JAN 22 1941

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BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons

VOL. II JUNE, 1917 No. 1

THE PHYSICIAN'S DUTY IN THE PRESENT CRISIS

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Baltimore

To address such an audience as this is a privilege which no man should belittle. To speak upon the theme which has been assigned to me, is a duty which no man should shirk. We are indeed facing a momentous crisis, certainly the greatest that the modern world has known.

Our beloved country has by the slow, solemn, resistless, logic of events been dragged into the great world's conflict. Our President has been slow to anger. After a long weary period of standing aloof, a calm judicial waiting for all the evidence in the case, after a forbearance which seemed past understanding, but which we now know was the silence of courage and not of fear, he has at last spoken. And the call is still re-echoing around the world; a call all the more convincing, because of its calm and measured tone; all the more compelling, because it is directed to the loves and not to the hatreds of mankind; all the more inspiring, because it gives a clear vision of that liberty which is the right of every man; all the more imperative, because it is a call to righteousness. It is more than a

[1] Read before the Medical and Chirurgical Faculty of Maryland on April 24, 1917.

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"Battle Hymn of the Republic." It is the cry of humanity itself. It is a call to arms, issued by a peace loving man, whose keen prophetic eye plainly sees that the price of the world's peace is war, and a winning war, for the world's democracy. We are now beyond the parting of the ways. There is but one way, and that one way we must follow, even to the bitter end.

What is the duty of the physician in the present crisis? It is clear. Each one of us should in his own selective, not selected, way give the best that is in him toward the triumph of our cause. Every physician should offer himself to the proper authorities, and then do with all his might what those in command think he can best do. In the great majority of instances, this will not involve going to the front with the Army or Navy. To be sure, thousands of physicians will be needed on the fighting lines, but those places, for the most part, will be filled by young and unencumbered men.

In the present state of medical practice in this country, very few, if any, men can be spared from the rural districts. The country physician should at once bestir himself with the study of rural sanitation, the establishment of convalescent homes for sick and wounded soldiers and sailors. He should aim in every way to increase the efficiency of county hospitals as health bureaus, laboratory and diagnostic centers and as emergency or field hospitals. He should busy himself with the increase and conservation of the food supply. He should use his enormous influence upon the farmers to see that the proper crops are planted. He should proclaim the truth that the man with the hoe or behind the plow will probably play just as important a rôle in the war as the man in the trench or on the ship. He should preach that patriotism demands that the farmer no longer have as his chief aim to get the biggest possible prices for his crops, but that he raise the biggest possible crops, whatever the price. He should aid in every possible manner the much needed "back to the farm" movement, and show in a very practical way that every man has work to do in the service of his country.

As to the physicians of the city, the demand is for more direct and personal medical work. Those of proper age and condition should offer themselves for service at the front. Ample provision will be made by the splendid men composing the Medical Board to protect men in active service from too great pecuniary or professional loss. Satisfactory arrangements are, I am sure, to be

made, to turn over a proper portion of fees paid by their patients to other practitioners, during their absence.

No physician need hesitate to offer his services because he is not inclined to do surgical work. Internists and laboratory men will be in greater demand than operators. Those who remain at home will probably find abundant work in the examination and care of recruits and those under training, in attending patients at the various hospitals, giving instruction in Red Cross and ambulance service, and probably, aiding in the solution of the inevitable and vexed problems of transportation.

Those who are engaged in teaching have especially important duties to perform. The times absolutely demand the most practical and intensive study of the problems requiring immediate solution. All the frills and fineries of medical teaching should be eliminated for the present, and thorough instruction should be given in camp, trench and ship sanitation, the treatment of wounds and wound infections, the epidemiology, prophylaxis and treatment of typhoid and typhus fever, malaria, dysentery, epidemic cerebro-spinal meningitis, yellow fever, and, that scourge of modern trench warfare, tuberculosis. Great stress too should be laid upon the shameful prevalence of venereal diseases among troops and upon their disastrous effects upon efficiency.

Careful instruction in the many psychopathic and neuropathic conditions produced by modern warfare is urgently called for. Great efforts should be made to increase the number of available medical men. When the war is well under way there will probably be a greater relative lack of medical than of fighting men. One way to supply this deficiency is to admit far more men to the study of medicine. Let us, for a time, lower the required standards for admission to medical schools. Give every bright, earnest, intelligent boy a chance. That is, after all, the only democratic way. Watch him carefully during the early periods of his course of study. If he proves incapable, use the selective draft on him and send him back to the farm. If he proves that he will make an efficient medical officer in war time, graduate him in medicine, whether or not he possesses a preliminary degree, and even if English is the only language of which he possesses a knowledge. We Americans will probably have to worry along with the English language alone, for quite a while.

Lastly, the medical man wherever located is now called upon to

take up a calling often neglected in the storm and stress of modern life. The professional man must profess, that is, he must be a teacher, and the first lesson he must teach is Patriotism. This is even more urgently and immediately needed than instruction in medical matters. The saddest lesson that the war has thus far brought directly home to us Americans is that as yet, we are not a united people. The much vaunted "melting pot" has not functioned as we had fondly hoped. We are not a coherent people, actuated by common national ideals and aspirations. Our geographical isolation, the great natural resources of our land, our lack of close touch with the affairs of the world at large, our rapid growth in population and wealth, and our self sufficiency have hampered and perverted our aesthetic and moral growth. In recent years, America has experienced the perils of prosperity, and we are now about to pay the price of our prodigal wastefulness and love of luxury. Our moral fibers have become relaxed and we must at once stiffen them up. The United States had, from August 1, 1914, to April 2, 1917, fallen from its former high estate, and had sunk very low in the moral estimation of the rest of the world, and I believe that no great injustice was done. On the latter date our leader spoke. He showed us the light. On April 2, 1917, the United States of America was put on trial before all the world. How are the American people and how is the medical profession going to stand the test. I cannot speak for the people, but I make bold to speak for the profession.

The first duty of the physician is to arouse the people of this country from their perilous, perhaps fatal, apathy in regard to the war. This is the most dangerous and insidious of all the enemies we shall have to meet. People blindly refuse to acknowledge the world's great emergency. Many times a day we are asked, "Do you really think we are going to have a war; do you believe we shall have any great trouble?" People are not steeling themselves for the hardships that are bound to come. The dense ignorance and indifference, among otherwise intelligent people, is incredible to those who know the power and ruthlessness of our arch enemy. Those who really know the recent history of Europe have long perceived the danger. We must awaken our people to a proper sense of our great national peril. Next, we must spike the guns of the actively hostile forces among our own people. Many of these do not belong to the alien class, nor are they of foreign birth or parentage.

They are the people who say, "I am a patriotic American but I don't want to see America go to war to pull England's chestnuts out of the fire." They don't seem to know what would have happened to us during the last three years but for the British fleet. They ignore the inside history of Manilla Bay. They are unmindful of the moral and military debts we owe to France. They have the spirit of Cain when he asked "Am I my brother's keeper?" They obstinately refuse to acknowledge that America has any great obligation to meet. They refuse to see what is plain to all the rest of the world, that the war has produced a great nation which, like a mad dog running amuck, defies all mankind, and which, blasphemously claiming divine right has, within the past few days, impudently demanded the privilege of making its own international law. There is no place for such men in a free country nor in a liberal profession.

Then too, many men, calling themselves good Americans, hate some other country more than they love their own. They cannot be patriots, because patriotism is positive not negative. It is based on love not on hatred. In this category is to be placed the ex-senator from the Empire State, one of the "little group of willful men" now fortunately returned to private life. Unfortunately, there seem to be some such still left in the halls of Congress.

Furthermore, we have the Pacifists led by two men, one of whom assured a foreign ambassador of a country now at war with us that certain announcements of the State Department were meant for home consumption only; and the other is constantly stirring up opposition to the President's war plans. He is the eminent publicist and prophet, who confidently stated less than six weeks before the outbreak of the war, "that in the present economic and political conditions of Europe, a great European war is impossible. He little knew the enemy with whom we have to reckon. Is it not our plain duty to make war upon so false a prophet? These men, with their insidious and dangerous doctrines must be combated by the enormous power of a united medical profession. If we pronounce the word pacifist at all, the accent must be placed on the "fist."

Again, the physician must take care of that nondescript, that man without a country, and now without a President, the knocker, the fellow who thinks that it is all very terrible, and who says the war has never been our affair and that it is a crying shame that we let the politicians drag us into it. I was talking to him

the other day. The poor homeless one was totally blind to the fact that it is the politicians who are trying to hold the war back, because they cannot perceive that the question has now emerged from the realm of politics into that of morals.

Can any sane man imagine Theodore Roosevelt standing shoulder to shoulder with Woodrow Wilson on a purely political issue? Can we, on the other hand, picture to ourselves a firm moral union between Wm. J. Stone and Wm. H. Taft? Can we reasonably expect James A. O'Gorman and Elihu Root to agree upon any policy affecting the honor of the United States of America? During our conversation, I tried to learn from my friend whom he would like to see in the presidential chair at the present time, and as far as I could learn, his choice lay between David Starr Jordan, Senator LaFollette and Jane Addams. At parting, I asked his opinion of me. He said "you are a sentimental damned fool" and I let it go at that.

Ladies and Gentlemen, this is no affair of jest. It is a solemn and momentous fact that there are thousands of such people in our land today. Belittling idealism, concerned only with the sordid things of life, failing to see that this war is to preserve the only things that make life worth the living, and to fulfill the mission of the Prince of Peace Himself, they are, in the present crisis, practically giving comfort and aid to the enemy. We know what that thing is, and that thing must be stopped.

To quote Elihu Root, "Every Republican must form a close coalition with every Democrat, to get behind the Administration and stay there, to stop criticising and go to work."

Furthermore, it is our duty to put forth every effort to hasten preparation for war. We should help to bring about the prompt passage of the Universal Service Act, the only fair and democratic way to secure proper military protection. We should inform people as to the great advantages the volunteer has over the drafted man. The physician's office should be a private recruiting station. All men of suitable age and condition should be urged to enlist. If too old or infirm to go ourselves, we can at least send our sons. We should impress upon every one that, in this country, opportunity implies obligation, and privilege demands sacrifice. We should try to teach all men that the most splendid spiritual fact brought out by the war is the moral regeneration of the French people, and bend our every effort to have America emulate the noble example of France.

In conclusion, let us cast our minds into the years to come and imagine that some later Cordell, the future author of the *Medical Annals of Maryland,* has written lines that we are privileged to read:

In 1917 the profession of Maryland came into its own. Among the people, in the hospitals, on the ships and in the camps and in the trenches, the physicians of the state, with rare skill and noble self sacrifice, did their work. Hundreds of Marylanders served with great distinction in all departments of the public medical service. Even more remarkable was the splendid spirit of coöperation shown by the members of the profession toward each other. Those in active service were treated most loyally by those who remained at home. The entire body of medical men showed an exalted patriotism for their country and self effacing devotion to their fellow men. They gave courage to those who faltered, hope to those who despaired, relief and solace to those who suffered during the long bitter war for the liberation of the world. They steadfastly kept up the good fight to the very day of triumph, the day which proclaimed to all men of every land and of every time, that the world was safe for "democracy," and that, in the Providence of God Himself, right is higher than might. In the history of medicine in the state of Maryland, 1917 was the year of the great awakening.

