made on account of pain at McBurney's point, and the presence of a small mass. Operation advised previously but deferred. During her fourth pregnancy, the symptoms becoming more marked, operation was urged, and on account of pregnancy, a consultation requested and granted. One of the most acute observers in this City was called in, made an examination, and said, "Yes, I fully concur in the diagnosis of chronic appendicitis, and I can feel the tumor easily. I think you will find at operation a fold of omentum wrapped around the appendix". Operation the following day. Right rectus incision. A perfectly normal appendix was brought up and removed, and a further search made. The mass previously felt proved to be a cystic condition of the fimbriated extremity of the right fallopian tube, misplaced and held in this position by adhesions. The tube was carefully removed. The patient was thusly cured of non-existent chronic appendicitis, and aborted a dead foetus some three weeks later.

Case IV. Colored female. Age thirty-two. Admitted to the hospital rather acutely ill and with all the symptoms referable to the gall bladder. Diagnosed by the admit-

ting officer as acute cholecystitis. Symptoms, pain of an acute character in this region, temperature, slight nausea, increased pulse rate, exquisite pressure pain, Murphy's percussion test absolutely positive for gall bladder pathology. No particular pain over McBurney's point. Meltzer's sign absent. No gastro-intestinal or genito-urinary series made on account of the acuteness of the condition. Operation three days later. Incision over gall bladder sufficiently large to explore thoroughly. Gall bladder perfectly normal; duodenum and stomach normal; no adhesions or evidences of an acute trouble anywhere in the upper abdomen. The appendix was now brought into view and found acutely inflamed, and removed. In pulling up the caecum and colon through the incision, it is not always possible to definitely locate the appendix, and in this case, it may have been retro-caecal and high up,

Case V. Colored female. Age thirty-nine. Transferred from Medical Ward in Charity Hospital to our service. This case had been beautifully worked up and a diagnosis of appendiceal abscess made. Temperature, leucocyte count 22,000, a tender mass in right iliac fossa, size of an orange. Right rectus incision made and a dark mass exposed, with the appendiceal tip adherent. Appendix removed and attention directed to the mass, which proved to be a right-tubal pregnancy, foetus dead, and macerated mass adherent to small bowel and appendix. Removed. This case had been seen and examined by not less than half a dozen men and all concurred in the diagnosis.

Case VI. Colored female admitted at eleven P. M. to our service. Patient in extremis; thready pulse, profuse perspiration, vomiting, abdomen exquisitely painful throughout. Was seen by a house officer three times during the night, who in the face of the general condition did not operate. Was seen by myself at nine a. m. next day. Condition about the same except the vomiting, which had ceased. Patient looked as if no matter what was done or not done, death was inevitable. Seen by Dr. Martin at three P. M., who gave expression to the same opinion. Under Fowler's position, hypodermoclysis, proctoclysis, etc., at the end of three days, patient began to improve. Abdomen still painful in right iliac fossa; pulse still running around 120, but better volume. No vaginal examination made at this time, on account of extreme condition. At the end of three weeks, patient's condition considered fair enough to risk operating. At this time, a mass the size of an orange could be felt in right side of pelvis, bulging upward almost to McBurney's point. Midline incision. A mass of clots found filling Douglas' pouch and fibrous masses attached to surrounding structures. A large black mass filled the right side of pelvic cavity, extending upward. Tubal pregnancy diagnosed, and the mass removed. No blood or clots elsewhere than in the pelvis. Why the intense upper abdominal symptoms? Why the generalized pain finally sifting down to the right iliac fossa and right pelvic region? Several diagnoses were made, ranging from perforated gastric or duodenal ulcer to a

pin-hole perforation of the appendix, with leakage and general peritonitis. Not until the mass could be felt was a ruptured tubal pregnancy suspected.

Case VII. White female. Age fourteen. History of a sudden fall two months previous while dancing. Acute pain in lower abdomen for a few days but not disabling. Several minor attacks of similar pain since, considered by her physician as of no consequence. When seen by myself, pain was quite marked in right iliac region, but patient persistently placed her finger lower than McBurney's point. Temperature 101 2-5. Pulse corresponding. Slight nausea. Consultation with Dr. Martin held, and operation advised. Right rectus incision, through which a healthy appendix was delivered, but judging by an inflamed tip, it had apparently been torn loose from attachment to some organ. After its removal, further search was made and a gangrenous ovarian cyst, size of a large orange, twisted on its pedicle, was delivered and easily removed. In this case, my attention was arrested by the persistency with which the patient placed a finger lower than the normal location of the appendix, insisting that was the spot giving most pain. This lesson has been of value.

Case VIII. White woman. Age fifty-one. Mother of six children. Patient rather nervous and possesses a vivid imagination. Has complained of pain in right side for about eighteen months, indefinite in character. Treated by myself one year ago and relieved. Later attended by another physician and relieved. Again by a third, with no relief. Being called in July 23rd, I determined to come to some conclusion, if possible, so had gastric-intestinal and genito-urinary, complete urinalysis, and blood examinations made, and in addition, the last half a dozen defective teeth extracted. All examinations negative and so reported. Appendix not visualized. Please note that. Patient continued to complain of pain, which she insisted confined itself to the right lumbar region. Pressure elicited no pain, or soreness there, but by long and firm pressure over the appendix, elicited slight discomfort. In the face of negative X-ray findings as to stone, a diagnosis of chronic appendicitis was made, and later through a midline incision, a hard fibrous occluded appendix was removed, no other pathology being found. Patient is now well and her imagination at peace.

Case IX. This is the prize case. Colored female eleven years old, admitted to our hospital service with a diagnosis of ruptured appendix and general peritonitis, by one of the house officers. Seen by myself the following morning. Patient's expression gave no evidence of a profound abdominal condition. Abdomen almost flat and negative as to pain, except over pelvis. Blood count 27,500. As I approached the bed, noticed the patient was on the bed-pan, and when asked the reason, she replied that she had had a diarrhoea for several days. Examination revealed no tenderness over the appendix, but a large mass almost filling the pelvic cavity, easily felt. Turning to the intern, I remarked that this patient had either a dermoid cyst or fecal im-



paction. Upon rectal examination, impaction to a marked degree was discovered. Ether was administered and about a quart of fecal matter removed, followed by a thorough colonic flush. Twenty-four hours later, blood count down to 17,000, following day 9,000, and normal one day later. Another cure for appendicitis.

Case X. Visiting the Michael Reese Hospital some years ago, saw Daniel Eisendroth operating a case of acute appendicitis in a child of two and a half years. Right rectus incision exposed a perfectly normal appendix, while near the lower border of the liver a necrotic looking area about the size of a silver dollar was found and excised. It would have been interesting to know the final diagnosis.

Case XI. Large tumor was filling right side from liver to pelvic brim, and diagnosed appendiceal abscess. Apparently no blood count was made, but of more importance, a urethral catheterization was done, and a hydronephrosis cleared up.

Case XII. Colored girl. Age fourteen, admitted to our service, with diagnosis of ruptured appendix and general peritonitis. Temperature 103, pulse 124. Apparently very ill. Immediate operation. An acutely inflamed appendix removed. No other pathology found. No blood count made at this time on account of haste in operating. During the operation I remarked to the intern assisting that we must find some other cause for the high temperature; that it certainly was not due to the appendix entirely. Advised looking for plasmodia. Temperature the following day up as high 103. Blood negative for malaria. On third day temperature still high. Patient very restless and irritable. Abdomen not sensitive or distended. At nine p. m. that night, plasmodia were found, and under vigorous quinine treatment, temperature was normal in forty-eight hours.

Nuzum, in studying one thousand cases of tabs in the Cook County Hospital, Chicago, found ninety-seven operations performed unnecessarily, eighteen of which were for an appendicitis which did not exist.

We certainly should not skimp our examinations. They ought to be as complete as it is possible to make them, and the case studied from all angles, yet such cases as No. 5 baffle us, while for case No. 9 no excuse can be offered save carelessness.

Conclusions—we are likely to continue making mistakes.

#### DISCUSSION.

Dr. Hermann Gessner: I want to congratulate Dr. King on having missed making one of the classical errors in operating for appendicitis—operating when the true condition is pneumonia. This has occurred in a number of cases. I had occasion to do that once under peculiar circumstances.

This patient came into Charity Hospital

very ill and presenting a rigid abdomen. A thorough examination was made and a pneumonia recognized. In spite of the fact that he had pneumonia, his abdominal symptoms were so marked that I opened the abdomen under local anesthesia. A normal appendix was found and removed. The patient subsequently died; autopsy showed pneumonia, with no complication. It was a case of right pneumonia, with a pleuritis which no doubt extended through the diaphragm to the peritoneum, thus causing abdominal rigidity. Fortunately the operation, as it was done under local anesthesia, to the exclusion of ether did not aggravate his pneumonia.

Dr. Urban Maes: Dr. King has opened a very important topic for discussion. Acute appendicitis is a fairly definite condition to most of us and the percentage of error in the diagnosis of this condition is small, in fact the cases overlooked are so few they are excusable.

The subject on which I wish to speak is the diagnosis of chronic appendicitis. In the absence of the history of an acute attack chronic appendicitis is a most difficult disease to recognize. The acute case has four or five cardinal signs which are present in most instances, which when taken together usually are pathognomonic especially when a few other causes of pathology in the right iliac fossa are eliminated. I do not know any group of symptoms that make the recognition of chronic appendicitis easy and I do know of three patients operated on for this condition, and a stone was found in the ureter. Very recently Dr. Marshall Clinton of Buffalo has called my attention to a condition worthy of mention, especially where pain in the right side is a predominating symptom. This is a neuritis of the 12th intercostal nerve. In one patient, appendix and gall-bladder were removed and a floating kidney was anchored, but the pain persisted and was found to be a neuritis of the 12th intercostal nerve. This pathological entity is found in people with a long 12th rib or in short-waisted people where the 12th rib touches the crest of the ilium in certain positions thus setting up a traumatic neuritis.

In looking over my statistics of end results in chronic appendicitis, I find that about 30 per cent of my patients return with gall-bladder disease. Both chronic appendicitis and chronic cholecystitis cause the same type of reflex dyspepsia. This and the 12th rib condition should be remembered in our patients on whom we suspect chronic appendicitis.

Dr. A. C. King (closing): I wish to thank Dr. Gessner for congratulating me for not operating cases of pneumonia having or supposed to have acute appendicitis. Perhaps I failed to diagnose the pneumonic condition.

I stated in my paper that Nuzum has reported 9 1-2 per cent of 1,000 cases of syphilitic infections of various kinds operated unnecessarily. I have often wondered many times if we have not operated on a syphilitic right iliac pain and called it chronic appendicitis.

Dr. Martin referred to leg pains in chronic appendicitis. I have also observed this and

especially in women. Flexing the thigh gives relief in most cases.

Meltzer's sign is simply a confirmatory sign and is valuable. The appendix normally lies on the ilio-psoas muscle, and in this test or sign pressure over the appendix while the leg is being elevated by the patient, held perfectly stiff while lifting it, gives pain. The appendix is simply squeezed between the tense muscle and fingers.

## SYPHILIS AND PREGNANCY.\*

BY DR. E. L. KING, M.D., F.A.C.S.,

*Assistant Professor of Obstetrics, School of Medicine, Tulane University of Louisiana.*

To Osler, I think, is ascribed the remark that to know syphilis is to know medicine, and while I do not pretend to know either, I feel that it is well occasionally to consider this widespread disease in its relation to the various specialties. We are all liable to encounter it in our work, and if it is recognized early and treated properly, the results are often surprisingly gratifying. However, some syphilographers and a fair number of neurologists are rather pessimistic as regards a permanent cure, unless the disease is treated much more energetically and for a much longer period of time than is generally done.

Women may be infected with syphilis before becoming pregnant, at the time of conception, or at any time during pregnancy. Many luetic women are sterile, however (DeLee), but if one should become pregnant, the child is always luetic, and generally dies prematurely and is expelled from the uterus. If untreated, the patient as a rule carries each fetus nearer to term than the preceding one, until finally a living but syphilitic child is born. If syphilis is contracted at the time of conception, the child is always luetic (Williams), the the outcome is practically the same. In such a case, DeLee states that "early abortion is the rule," though Williams says that "on the other hand it [i. e., syphilis] plays but a small part in the causation of early abortion." Probably both are right; there are so many etiological factors responsible for abortions that syphilis may be to blame for only a small number of the total, even though we admit that most cases of simultaneous syphilis and pregnancy end in this

manner. If the mother is infected during early pregnancy, the child is usually luetic, but if she becomes syphilitic in the later months, the child may escape. Le Pileur (quoted by Williams) found that in 139 women who had become syphilitic after having borne children, the fetal mortality was 78 per cent after developing this infection, as contrasted with 3.8 per cent before this event.

It is generally agreed that recent syphilis has a more disastrous effect on a pregnant woman than on one not pregnant. The chancre is larger than usual, and is more rebellious to treatment. Vulvar lesions, such as condylomata and ulcerations, are frequently found in florid cases, and are hard to cure. The general symptoms are often exaggerated, and ill-defined pains, neuralgias, etc., should arouse our suspicion. On the other hand, we encounter much more frequently what we may call latent syphilis. The patient gives no history of an initial lesion, has no visible manifestations of lues, but often gives a history of spontaneous premature delivery of one or more macerated infants. In such a case a positive Wasserman reaction is practically always obtained. The fact that the history is often negative regarding the initial lesion may mean that chancre of the cervix is much more common than is generally thought, but is symptomless and hence is not diagnosed. In many of these women, especially in those of the clinic type (and more especially in negroes), no clear history of secondaries can be obtained. These patients do not complain and appear to be in excellent health; nevertheless, they will probably lose their babies unless properly treated.

The effects of syphilis on the fetus, as noted above, is disastrous if there is no treatment or if the treatment is inadequate. Lespinasse quotes Marcus as stating that 90.2 per cent of children born of untreated mothers are luetic. Fournier, in 45 untreated cases, reported 37, or 82 per cent, fetal deaths (29 still-births or miscarriages, while 8 died soon after birth); of the eight living children, six had syphilis. Leredde states that when the treatment is inadequate the fetal mortality may be as high as 64 per cent. Williams states that of 705 fetal deaths in 10,000 deliveries at the Johns Hopkins Hospital, syphilis

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was the responsible factor in 26.4 per cent. Besides these, many others that were born alive died in a few days, and still others lived, but developed signs of hereditary lues later. Of these 705 deaths, 334 fetuses were delivered prematurely, and syphilis was responsible in 40 per cent of these cases. Similar figures can be obtained from the reports of many other observers, but these quoted above are sufficient to impress us with the gravity of this complication.

Naturally, early diagnosis is of paramount importance. In the active cases, in which pregnancy and infection are coincident, or in which infection occurs after pregnancy, this is usually easy, especially if vulvar lesions are present. In many cases, however, which we may call latent, the history of spontaneous stillbirths in multiparae may be the sole warning. Here the Wasserman reaction is almost invariably positive. In primiparae, the positive Wasserman may be the first intimation of trouble. Of course, the question of the reliability of the Wasserman test is involved. Lespinasse gives the following figures, based on series of cases of undoubted and proved syphilis: primary stage, 73.5 per cent positive (Vedder), 92.3 per cent positive (Noguchi); secondary stage, Vedder, 91.9 per cent positive, Noguchi, 96 per cent, Craig 96.1 per cent, Swift, 92 per cent; tertiary stage, Vedder, 86.3 per cent, Noguchi, 89.8 per cent, Craig, 87.4 per cent, Swift, 80 per cent; latent stage, Vedder, 80.7 per cent, Noguchi, 77.7 per cent, Craig, 68.1 per cent, Swift, 64 per cent. So that the usual acceptance of the Wasserman reaction as 90 to 95 per cent accurate is approximately correct, especially when the reaction is strongly positive. In pregnancy, however, there is an unexplained variation, as occasionally, according to Williams, a woman with a positive reaction before delivery will later, after delivery, be found to respond negatively, in spite of the fact that no treatment was administered. DeLee has made the same observation, and feels that the Wasserman reaction in pregnancy needs more study. In the present state of our knowledge, however, it is certainly better to consider a pregnant woman with a strongly positive reaction as luetic and treat her accordingly. The results of this test have called into question the

validity of Colle's law, that a healthy woman may have a luetic child by a syphilitic husband, as in practically all such cases the maternal reaction is positive. Profeta's law, that a luetic woman may give birth to a healthy child which is immune to syphilis, is also negatived. Williams, however, is not quite prepared to give up Colle's law, and cites the following case in support of this position. A colored woman, who had been delivered several times of healthy children at the Johns Hopkins Hospital, was delivered of twins, one healthy and one definitely luetic. On being questioned, she admitted intercourse within a few hours with two different men, her husband and another; the latter was under treatment at the Hopkins clinic at the time for syphilis. The patient had a negative Wasserman reaction, and subsequently gave birth to several more healthy children.

After delivery, the diagnosis of fetal syphilis is best made by autopsy on the still-born fetus, and lues should be diagnosed only if the treponema is found in the organs. If the baby lives, clinical observation by a pediatrician is advisable. The Wasserman reaction on blood obtained from the cord at delivery is stated by Williams to be so unreliable as not to be worth the trouble, and we have had the same experience in a series of several score cases studied at the Charity Hospital. Williams, Slemons, and others lay great stress on the microscopic study of the placenta, claiming that there is a characteristic clubbing and thickening of the villi, which are almost devoid of blood-vessels and are packed with round or oval cells. Williams, in particular, emphasizes these findings as diagnostic of lues, but states that negative findings do not rule out lues in the child. In an attempt to confirm these findings, several hundred placentae were examined in the pathological department of the Charity Hospital a couple of years ago, but the pathologists could not satisfy themselves that there were any characteristic changes, and the results were so unsatisfactory that the study was discontinued.