To have this vision, and to see to it, that the dream comes true is the supreme duty of this hour.

A DISCUSSION OF GALL STONE DISEASE

By A. C. Harrison, M.D.[1]
Baltimore

It is said that the less we know of a given disease the more we write and talk about it. If that be so, as it probably is, the complete knowledge of gall stone disease is certainly not yet at hand, for it is one of the most frequently treated subjects on the literature and wherever medical men are gathered together. That there is much misunderstanding of its pathology and hence also of its symtomatology is quite evident. The term "gall stone disease" (cholelithiasis) is incomplete and unsatisfactory in that it conveys the idea that gall stones is the disease whereas it is but one of the many complications which result from infection of the biliary ducts and bladder and most of the conditions and symptoms may be present without gall stones.

The normal physiological functions of the biliary apparatus, the

[1] Read at the 119th annual session of the Medical and Chirurgical Faculty of Maryland, April 25, 1917.

duodeum, pancreas and stomach are essentially interdependent and any pathological disturbance in one of them is sure to be reflected in abnormal functioning of the other three. This is, of course, true of the rest of the intestinal tract, only of less degree, but more especially is it true of the appendix and proximal portion of the large intestine. They are all under direct control of the same group of nerves and all intimately concerned in the same functional process, namely, the digestion and absorption of the various nutriments taken into the body.

It is inevitable then that the symptoms arising from pathological disturbance of any one or more of these organs must present in large measure a mixed picture and represent evidence of disturbance of the function of the entire group. Not until some complication sets in with sufficient severity to stamp the primarily offending organ with the burden of blame can we begin definitely to differentiate between them.

Hence it is no wonder that practically all of the early symptomatology of this entire group of diseases has been translated to mean, "stomach trouble," "dyspepsia," "indigestion," etc., by both the patient and physician. The layman supposes that if there is anything wrong with his digestion it must be his stomach that is at fault, whereas it should be translated to mean that there is something wrong with some one or more of this group of organs. To determine which one, presents a problem which in the early stages is always difficult and sometimes impossible, by any means at our command short of exploration and direct inspection. As a rule, however, the surgical diseases to which these organs are subject, sooner or later disclose themselves by one or more cardinal symptoms by which the primal offending organ can be predicated with reasonable certainty.

In this instance we are to consider what is usually denominated and considered "gall stone disease." It is, however, a bad term, almost a misnomer, in that it conveys the idea that gall stones is the pathological entity, whereas they are merely a consequence, and form only one of the important complications of this disease. A better name would be biliary disease as covering the entire picture rather than a single element in a multiplex condition.

The essential elements in the causation of the biliary picture are, first, infection and second, obstruction to the outflow of bile. Or if you choose you may reverse the importance of these causes, since it

is maintained by some, and with good argument, that infection of the gall bladder or ducts cannot occur unless there is sufficient obstruction to produce at least stagnation of bile. However this may be the important point to keept clear in mind is that the real disease is an inflammatory one due to infection, which infection is greatly aggravated whenever any marked degree of obstruction occurs in any part of the ducts, whether due to stones, kinks, adhesions or pressure outside the ducts. Stones in themselves produce no symptom so long as they lie free in the gall bladder but they become an important element in the production of symptoms so soon as they block the outlet of the gall bladder or pass into some part of the duct system. In as much as they are usually present in infected cases and play by far the most important rôle in the causation of duct obstruction they have assumed the importance of the primal disease instead of being looked up as one—a most important one—of the many complications of biliary disease.

With the proper concept then of the pathological processes of the disease, we may more or less accurately divide the symptomatology into three stages. It must be clearly understood, though, that these stages bear but little relation to time in months or years. In some the three stages are developed in rapid succession; in others the various stages may occupy several or many years.

As a rule one should make no attempt to differentiate between cholecystitis and cholelithiasis. Their primal symptomatology is the same. The first recognizable stage is cholecystitis with or without stones and without marked blocking of the biliary outflow. This is usually a long period during which the symptoms are vague and almost invariably referred to the stomach. During this period the symptoms consist of poor digestion and is expressed by eructations of gas and a feeling of pressure which now and then goes on to mild attacks of pain in the upper abdomen. Occasional nausea, rarely vomiting, and hyperacidity (heartburn), etc. They are all associated with and usually aggravated by the taking of food. Jaundice is never present in this stage. The chief differential feature in this stage is the absence of the cardinal features of other conditions.

The second period is fairly distinct and the diagnosis easily made. In this period pain and soreness are the dominating symptoms and are added to those belonging to the first stage. They are produced by blocking of the gall bladder outlet either by thick mucus, mud or stones which is followed by prompt exacerbations of inflammation,

and often with local peritonitis. Jaundice is but rarely present in this stage and is not at all a characteristic feature.

The third stage is due to repeated attacks such as occur in the second stage. To this stage belong blocking of the common duct and the shriveled gall bladder with wide spread cholangitis and local peritonitis. General adhesions follow involving the stomach, duodenum and colon; causing retention in the stomach and interfering with the motility of the colon. The pancreas is usually involved in the inflammatory process and its function markedly compromised.

Such widespread involvement of the chief digestive organs must necessarily produce a multiplicity of symptoms which are difficult either to translate completely or to correct entirely. The real solution of this phase of the subject is earlier diagnosis and operation. Up to the third stage the operative procedures should be comparatively simple and the results uniformly good. When cases are allowed to go on to the third stage some degree of morbidity will remain in many cases never mind what operation is done or how well it is done. This is due to the permanent crippling of the biliary apparatus and adhesions interfering with the function of the stomach principally.

As to whether the gall bladder should be removed entirely or drained is a subject which depends for its solution upon several very important elements. That less morbidity remains to those who recover from cystectomy than cystostomy seems fairly definitely decided but I believe that the least morbidity will remain when each procedure is best chosen.

It can hardly be questioned that it requires more skill and technical knowledge to do cholecystectomy than cholecystostomy Neither can it be questioned that cholecystectomy *must* necessarily have a greater mortality; that is to say, if cystectomy be invariably performed on all gall bladder cases regardless of conditions, the mortality rate will be greater than cystostomy under similar conditions. The surgeon must be not only equipped with sufficient skill but he must be equipped with that rarest of all surgical gifts, the ability to judge what his patient can safely stand for. To my mind there is unquestionably a place for both of these procedures and he is the master man who possesses the requisite skill and can best determine which is the most suitable procedure for each individual case.

A WORD TO OUR STUDENTS

By Ridgely B. Warfield, M.D.
Baltimore

Today as never before in the lives of most of us the call of the commonwealth to its sons is heard in the land. Devotion to one's country is perhaps the best as it is the simplest definition of patriotism. "Our country," said Cicero, "is the common parent of all," and Byron has sung that "He who loves not his country, can love nothing." But we are reminded that patriotism may be a "blind and irrational impulse unless it is founded on a knowledge of the blessings we are called to secure and the privileges we propose to defend." Yet this love of country more powerful than reason itself if genuine can never be wholly wrong although that doughty tory Samuel Johnson when irritated by the Whig leaders of his time, and especially by certain self-styled patriots, amused and startled the world by saying of patriotism that it was the last refuge of a scoundrel.

In our own country, although every generation in its history has had at some time to answer to the summons to war, we have invariably at the onset met such occasions slowly awakened and ill prepared because no doubt of our very freedom, because in fact of the indisputable controlling power of our people. Said Landor, "Kings play at war unfairly with republics; they can only lose some earth and some creatures they value as little, while republics lose in every soldier a part of themselves." In any event republics as a rule wage war inadequately and we recall that the Romans in conflict abandoned the republican form of government and appointed a dictator to conduct the war.

Our own Republic may be in a similar need and the necessities of war however abnormal are imperative. We are a various people cradled in many lands, assembled from all the corners of the earth, and burdened with the infirmities if endowed with the virtues inherent in popular government. Not lacking in patriotism perhaps but weak in nationalism, and in agreement with Goethe that "in peace patriotism really consists only in this—that everyone sweeps before his own door, minds his own business also learns his own lesson, that it may be well with him in his own house."

Without envy, spurred by no lust of conquest, prospering exceedingly, free from foreign alliance, smugly self sufficient, our people in spite of the many conflicts in our history, are in peace singularly

indifferent or opposed to even a small military establishment. We make heroes of our great soldiers but have little regard for our soldiery and have sedulously seen to it that our army has been kept small and subordinated. For our navy, of which we like to boast that man for man and ship for ship it is the best in the world, it is only of late when by the development of invention, our own, our ocean barriers are broken down, and our coasts in immediate danger of direct and invisible attack, it is only now with certain essential features still unprovided that it is accorded an ungrudging and generous support.

We are a peaceful people, probably the least belligerent of all the great nations of the earth. But we are capable, resourceful and strong and true to our tradition once employed will no doubt put forward our undertaking efficiently and successfully even if at unnecessary cost because of our unpreparedness. Unwillingly perhaps but inevitably the voice of public opinion, for us always articulate, forces us into a mighty conflict involving in large measure all civilization. It could not be otherwise, whatever our hope for the future the doctrine of the right of war still remains and although the fortune of war is always doubtful the one thing at the moment seemingly certain is, that the sovereignty of the peoples of the earth shall prevail. In such contest America must play her part, and since a great country on great occasion can have no such thing as a little war, must play a large part and it may well be as a result that autocracy in government is presently to disappear from the earth. And then perhaps peace, real peace, for as Lloyd George says Democracy means peace and with a democratic Prussia, with Russia free, Europe will no longer live under the menace of the sword. To an American the idea of anything short of civil liberty is intolerable and while many of us believe with Macauley that there are still peoples for whom it would be as absurd to establish popular governments as to abolish all the restraints of a school or to unite all the strait-waistcoats in a madhouse, we also believe with Macauley that even the unfit should be made free in order that they may learn to use their freedom, for only the fool would resolve not to go into the water till he had learned to swim.

Personal liberty is only relative. The amplitude of excursion for most of us is small and to the few to whom it is given to make individual progress on new path the golden hour of invention must terminate like other hours, and even the genius must return to the

cares, the duties, the vexations and the amusements of ordinary life. Even in politics we are limited to choice of sides, for here almost of necessity there exists a party of stability and order and another of progress and reform. We may be "mugwump" of course but only according to Horace Porter if educated beyond our intellect. We are controlled and limited on every side and it is better so. "Real freedom" said Schiller "is only in the land of dreams" and after all the best of freedom does not consist in license to do as one likes but rather in an untrammeled liberty to do as one ought. There is no fit freedom that does not include a sense of service which should be universal and must be individual, every man in proportion to his ability. And that is the lesson for us the sense of personal responsibility, the obligation to do our part in some essential service because our country calls, and to advance the great causes of liberty and humanity. Especially to us is the summons urgent, the need for trained doctors at home and abroad, at the front and in hospitals, and in the community at large, was never so great. If we are astonished at the numbers needed for regimental assignment in our gathering armies, for base hospitals and in the battle lines in France, we bear in mind that our young men admitted to the brotherhood of medicine are already enrolled with a dedication to service and sacrifice for life work immeasurably removed from selfishness and true to tradition in this supreme emergency we do not doubt that without regard to self interest and comfort the call to duty will be answered as always by the members of our calling. And the burden is to be carried where it should be by the young. We elders can help, but in war as in every adventure this is a young man's world.

Today the path may be undefined. Your present entire task is to continue your course and effect your graduation, but the hour for further activity for enlarged endeavor is at hand, and variously at work, and whether in uniform or in the dress of the civilian we can all of us engage with Rufus Choate "to join ourselves to no party that does not carry the flag and keep step to the music of the Union."

SOME MENTAL AND PHYSICAL ASPECTS OF SEXUAL IMPOTENCE

By A. J. Underhill, M.D.[1]
Baltimore

In the time allotted to me and with as extensive a subject as sexual impotence I can do no more than discuss briefly some of its more interesting aspects. Doubtless it was the prolongation of the sexual life rather than added years that gave the greatest incentive to the alchemists in their search for the elixir of life and to Ponce de Leon in his quest of the fountain of eternal youth. It is natural that man should be reluctant to resign himself to the fading of the strongest of human instincts by reason of age. We are not therefore, surprised at the profound shock to the individual who, at the time when his power should be ripest, finds himself sexually helpless. They brood over the condition and usually impute their lack of ambition and failure of achievement in the ordinary affairs of life to this one cause.

The influence of fright and other strong emotions in inhibiting erection is well known. The fact will serve to illustrate the mutual relationship existing between the reflex genital centers in the cord and the psychic centers in the brain. This inter-dependence is indicated on the one hand by the influence on the reproductive organs of thoughts and images which may originate in the cortex or are brought to light by memories, and on the other hand by sexual thoughts or dreams aroused by stimuli incited by the accumulation of secretions in the reproductive glands or by other peripheral stimulation.

The psychic and peripheral centers may however, under certain abnormal conditions act independently. This is seen when sexual desire is present, but the power of erection is absent, and orgasm fails to occur. Again the desire may be present and orgasm take place without an accompanying erection; in these cases the vasodilator centers controlling erection are inhibited. In other instances neither desire nor power are present.

As far as I know there are no authentic data showing the result of total abstention from sexual intercourse in the individual as related to the reproductive act per se; but there is little reason to sup-

[1] Read at the 119th annual meeting of the Medical and Chirurgical Faculty of Maryland, April 26, 1917.

pose that this function like that of every other gland and tissue, nervous and otherwise, of the organism will not suffer if its normal activities in this respect are entirely repressed. A muscle or gland if not exercised each in its own peculiar way atrophies; the mental faculties, if not developed or exercised, become obtunded. On the other hand if carried to excess this like the functions of other parts, results in exhaustion, permanent or otherwise as the case may be. It is common knowledge that the longer the time that elapses without indulgence, the less the inclination and power thereto. I was told by a gentleman who was a deep student, that after a number of years of such abstinence he had lost all sexual power and desire. He denied ever having had any venereal disease and attributed his condition to years of concentrated mental work along a single narrow path, which was far removed from anything of a sexual nature. Certain it is that those employed in purely physical labor are more active sexually.

A not infrequent form of impotence seen is that due apparently to psychical onanism, closely allied to the erotic excitement associated with dream imagination, what Ellis designates as "Sexual daydreams." The victims in these instances are usually imaginative individuals who repeatedly evolve erotic mental pictures. In the beginning the pictures are accompanied by the normal sexual phenomena both peripheral and central. As in course of time these mental pictures, so easily encouraged, grow in intensity and exaggeration, the individual's whole sexual existence becomes centered in his mental sphere. The normal balance between this and the lower reflex centers in the cord is overthrown, and by reason possibly of overactivity of the vasodilator centers controlling erection, exhaustion of this center ensues with consequent failure of erection. Orgasm in this instance may occur without the accompanying erection. That such exhaustion does occur and may be peripheral as well as central in origin is shown by patients who because of pathological conditions involving the posterior urethra and the regions supplied by branches of the hemorrhoidal and prostatic plexuses, are subjected to continual peripheral sexual stimulation, causing frequent erections and orgasms until the latter appear to the exclusion of the former.

I reported a case previously of a man aged 57, unmarried, who complained of "sexual exhaustion." There was no history of venereal disease, in fact he had never had sexual intercourse but had

until two years before I saw him masturbated frequently. During the five months before he appeared for treatment he had had very frequent seminal emissions, as many as eight in twenty-four hours, with little or no sensation and without erection. Examination showed the posterior urethra to be deep purple in color, extremely sensitive to the touch of the probe and bleeding readily from contact with the endoscopic tube. The surface of the mucous membrane of the prostatic urethra was irregular and covered with coarse granulations, and the normal folds were entirely obliterated; the veru montanum was small and cyanotic. There was no infection in the sinus pocularis, seminal vesicles, prostate or other parts of the genito urinary tract. There is no doubt that in this instance, the local condition, brought about by the continual congestion due to masturbation, caused a marked irritability of the posterior urethra leading to constant stimulation of the lower genital centers in the cord with the resulting frequent emissions and exhaustion of the vasomotors concerned with erection.

I believe the impotence of advanced age has as much a psychical as physical foundation. We are taught to believe that it is a necessary accompaniment of age. It is made a subject of jest from our youth and we are resigned to it beforehand as our years advance. We look upon the mellowing of the sexual function from the exuberance which youth attaches to all newly discovered delights, to a mature and rational indulgence of a regular and normal sexual existence as a decrease due entirely to age. This while true to the extent that all metabolic and katabolic processes are slowed with the years, does not mean that the one strongest of all instincts should be eliminated first. At the first imperfect response the doubt arises and the end is hastened. It is a condition which admits of neither doubt nor introspection. It is my observation that those who are victims of neither of these enemies to the masculine libido, such as the unthinking Caucasian and the African, enjoy the longest sexual existence; an existence which is modified it is true, as are other functions with age, but one which is present as long as their general health remains unimpaired.

The influence of the internal secretions on the sexual characteristics has been demonstrated by a number of investigators. Susruta, the Persian, 1000 years B.C. used orchitic substance to revive the waning powers of his clients. This is perhaps, the earliest reference to organotherapy. Claude Bernard experimented on him-

self and others with the same substance. Cushing demonstrated the influence of the pituitary secretions on the secondary sex characteristics. The relations and correlations between the various internal secretions are as yet too little understood to draw definite conclusions therefrom. No doubt some cases of impotence are due to more or less prolonged decrease in the activity of some of these glands or an increase in the activity of others; which may not, however, be sufficient to show on the part of the patient the well marked physical changes so graphically described by investigators. One of my patients aged 37, married, was totally impotent. He advised his wife to secure a divorce and spoke seriously of suicide. Treatment of chronic prostatitis as the result of a preceding attack of gonorrhoea failed to benefit his sexual condition. His general characteristics had not changed, except that his weight had increased twenty pounds. He was apparently normal in all other respects. I gave him the anterior lobe of the pituitary gland. His blood pressure rose to 155 systolic, where it remained for four weeks, then dropped to 140, where it has remained ever since, although he has continued to take the treatment. He is delighted with the result. Three other cases showed no effect of this treatment, which may be said as yet to be entirely empirical.

The prolonged use of drugs, such as alcohol, morphine, cocaine, etc., causes impotence through their depressant effect on the center controlling the nervi irrigenti.

The causes of impotence which we most frequently meet are pathological conditions in the posterior urethra, seminal vesicles, and prostate. These causes may act in two ways; first, where there are active lesions present, such as ulcers, new growths, calcareous deposits, infections, etc., which may result in constant reflex stimulation of the lower vasodilator and ejaculatory centers which in time lead to exhaustion of those centers, and second, as a sequence to infection in which the walls of the posterior urethra may be covered by minute cysts, or where there is infiltration of connective tissue leading to partial anesthesia due to the compression of the nerve endings in these parts. Both are characterized eventually by the loss of the power of erection. The effect of the tonic activity of the vaso constrictors is then seen in the characteristic shrinking withered appearance of the penis which many of these patients show. The first type is characterized in the beginning by frequent pollutions and ejaculations. The second by a gradually diminishing power

of erection. The veru montanum and its vicinity appear to be the points of prediliction for these changes, as they are most marked in this situation. This form of impotence is in the beginning purely organic; i.e., due to an inhibition or exhaustion of the sexual centers as a result of reflexes from the lesions in the genital tract. This, after one or more failures at coitus acquires a psychic element; subsequent attempts add to the degree of the psychic feature, which in some instances disappears with the improvement of the local lesion while in other patients of a more neurotic temperament, it persists for some time after the organic cause is eliminated.

Not a few of these patients are ultimately victims of sexual neurasthenia. This might be expected when structures so intimately bound up with the emotional side of life as the reproductive organs are concerned. It is especially so with the neuropathic type of individual; such a person is given to introspection, and a pain or neurosis, which in the beginning could be traced to a definite lesion in the genito urinary tract, by reason of worry and sleeplessness, all of which add to the nerve exhaustion, develops into a neurasthenia which, localized at first as sexual, becomes generalized as the sympathetic nervous system succumbs to the continually increasing despondency.

It is beyond the scope of this paper, nor would time permit me, to go into a detailed description of the treatment of the various conditions. The description which I have endeavored to give of the mental state of these patients will give a clue to those who are themselves mentally qualified to handle this peculiar condition. Some of them such as those illy mated, whose sexual environment is unfavorable are I fear, beyond our help as physicians; the remedy is social or legal rather than medical. From the others, brilliant results are often obtained.

The local treatment is that of the pathological condition found to be present. The most usual site of this is in the prostatic urethra, which presupposes in many instances, accompanying infection of the prostate and seminal vesicles; although these latter may be and often are the primary source. The changes in the prostatic urethra are connective tissue infiltration, papillomas, cysts, ulcerations, and fissures of the veru montanum, calcareous deposits and chronic inflammatory changes of various sorts. With the exception of connective tissue infiltrations, which are better treated by posterior dilatations, the other lesions should be practically all treated through

the endoscope. Applications should always be made through this instrument, as it is only by this means that injury to healthy parts can be avoided. None of the pain, discomfort and urinary disturbances, which so often follow instillations and other blind modes of treatment of these conditions result when this method is used. Aside from this the delicacy of the nerve endings, which is so essential to the unimpaired preservation of the sexual characteristics and the injury of which gives rise to so many neuroses, is respected.

The patients will improve mentally as a rule as the lesions are eradicated, but we must not lose sight of the fact that as the treatment progresses the psychic education must be conducted coincidentally. Indeed this is one of the most fascinating of the many psychological problems presented in our practice; and it means life; the very infinite beginning of life.

TRACHOMA: WHAT THE GOVERNMENT IS DOING TO ERADICATE IT[1]

By John McMullen, M.D.