Once diagnosed, the indication is clear, and the patient should be treated as vigorously as if she were not pregnant. Some claim that arsenic in the

last month of pregnancy is particularly liable to cause premature labor, more so than at any other time. This, however, is by no means universally admitted. As in all other cases, best results are obtained by the use of arsphenamin and mercury. DeLee is averse to the use of arsenicals when the diagnosis is based solely on a positive test, preferring mercury and tonics in such cases. Davis states that in using arsenicals there is a distinct danger to the fetus, but that the risk is justifiable, as the fetal mortality from lues is so high. It appears, from the literature, that even incomplete treatment will save the baby; three or four months of treatment nearly always assures an apparently healthy, vigorous child. One of our patients, who had delivered a macerated fetus in June, 1922 (at which time her Wasserman test was strongly positive), returned to the clinic in August, 1923, received six doses of neo-arsphenamin and a couple of mercurial rubs, and was delivered of a vigorous full-time baby in November. Thorough treatment will give most excellent results, as far as the fetus is concerned. As an example, I may refer to another patient, colored, who had lost nine babies from lues. Treatment from early pregnancy resulted in a healthy baby, and two others have been born since. Two years ago, the mother and the first child were found to have weakly positive reactions, and so they were given treatment in the special clinic, with a prompt return to the negative state. In our work so far, we have not seen any ill-effects from arsenicals, but we must bear in mind the frequency of toxemias and of renal complications in pregnancy, as, of course, arsenic would be contraindicated if such a complication were present.

In checking over the 1923 records of the Charity Hospital, I found that of 326 Wasserman reactions on white pregnant women, 318 were negative and 8 were positive, a frequency of 2.4 per cent. Three hundred forty-nine colored women were tested, with 59 positive results, or 16.9 per cent. These figures correspond very closely with those of Williams, who gives 2.5 per cent and 16.3 per cent, respectively. In another ward, where the complications of pregnancy and of puerperium are treated, there were 6 positive reports in 177

tests, or 3.4 per cent. In investigating these 73 cases showing positive results, our findings were as follows: in 52 of the colored patients there were 19 stillbirths (10 macerated), one abortion, three premature dead babies, six premature living babies, another premature baby which died twelve hours after birth (the mother was eclamptic), and 22 babies at or near full term were born alive and left the hospital with their mothers. Thus there were 28 living babies in 52 colored cases, showing a fetal mortality of 46 per cent. Of six white patients, one delivered a stillborn baby of four pounds, one a stillborn baby at term, one delivered prematurely at six months, one aborted at three months, and only two delivered full time, living children. Of the fifteen other patients, some left the hospital undelivered, and the records of the others were not available.

Hence it behooves us to watch for syphilis in our pregnant women, especially in our colored clinics. In our work in the Charity Hospital out-patient department, we have our patients routinely tested, and feel that we are accomplishing some good thereby. In private work, a routine Wasserman test is not so essential, but every patient with a suspicious history or a record of a spontaneous, unexplained stillbirth should be carefully studied. In obstetrics, as in all other fields, eternal vigilance is essential in order to obtain good results.

I desire to thank Dr. J. E. Kanatser, intern at Charity Hospital, for his valued assistance in looking up and tabulating the records of the institution.

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#### DISCUSSION.

Dr. J. S. Hebert: Of course the subject is one that would fill a large book and Dr.



King certainly cannot do justice to the subject and specialty in such a short space of time.

From a practical standpoint, the most surprising and interesting feature about this subject is one that faces all of us who do obstetrics. We have heard the statements made by Dr. Landford and the nature of his discussion did not touch upon it. Here is an apparently healthy husband and wife; in due course of time an apparently healthy baby is born. In about one to three weeks to our great surprise we have a newborn baby with typical general syphilis. The situation is a very embarrassing one to explain to the father and mother and the question arises as to how shall we meet this problem. Generally the accoucher (at least I do not) does not or possibly feels that he should not make a diagnosis. We call in a specialist and the diagnosis is then made.

The mysterious question then arises: who does it come from? We take the blood from the father and get a negative report. We take repeated cultures and examinations and all come back negative. There is a possibility it is from the mother. We take cultures and Wassermans; all examinations are made, and all come back negative. Where does it come from? I would like Dr. King to enlighten me on the subject.

Dr. E. L. King (closing): The question of syphilis as a cause of abortions has been considered in our work. The general consensus of opinion is that syphilis does not usually cause abortion in the early months—they generally carry to the later months and lose the child in the last two or three months of pregnancy.

I have a patient, 19 years old, brought into Charity Hospital yesterday. She has had six spontaneous abortions. I hardly think she has syphilis.

I know of one lady who has had six or seven miscarriages. She was anxious to have children and would even go to bed for weeks and still she would lose her baby. In this particular case, the patient and her husband were thoroughly examined; there was no history of syphilis; Wasserman negative on both and nothing else to be found. Everything in the way of necessary surgery was done, to no avail. So we cannot explain these cases on the grounds of syphilis. Chronic endometritis may sometimes be responsible.

There has been some interesting work done at Yale, which was reported in the *Journal A. M. A.* sometime ago. These investigators treated pregnant animals with neosalvarsan and later killed the animals. They found fairly large amount of arsenic in the maternal liver and in the placenta, but practically all the tissues of the foetuses were negative for arsenic. Apparently, the conclusion is that the foetus is protected by the storing up of arsenic in placenta.

Dr. Hebert asked for the explanation of the luetic child with apparently healthy father and mother. The only thing I see is that possibly the husband did have syphilis with a negative Wasserman, a so-called latent case.

## SOME SUGGESTIONS IN PHYSICAL DIAGNOSIS.\*

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It is not my hope in this brief discussion to present any matter of special or unusual interest, and it is entirely possible that some or all of these plans suggested have been tried out by most clinicians. But I have been unable to find them in literature, and as they have been of some real value to me, I am passing them on with the hope that they may aid someone else, even though it be in a limited way.



fig. 1

### *Exposing the Chest.*

It is well understood that for a thorough examination of the chest it is best to have the patient stripped to the waist; it is often desirable, however, to expose the back of a man when for some reason it is not convenient to have them sufficiently disrobe. When the two-piece underwear is worn it is customary to raise the shirts as shown in figure 1. This very imperfectly exposes the back. It will be found in these cases that the back can be fairly well exposed by the following plan:

Have the patient raise the arms out from the sides, as shown in Figure 2;

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Fig. 2

as the shirt is lifted as high as possible, then sweep the arms forward as shown in Figure 3, as the clothing is carried over the shoulders, then drop the arms as shown in figure 4. By comparing Figure 1 and Figure 4 the difference in the surface exposed for examination can be readily appreciated. Of course this will not apply where the patient wears a union suit.

#### *Position For Examining the Back of the Thorax.*

The most commonly used position is to have the patient fold the arms with the hands tucked in the axillae, or to fold the arms with the hands brought across to the opposite shoulders. The position that I suggest is to have the hands loosely locked and the patient bending forward until the hands barely touch the front of the body (see Figures 5 and 6). It has the following advantages:

1. It lends itself to relaxation.
2. It keeps the hands and arms still and eliminates the extraneous sounds (in auscultation) often produced by the patient's hands on his skin when the arms are folded in the usual way. These sounds which result from rubbing or scratching may very materially interfere with a careful examination.
3. It lends itself to comfortable res-

piration possibly better than does the folded arms.

4. This position also favors the separation of the scapulae as well or better than the usual positions. This is shown in Figure 7, where the vertebral borders of the scapulae have been blue-penciled. In testing out this position I blue-penciled these borders in various positions and believe that I am correct in stating that the separation here compares favorably with that obtained by folding the arms.

#### *Palpating the Apex Beat of the Heart.*

It has seemed to me that this can sometimes be located by "ulnar palpation" when other measures fail. (See Figure 8.) The palm of the hand may be either down or up as the ulnar side of the hand and the little finger is placed in the various intercostal spaces.

#### *Developing Crepitant Rales.*

The usual routine is to have the patient exhale and then cough, this being followed by a deep inhalation. The plan that I suggest is to have the patient forcibly exhale then wait as long as comfortable, then deeply inhale. It seems that this period of rest after a forced exhalation possibly gives a better opportunity or the agglutination of surfaces, the preparation of which gives rise to the sound that is sought.



Fig. 3



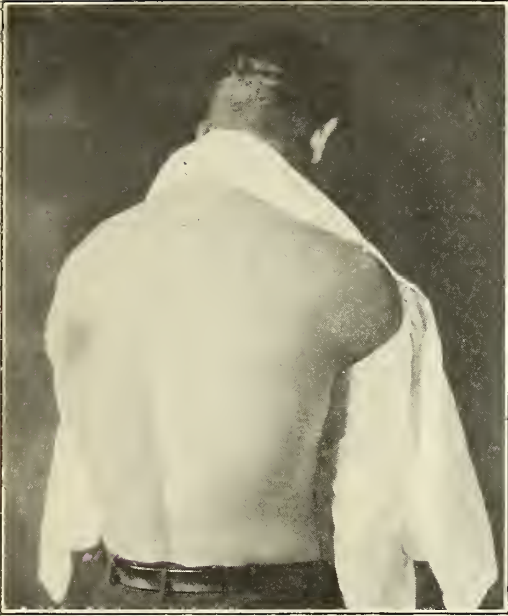


Fig. 4

*Preparing the Surface For Auscultation.*

In examining the front of the chests of men the presence of hair often inter-

feres with auscultation. The usual suggestion is to moisten this hair before examination. This does not always permit good work, particularly with the Bowles' stethoscope. The area in which the hair will interfere is usually small and I have found it much better to shave and dry this area before beginning the examination.

*Proper Breathing For Auscultation.*

One of the greatest difficulties in listening to the pulmonary sounds is to have the patient breathe right for an examination. I have often found it of considerable advantage to teach the patient how to co-operate by proper breathing before beginning this phase of the examination. I do this by holding my face where the patient can hear my breathing and I at the same time can watch the movements of the patient's chest, and then having them *breathe with me* until they have obtained the desired rate and depth. I then tell them to continue to breathe just that way until directed otherwise.

*Examination of the Chest After Removal of Adhesive Plaster.*

When a side of the chest is strapped

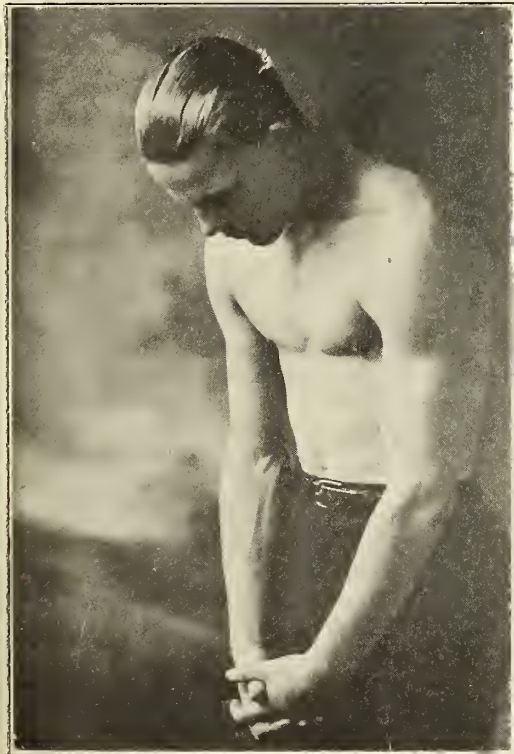


Fig. 5

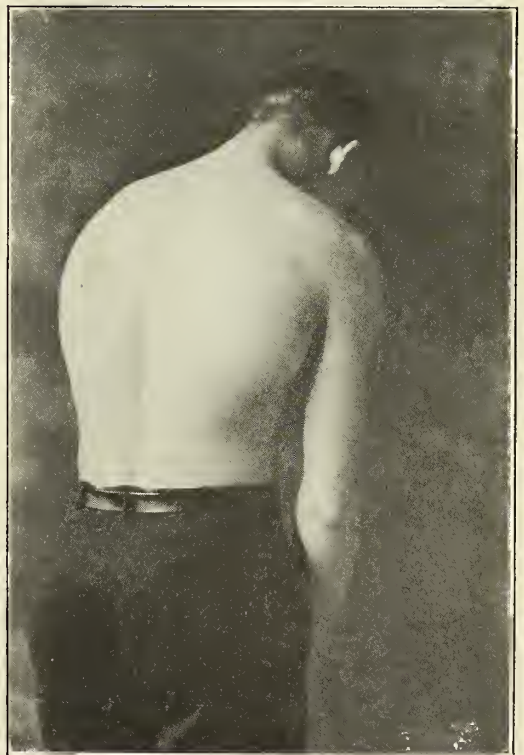


Fig. 6



Fig. 7

with adhesive plaster the function of the lung on that side is impaired and the other side takes on a certain amount of compensatory activity. On the side strapped not only is the lung proper



Fig. 8

compressed, but the muscles of respiration are interfered with very much in the same way as would the muscles of a hand that was put in splints. After the strapping is removed it may be quite some time before the normal function is restored, even where there is no pathology. This condition would obtain very much as would be the case in the hand kept in splints for several days. It would seem desirable, therefore, when there is any doubt as to the findings after removal of adhesive to re-examine, after a period of some hours at least, before attaching too much importance to the findings, as compared with the other side of the chest.

#### FURTHER OBSERVATIONS ON THE OPERATIVE CURE OF PRURITIS ANI AND VULVAE.\*

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In April, 1920, I presented before the meeting of the American Medical Association some observations on the operative cure of pruritus ani and vulvae. Since this time I have had considerable further experience and wish to again bring this matter before the profession with some further observations.

Since I have undertaken the study of this condition there have been some reports by Murray, Hirschman, Ward and others, who have been able to incriminate streptococcus fecalis as a causative factor and isolated it for the purpose of making a vaccine. As my investigations antedated their reports on this work and as they only obtained about 50 per cent cures after many months of treatment I felt that anything which offered more immediate results should be carefully followed up.

As a result of my observations on numerous cases I am convinced that reflexes have but little, if any, influence in producing this condition, or if they are productive factors the removal of these causes by operative or other means is not always followed by a subsidence of the pruritus once it has become established.

Among the measures which I adopted in my preliminary study of this sub-

\*Read before the Orleans Parish Medical Society, January 28, 1924.



ject, were alcohol and quinin injections, but these were abandoned after a time as the results were too transient or disappointing in other ways.

Observation made by injections of the pudic nerve have convinced me that this nerve plays no part in the affection.

I am quite willing to believe that some specific infection is the factor in producing this condition as the involved parts do not conform to the recognized distribution of any particular nerve. The thickened and leathery appearance of the involved parts may also add to this view, although this condition may be entirely the result of frequent scratching and rubbing, which these patients so often indulge in in a futile effort to obtain relief.

Whatever the cause may be if we have an operative remedy that is prompt and efficient I feel we should avail ourselves of it until something better is found.

I quote the following from my original report as the operative technic has not been improved upon, but some observations made on recent cases may somewhat modify my views regarding the efficiency of dividing the inferior pudendal nerve, particularly in cases where the involvement was not extensive and involved only the posterior surface of the scrotum or lower half of the vulva, in addition to the anal circumference. In these cases a simple dissection made subcutaneously into the area between the coccyx and perineum and a division of this nerve on both sides has been followed by almost complete relief. In stout individuals, or where the dissection is difficult or the nerve not readily found, a fairly deep crescentic incision made mid-way between the coccyx and anus, with the horns turned toward the perineum and carried out about two inches on each side of the mid line, has very effectively divided the inferior pudendal as well as all coccygeal nerves which run forward in this area. This last operative procedure has proved quite effective whenever used and while I prefer the operation as first proposed in the typical case one occasionally meets complicated conditions associated with fistuli or hemorrhoids, in which it is inadvisable to do any more surgery

around the anal margin than is absolutely necessary.

I give below the original description of the operation, which has proved so effective in my hands.

"The proposed operation has in view the separation of the skin from the underlying tissue, thus dividing all nerves which reach the affected parts, rendering them anesthetic and preventing the skin from immediately healing to the underlying tissues by packing, which is kept up until a firm bed of granulation has formed which usually requires about one week, when the packing is discontinued the skin is allowed to fall back in place, where it soon is again firmly united, leaving an anesthetic area which nearly equals the extent of the undermined area. This anesthetic area is not complained of, but is usually a quite welcome change. It gradually diminishes in size with the return of normal sensation after a few months, and has in my experience not been followed by a return of the pruritis.

The operation on the anal region is the simpler. The area involved must first be accurately determined. It is usually quite symmetrical and uniform on both sides. A series of incisions are now made beginning at the anal margin and continued outward to about one-half inch beyond the affected area, which rarely exceeds two inches. A series of these incisions are made about one inch apart at their peripheral extremities until the entire perianal region has been covered.

These skin strips are now dissected up, preferably with a scalpel, except at their two ends, which are left attached. In separating the skin from the subcutaneous tissues, but a small margin of tissue is left attached to its under surface to insure a sufficient circulation to prevent sloughing. As the pruritic area rarely involves the mucous surfaces the incisions need not invade them, and in a few cases where the vaginal mucosa seemed to have been involved, it cleared up with the relief of the external parts. The operation on the vaginal outlet is performed in the same general way as on the anal region, and should need no special description. After dissecting up the skin flaps, the space beneath is packed with iodoform

gauze. Frequent sitz baths with a liberal supply of soap has always been insisted on as an after-treatment. They keep the parts cleansed and are more effective and comfortable than irrigations. The packs may occasionally need changing, but often remain the full time, about one week. After the packs are removed, the parts quickly unite and the total disability is about two weeks.

In considering this operation in the light of the recent bacteriologic investigations of streptococcus fecalis, it is possible that the iodoform plays an antiseptic role here, or, more likely, the soap, which has been proved a quite active germicide and in the exposed condition of the tissues may eradicate the infection, if such is the cause; or should we take the other view that the prolonged anesthesia of the parts effectively breaks up the itching and scratching habit, the fact is that the patients get well and, as far as I have been able to follow them, remain well."

There was one case, which I operated upon last year, which was badly complicated by an anal stenosis, the result of chronic ulceration and which left me in a rather unsatisfactory condition and I have not heard from her since. With this exception I have followed all cases and there has been no recurrence as far as they have reported to me.

#### SOME PROBABLE FUNCTIONS OF THE SPLEEN AS DEMONSTRABLE BY THE EFFECTS OF RADIO-ACTIVITY UPON THAT ORGAN.\*

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The functions of the spleen, in the past, have been very obscure and, to judge by the statements of current textbooks of physiology, are still more or less problematical. In this paper are recorded personal observations noted by the application of Radium or X-rays over the splenic area, through the skin of the abdominal wall. The term radio-activity is employed to indicate both X-rays and Radium, as it is generally

accepted that the effects of the two agents, in equal dosage, are quite similar.

The diminution in size of an enlarged spleen, so frequently noted following the application of radio-activity to it suggests the probability of a stimulation of function, as indicated by certain effects coincident with its shrinkage. The writer believes that the stimulation of the non-palpable spleen has also been effected by this method.

The effect of the application of radio-activity to the spleen, to be discussed in this paper are:

1. Relief of capillary hemorrhage.
2. Increase in hemoglobin.
3. Increase in red blood cells.
4. Decrease in white blood cells.
5. Stimulation of immune bodies.
6. Effects on other organs.

The observations are based upon the treatment of several cases of myelogenous leukemia, one case of pernicious anemia, one case of splenic anemia or Banti's disease, one case of tuberculous peritonitis, and one case of extensive pulmonary tuberculosis complicated by ileocaecal tuberculosis.

1. Relief of capillary hemorrhage.

In myelogenous leukemia the writer noted the attacks of bleeding from the nose were overcome by radium over the spleen.

In connection with the relief of hemorrhage by irradiation of the spleen, Nagy (1) reports:

"Irradiation of spleen with a stimulating dose of the X-Rays was found to increase the coagulability of the blood in cases of hemoptysis, hemophilia, abdominal hemorrhage, and the hemorrhage following minor operations. Prophylactic irradiation diminished the hemorrhage of tonsillotomy and adenotomy. The effect was noted in a few minutes and lasted for from two to fourteen days or longer."

Nagy recommends such irradiation in cases of hemorrhagic diathesis, hemophilia, purpura, pulmonary and renal hemorrhage, menorrhagia, bleeding myomas and other hemorrhagic gynecological diseases, childbirth, bladder hemorrhage, and post operative hemorrhages, and as a prophylactic measure before operation.

Nurnberger (2) reports:

Of 25 patients suffering from uterine

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hemorrhage, 18 were permanently relieved by the treatment. In several cases the bleeding stopped within  $\frac{1}{2}$  hour of the treatment. In the majority cessation took place on the third day, which is the day on which the coagulant factor reaches its highest intensity. One fourth the erythema dose was given. If as rarely happened, no effect was obtained, three days later an additional two-thirds was given.

Schmitz and Bundy (3) state:

"The menorrhagias or metrorrhagias accompanying adnexal disease and the pernicious bleeding from different parts of the body during the pregnant state are often intractable to the usual forms of treatment. Though the adnexal disease may be clinically or surgically healed, uterine hemorrhage may persist even after repeated curettages. These hemorrhages respond almost immediately to an exposure of the spleen to a stimulating dose of rays of about 15% erythema skin dose. Should the bleeding persist after 24 hours, twice the dose is given."

2. Increase in hemoglobin.

3. Increase in red blood cells.

Both hemoglobin and the red blood cells were markedly increased after treating the spleen by Radium in cases of myelogenous leukemia. Within 90 days after beginning treatment the hemoglobin was raised in one case from 54% to 90%. The red blood cells were markedly increased from 2 million to 5 million and above within 90 days in several instances.

In a case of pernicious anemia, with no splenic enlargement the red count of 400 thousand was increased to 2 million in 5 weeks and from 2 to 5 million in  $3\frac{1}{2}$  months later. The hemoglobin in this case increased from 25% to 50% within 5 weeks and to 85% within 8 weeks. Although this case of pernicious anemia subsequently died, the marked effect of radiation in stimulating regeneration of the blood is worthy of note.

The spleen was concerned in the increase of hemoglobin and red blood cells. The effects followed the application of the Radium. The mechanism of the process cannot be stated, it is probable that the more complete and more rapid liberation of the iron from the effete red cells brought to the spleen was an

important factor in this change. This iron sent by the liver to the bone marrow resulted in an increased number and richness of the red cells.

Moynihan (4) states:

"Changes in the blood which agree with those found in splenectomized animals. There is a temporary anemia, gradually subsiding in approximately two month's time, and there is an increase in leucocytes, whose number return to the normal very slowly."

If anemia and leucocytosis mean lessened splenic function, then improvement in red blood and decrease of leucocytes point to increased function.

4. Decrease in white blood cells.

The effect of radio-activity on the spleen is very marked where the white cell count is high. This is clearly seen in those cases where the neutrophiles are in excess as in myelogenous leukemia. Irradiation may effect a marked reduction in the white cells from a height of 800 thousand to within 20 thousand within a relatively short time, a few weeks period. The leucocytes are especially susceptible to the action of radio-activity anywhere in the body, the lymphocytes most of all. It has been argued that the effect of irradiation of the spleen is on the circulating blood within it. If this were so, then irradiation of the limbs would produce a greater fall in the white count than irradiation of the spleen. However, this is not the case, as irradiation of the spleen produces the greater decrease, indicating a special effect upon the spleen itself aside from any effect upon the blood circulating within it.

How intimately the destruction of leucocytes is concerned with the production of immune bodies or antibodies we do not know at present although the physiologists favor the view that bacteriolysins are formed both by the intact and by disintegrating leucocytes.

Kolmer (5) states:

"It is probable that the endolysins act not only on bacteria that have been phagocytosed, but also upon free bacteria when liberated through disintegration of leucocytes."

More recently Carrell (6) states:

"Leucocytes, according to their condition, set free substances of varied nature. Trephones are secreted by nor-

mal cells, or diffuse from dead cells before the onset of disintegration."

These trephones stimulate the proliferation of epithelial and of connective tissue.

"Murphy recently found that, after an animal has been exposed to roentgen rays, lymphocytes divide in its serum more readily than in that of an animal which has not been irradiated. This effect may be attributed to the destruction or stimulation by roentgen rays of lymphocytes and the setting free of trephones in the plasma, which then becomes less inhibitory for cell proliferation. A similar weakening of the growth restraining power of plasma under the influence of trephones may cause, in part, the response of the organism to protein therapy. It is possible that the growth promoting properties of leucocytes are utilized by the diseased organism as fully as their power of opposing bacteria and other foreign substances."

5. The stimulation of immune bodies.

"Pfeiffer and Mark (7), in investigating the formation of immune bodies in cholera found that the spleen and the medulla of the long bones contained a far larger proportion of these substances than any other part of the body; and this reservoir, so to speak, of defensive substances continued for many months, until the bactericidal properties in the blood were slowly brought up to the standard found in the spleen and the bones. They also found that immunity could be developed in an animal whose spleen had been removed some months before; but if the production of immunity was attempted and the spleen then at once removed, the immunity failed to develop. In 1891 Bardach injected 25 normal dogs, and 25 dogs from which the spleen had been removed, with 1 cc of an anthrax culture. Of the 25 spleenless dogs, 19 died; of the 25 normal dogs, 5 died."

Morris and Bullock (7) took 88 rats and splenectomized under ether. A similar number were treated by abdominal castration as a fair basis of comparison of the effect of operative trauma alone upon the subsequent health of the animals. They injected both sets of animals with a subcutaneous sublethal dose of broth culture of the bacillus of rat plague. Of the cas-

trated rats, 22.7 per cent died; of the spleenless rats, 87.5 died."

Quoting Moynihan further: "Hektoen's experiments appear to show that antibodies are produced in the spleen, lymphatic tissues and bone marrow." "So far as I am aware, no observations to support these conclusions have yet been made on man. But the evidence as to the defensive properties of the spleen which these experiments reveal is so strong that remembrance of this function of the spleen should always be borne in mind when the operation of splenectomy is under consideration."

Eleven years ago Dr. J. M. Batchelor referred a case of extensive peritoneal tuberculosis for X-ray treatment. The patient had had 7 laparotomies within 3 years and a persistent sinus. The last operation was by Dr. Batchelor, who reported everything within the abdominal cavity was studded with tubercles. Under very mild X-radiation over the entire abdomen the patient responded well. Sixty-five treatments were given over a period of 18 months. The sinus had healed promptly and the patient seen a few days ago was free from all symptoms; well for a period of 9 1-2 years since her discharge.

C. S. referred by Dr. R. Matas with an extensive pulmonary tuberculosis complicated by an ileocaecal tuberculosis. The pulmonary lesion was quiescent, the patient's principal symptoms referable to the ileocaecal region. For 3 1-2 years there were frequent attacks of pain, distention, indigestion, with marked loss of weight and strength. The presence of the pulmonary lesion together with the mottling of the caecum on X-ray examination (described first by Stierlin as indicative, later by Lawrason Brown of this country as characteristic of ileo-caecal tuberculosis), justified the diagnosis of ileo-caecal tuberculosis. Small doses of X-rays to the abdomen, excluding the liver, but including the spleen, have resulted in a prompt increase in weight and strength which have been maintained, and practical absence of symptoms in four months. A re-examination of the ileo-caecal region within the week shows a practically normal appearance of the caecum and ascending colon. Increasing intervals of treatment corresponding to the steady improvement should permit this patient's discharge shortly. The complement fixation test a few weeks ago was negative. The prompt recovery of this patient justifies the belief that improvement was accelerated by stimulation of his spleen by radio-activity. In this connection, there is a growing tendency to treat the spleen by small doses of X-rays as an adjuvant in the treatment of pulmonary tuberculosis.

6. Effects on other organs.

To attempt to describe the relation of the spleen to other organs, including the liver, at this stage of our knowledge, would be foolhardy. However brief mention should be made of the effects



of a radio-activity upon a case of splenic or Banti's disease—a case with marked splenic enlargement, hepatic enlargement, anemia, indigestion, ascites.

This patient, a child of 10 years, referred by Dr. W. W. Butterworth in May, 1922, showed the above symptoms and had been ailing for 1-2 years previously. Radium applications were made monthly and improvement followed the first series of applications the spleen and liver diminished in size and the ascites disappeared. Five series of applications were made to December, 1922. In December, 1922, and February, 1923, X-rays were applied to the spleen. The boy's mother was directed to return him for monthly observations, but owing to press of other affairs failed to do so. This child was seen a few days ago and the mother considered him well as he showed no symptoms of indigestion, had gained in weight and looked well. Examination revealed no hepatic enlargement; the spleen was soft and about one-half to two-fifth its previous size. The mother was informed the child was not cured and instructed again to return for treatment.

This case, 20 months after treatment was begun, has maintained a marked improvement; whether we describe it as splenic anemia, Banti's disease or cirrhosis of the liver.

Naunym and others consider that splenic anemia is merely a type of hepatic cirrhosis in which the liver changes are relatively slight, at least until the final stages are approaching.

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#### DISCUSSION.

Dr. A. C. King: I would like to ask Dr. Henriques about cervical adenitis of tubercular origin. These cases are very interesting from a surgical standpoint and operation is not always successful.

Dr. A. Henriques (closin): In answer to Dr. King, as far as tubercular adenitis is concerned, I have had a number of these cases and they have responded very well by X-ray treatment of the enlarged glands, directly over the glands. I think in the future, in view of all the information we are disclosing about the spleen, that I shall also treat the spleen when called upon to treat cases of tubercular adenitis with the x-ray.

## RELATIVE VALUE OF PERCUSSION AND X-RAY IN CARDIOLOGY.\*

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The accurate delineation of the heart is essential in diagnosing diseases of that organ, for one of the most, if not the most, important factor in the diagnosis and prognosis of cardiac conditions is the mapping out the size, shape and position of that organ.

Unfortunately in this day of instrumental diagnosis, percussion is becoming more and more a lost art, its value unrecognized and to a great extent it has been superceded by the X-ray.

It is the purpose of this paper to consider the relative value of percussion as compared to the X-ray in the delineation of the heart borders.

Orthodiagraphy and teloradiography have not given results sufficiently accurate and illuminating even in the hands of the most skilful cardiologist and radiologist. It is the consensus of opinion among the most skilful radiologists that in the diagnosis of heart conditions very limited information is to be had from this means. Sir James Mackenzie in Oxford Medicine voices the opinion of many of our leading cardiologists in the following:

"Indeed I am doubtful if an X-Ray examination of the heart has ever thrown the slightest light on a cardiac condition."

And also the continuing:

"Like the modification of the stethoscope, the modification of the X-Ray methods by orthodiagraphy and telorentgenography has been of little practical use."

The X-Ray has not given us a basis on which we can determine the normality of the heart size. The normal heart size of the radiologists is very much greater than that determined by the anatomists. To this day the difference between the two has not been reconciled or explained.

The most patent difficulties often resulting in delineating the heart's area by means of the Roentgen rays, are:-

- (1) Approximately only one third of

\*Read before the Orleans Parish Medical Society, February 11, 1924.

the circumference of the heart's silhouette is usually shown in the skiagraph.

(2) Inability of mapping accurately the lower border of the heart from the upper margin of the liver.

(3) Frequent invisibility of the heart's apex because of being imbedded in the diaphragm.

(4) Influence of respiration and expiration on the size of the heart.

(5) Difficulty of radiographing heart at proper respiratory phase.

(6) Occasional influence of the shadows caused by the sternum, spinal column and the great blood vessels in determining the cardiac borders.

(7) Extreme variability in the size of the transverse diameter.

(8) Frequent inability to detect the apex, making the determination of the longitudinal diameter only approximate and inaccurate.

(9) Variations in the size of the heart in its systole and diastole.

(10) Variability in size, shape and position of the heart in individuals having high and low diaphragms.

(11) Divergence of the rays is always an important factor of error.

(12) All extra-cardial structures, the pericardium, pericardial fat, pericardial blood vessels are included in the heart's silhouette and cause more or less distortion of the shape and enlargement of the size of the heart's shadow.

(13) Slipshod technic, improper distance of tube from plate, inaccurate focussing, are sources of great errors.

(14) Size, shape and deformation of the chest.

(15) Changes in heart's size and shape due to changes in posture.

(16) Lack of correlation in the size of the radiologic and anatomical heart.

Accurate percussion gives the following advantages:

(1) Delineation of the whole heart.

(2) Heart accurately made out in size, shape and position.

(3) Patients percussed in the recumbent posture.

(4) Heart may be differentiated from the liver.

(5) Both the transverse and longitudinal diameters are available.

(6) Percussion of the heart itself and not its pericardial appendages and foreign structures can be made out.

(7) Apex can always be made out. (Exceptions are exceedingly rare)

(8) Shading of dullness and resistance due to a difference in density between the fat and cardiac tissues.

(9) Close approximation in the size of the percussed and anatomical heart.

(10) Correlation of the size of the clenched fist and the heart thereby determining its normality.

(11) Heart area can be more accurately measured.

(12) Always available, quickly done, and can be repeated at will.

The exaggeration of the heart size increases proportionately through its size and through its position. This difference is greatly reduced in the vertical heart, (the long narrow heart commonly called the drop heart), and it is increased proportionately as the heart increases in its obliquity and in the greater length of its transverse diameter. In other words, the narrower the transverse diameter the less the exaggeration of the cardiac shadow, the larger the transverse diameter the greater the exaggeration. It is then apparent that this exaggeration proportionately increases with the size of the heart. The reasons for this phenomenon are many, but the main two are; first, the parallelism of the rays is not absolute, even at a great distance, and certainly not so at a distance of six feet from the target to the plate, yet in this country this distance is generally accepted as sufficient. According to Vaquez and Bordet,<sup>1</sup> the distance of one meter, a meter and a half or even two meters, give too considerable exaggeration of the heart's silhouette. It is only at two meters and a half that the exaggeration of the heart's shadow is reduced to its practical minimum, that is, the projection of an object fifteen centimeters in size is augmented by only four or five millimeters.

They also insist that in radioscopy of precision it is necessary for the tube to be accurately centered on the region to be studied. The method practiced by Vaquez and Bordet<sup>1</sup> is the best and the most exact of any of the others recommended. The following is a proceeding advocated by these authorities:

"We illuminate the radioscopy screen and by means of a diaphragm with a circular opening we so adjust it that the



image of the heart is exactly contained in the interior of the luminous circle, the diameter of which should correspond exactly to the greatest diameter of the heart. We then fix the patient and the tube in their respective positions; we give the diaphragm a greater opening, we place a plate instead of the screen or between the screen and the thorax and set the apparatus in action."

Bardeen<sup>2</sup> claims that the most practical distance is two meters; he also states that at this distance there is a sufficient dispersion of the rays to make it necessary to allow for enlargement of the heart's silhouette over cardiac outline.

For reasons already explained the transverse diameter of the cardiac silhouette presents such variations in size as to render the diameter absolutely unreliable in determining whether the heart is enlarged. Bardeen<sup>2</sup> says "We have therefore discarded the transverse diameter of the heart's silhouette in favor of the area as a means of estimating the relative heart size."