Surgeon, United States Public Health Service

Trachoma is an epidemic, communicable disease which raged over Europe during the last century and rendered many thousands of people blind in both the military and civilian population.

It is found extensively in the Appalachian mountains, and especially in Virginia, West Virginia, Kentucky and Tennessee. In a survey of 23 counties in eastern Kentucky 1280 out of 18,000 persons examined were suffering from trachoma or 7 per cent. The type of the disease found was severe and its mutilating effects are seen everywhere. The disease, untreated, lasts practically throughout the life of the individual, a constant discomfort to himself and a menace to his neighbors.

The Public Health Service was requested by the boards of health of several states to undertake the eradication and control of this disease. The plan adopted was the establishing of hospitals in the infected districts where they would be accessible to those needing help. Six hospitals have been established, each with a capacity of about 20 beds and each under the care of a physician, with special training in eye work, with a staff of trained nurses. The patients are told

[1] Abstract from *Southern Medical Journal.*

of the infectious nature of the disease and are instructed in methods of preventing the infection from spreading. House to house visits are also made and an educational campaign is carried on.

During the fiscal year ended June 30, 1916, 3571 homes had been visited and during ten months of this period one nurse rode over 4000 miles on horseback. In sparesly populated districts this nurse often rode 20 to 30 miles in a day. The impairment of vision ranged between slight defects to total blindness. In children, when seen early, the disease usually is readily eradicated, and they can return to school in a short time, but any case of trachoma which had existed for some time was almost certain to have some impairment of vision left.

During the 12 months mentioned, more than 1000 cures had been recorded at the hospitals, but as many of the patients lived at long long distances from the hospitals, who never returned for inspection, it is probable that at least 50 per cent more have been cured. The results obtained by methods adopted by the service in the eradication of trachona show conclusively that this infection can be controlled and the work should be continued until this result is obtained.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

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JOHN EVANS, M.D.

THE MEDICAL SCHOOL WILL CONTINUE ITS COURSES IN SPITE OF THE WAR

The country is gradually awakening to the fact that we are at war and feverish activity is being manifested in preparing for this condition of affairs.

Enormous demands are being made on the medical profession in this emergency and great dislocation of the ordinary course of professional life and activity is bound to occur. The medical schools will also feel the stress acutely. Already the inquiry has been made by the War Department as to whom we could spare from the school and the reply has been sent that with the exception of our full-time teachers and laboratory assistants we would not ask for any exemptions. Owing to our successive mergers we are in a better position to let our teachers go into military service than are many other institutions, as there will still be a sufficient number, who for age or other reasons will be left at home, to conduct the school successfully. There need be no fear, therefore, that the school will be crippled for lack of teachers.

There will be, however, a shortage of internes and medical officers in the hospitals under our care, as many of those who have been appointed have already resigned in order to enter some branch of military service. Already a number have been called out with the National Guard, the Naval Reserve, and the Medical Reserve Corps, and many others are awaiting orders.

The David Streett Memorial Scholarship

It is a source of mortification to us that contributions to this fund have been so slow in coming in. We had thought that the many hundreds of graduates of the Baltimore Medical College would welcome the opportunity to contribute a mite to the memory of their former dean and professor, who did so much to start them on the road to success. A contribution of a few dollars from each living graduate would complete this fund, and form a permanent testimonial to the memory of an honored and beloved teacher and friend. Send in your contributions, boys!

We beg to acknowledge the following subscriptions.

Dr. L. E. Brown, Akron, Ohio, $2.

Dr. Saverio Agnelli, New York, $5.

THE ANNUAL COMMENCEMENT

The annual commencement of the University of Maryland was held on Friday afternoon, June 1, at the Lyric Theatre, Baltimore, before a large and distinguished audience. Samuel Chiles Mitchell, Ph.D., President of Delaware College was orator of the occasion. In a scholarly yet simple address he traced the development of national conscience from narrow isolation to the broad humanity which regulates the motives and the conduct of the world democracies. Germany, late to realize her nationality, has failed to develop along the broad lines of the day. Her attitude towards foreign countries has been regulated merely by self interest, with utter disregard for the rights of others. Therefore, the United States was compelled to throw in her lot with the Allies in order "to make the world safe for democracy." His references to the famous address of President Wilson brought forth frequent bursts of applause. In the great national crisis we are facing the college men are responding nobly to the call for service. President Mitchell struck the solemn note of the hour when he said that no class has ever gone forth from our halls with hearts more deeply stirred with resolves of devoted self-sacrifice to the call of duty.

The order of exercises was as follows:

Order of Exercises

Overture—"Semiramide" ..... *Rossini*

Selection—"Madam Butterfly" ..... *Puccini*

Three Dances from "Henry VIII".....*German*
Excerpts from "Love O' Mike".....*Kern*
1. Music—March, "Aida".....*Verdi*
2. Prayer by Rev. Robert Talbott, D.D.
3. Music—"The Star Spangled Banner"
4. Address to the Graduates—Samuel Chiles Mitchell, Ph.D., President of Delaware College.
5. Music—"I'm a-longing for you".....*Hathaway*
6. Conferring of Degrees by the Provost of the University.
   Candidates for the Degrees "Bachelor of Arts" and "Bachelor of Sciences" presented by the Dean of the Faculty of Arts and Sciences.
   Candidates for the Degree "Doctor of Medicine" presented by the Dean of the Faculty of Physic.
   Candidates for the Degree "Bachelor of Laws" presented by the Dean of the Faculty of Law.
   Candidates for the Degree "Doctor of Dental Surgery" presented by the Dean of the Faculty of Dentistry,
   Candidates for the Degree "Graduate in Pharmacy" presented by the Dean of the Faculty of Pharmacy.
7. Award of Prizes.
8. Music—"March Militaire".....*Schubert*

Prof. Fritz Gaul, Director of Music

Candidates for the Degree "Bachelor of Arts"

Harry James Andrew
James H. Brown Brashears
Carleton Burgess
E. LeCompte Cook
Marion Cox
Ralph Walter Crum
Walter R. Curfman
Samuel Wesley Freeny
William Hartwell Harrison
Cecil Carey Jarman
Joseph Pierce Jewell
Luther Thomas Miles
Alfred Houston Noble
John Wesley Noble
William Hawkes Price
Ernest von Schwerdtner
John Turnbull Spicknall
Henry Laurenson D. Stanford
John Murdock Storm
Guy Douglas Thompson
Alexander Ray Waller
George Noah Weaver

Candidates for the Degree "Bachelor of Science"

H. Hubert Bowers
George Davidson, Jr.
Dunlevy Courtney Downs
Lea Alvin Darley
John Corry Fell
Alton Arnold Gladden
Thomas Reed Holmes
Lorraine Douglas Fields
John Irvin Heise
J. Wilson Knighton
Robert Hoblitzell Maddox
Ira Bryant Talton
William Bennett Tucker
James Carlyle Miller
Hiram Franklin Plummer
Nicholas Dodge Woodward

Candidates for the Degree "Doctor of Medicine"

Armstrong, Fred Francis, Connecticut
Audet, Charles Henry, Massachusetts
Bampfield, Fred J., Canada
Barishaw, Samuel, New Jersey
Bennet, DaCosta F., Maine
Bloom, George Homer, Pennsylvania
Bloom, Lawrence Hughes
Pennsylvania
Bohl, Louis Joseph, New Jersey
Bonner, Octavius B., North Carolina
Brounshas, Ipolitas B., New York
Burrows, Ernest Allen, Massachusetts
Carroll, Henry Roland, Maryland
Champlin, Roy D., New York
Clark, Frederick Harlow, Georgia
Collins, Henry J., Massachusetts
Covey, William Crocket,
West Virginia
Cumin, Milton H., Maryland
Daves, John Thomas, Virginia
Davidson, William Brown,
Rhode Island
Doyle, Joseph F., New Hampshire
Duffy, Vincent P., West Virginia
Ehlers, Reginald G. M., California
Eisenberg, Albert, Maryland
Eleder, Franklin Charles, Maryland
Fay, Daniel E., Maryland
Fernandez, Luis J., Porto Rico
Gallagher, William Edward
New York
Hartman, George Otto, Ohio
Hedrick, Erland H., West Virginia
Hertzog, Francis Carl, Pennsylvania
Holm, Hans Christian, Denmark
Holmes, James, Massachusetts
Huff, Wheeler O., Maryland
Kaufman, Edgar Wayne,
Pennsylvania
Ketcherside, Hilary D., Arizona
Kirk, William Van, West Virginia
Krause, Louis A. M., Maryland
Lasher, Lemuel A., Pennsylvania
Legge, Kenneth D.,
District of Columbia
MacGregor Allan W., Connecticut
McClintock, George Lorenze
Maryland
Machin, Frank H., Maryland
Marston, James Graham, Maryland
Martinez, Jose, Porto Rico
Mason, Frank Ebaugh, Maryland
Miller, Wilfred Porter, New York
Montgomery, Mathison J.,
Pennsylvania
Moran, Arthur B., Connecticut
Moyers, Emmet D., West Virginia
Nohe, Carl Clyde, West Virginia
Nolan, Francis F., Virginia
Norris, J. Edward, Maryland
Ogden, Frank Nevin, Maryland
Payawall, Juan L., Philippine Islands
Peeler, Casper Smith, Florida
Petrulias, George A., Greece
Porterfield, Marvin H., West Virginia
Reddig, Clarence Mansfield,
Pennsylvania
Reitzel, Elbert Coy, North Carolina
Rigau, Gabriel, Porto Rico
Rigby, Samuel B., Utah
Rodriguez, Antonio, Porto Rico
Salan, Joseph, Indiana
Shinn, Herbert Linville,
District of Columbia
Silverstein, Max, New Jersey
Skilling, John Galen, Maryland
Smith, Leroy Henry, Maine
Smith, Leo L., Oklahoma
Stein, Albert, Massachusetts
Tarkington, Grayson E., Arkansas
Thomas, Charles Roberts, Maryland
Vaughan, George W., Maryland
Viewig, Max William, West Virginia
Weber, John J., Maryland
Welch, Robsrt S. G., Maryland
Wheeler, Howard Laurence,
Maryland
Whistler, Edward L., Pennsylvania
White, George Lawrence, Maryland
Williams, William C., North Carolina
Wolff, Carl Otto, North Carolina
Wolford, Roy Azariah, West Virginia
Worrell, Churchill F., Virginia

Prizemen

University Prize—Gold Medal.....Louis A. M. Krause

Certificates of Honor

Edgar Wayne Kaufman
Luis J. Fernandez
Frank Nevin Ogden
Carl Otto Wolff
Franklin Charles Eleder

Candidates for the Degree "Bachelor of Laws"

Warren Nauman Arnold, Maryland
F. Gloyd Awalt, Maryland
Joseph Baker, Maryland
J. Alexander Bartlett, Maryland
Ernest Wesley Beatty, Maryland
Joseph B. Bloch, West Virginia
Victor G. Bloede, Jr., Maryland
Jacob Edgerton Brickwedde, Maryland
Eduardo Gutierrez Canedo, Mexico
Godfrey Child, Maryland
Horce Porter Coles, Pennsylvania
Levin Nock Davis, Maryland
Murray Thompson Donoho, Maryland
J. Ralph Dykes, Maryland
Edgar T. Fell, Maryland
Jesse Fine, Maryland
Hans Froelicher, Jr., Maryland
Emanuel Gorfine, Maryland
John Newell Graham, Maryland
William Meyer Greenstein, Connecticut
Hiram Cleaver Griffin, Maryland
Saul Habelson, Maryland
Waldo Hack, Maryland
Alfred Boucsein Haupt, Maryland.
Charles P. Hershfeld, Jr., Maryland
Andrew Henry Hilgartner, Maryland
Charles Bernard Hoffman, Maryland
Roger Howell, Maryland
Abram Coblens Joseph, Maryland
Paul E. Keedy, Maryland
David Duff Kennedy, Maryland
Irving Mason Kolker, Maryland
Conrad Henry Kratz, Maryland
Malcolm H. Lauchheimer, Maryland
Walter Edward Lee, Maryland
Leonard Liepman, Maryland
James Edwin Lockard, Maryland
James Irvin McCourt, Maryland
William H. Maynard, Maryland
Morris Meyer, Maryland
William L. Murphy, Jr., Maryland
Emory Hamilton Niles, Maryland
Harley McCauley Penn, Maryland
Donald Wayles Powers, Maryland
John Hubner Rice, Maryland
Harry Malcolm Rodman, Maryland
Herman Harry Rosenberg, Maryland
Ellsworth R. Roulette, Maryland
George J. Sellmayer, Maryland
Harry Wroth Shenton, Maryland
Louis M. Silberstein, Maryland
Daniel Earle Smith, Maryland
Benjamin B. Snyder, Maryland
Meyer Steinberg, Maryland
Everett Sherman Stille, Maryland
Alvin Rigbey Whiting, Maryland
Albin Widoff, Maryland
Paul Judson Wilkinson, Maryland
Herman Monroe Wilson. Maryland
John S. L. Yost, Maryland

Prizemen

Abram Coblens Joseph.....First Honor
Malcolm H. Lauchheimer.....Prize Thesis

Candidates for the Degree "Doctor of Dental Surgery"

Milton Bayfield Acorn, Washington
Louis Amos Bennett, Virginia
Edwin M. Betts, New Jersey
Coleman Tompkins Brown, Florida
Charles Harrison Claiborne, Jr., Maryland
James Campbell Clarke, Virginia
Carl Preston Cline, Virginia
Emsley Augustus Coble, North Carolina
Maurice D. Corrigan, Connecticut
Morris Cramer, Maryland
Oscar Ernest Culler, North Carolina
Emmett Paul Dagon, New York
Lawrence A. Demarco, Maryland
George A. Dozois, New Hampshire
Z. Lester Edwards, North Carolina
J. Frederick Emerson, Brazil
Cornelius Berrian Fish, New York
Glenn Badgley Fleek, New York
Owen Philip Gillick, New York
Frank Joseph Glanville, New Jersey
Joseph Jennings Godson, New York
Charles Louis Goldberg, New York
Walter H. Harnisch, New York
Harold Irving Huckans, New York
Joaquin Jimenes Matutez, Porto Rico
Albert H. Kendall, Georgia
Moe Murry Kirschen, New York
DeWitt Bacon Lancaster South Carolina
J. Frank Manley, Massachusetts
Adolphe Nelson Marsh Massachusetts
Leland Horace Miller, Maine
Harold W. Ouderkirk, New York
Eldorus H. Palmer, New York
John Francis Peters, Nicaragua, C. A.
Glenn Hardy Quick, New York
Harold Bayliss Sampson, New York
Ramon Francis Sabater, New Jersey
Pierre Jean Santoni. Porto Rico
Roy P. Smith, Maryland
Durward Lynn Tracy, Vermont
Victoriano A. Vina, Cuba
George E. Waynick, North Carolina
Boris Wechteren, Russia
William George Williams Connecticut
L. Clarke Witten, West Virginia
Earl R. Wray, New York

Prizemen

University Prize—Gold Medal.....DeWitt Bacon Lancaster
Special Honorable Mention.....Carl Preston Cline

Candidates for the Degree "Graduate in Pharmacy"

Bigby, George F.....South Carolina
DeConway, Marshall D.....Maryland
Corbett, Eugene S.....West Virginia
Donaldson, John Eldridge.....Maryland
Goldsmith, Abraham R.....Maryland
Hansen, John Henry.....Maryland
Harp, Joh Henry.....Maryland
Huddleston, Ray C.....West Virginia
Jacobson, Hyman.....Maryland
Jones, H. Pryor.....Tennessee
Kerr, C. Raymond.....Maryland
Lemler, Harry.....Maryland

Leonhardt, Carl O.....Maryland
Lloyd, W. Humphrey.....Pennsylvania
Lyon, George Taylor.....Maryland
Miller, Harold C.....New York
Murphy, Edwin LeCount.....Georgia
O'Neil, Jennie Agatha (Miss).....Virginia
Patterson, Walter J.....Maryland
Paulk, Reason.....Georgia
Richardson, Vaughn Morris.....Maryland
Spittel, Robert John.....Maryland
Startt, William Andrew, Jr.....Maryland
Trachtenberg, Doris (Miss).....North Dakota
Truitt, Edward Byrd.....Virginia
Warfield, S. Roland.....Maryland
Wise, John Evans.....Virginia

Prizemen

Gold Medal for General Excellence.....S. Roland Warfield
Honorable Mention.....E. B. Truitt

Junior Class—Honorable Mention

Gilbert Campbell	W. W. Payant
Joe Hollingsworth	W. F. Voshell

HOSPITAL APPOINTMENTS

The following resident physicians have been appointed for the year 1917–18:

Mercy Hospital: Dr. Edward P. Smith, Superintendent; Dr. L. A. M. Krause, Dr. C. R. Thomas, Dr. G. H. Bloom, Dr. H. C. Carroll, Dr. H. C. Holm, Dr. C. R. Post, Dr. F. X. Kearney, Dr. L. H. Bloom, Dr. L. A. Lasher, Dr. C. C. Nohe, Dr. A. T. Peterson, Dr. F. C. Eleder, Dr. H. D. Ketcherside, Dr. F. E. Mason,

Maryland General Hospital: Dr. J. J. Roberts, Superintendent; Dr. George A. Bawden, Dr. B. H. Growt, Dr. B. M. Jaffe, Dr. C. C. Childs, Dr. F. H. Machin, Dr. C. F. Worrell, Dr. R. A. Wolford, Dr. J. G. Skilling.

University Hospital: Dr. Harry Stein, Superintendent; Dr. Frank Marino, Dr. Charles Reifschneider, Dr. Dorsey P. Etzler, Dr. J. R. Rolenson, Dr. J. T. Daves, Dr. J. Salan, Dr. L. L. Smith, Dr. H. L. Wheeler, Dr. D. F. Bennet, Dr. E. C. Reitzel, Dr. James Holmes, Dr. A. W. MacGregor, Dr. E. H. Hedrick, Dr. E. F. Armstrong, Dr. B. B. Brumbaugh, Dr. I. B. Brounshas, Dr. J. G. Marston.

ITEMS

The following members of Mercy Hospital Staff, 1916–1917, have joined the Medical Reserve Corps of the United States Army: Drs. W. R. McKenzie, Erwin E. Mayer, B. T. Baggott, Thomas K. Galvin, and Arthur F. Peterson. Dr. Richard Shea of the same staff has joined the Navy Medical Service.

Dr. William Hunt Blankenship, P. & S. '93, now located at Pine Bluff, Arkansas, recently spent a few days in Baltimore, visiting Mercy Hospital.

Dr. John J. Bell, P. & S., '01. Erie, Pa., has recently been attending clinics at Mercy Hospital.

The following members of the Faculty and Board of Instruction of the University of Maryland School of Medicine and College of Physicians and Surgeons have been assigned to active duty in the Army at Fort Oglethorpe, Georgia: Captains, Thomas R. Chambers, Arthur M. Shipley and Edgar B. Friedenwald, First Lieutenants, E. H. Hayward, Louis R. Rosenthal, O. V. Linhard.

Caleb Winslow, A.M., who has been Registrar of the Medical School for the past two years, has resigned in order to enter business. We wish him success in his new venture.

Dr. Wm. F. Sappington, class 1901, who is a successful practitioner of Hancock, Md., has sailed for France to take a position in the American Ambulance Corps as physician. His wife accompanies him to become a member of the American Red Cross.

Dr. Charles W. Mitchell was the orator at the annual commencement of Loyola College, held on June 14, 1917, on which occasion the degree of Doctor of Laws was conferred upon him. We congratulate Professor Mitchell heartily on this recognition of his ability and skill as a physician, his erudition as a scholar, and his altruism as a citizen.

Dr. John Holmes Smith was the recipient of the honorary degree of Master of Arts on the occasion of the annual commencement of

St. John's College held on May 31, 1917. Professor Smith was a member of the Class of 1878 but was obliged to leave at the end of his junior year. In this class were also Hon. Jas. P. Gorter, Hon. Henry D. Harlan and Hon. H. Arthur Stump, all of whom became judges of the Supreme Bench of Baltimore City. This recognition of the work and attainments of Professor Smith is worthily bestowed.

Dr. Randolph Winslow attended the meeting of the American Surgical Association held in Boston on May 31 and June 1 and 2, and read a paper on "Madura Foot." Notwithstanding the absence of a number of the most prominent fellows on account of war duty, the meeting was well attended and was a very pleasant and profitable occasion.

Drs. Alexius McGlannan and Randolph Winslow were the delegates representing the Medical and Chirurgical Faculty of Maryland in the House of Delegates of the American Medical Association, at the annual meeting held in New York from June 4–8. Dr. Winslow was reëlected a member of the Judicial Council of the Association for a term of five years.

The Faculty of Physic has authorized Dr. A. C. Harrison to form a hospital unit for service with the troops, which however is not to preclude the formation of other units under the auspices of the University, if it should be desirable to do so.

Dr. John McMullen, U. of M. 1895, United States Public Health Service, was elected second Vice President of the American Medical Association at the recent meeting in New York, in recognition of the efficient work he has done in stamping out trachoma in the mountains of Kentucky, Virginia, West Virginia and Tennessee.

Dr. Frank Martin has been commissioned a major in the Medical Reserve Corps as have been also Drs. A. C. Harrison and R. Tunstall Taylor.

Drs. H. M. Stein, Superintendent of the University Hospital, and Dr. C. R. Edwards, W. H. Toulson, and J. E. Evans, have been commissioned first lieutenants. The two latter have already been assigned to duty.

Dr. E. B. Quillen, U. of M., 1904, of the Mayo Clinic, was in town recently. He holds an important position in the throat and nose department of the Clinic.

Dr. A. G. Rytina, read a paper before the Section on genito-urinary diseases, at the meeting of the A. M. A. in New York, entitled, "Clinical considerations of Verumantanum diseases based on histo-pathology."

Dr. Julius Friedenwald read a paper in the Section on Gastro-enterology, entitled "Chronic diarrheas due to entero-coloric conditions: The medical point of view.