The linear measurement of the longitudinal diameter beginning at the intersection of the right contour of the heart and the origin of the blood vessels extending to the apex is equally unreliable for determining the normal size of that organ. Alfred Cohn<sup>3</sup> says "The difficulty of locating the apex precisely in a photographic plate makes the estimation of the long diameter inexact."

The measurement of the area of the heart was then suggested to determine the normality of its size, but because of the inaccuracy of the transverse and longitudinal diameters it proved of dubious help in the diagnosis of cardiac conditions. Cohn<sup>3</sup> says: To delimit the area of cardiac shadow requires that the extremities of the lines representing the right and left borders of the heart be joined by curved lines drawn arbitrarily. With experience these lines are properly drawn by different observers in a consistent manner, but no doubt each observer draws them differently. But the complete outline fails in exact representation also because of the difficulty, indeed, often because of the impossibility of locating the apex in certain individuals. On being able to locate this point accurately depends the value of the measurement, both of the long diameter and the area."

Bardeen<sup>2</sup> claims that an accurate outline of the apex is the chief difficulty that confronts one when he attempts to complete a line to the lower border of the heart.

The following conclusions reached by H. W. Smith and W. A. Bloedern<sup>4</sup> in their excellent essay on the size of the normal heart, reflect the generally accepted opinion of radiologists; "The method employed (Bardeen's) does not furnish satisfactory standard by which to determine if the heart is abnormal in size. The failure not being due to method, but to great and unexplained variability in the organ studied, the difficulty still remains whatever means to ascertain the size of the individual heart under consideration. Hence any conclusion as to the relative size of the heart, based on comparative dimensions, ratios, or relation to body landmark is fallacious and should be applied clinically with great reserve."

The size of the normal heart must first be determined before we can recognize its abnormality. The radiologists have tried to give us the basis of normalcy, but unfortunately all their tabulations, formulae, have been more or less barren of very accurate results. Of course an enormously enlarged heart will be shown as such on the plate, but when it is considered that the greater the size of the heart the more is its exaggeration and often a smaller part of its contour is visible, and the more it is imbedded in the diaphragm, this diagnostic means loses a great deal of whatever value it may have.

But when it is a matter of a slight dilatation or enlargement, a question of which side is enlarged, or when it is necessary to make out its full contour to determine a pathological condition, then the X-ray is of doubtful utility.

The second reason for the exaggeration of the heart size, especially in the obese who have a high diaphragm and with the apex pushed upwards, is pericardial and extra-pericardial fat. This fatty cushion surrounding the apex of the heart is distinguishable from the cardiac tissues by percussion.

Hirschfelder<sup>5</sup> says that fat may be deposited in the heart in solid masses of adipose tissue, especially in the pericardium in fat individuals, particularly in those addicted to alcohol, and it is

very often associated with coronary sclerosis. This condition is designated as fatty infiltration or obese heart. He also mentions that in normal hearts there is a considerable amount of fat 30 to 60 gm. ((1 to 2 ounces), collected just beneath the endothelial layer of the pericardium, along the auricoventricular and inter-ventricular grooves (coronary, longitudinal sulci), at the base of the artery and scattered elsewhere over the heart. It has been shown by W. Muller,<sup>6</sup> Hirsch,<sup>7</sup> Kirch,<sup>8</sup> that the weight of adipose tissue may actually exceed the weight of cardiac muscles.

The teleradiographic examination of these hearts showed great enlargement over the normal, the percussion revealed a heart the size of the patient's fist, which manifested no clinical evidence of any cardiac pathology. The difference of resistance and of the percussion note over the adipose tissue is readily recognized from that of the heart.

G. Schwartz<sup>9</sup> called attention to this source of error from a radiologic standpoint and proved that the left cardio-diaphragmatic sinus, instead of being clear, is filled by a shadow, less heavy, it is true, than that usually cast by the heart, and proved this to be caused by the presence of fat.

A thorough search of the literature on this subject failed to reveal any reference pertaining to the recognition of this source of error by percussion, and as far as I can ascertain this is the first time the same has been called to the attention of the profession.

The question now arises, what is the size of a normal heart, and how can it be determined? The normal size of the heart of an individual is the size of his clenched fist. This fact was brought out by the celebrated Laennec, and accepted by the leading authorities on anatomy. Davis in his anatomy says: "The heart is somewhat larger than the clenched fist." Cunningham in his book on anatomy also mentions that the heart is roughly estimated as being about the same size of the closed fist.

The size of the normal heart handed down from the great Bouillaud<sup>10</sup> in 1840 to the present time varies according to different authorities from 8.7 to 9.0 cm., at its broadest, 5.8 to 6.2 cm., at its thickest and 12.0 to 12.5 cm., from its base to its apex. A study of tables of

the size of normal hearts as shown by the X-ray in orthodiography and tele-roentgenography by Clatyor and Merrill,<sup>10</sup> Bernard Smith,<sup>11</sup> Dietlen,<sup>12</sup> Bardeen, R. Lutembacher<sup>13</sup>, and others, give the size of the transverse diameter to be from 10.7 to 14.4 cm., and the longitudinal diameter from 11.8 to 15.8 cm.

The reader had the opportunity of observing in Camp Beauregard in the fall of 1917, 257 soldiers with normal hearts. These hearts were made out by percussion and special attention paid to determine the transverse and longitudinal diameters. The heart at its broadest, or its transverse diameter corresponded closely to the figures given by the anatomists, the average being 9.0 cm., with a minimum of 8.0 and a maximum of 10.5 cm. The longitudinal diameter gave an average of 9.27 cm., and varied from 7.5 to 11.4 cm. The linear measurement of the transverse diameter was in nearly all cases approximately that of the longitudinal.

Vaquez and Bordet<sup>1</sup> in their book "The Heart and the Aorta," published in 1920, write the following:

"In the recumbent position, as we have said, the two diameters, longitudinal and horizontal, are perceptibly equal. Sometimes, however, the first is greater than the second, by from 5 mm. to about 1 cm. in exceptional cases it is less by several millimetres. In the standing position the longitudinal position may be increased a little, which is, however, very rare, on the contrary, the horizontal diameter always diminishes. It then becomes inferior to the other by from 5 mm. to 1 cm."

This correlation of the clenched fist and the heart is constant, and is the only practical determinator of its normalcy. The slightest pathological variation of its size may thus be recognized with a greater degree of exactitude than is possible by any other method. I have found that the transverse diameter corresponds to the linear measurement of a line beginning at the juncture of the inner side of a hand and the wrist, and ending at the middle joint of the fourth finger. An individual with a large fist will have a corresponding large heart, and one with a small fist will have a small heart. The correlation of the size and shape of the hand and that of the stature of the individual



is likewise constant. Tall, slim persons of the visceroptotic type, with vertical heart having a small transverse diameter, have long narrow hands; those who have a high diaphragm with heart showing marked obliquity, have wide stocky hands. Furthermore the size of the hands as well as that of the heart are influenced by the same factor, physical work. It has been observed that vocations involving manual labor affect the breath and thickness of the hand, and not its length. The simplicity of the percussion technique used, the ease with which it is learned, the correctness of its results, and its great value in diagnosis, commends itself for its more general use by the profession.

The following quotation taken from Thomas Lewis is appropriate:

"That the value of a method of diagnosis is to be assessed, not by the success with which it is employed in special trained hands, but by its success when employed by the average medical man. When a professed expert introduces a new diagnostic test or revives an old one, even though he may be able to show that in his hands it has great value, which is not always the case, yet by his advertisement he will do more harm than good unless he is able to state the method of his test so clearly, and unless the test is so simple, that it is easily acquired and used by the majority of his professional brethren. Assuredly the method would be attempted on his authority, whether rightly or not; as it is perfectly well known in specific instances, the test may be properly applied and quite erroneous conclusions drawn from it. I allude especially to methods of estimating the size of the heart and to the close differentiation of various types of cardiac murmur which are treated at length.

In regard to electrocardiography, I should say that it has value in elucidating irregularities on occasions, but that its indiscriminate use is much to be deplored."

This could also be applied to the rays!

The time allotted being too short to enter into a discussion of the relative

merits of various methods of percussion, and to speak of the technique employed by me, I wish to state that to anyone who may be interested and who may wish a demonstration, my time is at his disposal.

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#### DISCUSSION.

Dr. Leon J. Menville: I am not here to defend the science of roentgenology as it needs no defense in this instance as it is based upon known laws of physics and electricity.

We are all firm believers in percussion, some more adept than others: Dr. Fossier's ability along this line is well known; but I would like to inform him that the apex of the heart is not as difficult to visualize as he would have us believe. By taking a tablespoonful of a solution made with the white powder of a seditiz powder and the same amount from the blue powder, the patient will show after swallowing these solutions a small gas bubble in the cardia of the stomach which will clearly outline the apex.

As Dr. Fossier has quoted the work of Vaquez and Bordet on the Heart and the Aorta, I might mention that the book is an X-ray one, and that Dr. H. Vaquez is a renowned French internist, and I would like to mention what they have to say on the mensuration of the heart by the X-rays. "To prevent deformations due to the X-rays the patient should be placed from 2.5 meters to 3 meters from the target of the tube and at this distance the rays which arise from the target of the tube take a perceptible parallel direction and strike the circumference of the heart grazing it at almost equal angles: The parallelism of the rays is not absolute, but the errors of projection are insignificant." And it is for this reason that I am taking my measurements at the distance of 8 feet.

## THE VALUE OF THE ROENTGEN RAY IN THE DIAGNOSIS OF GALL STONES.\*

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It was in the year 1900 that Carl Beck, of New York, showed the first X-ray plates of gall stones. His presentation elicited favorable comment by the internists and surgeons of the time. A reasonable inference was that with better apparatus and improved technique, gall stones would be shown in a very large percentage of cases. Promptly upon the heels of this enthusiasm came a feeling of distrust from many who had great faith in the X-ray diagnosis of gall stones; this was brought about by the comparatively few report from Roentgenologists showing gall stones on X-ray plates.

In 1910, Pfahler, of Philadelphia, reported three positive diagnoses of gall stones, and Haenisch, of Hamburg and Cole of New York, each reported three positive diagnoses on the same occasion. Following the year 1910, we find increased frequency of positive reports. In 1914 Pfahler of Philadelphia,<sup>1</sup> makes the statement that he believed 50 per cent of gall stones can be demonstrated on an X-ray plate. There were many who thought that he had quite overshot the mark. Next came a report from Caldwell<sup>2</sup> in 1915, protesting against the making of positive diagnoses on the insufficient evidence of very indefinite shadows. He says, "It is very easy to make a roentgen diagnosis of gall stones. The difficult thing at present is to avoid making such a diagnosis occasionally when no stones are present." Not that Caldwell's faith in the diagnosis of gall stones with the X-ray wavered, but he was for conservatism.

That the value of the X-ray as a means of diagnosing gall stones was accepted by many with reluctance and misgiving, is well known to all Roentgenologists and even to this day, there are quite a number who are skeptical of its practicability. I wish to inform you that today, the X-ray is of great value in the diagnosing of gall stones.

Drs. Carman, McCarthy and Camp<sup>3</sup>

of the Mayo Clinic, read a paper in December, 1923, before the North American Radiological Society, in which paper they reported that out of 226 cases operated upon, and gall stones found, 78 cases had been previously diagnosed as positive with the X-ray and 139 were reported negative, giving the X-ray a 38.4 per cent positive diagnosis.

With the improved technique as used by Carman, we can in all honesty state to the internist and surgeon, that we can now make possible a positive diagnosis of gall stones in from 30 to 40 per cent of all cases, and I feel quite certain that it will not be long before we can materially add to this percentage.

A negative X-ray examination for gall stones is valueless, and we should view with grave suspicion the Roentgenologist who would impress us with the value of his negative report.

It is of scientific interest to learn why we have been unable to demonstrate as many gall stones as we do in urinary stones.

(4) It is becoming clearer in late years that the primary formation of gall stones is itself largely depended upon stagnation of bile, such as may arise in the gall bladder if an intermittent or incomplete closure of the cystic duct be brought about by such things as tight lacing, pregnancy, or even the unequal sagging of the abdominal viscera. Then, although some bile moves in and out of the gall bladder, there is stagnation, and even in the clear, uninfected fluid, cholesterine crystals may separate out and cluster about a central point until there is formed a solitary round or oval, slightly roughened stone-like mass, which usually lies loose in the neck of the gall bladder. This is the first type named by Aschoff<sup>5</sup> and Bacmeister,<sup>5</sup> the (1) radial cholesterine stone, because it is composed of nearly pure cholesterine ( $C_{27}H_{46}O$ )—90-95 per cent cholesterine. The most common gall stone is the (2) mixed stone with a nucleus formed of cholesterine ( $C_{27}H_{46}O$ ) and a mantle of calcium bilirubin ( $C_{16}H_{18}N_2O_3$ ). (3) Laminated calcium cholesterine stones and the soft, blackish green, calcium bilirubin concretions, are usually formed in the hepatic ducts, more rarely get into the gall-bladder. (4) Pure calcium carbonate ( $CaCO_3$ ).



Every substance absorbs some part of X-ray passing through it and, therefore, casts a shadow. However, some substances are much more absorbent than others and will cast a much darker shadow. This absorption or shadowing is about in proportion to the cube of the atomic number of the substance multiplied by its density.

I worked out and formulated a reference table of the absorbability of all the elements, which was presented in a paper at the Chicago meeting of the Radiological Society of North America<sup>7</sup>, from which table I shall make an attempt to show why some gall stones will cast sufficient shadow to be shown on an X-ray plate while others do not, also why we may never be able to demonstrate all gall stones.

Let us consider first the almost pure cholesterine stone (90-95 per cent pure) with a chemical formula ( $C_{27}H_{46}O$ ); in a molecule of cholesterine we have 27 atoms of carbon, 46 of hydrogen and 1 of oxygen: looking at our reference table we find that the absorbability rate of carbon is 3.416 and as we have 27 atoms we multiply 3.416 times 27 and we have

Hydrogen is .00072 times	92.232
46 and we have	.03312
Oxygen is	5.803
Total	98.06812

absorbability rate of one molecule of cholesterine.

Let us study the more common gall stones, the mixed stone, which has a nucleus of cholesterine with a mantle of calcium, the calcium bilirubin stone.

We find that calcium has an absorbability rate of 121.114. Bilirubin ( $C_{16}H_{18}N_2O_3$ ) by the same process as employed in calculating the absorbability of one molecule of cholesterine, we find bilirubin to be 78.7476: and the absorbability rate of cholesterine we have already found to be 98.06812; therefore the total absorbability rate of one molecule of calcium bilirubin gall stone is 297.92972 or three times more than that of one molecule of cholesterine, that is to say it will cast a shadow three times denser than that of a cholesterine stone. If the more common gall stones with an absorbability rate of 297.92972 are difficult to demonstrate, how much more difficult is it to show those of an absor-

bility rate of only 98.06812. We have another variety of gall stones: calcium carbonate; unfortunately not so common as the calcium bilirubin stones, with a formula of ( $CaCO_3$ ), the absorbability rate is, 141.939, on examining the absorbability rate of the calcium bilirubin stone we find that it has a rate of 297.92972, twice as great as that of the calcium carbonate stone. In reality this is not true, as in the instance of calcium bilirubin stone we allowed a full atom-rate of calcium, and we are told that the calcium only forms a mantle and the amount must be small, therefore the absorbability rate or the shadow cast of the calcium bilirubin stone would be in proportion to its highest atomic number calcium, while in the instance of the calcium carbonate stone, there is always a full atom of calcium. The larger the stone the denser the shadow cast, a stone 2 cm thick will cast a shadow twice as great as one of 1 cm, provided the chemical compositions are the same. In the instance of the urinary stone, taking the calcium phosphate stone with a formula of  $Ca_3(PO_4)_2$  we find that its absorbability rate is 543.038 and the shadow cast will be over three times that of the calcium carbonate gall stone and nearly five times greater than the cholesterine stone. It is quite evident therefore, why some gall stones will not cast a shadow upon an X-ray plate while nearly all urinary stones are demonstrated.

To emphasize the statement I have previously made that a negative X-ray examination for gall stones is without value, I have only to remind you that the very faint shadow cast by many gall stones while present but not visible on an X-ray plate, is due to the low absorbability rate.

#### *Summary*

(1) The X-ray is a valuable means of diagnosing gall-stones; from 30 to 40 per cent. Positive diagnosis is now being reported.

(2) A negative X-ray examination for gall stones is valueless.

(3) The shadow cast by gall-stones is dependent upon their absorbability rate, the higher the rate, the denser the shadow.

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### COD LIVER OIL AS AN ADDITION TO THE DIETARY REGIMEN OF THE UNDERNOURISHED DIABETIC\*

J. BIRNEY GUTHRIE, M.D.,  
NEW ORLEANS.

Diabetes is a disease involving most conspicuously, carbohydrate metabolism; and we are concerned with the problem of feeding these patients so as to supply sufficient protein to preserve nitrogen equilibrium and values energy adequate for the day's task, notwithstanding the relative inability to utilize the usual carbohydrate quota. The problem in the treatment of diabetes at the present time with insulin available is the same as at the time when it was first said, "The art lies in the feeding of the fats." The carbohydrate tolerance is readily determined by recording the daily intake of carbohydrate as such and reckoning 58% of the protein and 10% of the fat as glucose. The sum of these three factors is the total ingested glucose. The glucose excreted is compared with this and the glucose tolerance is determined. The minimum protein need is readily computed by multiplying the weight in kilos by 0.66 if there is occasion to restrict protein, or by 1.0 if no such need exists. The quantity of fat that may be consumed offers a more serious problem. Patients never die suddenly in diabetes from an excess of carbohydrate in the diet; but there is a long and a sad story of deaths from an excess of fat. Insulin has added much to the ease with which we can establish an adequate diet which will keep the patient at work and reduce his discomfort. However, even

with its aid, we are at times quite anxious as to the ability of the patient to completely burn the fats necessary to furnish the total energy for the day's work.