Dr. Harvey G. Beck, of the University of Maryland, has made a great discovery. If you want to know just how much you *should* weigh put down 110; then multiply by 5½ the number of inches by which your height exceeds five feet. Add the result of the multiplication to the original 110, and the sum will be your "ideal weight."—*Ladies Home Journal* July, 1917.

PROGRAM OF 1912 CLASS REUNION, MEDICAL DEPARTMENT, UNIVERSITY OF MARYLAND, BALTIMORE, MAY 31, JUNE 1 AND 2

The following is the program of 1912 Class Reunion:

Thursday, May 31, 1917

12.00 noon. Assembly at Davidge Hall; roll call; business meeting; announcements.

1.00 p.m. Auto trip around Baltimore: Homewood, Guilford, Johns Hopkins Hospital, Gas and Electric Building, Hanover Street Bridge, Curtis Bay Development, Visit to factories.

7.00 p.m. General All Alumni Banquet and Reunion at Hotel Emerson.

Friday June 1, 1917

9.00 a.m. Clinics at University Hospital.
12.00 noon. Luncheon at University Hospital.
1.00 p.m. Clinics at University Hospital or special Hospitals.
4.00 p.m. Commencement Exercises at the Lyric.
7.30 p.m. Class Banquet at Hotel Emerson.

SATURDAY JUNE 2, 1917

10.00 a.m. Meet at Light St. Pier for boat trip down Bay and picnic; inspection of Maryland Steel Company Works; picnic dinner at Tolchester; crabbing and fishing; bathing at Bay Shore.

6.00 p.m. Sea Food Supper at Bay Shore; bowling; boat trip to River View; dancing and music at River View; roller coasting; trip up Bay by moonlight.

SUNDAY JUNE 3, 1917

Trip to New York to attend American Medical Association.

Entertainment Committee: Edward A. Looper, M.D., Chairman; Edward S. Johnson, M.D., Secretary; Moses L. Lichtenberg, M.D., Treasurer; John Henry Traband, M.D.; David Silberman, M.D.; Bertrand Lillich, M.D.

UNIVERSITY OF MARYLAND—GENERAL VIEW

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. II JULY, 1917 No. 2

ANNUAL ANNOUNCEMENT SESSION 1917-1918

CALENDAR.

1917-18

June 1 to September 30.—Daily Clinics at University, Mercy, and Maryland General Hospitals.

September 25.—Examination of Conditioned Students and Examination for Advanced Standing.

October 1.—Regular Session begins.

November 28.—Thanksgiving Recess begins. 6 p.m.

December 3.—Thanksgiving Recess ends. 9 a.m.

December 22.—Christmas Recess begins. 6 p.m.

January 2.—Christmas Recess ends. 9 a.m.

February 22.—Washington's Birthday.

March 27.—Easter Recess begins. 6 p.m.

April 2.—Easter Recess ends. 9 a.m.

June 1.—Commencement.

DEPARTMENTS

OF THE

UNIVERSITY OF MARYLAND.

THE UNIVERSITY is represented by five departments, each having a distinct Faculty of Instruction.

1st. The School of Liberal Arts at Annapolis, Md. St. John's College, Annapolis, Md., founded in 1696, has by affiliation become the Department of Arts and Sciences. The curriculum leads to the degree of Bachelor of Arts or Science.

2d. The School of Medicine in Baltimore, Md. The University of Maryland was established in Baltimore in 1807; The College of Physicians and Surgeons was established in Baltimore in 1872. The consolidated school offers a high grade course in medicine extending over a period of four years, and leading to the degree of Doctor of Medicine.

3d. The School of Law in Baltimore, Md. This school, founded in 1812 and reorganized in 1869, is designed by means of a course of study covering three years to qualify its students for the degree of Bachelor of Laws and for an intelligent practice of the Law.

4th. The School of Dentistry in Baltimore, Md., was founded in 1882, and is designed to teach the art of dentistry as an integral part of the School of Medicine. The course of study leading to the degree of Doctor of Dental Surgery covers a period of three years.

5th. The School of Pharmacy in Baltimore, Md., was established in 1841 as the Maryland College of Pharmacy, and affiliated with the School of Medicine in 1904. The course of study covers two years, and leads to the degree of Graduate in Pharmacy.

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Jos. E. Gichner, M.D.

Associates.

J. E. Poulton, M.D. — Thomas W. Keown, A.B., M.D.
Frank J. Powers, M.D. — J. W. Clift, M.D.

Neurologists.

Chas. G. Hill, A.M., M.D. — Irving J. Spear, M.D.

Associates.

J. Clement Clark, M.D. — J. Percy Wade, M.D.

Laryngologists.

S. K. Merrick, M.D. — John R. Winslow, A.B., M.D.

Obstetricians.

J. M. H. Rowland, M.D. — L. E. Neale, M.D., LL.D.

Associates.

J. K. B. Seegar, M.D. — Stanley H. Gorsuch, M.D.
H. N. Freeman, M.D.

Gynecologists.

W. B. Perry, M.D. — J. Mason Hundley, M.D.

Associates.

S. H. Streett, B.S., M.D. — Maurice Lazenby, M.D.
J. M. Fenton, M.D. — E. H. Hayward, M.D.

Ophthalmologists.

J. Frank Crouch, M.D. Hiram Woods, A.M., M.D.

Associates.

Clyde A. Clapp, M.D. R. D. West, M.D.

Proctologists.

G. Milton Linthicum, A.M., M.D

Associate.

Ernest G. Marr, M.D.

Radiologist.

John Evans, M.D.

Dermatologist.

E. R. Stroebel, A.B., M.D.

Urologist.

W. B. Wolf, M.D.

Orthopedic Surgeon.

Sydney M. Cone, A.B., M.D.

Pathologists.

Wm. Royal Stokes, M.D., Sc.D. Standish McCleary, M.D.
G. Howard White, M.D. H. B. Wylie, M.D.

RESIDENT STAFF.

Joseph J. Roberts, M.D., *Medical Superintendent.*

George A. Bawden, M.D., *Resident Surgeon.*

Robert W. Johnson, M.D., *Resident Surgeon.*

Bowers H. Grout, M.D., *Resident Gynecologist.*

C. Chapin Childs, M.D., *Resident Surgeon for Proctology, Laryngology and Urology.*

B. M. Jaffe, M.D., *Resident Physician.*

Frank Machin, *Resident Obstetrician.*

Assistant Resident Physicians Rotating Service.

Roy A. Wolford, M.D. John G. Skilling, M.D.
Churchill Worrell, M.D. Fred. H. Clark, M.D.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN.

R. Tunstall Taylor, A.B., M.D., *Surgeon-in-Chief.*

Associate Surgeons.

Sydney M. Cone, A.B., M.D. Albertus Cotton, A.M., M.D.
Compton Riely, M.D.

W. H. Daniels, M.D., *Dispensary Surgeon and Anaesthetist.*

C. Reid Edwards, M.D., *Assistant Surgeon and Superintendent.*

George F. Lynch, M.D., *Resident Surgeon.*

Miss Anita Renshaw Presstman, *Instructor in Corrective Gymnastics.*

Miss Mary H. Lee, *Principal of School.*

Miss Ada Mosby, *Kindergartner and Industrial Teacher.*

Roentgenologist.

Henry J. Walton, M.D.

Attending Plastic Surgeon.

John Staige Davis, B.Sc., M.D.

Attending Physician.

A. D. Atkinson, M.D.

Attending Surgeon.

Frank Martin, B.Sc., M.D.

Attending Laryngologists.

John R. Winslow, A.B., M.D. Richard H. Johnston, M.D.

Attending Dermatologist.

John R. Abercrombie, A.B., M.D.

Attending Pathologist.

Howard J. Maldeis, M.D.

Attending Urologist.

Gideon Timberlake. M.D.

LIBRARY
SCHOOL OF MEDICINE

Attending Oculist and Aurist.

WILLIAM TARUN, M.D.

Attending Neurologist.

IRVING J. SPEAR, M.D.

Attending Dentist.

G. E. P. TRUITT, D.D.S.

Consulting Surgeons.

W. S. HALSTED, A.B., LL.D., B.Sc., M.D. J. M. T. FINNEY, A.B., M.D.
RANDOLPH WINSLOW, A.M., M.D., LL.D. ARCHIBALD C. HARRISON, M.D.

Consulting Physicians.

THOMAS R. BROWN, A.B., M.D. LLEWELLYS F. BARKER, A.B., M.D.
THOMAS B. FUTCHER, A.B., M.D. CHARLES W. MITCHELL, A.M., M.D.
WILLIAM S. THAYER, A.B., M.D.

Consulting Oculist.

HIRAM WOODS, A.B., M.D.

Consulting Laryngologist.

JOHN N. MACKENZIE, A.B., M.D.

STAFF OF THE CITY HOSPITAL AT BAYVIEW.

THOMAS R. BOGGS, S.B., M.D., *Physician-in-Chief.*

ARTHUR M. SHIPLEY, M.D., *Surgeon-in-Chief.*

GORDON WILSON, M.D., *Physician-in-Chief to the Municipal Hospital for Tuberculosis.*

ADMONT CLARK, M.D., *Pathologist.*

THOMAS P. SPRUNT, M.D., *Acting Physician-in-Chief.*

FRANK S. LYNN, M.D., *Acting Surgeon-in-Chief.*

CONSULTING STAFF.

Ophthalmologist.

JAMES J. MILLS, M.D.

Otologist.

WILLIAM TARUN, M.D.

Gynecologists.

EDWARD H. RICHARDSON, M.D. HUGH W. BRENT, M.D.

Urologists.

GIDEON M. TIMBERLAKE, M.D. JOHN T. GERAGHTY, M.D.

Laryngologist.

FRANK DYER SANGER, M.D.

Pediatrician.

JOHN RUHRÄH, M.D.

Neurologist.

HENRY M. THOMAS, M.D.

ST. ELIZABETH HOME.

Attending Physician.

EDGAR B. FRIEDENWALD, M.D.

Surgeon.

ALEXIUS MCGLANNAN, M.D.

Neurologist.

A. C. GILLIS, M.D.

STAFF OF NURSERY AND CHILD'S HOSPITAL.

Attending Physicians.

CHAS. F. BEVAN, M.D. EDGAR B. FRIEDENWALD, M.D.

JOHN RUHRÄH, M.D.

Consulting Physicians.

WM. S. BAER, M.D. WM. F. LOCKWOOD, M.D.

ALBERTUS COTTON, M.D.

Oculist and Aurist.

HARRY FRIEDENWALD, M.D.

Superintendent.

MISS ELIZABETH M. STONE.

ST. VINCENT'S INFANT ASYLUM.

Visiting Physicians.

Charles O'Donovan A.M., M.D.
J. E. Poulton, M.D.
J. F. Powers, M.D.
Eugene H. Hayward, M.D.
J. K. B. E. Seegar, M.D.
L. C. M. Parker, M.D.

Visiting Surgeons.

Frank Martin, B.S., M.D.
R. B. Warfield, M.D.
John D. Blake, M.D.
Alexius McGlannan, M.D.

Visiting Oculists and Aurists.

J. Frank Crouch, M.D.
Clyde E. Clapp, M.D.

Visiting Orthopedic Surgeons.

Sydney M. Cone, A.M., M.D.
Compton Riely, M.D.

Visiting Proctologist.

G. Milton Linthicum, A.M., M.D.

Pathologists.

Sydney M. Cone, A.M., M.D.
Alexius McGlannan, M.D.

Resident Interne.

James P. Rosseau

MARYLAND LYING-IN ASYLUM (MATERNITÉ)

Visiting Obstetricians.

George W. Dobbin, M.D.
Charles E. Brack, M.D.
Glenn M. Litsinger, M.D.
Maurice Lazenby, M.D.

Resident Obstetrician.

Carl C. Nohe, M.D.

MARYLAND LYING-IN HOSPITAL.

Obstetricians.

J. M. H. Rowland, M.D.
L. E. Neale, M.D.

Associates.

J. K. B. E. Seegar, M.D.
H. S. Gorsuch, M.D.
H. N. Freeman, M.D.

Resident Obstetrician.

Frank H. Machin, M.D.

UNIVERSITY HOSPITAL DISPENSARY STAFF.

JOHN HOUFF, M.D., *Dispensary Physician.*

Medicine.

H. D. MCCARTY, M.D., *Chief of Clinic.*

S. R. CLARKE, M.D.
R. C. METZEL, M.D.
EUGENE KERR, M.D.
M. S. SCHIMMEL, M.D.
E. L. COOK, M.D.
HORACE BYERS, M.D.

Surgery.

R. P. BAY, M.D., *Chief of Clinic.*
FRANK S. LYNN. M.D., *Associate Chief, of Clinic.*

T. L. PHILLIPS, M.D.
E. S. PERKINS, M.D.
CHARLES R. EDWARDS, M.D.
H. M. FOSTER, M.D.

Children.

JOSE L. HIRSH, A.B., M.D., *Professor of Clinical Pediatrics.*
G. CARROLL LOCKARD, M.D., *Chief of Clinic.*

J. A. SKLADOWSKY, M.D.
NORBERT C. NITSCH, A.B., M.D.
C. L. JOSLIN, M.D.
J. S. FENBY, M.D.

Women.

W. K. WHITE, M.D.
R. L. MITCHELL, M.D.
J. A. SKLADOWSKY, M.D.
R. G. WILLSE, M.D.
L. H. DOUGLAS, M.D.
D. SILBERMAN, M.D.

Eye and Ear.

WM. TARUN, M.D., *Chief of Clinic.*

E. A. LOOPER, M.D.
H. BUTLER, M.D.
G. MURGATROYD, M.D.

Skin.

JOHN R. ABERCROMBIE, A.B., M.D., *Chief of Clinic.*

L. N. KETRON, A.B., M.D.,
H. M. ROBINSON, M.D.

Stomach.

J. HARRY ULLRICH, M.D.

Nose and Throat.

H. C. DAVIS, M.D., *Chief of Clinic.*

M. L. LICHTENBERG, M.D.
E. G. BREEDING, M.D.

Orthopedics.

R. TUNSTALL TAYLOR, A.B., M.D., *Professor of Orthopedic Surgery.*
COMPTON RIELY, M.D., *Chief of Clinic.*
W. H. DANIELS, M.D.

Genito-Urinary.

GIDEON TIMBERLAKE, M.D., *Professor of Genito-Urinary Diseases.*
A. J. UNDERHILL, M.D., *Chief of Clinic.*
W. H. COUNCILL, M.D. WM. BLANEY, M.D.

Neurology.

IRVING J. SPEAR, M.D., *Professor of Neurology.*
G. M. SETTLE, M.D., *Chief of Clinic.*
B. PUSHKIN, M.D. J. A. SKLADOWSKY, M.D.

Rectal.

G. MILTON LINTHICUM, *Professor of Diseases of Rectum and Colon.*
J. D. REEDER, M.D., *Chief of Clinic.*

Tuberculosis.

J. E. O'NEILL, M.D., *Chief of Clinic.*

Obstetrics.

L. H. DOUGLAS, M.D., *Chief of Clinic.*
H. N. FREEMAN, M.D.

X-ray Department.

HENRY J. WALTON, M.D., *Roentgenologist.*

MISS FRANCES MEREDITH, *Chief Nurse, Out-Patient Department.*

DISPENSARY STAFF OF MERCY HOSPITAL.

Physician in Charge.

B. S. HANNA, M.D.

Surgery.

E. H. HUTCHINS, M.D. H. M. FOSTER, M.D.
A. M. EVANS, M.D. F. L. JENNINGS, M.D.
A. F. HUTCHINS, M.D.

Genito-Urinary Surgery.

ANTON G. RYTINA, M.D.
WM. J. TODD, M.D. A. E. GOLDSTEIN, M.D.
A. L. TUMBLESON, M.D. HARRIS GOLDMAN, M.D.

Orthopedic Surgery.

ALBERTUS COTTON, M.D. HARRY L. ROGERS, M.D.

Medicine.

HARVEY G. BECK, M.D. W. C. COPPAGE, M.D.
B. S. HANNA, M.D. A. C. SORENSON, M.D.

Diseases of Stomach.

JULIUS FRIEDENWALD, M.D.
T. FRED'K LEITZ, M.D.
JOHN G. STIEFEL, M.D.
THEODORE MORRISON, M.D.
L. KRAUSE, M.D.

Nervous Diseases.

A. C. GILLIS, M.D.
G. F. SARGENT, M.D.
OTTO H. DUKER, M.D.
D. D. V. STUART, JR., M.D.
G. B. WOLFE, M.D.
J. W. V. CLIFT, M.D.

Diseases of Children.

C. L. JOSLIN, M.D.
F. N. HILLIS, M.D.
FRANK AYD, M.D.

Diseases of Women.

A. SAMUELS, M.D.
EMIL NOVAK, M.D.
J. G. ONNEN, M.D.
C. F. J. COUGHLIN, M.D.
A. J. GILLIS, M.D.

Diseases of Nose and Throat.

FRANK DYER SANGER, M.D.
G. W. MITCHELL, M.D.
W. F. ZINN, M.D

Diseases of Eye and Ear.

HARRY FRIEDENWALD, M.D.
H. K. FLECKENSTEIN, M.D.
JOS. I. KEMLER, M.D.

Neuro-Otology.

J. W. DOWNEY, JR., M.D.

Diseases of the Rectum.

C. F. BLAKE, M.D.

Diseases of Skin.

MELVIN ROSENTHAL, M.D.
B. V. KELLY, M.D.

MARYLAND GENERAL HOSPITAL DISPENSARY STAFF.

Committee in Charge.

CLYDE A. CLAPP, M.D., *Chairman.*
MAURICE LAZENBY, M.D.
ARTHUR G. BARRETT, M.D.

Medicine and Children.

J. W. V. CLIFT, M.D.
S. D. SHANNON, M.D.
FRANK J. POWERS, M.D.

Surgery.

Arthur G. Barrett, M.D. J. D. Bubert, M.D.
J. C. Frey, M.D.

Nose and Throat.

George W. Murgatroyd, M.D. Wm. Caspari, M.D.

Eye and Ear.

Clyde A. Clapp, M.D. Reginald D. West, M.D.
J. E. Brumback, M.D.

Gastro-Enterology and Proctology.

E. B. Freeman, M.D. Ernest G. Marr, M.D.

Urology.

R. B. Kenyon, M.D. J. B. Culverhouse, M.D.

Gynecology.

Maurice Lazenby, M.D. J. M. Fenton, M.D.
J. M. Denny, M.D.

Obstetrics.

H. N. Freeman, M.D. H. S. Gorsuch, M.D.
Eugene H. K. Zeller, M.D.

Dermatology.

E. R. Strobel, M.D.

Neurology.

Irving C. Spear, M.D. George M. Settle, M.D.
A. C. Gillis, M.D. M. Feldman, M.D.

MATRICULATES, UNIVERSITY OF MARYLAND, SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, 1916–1917.

POST-GRADUATES AND SPECIAL STUDENTS.

Name	State
Philip B. Becker	*New York*
* Arthur E. S. Casey	*Connecticut*
* George Edward Clark, M.D.	*New York*
Alfredo Comas Calero	*Cuba*
Michael Joseph Czapp	*Pennsylvania*
* John M. DeWeese, A.B., M.D.	*Ohio*
* George L. Faucett, B.S., M.D.	*Alabama*
* William James Fulton	*Maryland*
* Benjamin Harrison Gibson, M.D.	*Georgia*
* Manuel Gonzalez	*Porto Rico*
* F. M. Gordy, M.D.	*Georgia*
* Thomas Arthur Griffin, M.D.	*North Carolina*
* Francis E. Henry, M.D.,	*Pennsylvania*
* Horace L. Hulett, M.D.	*New York*
* Leo Huth, M.D.	*Ohio*
* Donald Swett Knowlton	*Maine*
* F. Lahmers, M.D.	*Ohio*
* Royce Reed Long, A.B.	*Maryland*
* Carlos E. Rivas Leiva	*Cuba*
* L. J. McCusker	*Massachusetts*
* Alfredo D. Martinez	*Porto Rico*
* Edward William Mulligan	*Rhode Island*
Keiki Nagatsuka	*Japan*
* Hugh W. Neel, M.D.	*West Virginia*
* W. T. Owens, M.D.	*West Virginia*
J. A. Parlade, Phar.D.	*Cuba*
* Davis Robertson	*North Carolina*
Pedro Rosario, Jr.	*Porto Rico*
* Fred Collins Sabin	*New York*
* C. N. Slater, M.D.	*West Virginia*
* J. E. Springer, M.D.	*Ohio*
George W. Todd, Jr.	*Maryland*
S. J. Wu, Phar.D.	*China*

33

* Not in attendance the entire session.

FOURTH YEAR CLASS.