Recent work on the subject by Wood-yatt<sup>1</sup>, P. A. Shaffer<sup>2</sup>, Ladd and Palmer<sup>3</sup> and others has given us a mathematical basis by which we can calculate approximately how much fat it is safe to allow the patient. The calculation is in relationship of the glucose equivalent of the protein and carbohydrate elements to the fatty acids. In cases of mild diabetes and sometimes in the cases of severity we can arrange a diet that will furnish sufficient carbohydrate to ensure combustion of the needed fats. Insulin in low doses may be required in some of these moderately severe cases. The severe cases all require insulin; and even with insulin we must watch the fats most carefully. Often we are forced to do without insulin and resort to under-nutrition to get the patient sugar-free. In severe cases accompanied with emaciation we aim to feed all the fat that can be safely burned, consistent, of course with the energy needs of the patient and within the limit of safety so far as acidosis is concerned.

The patient often comes to us in a state of extreme emaciation, and when his test period is over, and a satisfactory maintenance diet determined, it is a matter of weeks before he is sufficiently built up to be able to return to usefulness and the day's task.

It is in this type of case that one needs all the factors possible to restore the patient to something approaching a normal state of nutrition. The revival of the use of cod-liver oil in cases of malnutrition which we have seen during the last three years has filled the literature and has impressed the writer with the necessity of securing for every case where any form of diet restriction is carried out, an adequate supply of the so-called vitamins. Cod-liver oil seems to be richer in the fat-soluble A. substance than any other known food-stuff. Zilva and Drummond<sup>4</sup> put the content of this substance in cod-liver oil at 200 times that of butter-fat. This figure was determined by experiments on white rats which were fed a diet deficient only in the fat-soluble A. substance. This basal diet was complete in every

\*Read before the Orleans Parish Medical Society, March 10, 1924.



other respect. Various fats were then added to the basal diet and the quantity of these necessary to establish growth in the young animals, prevent rickets and xerophthalmia was measured. This method of study was practically the same as carried out by McCollum and Davis<sup>5</sup> in originally determining the existence of the fat-soluble A. substance. It is of interest here to note that McCollum denied the existence of any so-called vitamins excepting the fat-soluble A. and the water soluble B. substances. He has with his associates<sup>6</sup> called attention to the lack of identity of the antirachitic substance and the substance which cures the eye disease, xerophthalmia, and stimulates growth.

Cod-liver oil which is warmed and aerated by blowing air through it loses the power to cure deficiency xerophthalmia but preserves its antirachitic properties intact.

The experiments of McCollum and his associates on rats lead them to conclude that the cod-liver oil contains in abundance some substance which is present in butter-fat, the best food-fat we know, in very slight amounts, and which exerts a directive influence on bone-development, enables animals to grow with even an inadequate supply of calcium or phosphorus. This substance they consider as distinct from fat-soluble A. which is essential to growth. Simmonds, Shipley, McCollum and Park<sup>6</sup> believe that they have determined two distinct organic factors, operating in the nutrition of a mammal, which are associated with certain fats.

Experimental evidence is apparently negative as to the existence of McCollum's water soluble B. substance (antineuritic) in cod-liver oil. Heinrich, Lax<sup>7</sup> produced beriberi in pigeons by feeding polished rice and attempted to cure this by feeding cod-liver oil and extracts made from it in addition to the basal diet. The experiments failed to show any antineuritic element (Water-soluble B.) in the oil. Lax states that the A. substance is destroyed by heating to 80° to 90° C. and the B. substance by heating to 120°C. Codliver oil, he says, can contain neither because its preparation is usually at 130°C.

This conclusion seems at variance with most workers who have furnished protocols of experiments showing that

the A. substance, at least, is present together with the antirachitic substance.

Nothing is available to the writer to support a claim for the existence in cod-liver oil of the so-called vitamin C (antiscorbutic) substance. It is fairly well determined through years of use that the oil in quantities sufficient to supply necessary amounts of the growth-favoring substance and the antirachitic substance, can be taken continuously during long periods without harm to the patient. Clinical evidence of its value in malnutrition is abundant. Even though we have experimental data to prove its worth in only one or two respects, is it not possible that other more remote effects may yet be demonstrated. Where chemistry fails biologic methods may later give the reason for previously obtained empiric results. The parallel with insulin suggests itself. Who is there who believes that the effect of insulin is confined exclusively to activation of carbohydrate metabolism?

The positive laboratory results with codliver oil justify its use as a preventive and cure of rickets in infancy, childhood and adolescence. The adult does not suffer from active rickets but the same dietetic or hygienic deficiencies which produce it in the child, may impair the health of the cells of the adult body and bring about disease.

The whole story of the vitamins is yet to be written and investigators are still waiting on the chemist to determine their exact nature. Meanwhile, it seems just to conclude that such foods as produce the best possible conditions of growth and such conditions of cell-nutrition as secure resistance to disease in the young of animals or of man are also necessary to the proper nutrition of the cells of the adult. Also diseases which may be brought about by food deficiencies of long standing are to be avoided by striving at all times to maintain a proper supply of the varieties of foods which because of containing essential activating substances, experience and laboratory data have taught us are necessary to health. Dietetics in disease consists usually in the restriction of certain food-stuffs and their substitution by other foods. In this restriction, we shall fail if we omit the consideration of these food-constituents of as yet, undetermined chemical nature.

Diabetes is no exception. If carbohydrates are to be restricted, fats must be substituted as a source of energy. If fats cannot be substituted in proper quantity either the individual must live on a lower plane of activity or be helped by insulin to reach the grade of activity commensurate with his usefulness. Fat restriction implies the risk of deficiency of one and probably two essential substances. These substances are found in cod-liver oil. Cod-liver oil would then seem to be a most desirable addition to the dietary of a diabetic who has lost much weight. This addition can be made by substituting cod-liver oil for other fats as soon as the fats in the diet have reached say 60 grams daily. Thirty cc. of the oil are of very much more value than the equivalent of other known forms of fat from a nutritional standpoint.

The writer has used cod-liver oil as a routine in the treatment of emaciated diabetic patients during the last six months and has found that the gain in weight and strength has been more rapid with it than without it. Eight cases were kept on a maintenance diet, some with and some without insulin, and weighed regularly. This method of observation is imperfect because of possible change in other conditions, but the course of the eight cases with whom it was carried out seemed to justify the procedure.

In a dietetic regimen, it seems highly desirable to attempt to embody all of the essential substances known as vitamins. The exact amount necessary cannot be laid down in the present state of our knowledge. Failing this exactness of dosage, one must safe-guard the patient by adding to the diet what would be slight excess of these substances. No harm could possibly come to the patient under such a plan comparable to the harm that might result during a prolonged dietetic restriction where these substances were lacking. Cod-liver oil seems to be the richest possible known source of fat-soluble substances and is utilized by the author to make sure they are taken by the patient.

In the series of eight cases, whose ages ranged from 26 to 62, observed by the author upon the cod-liver oil addition to the diet, the usual observations were made upon the urine and the su-

gar-content of the blood. The diet was checked with the usual degree of accuracy in a diabetic clinic for ambulatory patients. While there appeared a more rapid gain in weight and strength with cod-liver oil than without it, no improvement in the tolerance that could be attributed to this measure was observed.

One of these cases showed a particularly noteworthy gain in weight.

B. W. S. was a diabetic who had been admitted to Touro Infirmary, service of Dr. Lemann, July 13-23 in an extreme state of emaciation and weakness. He had lost 56 1-2 lbs. in weight and had been on a diet restriction constantly during the previous year. He complained of polyuria, ravenous appetite, cramps in the legs and deterioration of vision. There was some edema of the ankles, and numerous petechial spots in the skin. Over the mastoid regions there were pigmented spots. The gums showed pyorrhea, the tongue was brown but moist. The chest showed a wasted musculature. The lungs were apparently normal. The heart was normal in size. The heart sounds were muffled. Blood pressure was 100-70. There was evidence of arterial thickening. Abdomen was prominent and some fluctuation was noted in the flanks with patient lying down. The liver was about 3 c. m. below the costal margin. The weight on admission was 93 1-2 lbs.; height, 5 ft. 6 in. The urine on admission showed sugar, 25 grams in 24 hours. The blood-sugar was 266 m. g. per cc. on a diet of C 100—P42—F51. Acetone was present in the urine and in the breath. Under insulin, he became promptly sugar free and the fasting blood-sugar was reduced to 132 m. g. per cc. There was a constant gain in strength. The dose of insulin was increased to 30 units (H 10). The blood sugar being the guide; because of a high threshold, 200. A slight gain of weight 7 lbs. occurred during the 2 months in the hospital. At the time of discharge to the clinic Sept. 12-23, he weighed 95 1-2 lbs. and was sugar-free with a blood sugar of 133 on a diet of C. 46; P. 52; F. 48, no acetone in breath or urine. Insulin dose was kept at 30 units. He continued to gain weight slowly and Oct. 18-23, three months after treatment with Insulin was begun, he weighed 107 1-2 lbs. At this time 30 cc. of cod-liver oil was made part of his daily diet, being substituted or 30 g. m. of other fat. On Jan. 24-24 he weighed 122 1-2 lbs., and March 17-24, 131 lbs. The gain during first three months was 14 lbs., that during the second 3 months after cod-liver oil aded was 17 lbs. This period shows a greater increase in weight with the oil than without it. The patient noted a very marked improvement in his strength and took up a more laborious task. A cough which had troubled him for some years disappeared completely.

There is nothing very startling in these figures, but it must be remembered that the gain in weight during the two periods compared, was upon the same diet so far as caloric value and quantities of carbohydrate, protein



and fat are concerned, I feel sure such a gain might have occurred due to other causes, but the course of this case and the seven others lead me to believe that in cod-liver oil, we have a valuable addition to the dietary of all under-nourished or emaciated diabetic patients. In the growing child who is diabetic and who shows marked emaciation, the indication is absolute and it would seem so necessary as even to justify the use of insulin, if for no other reason, than to make possible the addition of cod-liver oil to the dietary.

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#### DISCUSSION

Dr. Allen Eustis:

I do not like to see this admirable paper go by without some discussion.

I have seen one or two of the cases in which Dr. Guthrie has used Cod Liver Oil, and they certainly do show some improvement. I have not had the opportunity to use it myself.

One point he mentioned, but failed to emphasize: fat soluble vitamine is a promoter of nutrition. Experimental animals on a diet deficient in this vitamine show marked malnutrition long before sclero-derma develops. There is no doubt cod liver oil does contain what some vegetable oils do not contain, viz fat soluble vitamin, and animals without fat soluble content do not nourish properly.

Another point outside of vitamine condition. I have had occasion, recently, to examine the stools of a great many diabetes, and often the stools are fatty, showing poor absorption. Cod liver oil renders itself most soluble. Two (2) teaspoonsful, if completely absorbed, have a greater calorie effect than one (1) oz. of butter, if passed through the bowel unabsorbed.

### AN OVARIAN GRAFT: A CASE REPORT.

C. Jeff Miller, M. D., F. A. C. S.,  
New Orleans.

The following case is of interest because of the behavior of an ovarian graft which was finally removed because of discomfort at the site of its implantation and an intractable metrorrhagia which began with the swelling of the graft and persisted until its removal.

Mrs. A. R. B., aged 28, first consulted me in 1915. Her family history was negative. She had had typhoid at 19,

measles and mumps recently, and malaria several times. Her menstrual history began at 17 and after the first year was fairly regular. She had always suffered from dysmenorrhea, with intense backache and headache. She had had one full term, normal delivery, during which she was severely lacerated and following which she ran a slight temperature. Two years before her appendix had been removed, together with the entire left and a portion of the right ovary for multiple cysts. The lacerations were also repaired, though the results were not good. She had been nervous all her life.

When I first saw her she was markedly anemic and had lost considerable weight following a persistent diarrhea which had begun three months before. There had been a profound sexual excitement since mumps four months before, and her chronic nervousness had been much increased. She also complained of severe headaches, for which no cause could be found other than the pelvic condition. As the diarrhea was apparently not of amebic or tubercular origin it was decided that the pelvic condition justified operation. Therefore, in April, 1915, the uterus was curetted, an extensive tear of the cervix repaired, the right ovary removed, and the uterus suspended by the Montgomery technique. The remnant of the ovary was markedly cystic and buried in adhesions, and there were also marked adhesions between the sigmoid and the stump of the left ovary, which were freed. As small portions of the ovarian tissue appeared normal, and I was extremely desirous of conserving function because of the patient's age, before closure about half of the remaining portion of the remaining portion of the right ovary was tacked into a dry area behind the peritoneum and the left rectus muscle.

The patient's recovery was uneventful and she left the hospital in excellent condition. The sexual disturbance disappeared entirely and she gained in weight, although she continued to complain of headache and backache. Menstruation was re-established about three months after the operation. The periods were irregular, frequently coming a week or even two, ahead of time, but the dysmenorrhea disappeared entirely.

In July of 1917 she consulted me

again, stating that about three months before a small mass had appeared about an inch to the left of the scar, which was gradually enlarging and was very sensitive on pressure. Coincident with its appearance a metrorrhagia had developed which had been practically continuous since. Examination showed what was obviously a cystic condition of the ovarian graft, and its excision was advised.

The operation was entirely without incident. A small portion of the graft was still apparently normal, but the

lower end was cystic and contained about three ounces of clear fluid. The pathological study showed an active corpus luteum. Within a few days after the operation the metrorrhagia ceased entirely and there has been no return of the flow since.

The case is of interest as illustrating changes that may take place in grafted ovarian tissue, and also as illustrating the relation between the metrorrhagia and the gradual enlargement of the ovarian cyst.



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### PREVALENCE OF TUBERCULOSIS.

Hardly anyone will be prepared to combat the assertion that tuberculosis is one of the most prevalent diseases common to civilized countries, and that it is one of the greatest scourges that ever persecuted mankind. In England and Wales it is responsible for 50,000 deaths, in Germany over 60,000, in France over 840,000, and in the United States 160,000 annually.

The fatality is greater during infancy than at any other period of life. Cobbett, the English authority, states that 16.7 per cent of the deaths occur during the first five years. From this time on up to the fifteenth year there is a decline, but the increase is rapid after the school period has been passed and a maximum is reached between the 35th and 55th year. Then there follows a second decline to a minimum in the eighth decenium.

In Louisiana during the years 1914 to 1922, inclusive, 20,214 persons are reported to have died of pulmonary tuberculosis. This, including deaths from other forms of tuberculosis, brings the total mortality up to 21,912 for this period.

In 1918 3,040 persons died from the pulmonary type as a result of the influenza epidemic. In 1919 the deaths had dropped to 2,326, rising to 2,360 in 1920. In 1921 there is a decided decline to 2,053 and in 1922 to 2,052.

There exists an apparent increase from 1914 to 1918. In 1912 there were 1,915 deaths, 2,330 in 1916, and 2,579 in 1917. The greatest increase during

these four years is between 1915 and 1916, and another rise in 1918 for the reason already given; this year marks the peak of the curve for the 9-year period.

The death rate from pulmonary tuberculosis shows a steady increase for the first five years. In 1914 it was 90.3 per 100,000, increasing to 110.3 in 1915, to 133.3 in 1916, 146.3 in 1917, and reaching a maximum in 1918 of 171.0.

From 1918 onward, with the exception of 1920, there is a steady decline in the rate. In 1919 it had dropped to 129.7, rising in 1920 to 130.6, and falling in 1921 to 113.2, and finally reaching the lowest recent figure of 111.7 per 100,000 in 1922.

It would be rash to draw definite conclusions from these statistical data, the accuracy of which is open to question, notably those figures prior to Louisiana's entrance into the Registration Area in 1918. There is, however, a suggestion of a gradual decline, which we understand is the case for the United States taken as a whole. On the other hand, too, it may mean that patients are receiving better care and are not dying so rapidly. It is possible, though, that the statistics may represent an actual diminution in the number of cases. We may be unduly pessimistic, but we hardly believe that the latter inference represents the true state of affairs.

### ARE WE TRUE TO OUR TRUST?

The Principles of Medical Ethics of the American Medical Association, Chapter III, Section 1, relating to Phy-

sicians as Citizens, sets forth: "As good citizens and because their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interest of humanity. They should co-operate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine."

Recognizing the importance of reporting births and deaths and communicable diseases, the State Medical Society in 1923 adopted a resolution urging upon the members of the profession of the State of Louisiana that they take cognizance of this obligation. While it had its effect upon some, the records of the Bureau of Vital Statistics of the State Board of Health show that an astonishing number of our physicians, some of whom, however, may be retired, are more or less delinquent in the matter of reporting. One hundred and sixty-seven in Louisiana in 1923 did not report a birth or death, while 145 sent in less than four reports of births and deaths.

The records of the Bureau of Epidemiology show for the period of 1916 to 1923, inclusive, that there were reported throughout the State 7,520 cases of diphtheria, of which 946 died; 21,213 cases of gonorrhoea were reported, with 87 deaths; malaria, 14,044 cases, with 3,854 deaths; smallpox, 8,028 cases, with 427 deaths; syphilis, 18,314 cases and 2,093 deaths; tuberculosis, 16,550 cases and 18,734 deaths; typhoid, 8,929 cases and 3,303 deaths.

You will note the disparity in number of cases as compared with deaths. It is conceded that for every death from tuberculosis there are ten cases.

In addition to the cases reported to the Epidemiological Department there were taken from the death certificates (included in figures in preceding paragraph) deaths from communicable diseases during 1922, 1,141, and 1923 2,749, or a total of 3,890 that had not been reported as required by Act 79 of 1921 and the Sanitary Code of 1923.

Vital statistics are the health book-keeping of the State. No argument is

required to demonstrate the ultimate importance of these figures. Individually and collectively, the physicians can render the State a great service by making full and prompt reports. If these were complete the prejudice that exists against the South would be removed, because we would have a correct statistical answer for the questions raised as to whether this is a land of mosquitoes, alligators and sickness. Our death rate for 1923 is 12 per thousand, many points lower than it was ten years ago, but by concerted action and the prevention of unnecessary sickness it can be made to compare favorably with the lowest rate in the United States.

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#### PRESENT STATUS OF INSULIN.

It has now been about two years since the first announcement came from Toronto relative to the work of Banting and Best. Many were skeptical, for the isolation of the endocrine substance of the Islands of Langerhans, free from pancreatic enzymes and dangerous proteins, had long been sought in vain. Others were too optimistic, and, partly through the exaggerations in the lay press, the idea that a "cure-all" for diabetes had been discovered became more or less widespread. It was not long, however, before the medical profession learned of the value and the limitations of the new discovery, partly due to teachings of those to whom the Toronto group sent an early supply of the extract and partly through the instructions given by the pharmaceutical house in the United States which received rights from the discoverers. Later, this was supplemented by the munificence of Mr. John D. Rockefeller, Jr., whose gift enabled certain clinics to provide free instructions to physicians.

Much has been published of late as to the present status of insulin therapy, while the ultra-optimistic have been somewhat disappointed in the achievements of the product, there has been no swinging back of the pendulum at all for the conservative therapist; in fact, experience with the extract is so gratifying that we sometimes wonder why this principle was not isolated earlier and thereby more lives saved and more victims of diabetes mellitus made more



comfortable, with life more worth while for them. Although, as stated above, it is not a "cure-all," there is no doubt but that many patients have had their tolerance raised by maintaining a low blood-sugar level over a prolonged period through the use of insulin. Reports of apparent cures have been slow in coming in, but we hear of some, especially in the young. The Shreveport Charity Hospital records a case of a boy of 14, admitted with diabetic acidosis, on the verge of coma, with acute nephritis, who was not only tided over his acute trouble with the aid of insulin, but who, after four months of treatment, has resumed his normal life, on a fairly high caloric diet, and who remains apparently perfectly well, after leaving off the extract for eight months. Certainly, nothing better could be hoped for than the result in this boy, who, undoubtedly, would have died of diabetic coma in 1923 but for the work of Banting and Best!

Then, again, insulin has found a place in treating non-diabetic conditions, as cases reported in recent medical literature testify, such as in non-diabetic acidosis and in acute shock. In the condition of diabetes, complicating tuberculosis (or, vice-versa), in which a proper diet has heretofore been a most baffling proposition, insulin has proven a God-send, for, with its aid, we are enabled to feed the patient sufficiently to fight off the ravages of the "Great White Plague."

We predict that, within the next year or so, the chemical composition of the extract will have been worked out to such a point that its administration will be accompanied by less inconvenience than at present; at least, let us hope so, for the sake of our timid patients, who rebel at the idea of one, two or three "sticks" per day.

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#### THE CHARITY HOSPITAL OF LOUISIANA IN NEW ORLEANS.

This institution has had an interesting history since 1908. In that year Col. W. G. Vincent, a devoted member of the Board of Administrators, offered a resolution inviting the members of the Visiting Staff to organize and to elect a committee for conference with the Board. At that time the executive man-

agement was in the hands of three house surgeons, who not only performed the duties of a superintendent, but also took care of the emergency surgery of the hospital, had surgical wards within its walls and practiced outside as well. In effect they were the superior officers of the Visiting Staff and their competitors within and without the institution. As might be expected, there was no cooperation between Visiting Staff and House Staff. It follows that when Col. Vincent's resolution was adopted the Visiting Staff cheerfully accepted the invitation, organized and selected a Conference Committee. There ensued a period of futile struggle to make useful and effective this committee. The Board had voted for the resolution; it went no further.

The election of Gov. Luther E. Hall in 1912 brought a change in the situation. He appointed a board not with a view to supporting certain individuals for the house surgeonships, but for the single purpose of giving the institution the best possible administration. This Board called in consultation Dr. S. S. Goldwater, of New York City, then Superintendent of Mt. Sinai Hospital and an ex-president of the American Hospital Association. After a thorough study of the situation he made recommendations of which the principal were the selection of a whole-time superintendent who should practice neither within nor without the hospital, and the development of a Conference Committee of the Visiting Staff, which should co-operate with the superintendent in advising the Board on all professional matters. Under the new system the House Staff, including now resident physicians as well as surgeons, were to do emergency work only, holding no hospital wards and doing no outside practice. These changes, promptly effected by the Board in 1913, made for a notable increase in the efficiency of the hospital.

The year 1916 came all too quickly, and with it a change in administration. The all-time superintendent who had labored to modernize the institution, was promptly dismissed to make room for his successor, who had contributed materially to the election of the incoming governor. Unfortunately, the new incumbent had been Assistant House Surgeon when that position carried with it

vice-regal authority; he had not been converted to the new system. Within a short time after his appointment the Conference Committee had lost much of its authority and influence in representing the Visiting Staff. The situation drifted back noticeably but not altogether to the status before 1913. After some three or four years the reactionary executive, realizing the need of co-operation on the part of the Visiting Staff, sought this co-operation and inaugurated a new era of progress along this line. However, before he had had time to accomplish much his health gave way to an extent that compelled his retirement.

His successor, now in office, made the policy of co-operation his own from the beginning, and carried it out to a degree not previously known in Charity Hospital. Besides vigorously pushing the physical improvement of the hospital so as to relieve overcrowding and eliminate unnecessary steps in the handling of admissions as well as to provide up-to-date equipment (including radium) as rapidly as possible, he has worked hand in hand with the Board in giving the Visiting Staff its proper place in the institution. All matters of a professional character are acted on only after reference to the Staff. For example, the Visiting Staff recommends promotions of its members from subordinate to higher ranks; this provides a systematic grading of the responsibility placed on them with increasing experience and skill.

There is an era of general good feeling and of effective team work. Under the circumstances it is natural that the visiting physicians and surgeons should endeavor to perpetuate the status quo and to guard against its being disturbed by political events. To that end legislation is being considered to provide overlapping terms in the board. With this provision an incoming State administration can introduce changes in the Board only gradually; a complete change at one stroke will then no longer be possible. It is felt that in this manner continuity of policy can be secured. Further, the taking up of medical executive work will be made more attractive by the fact that a sudden loss of position, as in the upheaval of 1916, will not have to be feared. It is not reasonable to expect men of ability to seek or accept employment that may be terminated after

years of efficient service because the appointive power wishes to reward some faithful friend for campaign services. With this change effected the Charity Hospital in New Orleans will need but one thing to help it climb up to its rightful place in American medicine, and that is adequate appropriations. It is run on about half the per diem per capita of any similar institution in our country.

Let us give this time-honored refuge of the sick and injured, with its honorable record of service, the necessary tools to work with, free from handicap!

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#### CORRESPONDENCE.

To the Editor:

My attention was especially attracted to the interesting historical sketch of the JOURNAL contained in the eightieth anniversary number. Aside from its general interest to the medical profession of the state, it was eminently appropriate to the occasion and is an addition to our archives. With this last idea in view, I desire to make two notations which I believe are deserving of special mention in connection therewith.

I wish to refer first to the period from 1896, when the JOURNAL was facing financial disaster, to the time of its acquisition by the Louisiana State Medical Society in 1922. THE JOURNAL was then under the able and efficient editorship of Doctors Chassaignac and Dyer. There were several notable achievements for the JOURNAL in these 26 years. From June, 1896, to June, 1922, the JOURNAL never failed to appear on time. In July, 1897, an edition de luxe was published, commemorating its 50th anniversary. The JOURNAL appeared uninterruptedly during the World War. In 1919 *The American Journal of Tropical Diseases and Preventive Medicine* was incorporated with it. Finally, it is a noteworthy fact, that the JOURNAL continued under the same management for the unusually long period of 26 years and proved in its hands a financial success.

Secondly, I wish to refer to the "purchase" of the Journal by the Louisiana State Medical Society in 1922. A recital of the facts in the case will show that the term "acquisition" rather than "purchase" applies to the transaction. At



the first meeting of the Executive Committee of the society in May, 1922, Dr. A. E. Fossier, Chairman of the A. M. A. Arrangement Committee, appeared and offered the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, which had been purchased by his committee, provided it would assume the remaining indebtedness. He stated that the chairmen of all the sub-committees had endorsed his action, that a cash payment of \$3,000.00 had been made, and \$2,000.00 was still due. This offer was accepted, and thus was the JOURNAL acquired by the state society. It is gratifying to note that all obligations have been met up to date without cost to the society.

The sketch would be incomplete without the mention of some of the distinguished men who edited the JOURNAL from 1884 to 1890, for the names of Drs. Bruns, Matas and Parham are linked with the long and honorable career of the JOURNAL.

I feel sure that you believe as I do that the above facts will help to perfect the records, and I therefore request you to publish this communication in the next number of the JOURNAL.

Cordially yours,

PAUL J. GELPI.

May 12, 1924.

# PROCEEDINGS OF LOUISIANA STATE MEDICAL SOCIETY

*Address of Mr. J. L. Ballard.*

Mr. Chairman, Ladies and Gentlemen:

When the Almighty created the heavens and the earth; when from out the great deep arose the untrodden land; when He had jeweled the earth with His beautiful gardens and hung His lamps high up in the heavens, He fashioned a being in imitation of His own faultless form, graced him with something of His own divine attributes, and gave this kingly creation to the world. He prescribed the zone in which he must move in fulfillment of his destiny; He appointed the limits he should not pass; but He gave him ambition and a desire to learn and know, and the journey from childhood's cradle to the last long sleep is a ceaseless search for light.

In the fabled history of Greece we are told that a party of Ionians once bargained with some Milesian fisherman for the next draft of fishes they should catch. When the net was drawn up, it was found to contain a golden tripod which it was believed that Helen had thrown into the sea while returning from Troy. Very naturally a dispute arose as to whether the tripod belonged to the Ionians or to the fisherman. Being unable to settle this controversy themselves, they referred it to the oracle at Delphi. The oracle said, "Give it to the wisest." The Milesians, thinking that Thales, their own philosopher, was the wisest man on earth, sent it to him. But Thales, being too modest to deem himself perfect, forwarded it to Bias, another of the Grecian sages, who, in turn, and for similar reasons, sent it to Pittacus; and so it went around until it came to Solon; and his decision was, that "God, alone, is wise;" and he sent it to Delphi to be consecrated to Deity at that place.

But while we are not possessed with absolute wisdom, there are some things we have learned and know. We have discovered that in all this wide world no one lives to himself alone. By refusing to fraternize with his fellows, an individual may, in some degree, lessen the enjoyment of all; but the friendship he withholds will not enrich him, but only brings him the nearer to social

bankruptcy. It is the duty of every one to relinquish, if necessary, something of his own convenience in order to make this good old world in which we live brighter and happier.

We have learned that it is even sweet to suffer for humanity; and that much of our national grandeur and many of our most valued privileges have come to us through the sacrifice of others. Curtis Guild tells us that nations, like individuals, become great, not from difficulties avoided, but from difficulties overcome; and the spell which avoids them is neither riches nor poverty, but sacrifice. There is not a great cathedral, there is not a mighty viaduct, there is not a line of rails stretching across field, veldt or prairie, that has not Moloch-like, demanded its sacrifice of human life. This much is demanded of the spread of civilization; that the many may rejoice, the few must suffer. The Egyptian died, but he left the Pyramids behind him; the Phoenician died, but he left the world the alphabet and navigation. The Greek died, but poetry and philosophy bloomed in the places where he had striven. The Roman died, but the barbarian, who slew him never could shake that mighty fabric of law which was to become the basis of all social order. The Swede and the German died, but from out the murky smoke of thirty years of battle was enkindled the pure white fire of religious liberty. The Frenchman died, but underneath his heroic form lay dead the feudal system never to rise again. The Englishman died, but the wastes of Australia and Manitoba furnish food for the hungry for Europe, the monsters of the Ganges no longer feed on innocent children, the girl-wife no longer perishes in torment on the funeral pyre, and the haunts of the thug and the tiger have become the highways of commerce and the field of the husbandman's increase.

In our own history, we read of the minute-man of the Revolution. And who was he? George William Curtis tells us he was the husband and father, who, born to love liberty and to know



that lawful liberty was their only guaranty to peace and progress, left the plow in the furrow and the hammer on the bench, and, kissing the wife and little ones, marched to die or be free. He was the old, the middle-aged and the young. He was the son and lover, the plain, shy youth of the village choir whose heart beat to arms for the good of his country, and who felt, though perhaps he could not say, with the old English cavalier:

"I could not love thee, dear, so much  
Loved I not honor more."

He was Captain Miles, of Concord, who said he went to battle as he went to church. He was Captain Davis, of Action, who reproved his men for jesting on the march. He was Deacon Josiah Hayes, of Sudbury, eighty years of age, who marched with his company to the Old South Bridge, joined in the hot pursuit to Lexington, and who there fell as gloriously as did Warren at Bunker Hill. He was young James Hayward, of Acton, twenty-two years of age, foremost in that deadly race from Concord to Charleston, who raised his piece at the same moment with a British soldier, exclaiming, "You are a dead man!" The Britain fell, shot through the heart. James Hayward fell mortally wounded. "Father," he said, "I started with forty balls; I have but three left. Tell mother not to grieve too much; and tell her whom I love more than mother, I am not sorry I turned out."

Sacrifice all along the line of history!

The tragedies of today, tomorrow, become forces, lifting nations to higher planes of liberty and propelling them to further achievement as great events are overtaken and woven in the loom of time.

Mr. Chairman—Two score and five years ago our fathers brought forth in this city a society, born in love, established on the altar of sacrifice, nurtured with the milk of human kindness, bathed in the blood of heroes, dedicated and devoted to humanity, and, annually since you have assembled in convention to revere the memory, pay tribute of praise to the worth of those comrades who had fallen in rank since your last assemblage; mark the progress made in

the various branches of your profession and lay plans for future achievements. All for the uplift of humanity, the amelioration of suffering, the eradication of disease, the preservation of human life and the glory of God. And tonight ancient Opelousas rejoins to acknowledge the return of the scions of her distinguished sons, and modern Opelousas is happy to welcome and entertain them.

Opelousas, the city of your birth as an organization, has to her credit a long list of wonderful achievements during her more than two hundred years of existence, and these fraught not without disappointments, heart aches and disparagements. We have had epidemic upon epidemic, we have had epidemics of yellow fever, those of typhoid, smallpox, malaria and even the "flu," but, gentlemen, it has been a long, long time since we have suffered from such an epidemic of *doctors* as we have had during the past few days.

Your short sojourn in our midst has been delightful to us, and we trust has been pleasant for you. Aside from this it has been of untold educational value to us—you have been an inspiration. We are impressed seriously and solemnly with that lofty place you hold in our society—with that strategic niche which is yours in our civilization, and are called upon to acknowledge that debt of gratitude we can never repay. Indeed, there are few holier relationships than that existing between my doctor and me. Who brought me into this world. My doctor. Whom did mother call at the dead of night when I had the croup? My doctor. Who tenderly removed the thorn from my bare foot and administered the paregoric when I had eaten green apples? My doctor. And, in later life, who sat by my bed and felt my quickened pulse and soothed my fevered brow, giving unconsciously to me that which I could neither perceive nor appreciate—his very life—for to me and such as me is imputed the burden which wears the doctor's life and increases that deadweight upon his heart which eventually claims him. Then when it is over, when life has ebbed out its little way, who is he who notes the soul's departure and is the first to feel the cold breath of death as he steals over my prostrate form, and who is he

that pronounces me dead? My doctor. Is he not very part of me, and do I appreciate him? So often it is the case that when we've recovered from the bed of affliction and stand again basking in the sunlight of health and happiness, despite our promises and earnest protestations to the contrary, our God is *neglected* and our doctor *forgot*. How often is the doctor as much a casualty of a raging disease as the patient who succumbs—for into every case he injects something of himself and partakes of the nature of each case until he is no longer able to withstand the advances of disease and he, too, is taken from us. The press records—a doctor died—when in reality a soul as great as God's universe and a heart bursting for humanity has shaken off this mortal coil and joined the celestial choir. And as we drop the sympathetic tear over his last resting place we recall Graves' immortal definition of life.

I have seen some mighty engine rushing madly through the darkness, heedless of opposition and fearless of danger. I thought that was grand. I have seen the lightning flash across the sky, making the midnight as bright as the roodday sun. I thought that was grand. I have seen the light break over the eastern hills in glory, driving the lazy darkness like mists before a sunbeam gale—I *know* that was grand, but the grandest thing I ever saw was the grand light of a beautiful life wrapping itself in benedictions around the destinies of men and finding a home in the blessed bosom of the everlasting God.

*That, gentlemen, is my doctor!*

Oh! doctors, one and all we greet you,  
And we hope at last to meet you,  
On the Golden Shore.

*Report of the House of Delegates to the  
General Assembly.*

In accordance with the constitution and by-laws, the House of Delegates wishes to report the following actions representing the deliberations and business transacted by your House of Delegates at the present meeting.

The various meetings of the Executive Committee, of the Council, reports of Councilors, and of Standing and Special Committees, were read to the

House of Delegates and properly disposed of. The President's Report was replete with recommendations, and upon report of the special committee, the following items of interest were adopted.

First, the election of a president, and president-elect, the present-elect taking office one year after his election. This to go into effect in 1925.

The Secretary-Treasurer's report contained one important recommendation, that of having the Louisiana State Medical Society indorse the principle of assisting to establish some form of periodic health examinations throughout the state. The report of the Journal Committee covering the management and editing of the Journal for the past nine months for the present Journal Committee was read and after some slight modification was accepted. The new Journal Committee presently constituted, has the following personnel: Dr. H. B. Gessner, three years; Dr. A. A. Herold and Dr. A. O. Hoefeld, two years; Dr. O. Dowling and Dr. H. W. E. Walther, one year. Their report showed that the affairs of the Journal were in a very satisfactory condition, and at present free of obligation on the part of the Louisiana State Medical Society. The House of Delegates adopted the principle contained in the report of the Committee on Hygienic Marriage Law, submitted by Dr. R. McG. Carruth, chairman. The resolution requested that the bill be presented to our legal advisor for its determination as to its constitutionality and then submitted to the Committee on Public Policy and Legislation.

Upon the recommendation of the Women's Auxiliary, the committee was discontinued.

The Committee on Walter Reid Memorial made a very interesting report, and by motion approved the appropriation of the sum of \$400 by the local Arrangement Committee of the New Orleans Convention, and amended the by-laws whereby the surplus money remaining in the Annual Arrangement Fund each year should be turned over to the Walter Reid Committee, up to such time that the funds will reach \$2,000, after which it shall be returned to the General Fund of the State Secretary, in accordance with the resolution amending the by-laws offered by Dr. Marvin Cappell.



Approval of the plan of the Committee on Publication, whereby one-half of the expenses of making and printing of cuts presented by the essayists is equally borne by the Louisiana State Medical Society and the essayist up to the number of ten, expenses over ten cuts are borne entirely by the essayists. The Committee on Health and Public Instruction submitted a very interesting report in regard to legislation dealing with the faulty labeling and sale of lye. It was recommended that the Committee on Public Policy and Legislation introduce a proper bill containing the most modern provision for the control of this commodity.

A resolution was offered by the St. Landry Parish Medical Society giving notice of an amendment to the charter, making the provision for having the Secretary of the State Body make its Executive Body. This will be introduced formally in 1925, according to the provisions made for such amendments.

The following officers, after being duly nominated, were elected as officers of the Louisiana State Medical Society:

- President—C. V. Unsworth, New Orleans.
- 1st Vice-President—E. M. Ellis, Crowley.
- 2nd Vice-President—Carson R. Reed, Natchitoches.
- 3rd Vice-President—Roy B. Harrison, New Orleans.

- Councillors:
- 1st District—S. M. Blackshear, New Orleans.
- 2nd District—H. W. Kostmayer, New Orleans.

- 4th District—A. A. Herold, Shreveport.
- 5th District—F. C. Bennett, Monroe.

Two members State Board of Medical Examiners: for vacancy in re—Dr. J. E. Knighton, expiring on date of

J. E. Knighton, Shreveport; S. C. Barrow, Shreveport.

Committee on Scientific Work—H. P. Jones, Elizabeth Bass, secretary-treasurer.

Committee on Public Policy and Legislation—D. J. McAnn, W. B. Phillips, R. B. Harrison, president and secretary.

Committee on Publication—P. S. McIlhenny, J. J. Ayo, secretary-treasurer.

Committee on Medical Education—B. W. Smith.

Committee on Medical Defense—R. C. Simmons.

Committee on Hospitals—G. M. Snellings, P. Graffagnino, O. P. Daly, S. D. Yongue, Charles Chassignac.

Committee on Health and Public Instruction: W. H. Seemann, F. R. Gomila, J. W. Featherston, G. M. G. Stafford, W. F. Carstens.

Journal Committee, for term of three years—H. B. Gessner.

Delegate to American Medical Association—S. M. Blackshear, two years; Alternate, L. J. Williams, two years.

Next Place of Meeting—New Orleans.  
Dr. Leon J. Menville was elected chairman of the House of Delegates.

The Resolution Committee offered the following resolutions, which were unanimously passed:

"Whereas, Those in attendance upon the meeting of our State Society have profited to the utmost by the courtesies and consideration shown them, we submit the following:

Be it resolved, That our thanks be extended to the profession of Opelousas and of St. Landry Parish, to the Committees on Arrangement and Entertainment, and especially to the genial local chairman, Dr. Fred J. Mayer, for his energetic and painstaking efforts. Also to the Elks, the Knights of Columbus, and the Masons, for the privileges and courtesies afforded us.

Be it further resolved, That we extend our thanks to the management of the various hotels, the citizens who have thrown open their homes to us and the public of Opelousas in general, for the most unique and general hospitality accorded us.

Be it further resolved, That we are deeply appreciative of the delightful and sumptuous luncheons served by the Masons and their ladies, by the Knights of Columbus and their ladies, our brethren of St. Landry Parish Medical Society and their ladies, and barbecue at Washington, cooked and served in a style that appealed to the most sensitive gastronomic senses.

Be it further resolved, That our thanks be extended to the Press for the kindness and consideration shown us at all times; also to those in charge of the ladies' entertainments for the unusual courtesies shown our ladies.

In general, the proverbial hospitality of Opelousas and St. Landry has been outdone in this instance and we shall ever cherish the memory of this meeting.

We could not close this report without expressing our debt of gratitude to our earnest secretary-treasurer, Dr. P. T. Talbot and his assistants, for their untiring efforts to make our meeting successful, and to them we also extend sincere thanks.

Whereas, one of our members, who is

unavoidably absent from this meeting, is now voluntarily retiring from "official harness," after rendering most valuable services to this society for many years; and

Whereas, Dr. George S. Bel has shown, by his example, after retiring from the presidency, that interest in this great organization should not lag with the surrender of the highest office, he having, since then, served as Councilor for eight years;

Therefore, be it resolved, That we are deeply appreciative of the eminent services rendered to organized medicine in Louisiana, by Dr. Bel, who, as a Councilor, conciliator, or mediator, seems to be endowed with unusual powers, and for these reasons we hereby extend our deep and lasting thanks to Dr. Bel.

*Report of Our Delegate to Mississippi State Meeting.*

*To the Officers and Members of the Louisiana State Medical Society:*

Gentlemen—

In rendering this, my report as the Fraternal Delegate from the Louisiana State Medical Society to the Mississippi State Medical Association, which met in Jackson, Mississippi, May 13th, 14th and 15th, I wish first to thank you for having had the honor and privilege of serving the Society in this capacity.

My credentials were presented at the first meeting. The President, Dr. Dearman, in introducing me, spoke briefly of his recent visit as the Fraternal Delegate from Mississippi to our Annual Meeting in Opelousas, mentioning the many kindnesses and courtesies that were extended him while a guest in our midst. It is needless to say that I was warmly received and made to feel the genuineness of the welcome from the time of my arrival to that of my departure.

The House of Delegates met each morning from 8:00 to 9:30, and after a recess of a few minutes, was followed by the Scientific Sessions. The meetings were well attended, there being over 450 members and guests registered. The scientific papers were splendid, covering a large range of subjects; the discussions were prompt and liberal. Clinics were held at the various hospitals from 8:00 to 9:00 each morning. Prac-

tically all of the meetings were held in the beautiful new Edwards House, where most of the members were registered. This facilitated and encouraged a larger attendance at the meetings, and proved both pleasant and a saving of time for the members.

The general arrangements were under the auspices of the Central Medical Society, Dr. G. E. Adkins of Jackson, President. Besides the ideal arrangement of the business and scientific meeting there were many delightful entertainment features. The public meeting on Tuesday night, held in the magnificent new Municipal Auditorium, was a treat. The President's address, covering briefly many subjects interesting to all minds today, was listened to with closest attention. Governor Whitfield paid a tribute to the medical profession, the gist of which was that "*the wealth of the state was dependent upon the health of her citizens.*"

A trip by special train to the great State Tuberculosis Sanitarium at Sanitarium, Mississippi, said to be the largest and most modern institution of its kind in the world, and which is attracting the attention of health workers from all parts of the country, proved of much interest and a revelation to most of the visitors. Dr. Boswell, whose inspiration and years of strenuous effort in arousing the people of Mississippi to the needs of such an institution, said that "the hospital was a great monument to the members of the Mississippi State Medical Association." The train trip and dinner proved an excellent opportunity for bringing the doctors together for closer and better acquaintance.

Another delightful affair, following the close of the Scientific Session Thursday morning, was the elaborate luncheon given by the physicians of Jackson.

I was impressed by a provision in their by-laws making any member who has reached the age of 60 years and who has served the society for ten consecutive years, a member for life without further payment of dues while retaining his power to vote. Also, all ex-Presidents and Honorary members without further payment of dues, but privileged to vote.

Relative to the JOURNAL, I am pleased to report that a committee of three, consisting of the Secretary, Dr. T. M. Dye,



of Clarksdale, Dr. E. F. Howard and Dr. S. W. Johnson, of Vicksburg, were appointed to confer with our JOURNAL Committee and with power to act.

In the exchange of Fraternal Delegates one can readily appreciate the great opportunity it affords for bringing the organizations closer together, stimulating all to a common interest in organized medicine. I am voicing the

sentiment as expressed by the President and Secretary of the Mississippi State Medical Association, in stating that the experience this year has been of inestimable value, and that they hope to see it extended to other near-by states in the future.

Cordially yours,  
ELIZABETH BASS, M. D.

## NEWS AND COMMENT

### *Orleans Parish Medical Society.*

During the past month the society held two scientific meetings. Five scientific papers were read and in addition Dr. Robert King, medical missionary, was the guest of the society.

There has been a noticeable falling off of applications for membership. Every effort should be made toward increasing our membership and all eligible physicians in this parish should be approached with this object in view.

Many members have neglected to return their discussions within the time required by our by-laws, and as a result many of our papers appear with an incompleated list of discussions. The attendance at our meetings during the past month have been greater than for several months past. This gratifying increase in attendance will greatly encourage the Scientific Essays Committee.

The minutes for the year 1923 will soon be bound and will be available for reference in the library.

Beginning with Volume 77 of the New Orleans Medical and Surgical Journal, the Orleans Parish Medical Society will sign a contract for a period of one year.

The society was well represented at the State Medical Convention in Opelousas. A score or more members of this society read papers and many more took part in the discussions which followed.

Meetings scheduled for the month of June are as follows:

June 9th, Clinical meeting, Charity Hospital.

June 23rd, Scientific meeting, Hutchinson Memorial.

### *Report of Librarian for Month of April.*

The Assistant Librarian has completed the cataloging of 280 books during the month. Of these 30 were received by gift, 15 from the New Orleans Medical and Surgical Journal, and 1 replacing a lost copy.

The night hours of opening in the library were discontinued on May 1st by order of the Dean of the Medical School, as the use seemed not to justify the expenditure.

### *Report of Treasurer for Month of April.*

Total receipts .....	\$ 524.10
Total expenditures .....	502.04
Resources.	
Domicile fund, Liberty bonds, par value .....	\$30,000.00
Library endowment fund, bonds par value.....	3,500.00
Medical relief fund, savings account .....	96.23
	\$33,596.23

### *Monthly Bulletin of the Shreveport Medical Society, May, 1924.*

The May meeting of the Shreveport Medical Society was held May 6th at Charity Hospital at 8 p. m.

Scientific Program by Schurpart Sanitarium Staff.

Subject: Symposium on Cancer.

History and Theories of Etiology—  
Dr. J. J. Frater.

Diagnosis and Treatment:

Surface Cancer—Dr. C. B. Erickson.

Digestive Tract—Dr. J. S. Knighton.

Breast and Pelvic Organs—Drs. J. C.

Willis and B. C. Garrett.

Bones—Dr. Guy A. Caldwell.

Radiological Diagnosis and Treatment—Dr. S. C. Barrow.

June Scientific Program by Drs. Pirkle,  
Williams, Harris and Green.

Subject: The Female Pelvis.

Surgery of the Tubes and Ovaries—

Dr. L. H. Pirkle.

Caesarian Section—Dr. T. E. Williams.

Female Pelvis from a Urological Standpoint—Dr. E. W. Harris.

Extra-Pelvis Symptoms Due to Pelvis Pathology—Dr. H. L. Green.

Toxemias of Pregnancy—Dr. W. B. Heidorn.

Ectopic Gestation—Dr. S. W. Boyce.  
Scientific Program.

Highland Sanitarium Staff had charge of the program, the subject being Some Chronic Abdominal Conditions.

Dr. Hendrick made a plea for a complete history and physical examination with the utilization of all diagnostic agencies to arrive at a correct diagnosis before subjecting the patient to an operation.



Dr. John's paper was on The Interpretation of Abdominal Pain.

Dr. Prothro, Some Symptoms of Chronic Gall Bladder Disease.

Dr. Lloyd, Chronic Intestinal Toxemia.

Dr. Douglas, Indigestion.

Dr. Rutledge, The Barium Meal and Opiate Enema in Chronic Abdominal Conditions Illustrated with X-ray pictures.

Discussion by Drs. Thomas, W. S. Kerlin, Crain, Rougon, I. Henry Smith, Cassity, Young, Barrow.

Closing by Drs. Hendrick, Lloyd, Douglas, Johns and Prothro.

The papers and discussions were instructive and interesting, continuing the high type of scientific program which has characterized the meetings this year.

On motion the Society adjourned.

ROBERT T. LUCAS, Secretary.

An interesting monograph by Dr. Lewis Heermann, Surgeon in the United States Navy, and a prominent medical figure in the City of New Orleans in the last century, has been received from the Editor, United States Navy Medical Bulletin, and is on file in the Library of the Orleans Parish Medical Society.

At the recent meeting of the Louisiana State Medical Society in Opelousas the Louisiana Railway Surgeons' Association was reorganized with the following officers:

President—Dr. Hermann B. Gessner, New Orleans.

Vice-President—Dr. O. P. Daly, Lafayette.

Secretary—Dr. W. Bradburn, New Orleans.

The next meeting will take place in Alexandria in September.

#### *First Lepers for New Additional Buildings at Carville, La.*

"The first of the additional buildings provided by Congressional Act of February 20, 1923, to enlarge the National Leper Home at Carville, La., have been completed and twelve lepers who had been temporarily detained elsewhere were moved to Carville, April 4," Surgeon General Cummings, of the U. S. Public Health Service, stated recently.

#### *Western Physiotherapy Association.*

The sixth annual meeting of the Western Physiotherapy Association was held at the Little Theatre, Kansas City, Mo., April 17 and 18, 1924, under the presidency of Dr. Harry H. Bowling, of Rochester, Minn. The following officers were elected for the ensuing year:

President—L. A. Marty, M.D., Kansas City, Mo.

First Vice-President—R. W. Fouts, M.D., Omaha, Neb.

Second Vice-President—W. P. Patterson, M.D., Springfield, Mo.

Secretary—Charles Wood Fassett, M.D., Kansas City, Mo.

Treasurer—W. P. Grimes, M.D., Kansas City, Mo.

Registrar—H. A. Spilman, M.D., Ottumwa, Iowa.

Board of Trustees—H. H. Bowling, M.D., Rochester, Minn.; L. B. Foster, M. D., Walters, Okla.

The association meeting was preceded by a six-day session of the Western School of Physiotherapy, a class of 100 attending. Next meeting will be held in Kansas City, April, 1925.

#### *St. Tammany Parish Medical Society.*

The St. Tammany Parish Medical Society met in regular monthly session on Friday, May 9th, at Slidell in the Community Room of the Association of Commerce, with the following members present: Dr. J. K. Griffith, president; Dr. F. R. Singleton, secretary-treasurer; Drs. R. B. Paine, P. L. Cusachs, J. F. Polk, F. F. Young, B. B. Warren, H. D. Bulloch, H. E. Gautreaux and A. G. Maylie, with Dr. Chaille Jamison of New Orleans as an honored guest.

Dr. Jamison came from New Orleans for the special purpose of attending this meeting, at which he delivered a discourse on "Cerebro-Spinal Syphilis." The lecture was as interesting as entertaining, and the round table talk that followed, led by Drs. Young and Gautreaux, brought forth many new and instructive points.

Light refreshments were served. The society held a short business session and adjourned to meet next month in Mandeville.

Most people have the mistaken idea that sunburn is caused by "the heat of

the sun." This is incorrect. Sunburn is caused by the ultra-violet rays, which constitute only 7 per cent of sunlight.

Nature herself provides a form of protection against the ultra-violet rays, for when a person is exposed continually to sunlight he will find that after several attacks of sunburn the skin becomes tanned or freckled. Tan and freckles are simply the natural pigment which nature provides as a yellow screen through which the ultra-violet rays can not pass and cause real injury by continued burning.

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#### *Foot and Mouth Disease.*

In view of the epizootic of foot and mouth disease in cattle in certain parts of California at the present time and the interference with travel and with the shipment of certain foodstuffs (including milk) as the result of the presence of this disease, Acting Surgeon General White of the Public Health Service was asked to discuss foot and mouth disease from the viewpoint of its possible danger to human beings.

"The disease," Dr. White states, "is an acute, highly contagious malady affecting chiefly cloven-hoofed animals, such as cattle and sheep. Animals suffering from foot and mouth disease have fever, followed by an eruption consisting of vesicles (small blister-like sores) occurring chiefly on the mucous membrane of the mouth and on the skin at the cleft of the hoof and less frequently on the udders and other portions of the skin. There is usually prolonged ill health and much wasting of the tissues.

"The germ which causes this disease has not been identified, but it is known that it occurs particularly in the exudate from the vesicles, in the saliva, and in the milk of infected animals, though it is not limited to these materials. It is readily destroyed by heat, such as the boiling or pasteurization of milk.

"Adult human beings are not very apt to contract the disease, but it is by no means rare among children.

"The question has been raised as to whether the disease in children known as "impetigo contagiosa" may not be identical with foot and mouth disease in animals, but no one has yet been able to answer this question either in the affirmative or in the negative. Foot and

mouth disease is not very fatal in cattle, and apparently much less so in human beings, if at all. It does cause serious losses when cattle are infected, because of the interference with the sale of milk, the reduction of the quantity of beef produced, and also on account of the expense and inconvenience resulting from quarantines against infected districts."

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Dr. Appleton H. Pierce, Senior Surgeon, U. S. Public Health Service Reserve, has been appointed as Medical Officer in charge of the recently completed U. S. Veterans' Hospital No. 95, Northampton, Mass., General Frank T. Hines, director of the U. S. Veterans' Bureau, has announced.

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#### PERSONAL.

Dr. L. Rosa H. Gantt, of Spartanburg, S. C., a prominent Eye, Ear, Nose and Throat Specialist, was a guest of Dr. Elizabeth Bass during the past month. Dr. Gantt is Treasurer of the Medical Women's National Association.

Dr. Hermann B. Gessner has been elected to fill a three-year term on the JOURNAL Committee of the Louisiana State Medical Society.

At a recent meeting of the American Gastro-Enterology Society at Atlantic City Dr. D. N. Silverman was elected to membership.

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#### REMOVALS.

Surgery, Gynecology and Obstetrics—The Surgical Publishing Company of Chicago, editorial and business offices now located at 30 North Michigan Avenue, Chicago, will remove on April 29, 1924, to 54 East Erie Street, Chicago.

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#### DIED.

On May 19th, 1924, Dr. C. F. Sartor, of New Orleans, aged 50 years.

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The Fourth District Medical Society held its regular semi-annual meeting at the Shreveport Charity Hospital on May 8, 1924, under the presidency of Dr. T. J. Fleming of Mansfield, Dr. J. E. Heard of Shreveport being secretary. The meeting was well attended and much interest shown in the following program:



Call to order by President T. J. Fleming.

Greeting, by District Councilor A. A. Herold.

1. The Early Diagnosis of Early Pulmonary Tuberculosis, C. R. Gowan. Discussion opened by J. E. Knighton and W. S. Kerlin.

2. Miliary Tuberculosis, W. B. Rawls. Discussion opened by A. A. Herold.

Dinner by Charity Hospital, Dr. W. P. Morrill, Superintendent.

3. Some Surgical Conditions of the Breast, B. C. Garrett.

4. The Gall Bladder, made opaque to X-Ray by use of calcium-tetrabromophthalein, with demonstration of plates, S. C. Barrow.

5. Report of an Interesting Case, W. S. Kerlin.

6. Local Anesthesia in Prostatic Surgery, J. R. Stamper. Discussion opened by I. B. Rowan.

Announcements by the Secretary.

Adjournment till Autumn, 1924.

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Dr. Wilkins McDade, Minden, President of Webster Parish Medical Society, has recently recovered from a bad infection of the hand.

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The new North Louisiana Sanitarium, Shreveport, will be opened for patients about July 1st, 1924.

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At the Shreveport Charity Hospital definite diagnosis was recently made of a case of suspected leprosy and the patient was committed to the U. S. Hospital at Carville, La., being conveyed there by Dr. Dowling, State Health Officer. The patient has a combination of the anesthetic and tubercular types.

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Dr. H. O. Barker, who was stationed at Shreveport for nearly four years as sub-district Medical Officer of U. S. Veterans' Bureau, has recently been transferred to Hospital No. 27, near Pineville, La. Dr. Barker did excellent work at the Shreveport office and made many friends there, who are glad to know that his transfer is in the nature of a promotion.

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#### *S. M. A. Committees Appointed.*

Dr. Homer Dupuy, chairman of committee of arrangements for the South-

ern Medical Association meeting, which will be held in New Orleans, November 24-27, has appointed the following chairmen who will serve as a general committee: Dr. E. L. Leckert and Dr. Geo. Dempsey, buildings and halls; Dr. H. W. E. Walther, commercial exhibits; Dr. F. M. Johns, scientific exhibits; Dr. John Lanford, finance; Dr. J. C. Menendez, hotels; Dr. P. T. Talbot, registration; Dr. Paul J. Gelpi, entertainment; Dr. Leon Menville, badges; Dr. Jules Dupuy, lanterns; Dr. Daniel Silverman, membership; Dr. F. R. Gomilla, automobiles; Dr. A. I. Weil, golf; Dr. H. E. Bernadas, publicity; Dr. M. J. Lyons, alumni dinners; Dr. R. C. Lynch, clinics; Dr. Elizabeth Bass, women physicians; Dr. B. A. Ledbetter, public health; Dr. A. L. Whitmire, information; Dr. C. V. Unsworth, for Louisiana State Medical Society; Dr. Chaille Jamison, ex-officio chairman, and Dr. Lucien Ledoux, secretary.

It is expected that we will have an attendance of over 2,500. Money will be needed to worthily entertain our conferees from all parts of the South. Funds are being collected by the following members of the finance committee: Drs. R. Bernhard, A. Nelken, Lucian Landry, M. Boebinger, Chas. Samuel, A. L. Levin, L. R. DeBuys and E. L. King.

The other committees have begun functioning and are enthusiastic in their endeavor to insure the success of what must prove a notable event in the history of Louisiana medicine.

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At a recent meeting of the Charity Hospital Staff, New Orleans, a committee was appointed to investigate the problem of depoliticalizing this institution. The members of the Staff appointed on this committee are: Dr. H. B. Gessner, chairman; Dr. I. I. Lemann, Dr. E. H. Walet, Dr. H. W. E. Walther, and Dr. E. L. King.

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At the call of Dr. C. V. Unsworth, president Louisiana State Medical Society, 140 representative men and women met at a luncheon at the Hotel Roosevelt recently to hear Dr. Linsly R. Williams, of New York City, who is managing director of the National Tuberculosis Association. Dr. Williams made a plea for a larger program of

tuberculosis work in Louisiana, to be chiefly along educational lines. Among others to address the gathering were: Dr. Oscar Dowling, State Health Officer; Miss Kate M. Gordon, vice-president Orleans Parish Anti-Tuberculosis League; Dr. Ernest Lewis, president of the State League; Dr. Wallace J. Durel, of Covington; Dr. R. G. Patterson, of Ohio; Miss Sara Ellis, president of Tangipahoa Parish League, and Dr. J. A. Danna.

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*Report of the Louisiana State Tuberculosis Commission of the State of Louisiana, 1923-1924.*

Governor John M. Parker,  
Baton Rouge, La.

Dear Governor Parker:

The following is a report of the Louisiana State Tuberculosis Commission:

The Commission was created by a bill enacted in 1912. The purpose set forth is as follows:

"To provide for the suppression of tuberculosis within the State and means for the isolation, care, cure and treatment of persons suffering therefrom; to authorize the acquisition of two or more sites for the location of sanatoria for persons ill with tuberculosis; to provide funds, ways and means for the establishment and maintenance of such sanatoria and placing such sanatoria, subject to the general supervision of the State Board of Health, under the administration and charge of the State Tuberculosis Commission."

The membership designated is: The Governor, the Attorney General, the President and Secretary of the State Board of Health.

In 1918 the Act was amended, adding three members (physicians) to the Commission; these to be selected upon the recommendation of the Anti-Tuberculosis League, one of the three to be a New Orleans physician, and two from a list of six non-residents of New Orleans.

In 1922 the Act was again amended, increasing the membership of the Commission. Under this amendment seven are chosen as before; the additional two members it provides shall be women, one of whom shall be selected from the City of New Orleans.

1. The Commission purchased in 1915 six hundred and twenty-three

(623) acres of land several miles from Alexandria, for the establishment of a district state sanatorium.

2. It entered into negotiations with the Orleans Parish Anti-Tuberculosis League (March, 1918), whereby the State would take over Camp Hygeia, near Slidell. The proposition was accepted by the Commission, but the transfer was never made by the League.

3. The offer of the Louisiana Anti-Tuberculosis League of Greenwell Springs (November 28, 1922) to the Commission was not accepted as objections were made to the inaccessibility of the location and doubt expressed as to whether it could be legally accepted by the State so long as it was encumbered.

4. January 23, 1923, the Commission agreed to accept the Greenwell Springs property when the transfer could be made with an unencumbered title.

5. On April 4, 1924, the Greenwell Springs property was again offered, free from encumbrance, and was accepted by the Commission. At the same meeting it was agreed to sell the Alexandria property at \$12.00 per acre. The sale has been consummated.

From year to year numerous efforts were made to have meetings of the Commission. Most of these were unsuccessful. In order to bring about co-operative effort, and that the Commission may accomplish the purpose for which it was created, it has been suggested by the National Tuberculosis Association that there should be a complete reorganization. The functions of the Commission should be the same as those exercised by boards of trustees of tuberculosis sanatoria—it should purchase suitable sites, select plans, construct, equip and administer sanatoria.

It is doubtful if the Governor and the Attorney General should be members of the Commission, and it would seem more reasonable that the list of physicians sent in should be nominated by the State Medical Society; also that the Governor should not be limited to two women, one of these from New Orleans. From the experience of other States, it would seem wise that the President of the State Board of Health should be designated as Chairman of the Commission, and, as members, the Secretary of the State Board of Health and the Director of the Bureau of Tuberculosis Control of the



State Board of Health. Since the generally accepted plan is that there should be a sanatorium for each Congressional District of any State, there should be selected as additional members, one person from five Congressional Districts, these to be other than districts in which Shreveport and New Orleans are situated.

Nominations for membership on the Commission should not be limited by law to any group or groups.

The Bureau of Tuberculosis Control of the State Board of Health should work in harmony with the Tuberculosis Commission.

I take pleasure in submitting the financial statement as shown on the books:

Received from State Treasurer, December 20, 1913 .....	\$ 100.00	
Less expenses .....	100.00	
		\$6,375.50
Received January 6, .. 1915 .....	\$ 9,900.00	
Less expenses (including purchase land) .....	\$ 3,524.50	
		10,000.00
February 20, 1918, received .....		10,000.00
Deposited Hibernia Bank, December 7, 1921.....	\$16,375.50	
Deposit, sale (April 4, 1924) land Alexandria, 10 per cent.....	747.60	
Interest Hibernia Bank .....	1,176.69	
		\$18,229.79
Less expenses incurred.....	163.25	
		\$18,136.54
Balance due on Alexandria land, May 13, 1924 .....		6,728.40
Amount due Commission to date.....	\$24,864.94	

Respectfully submitted,

OSCAR DOWLING,

President, Louisiana State Tuberculosis Commission.

New Orleans, La., May 15, 1924.

PUBLICATIONS RECEIVED.

W. B. Saunders Company, Philadelphia and London: "The Circulatory Disturbances of the Extremities," by Leo Buerger, M. A., M. D. "Pediatrics," by various authors, edited by Isaac A. Abt,

M. D. "Differential Diagnosis," Vol. II, by Richard C. Cabot, M. D.

F. A. Davis Company, Philadelphia: "Cosmetic Surgery," by Charles Conrad Miller, M. D. "Cancer of the Breast," by L. Duncan Bulkley, A. M., M. D. "Maternity Nursing in a Nutshell," by Elizabeth H. Wickham, R. N. "Diseases of Middle Life," Vols. I and II edited by Frank A. Craig, M. D. "The Relative position of Rest of the Eyes and the Prolonged Occlusion Test," by F. W. Marlow, M. D., M. R. C. S. Eng., F. A. C. S. "Modern Treatment and Medical Formulary," compiled by W. B. Campbell, M. D.

Funk & Wagnalls Company, New York and London. "Food for Health's Sake," by Lucy H. Gillett, A. M. "The Young Child's Health," by Henry L. K. Shaw, M. D. "The Human Machine," by William H. Howell, Ph. D., M. D., L. L. D., Sc. D., "Taking Care of Your Heart," by P. Stuart Hart, A. M., M. D., "The Quest for Health," by James A. Tobey.

Lea & Febiger, Philadelphia and New York: "Modern Urology," Vols. I and II, edited by Hugh Cabot, M. D., C. M. G., F. A. C. S.

Paul B. Hoeber, Inc., New York: "What Every Mother Should Know," by Charles G. Kerley, M. D.

P. Blakiston's Son & Company, Philadelphia: "Gynecology and Pelvic Surgery," by Roland E. Skeel, M. D., A. M., M. S.

D. Appleton & Co., New York and London: "Clinical Laboratory Diagnosis," by Rober Sylvester Morris, A. B., M. D.

Physicians and Surgeons Book Company, New York: "Genitourinary Diseases and Syphilis," by Henry H. Morton, M. D., F. A. C. S.

Washington Government Printing Office: "Public Health Bulletin No. 139." "Hygienic Laboratory Bulletin No. 135." "Public Health Reports," Vol. 39, Nos. 14, 15, 16, 17.

Miscellaneous: "Social Control of the Feeble-minded," by Stanley P. Davies, Ph. D. "Les Regimes Fondamentales," by Paiseau, P. Carnot, A. Lemierre, A. Baudouin Rathery, J.—Ch. Roux, Marcel Labbe.

## REPRINTS

"Liver Abscess," by A. I. Ludlow, M. D., F. A. C. S. "Successive Pregnancies in cash Member of a Didelphic Uterus with Cesarean Delivery in each Case on Account of Dystocia caused by Retroversion of the Non-Pregnant Uterus," by Gilbert Fitzpatrick, M. D., F. A. C. S.

## BOOK REVIEWS.

Radium Report of The Memorial Hospital, New York, Second Series 1923. Paul B. Hoeber, Inc., New York, 1924.

A glance at the list of contributors is sufficient to recommend this report to all radium workers, as containing valuable information about radium application and therapy. Chapter 2, dealing with technical principles employed in radium therapy, is of great value. Radium emanation, its indications and method of application is explained in a very clear and concise manner. A report is given of the effect and results obtained with radium in all forms of malignant disease. Tables are given in chapter xv showing the results obtained in carcinoma of the bladder in both intravesical and suprapubic methods of radium application, and the following statement is made by Benjamin S. Barringer: "I have never seen any operative statistics that compare at all with those of the above tables"

LEON J. MENVILLE, M. D.

Endocrinology, Lectures On, by Walter Timme, M. D., Paul B. Hoeber, Inc., New York, 1924.

The monograph is an elaborated article on "Clinical Endocrinology" which appeared in the Neurological Bulletin for January, 1921. It is justly published in response for reprints of his article on the subject.

Dr. Walter Timme has presented in an understandable English and has treated logically a difficult subject "Endocrinology" and should you read his monograph you will obtain most valuable information.

T. J. DIMITRY, M. D.

War against tropical disease, by Andrew Balfour, C. B., C. M. G., M. D., B. Sc. (Public Health), F. R. C. P. (Edin.), D. P. H. (Camb.), Director-in-Chief, Wellcome Bureau of Scientific Research. Bailliere, Tindall & Cox, London, 1924.

This book brings together seven interesting papers, all but one of which (The Palm from a Sanitary Standpoint) have been published previously. They are as follows: Some Aspects of Tropical Sanitation, Tropical Problems in the New World, Preventive Inoculation against Typhoid and Cholera, The Medical Entomology of Salonica, Sanitary and In-

sanitary Makeshifts in the Eastern War Areas, The Problem of Hygiene in Egypt, and the Palm from a Sanitary Standpoint.

The papers which had previously been published have been revised, altered in some places and brought up to date.

The titles indicate the nature of the subject dealt with. The subjects are treated in a most interesting way by a world-authority. Andrew Balfour has had the most extensive experience in dealing with conditions and diseases met with in tropical countries. The book is of special interest because the author speaks from actual experience in dealing practically with the problems that are met.

This work is well illustrated with a large number of original pictures, practically all of which are made from photographs. They are well selected and are interesting and instructive. Students of tropical medicine, and especially those contemplating taking up duties and responsibilities in tropical countries, will benefit greatly by reading this book.

C. C. BASS.

The Elements of Public Health, by George Sparr Lockett, A. B., M. D., and Harold Farnsworth Gray, B. S., M. S., Gr. P. H., P. Blakiston's Son and Company, Philadelphia, 1923.

Lockett & Gray have just published a book entitled "The Elements of Public Health Administration" which does much credit to the two authors. It is divided into three sections. The first is comprised of 21 chapters of Public Health Administrative Measures; the second on the Preventable Diseases under 42 headings and the third is an appendix divided into ten different categories.

We have read the sections of this book carefully and with great pleasure. It is clear and lucid, and while it does not contain much new information, still the manner in which the information is distributed makes it easily accessible, and we believe that this book should prove of great benefit to the average Health Officer. The section devoted to communicable diseases considers a large number with a brief synopsis of the causes, diagnosis and manner of prevention together with the mode of transmission and other useful data.

The appendix is unique and contains desirable information on the manner of handling courses for public health nurses and midwives, describes also the plan for organization of relief service units, complete instructions for use together with facsimile of dairy score card, finally a description of the Schick Test as well as different disinfection and de-lousing methods.

We believe that this book fills the need that more extensive and complete reference books on Public Health, Hygiene and Preventive Medicine do not. In the first place the information is so arranged that it is easily accessible, there is neither too much nor too little and there is as a rule just what one needs and wants at a critical moment.

OSCAR DOWLING, M. D.











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