Name	State
* Andrew, Clarence P., A.B.	*South Africa*
Armstrong, Fred Francis	*Connecticut*
Audet, Charles Henry	*Massachusetts*
Baldwin, Jr., Anton	*Maryland*
Bampfield, Fred J.	*Canada*
Barishaw, Samuel	*New Jersey*
Bennet, DaCosta F., A.B.	*Maine*
Bloom, George Homer	*Pennsylvania*
Bloom, Lawrence Hughes	*Pennsylvania*
Bohl, Louis Joseph	*New Jersey*
Bonner, Octavius B.	*North Carolina*
Bronnshas, Ipolitas B.	*New York*
Burrows, Ernest Allen	*Massachusetts*
Byrnes, Thomas Eusebius	*Massachusetts*
Carlin, Edward J.	*New Jersey*
Carroll, Harry Roland	*Maryland*
Champlin, Roy D.	*New York*
Clark, Frederick Harlow	*Georgia*
Collins, Henry J.	*Massachusetts*
Covey, William Crocket	*West Virginia*
Cumin, Milton H.	*Maryland*
Daves, John Thomas	*Virginia*
Davidson, William Brown	*Rhode Island*
Donahue, Cornelius Louis	*New York*
Doyle, Joseph F.	*New Hampshire*
Duffy, Vincent P.	*West Virginia*
Eby, John Cyril, Phar.D.	*Maryland*
Ehlers, Reginald G.M., M.D.V.	*California*
Eisenberg, Albert	*Maryland*
Eleder, Franklin Charles	*Maryland*
Fay, Daniel E., Phar.D.	*Maryland*
Fernandez, Luis J.	*Porto Rico*
Frost, Nugent George	*Massachusetts*
Gallagher, William Edward	*New York*
* Gieson, John Jacob, A.B.	*Virginia*
Hartman, George Otto	*Ohio*
Hedrick, Erland H.	*West Virginia*
Hertzog, Francis Carl	*Pennsylvania*
Holm, H. C., M.S; Ph.B.	*District of Columbia*
Holmes, James	*Massachusetts*
Howell, James Edward, B.S.	*North Carolina*
Huff, Wheeler O.	*Maryland*
Kaufman, Edgar Wayne	*Pennsylvania*
Ketcherside, Hilary D.	*Arizona*

Name	State
* Kimball, Philip Albert	*New Hampshire*
Kirk, William Van	*West Virginia*
Koprivich, Milan I. S.	*Serbia*
Krause, Louis A .M	*Maryland*
Lasher, Lemuel A.	*Pennsylvania*
Legge, Kenneth D.	*District of Columbia*
MacGregor, Allan W.	*Connecticut*
McClintock, George Lorenze.	*Maryland*
Machin, Frank H.	*Maryland*
Maddison, Walter E.	*Utah*
Marston, James Graham, A.B.	*Maryland*
Martin, John Willis	*Maryland*
Martinez, Jose	*Porto Rico*
Mason, Frank Ebaugh	*Maryland*
* Merrick, Frank X.	*New York*
Michael, M. Harlan	*Maryland*
Miller, Wilfred Porter, M.E.	*New York*
Montgomery, Mathison J.	*Pennsylvania*
Moran, Arthur B.	*Connecticut*
Moyers, Emmet D.	*West Virginia*
None, Carl Clyde	*West Virginia*
Nolan, Francis F.	*Virginia*
Norris, J. Edward	*Maryland*
Ogden, Frank Nevin	*Maryland*
Payawall, Juan L., A.B.	*Philippine Islands*
Peeler, Casper Smith, B.S.	*Florida*
Peery, Clarence Eugene	*Virginia*
Petrulias, George A.	*Greece*
Porterfield, Marvin H.	*West Virginia*
Reddig, Clarence M., Ph.B.	*Pennsylvania*
Reitzel, Elbert Coy	*North Carolina*
Rigau, Gabriel	*Porto Rico*
Rigby, Samuel B., A.B.	*Utah*
Rodriguez, Antonio	*Porto Rico*
Salan, Joseph	*Indiana*
Shinn, Herbert L.	*District of Columbia*
Silverstein, Max	*New Jersey*
Skilling, John Galen	*Maryland*
Smith, Leroy Henry	*Maine*
Smith, Leo L.	*Oklahoma*
Stein, Albert	*Massachusetts*
Tarkington, Grayson E.	*Arkansas*
Thomas, Charles Roberts, A.B.	*Maryland*
Thomas, Kelly Clifton.	*North Carolina*
Tierney Edward Francis.	*Rhode Island*
Vaughan, George W.	*Maryland*
Viewig, Max William, Ph.G.	*West Virginia*
Weber, John J., A.B.	*Maryland*
Welch, Robert S. G.	*Maryland*
Wheaton, Harry W.	*New York*
Wheeler, Howard Laurence.	*Maryland*
Whistler, Edward L., A.B.	*Pennsylvania*
White, George Lawrence	*Maryland*
Williams, William C.	*North Carolina*
Wolff, Carl Otto, A.B.	*North Carolina*
Wolford, Roy Azariah	*West Virginia*
Worrell, Churchhill F.	*Virginia*
Yost, Fielding, E. L.	*West Virginia*

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* Not in attendance the entire session.

THIRD YEAR CLASS.

Name	State
Allen, Eustace Andrew, A.B.	*Alabama*
Anderson, Lano W.	*South Carolina*
Bird, LaRue	*Pennsylvania*
*Bonner, John Bryan	*North Carolina*
Borror, William Bruce	*West Virginia*
Briscoe, Everard	*Maryland*
Bross, Samuel I.	*Maryland*
Cafritz, Edward A.	*District of Columbia*
Clark, Harold Chandler, Ph.G.	*New York*
Cooke, Grady Carlyle	*North Carolina*
Coombs, Forrest P., B.S.	*West Virginia*
Coulon, Frank N.	*New Hampshire*
Dalton, William Bennett.	*North Carolina*
Darby, W. Arthur	*Maryland*
Deliz, Ramon C.	*Porto Rico*
Diebolder, Oscar A.	*Maryland*
Ephraim, Myer	*Maryland*
Fazenbaker, Anderson J.	*Maryland*
Flippin, Eugene Littlejohn.	*North Carolina*
Forbes, Sherman Balch	*Florida*
Frizzelle, John Lloyd	*North Carolina*
Gavronsky, Samuel	*New Jersey*
Gore, Michael Alvord, A.B.	*Maryland*
Grove, George Hedges	*Maryland*
Hart, Crawford Avery, A.B.	*North Carolina*
Heiskell, Edgar Frank	*West Virginia*
Hunter, Dewitt T.	*North Carolina*
Johnson, Harley Monroe.	*South Carolina*
Joyner, James Craig	*North Carolina*
Kellam, John Wise	*Virginia*
Kocevar, Martin Francis	*Pennsylvania*
LaRue, Raymond T.	*Ohio*
Lynch, Raymond A.	*West Virginia*
McDade, Brodie Banks	*North Carolina*
McDowell, John S.	*New York*
Macke, Clarence Edgar	*Maryland*
Miller, Daniel	*Maryland*
Morgan, Zachariah Raphael	*Maryland*
Pinkerton, Frank Coulson	*Maryland*
Putterman, Morris Nathan	*Maryland*
Reynolds, Paul Emerson	*Maryland*
Ridgely, Irwin Oliver, A.B.	*Maryland*
Robles, Charles Walter	*Florida*
Rousseau, James Parks	*North Carolina*

Name	State
Sabiston, Frank	*North Carolina*
Seal, Gratta Earle	*West Virginia*
Shaffer, Stewart S.	*Pennsylvania*
Shaver, William T.	*North Carolina*
* Shayt, Louis	*Maryland*
Sindler, Joseph	*Maryland*
Sledge, Robert F., B.S.	*North Carolina*
Speake, Thomas Carlyle, A.B.	*Maryland*
Spoon, Jr., Samuel C.	*North Carolina*
Sweet, Alfred Norton	*Connecticut*
Taylor, Joseph Russell	*Pennsylvania*
Thompson, Theodore F.	*New Jersey*
Thorner, John George	*West Virginia*
Trippett, Jr., Lemuel H., A.B.	*West Virginia*
Walter, Ralph Somers	*Pennsylvania*
Warlick, Jr., Henry C.	*Mississippi*
White, S. Howard, A.B.	*South Carolina*

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* Not in attendance the entire session.

SECOND YEAR CLASS.

Name	State
Abbott, Lyman Sinclair	*Missouri*
Adams, Edgar Paul	*Maryland*
Alagia, Damian Paul	*Maryland*
Alexis, Joseph A.	*Pennsylvania*
Barker, Frank Talmage	*Florida*
Beachley, Ralph Gregory	*Maryland*
Boone, Jr., Walter	*South Carolina*
Brown, Jr., James	*North Carolina*
Buchness, John Adam	*Maryland*
Campbell, Arthur Thomas	*Connecticut*
Chesebro, Charles C.	*New York*
* Cohn, Alexander	*Maryland*
* Conrad, Lewis S.	*New York*
Crego, Herbert Alexander	*Massachusetts*
Davis, Chas. Willson, A.B.	*North Carolina*
Davis, John Edward	*Virginia*
Deakyne, Walter Clifton	*Delaware*
Dye, Frank Ganes	*New York*
Flaherty, John Joseph	*Connecticut*
Fort, Wetherbee	*Maryland*
Franceschi, Francisco	*Porto Rico*
Geyer, William Glenn	*Maryland*
Goldsborough, Charles R., A.B.	*Maryland*
Hartenstein, Albert G., Ph.G.	*West Virginia*
Helsabeck, Chester Joseph.	*North Carolina*
Horine, Cyrus Flook	*Maryland*
Ingram, W. Hawkins	*Maryland*
Isaacs, Raphael Harris	*Maryland*
Jacobowitz, Aaron	*Pennsylvania*
John, Baxter Schooley	*Virginia*
Lonergan, Paul B.	*Pennsylvania*
Lumpkin, Morgan LeRoy, Ph.B.	*Maryland*
McElwain, Howard Byer	*Pennsylvania*
McLeod, Walter Guy	*North Carolina*
Macis, Salvador A., A.B.	*Nicaragua*
Mallett, Victor Joseph	*New York*
Mayoral, Jr., Joaquin	*Cuba*
Morales, Jr., Pablo	*Porto Rico*
Murphy, Benjamin Russell	*New Jersey*
Neidermyer, John William	*West Virginia*
Owens, William Duncan	*Georgia*
* Pilson, Robert A.	*West Virginia*
* Quintero, Ernesto	*Porto Rico*
Reynolds, Roy Rex	*Virginia*
Romine, Carl Chester	*West Virginia*
Shaw, W. McLaurin, A.B	*South Carolina*
Stansbury, Fred	*West Virginia*
Stewart, Charles Wilbur	*Maryland*
Tiemeyer, Arthur Charles	*Maryland*
Timko, Louis M.	*Ohio*
Tull, Myron G., A.B.	*Maryland*
Vasquez, Raphael S.	*Porto Rico*
White, Thomas Francis	*Delaware*
Whitted, Walter Puryear	*North Carolina*
Wild, Albert	*Connecticut*
Wright, Harold Edson	*New York*

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* Not in attendance the entire session.

FIRST YEAR CLASS.

Name	State
Artigiani, Philibert, Phar.D.	*Maryland*
Aubrey, John Forsyth	*Maryland*
Banvard, Navy F. X.	*New Jersey*
* Barry, Edward Leo	*Rhode Island*
Bernabe Adolfo	*Porto Rico*
Billingslea, Charles Levine	*Maryland*
Bolewicki, Peter Edward, A.B.	*Maryland*
Broadrup, Earl Edgar	*Maryland*
Broll, Harry R.	*Maryland*
Brumback, Lynn Hamilton	*Virginia*
Bubert, Howard M.	*Maryland*
Burton, Claud Carter, B.S.	*Kentucky*
Cardona, de, Nestor Bernardo,	*Porto Rico*
Castro, Andres Gutierrez, A.B.,	*Costa Rica*
Clarken, Joseph A.	*New Jersey*
* Conniff, John J.	*West Virginia*
* Davis, Charles L.	*West Virginia*
Dobihal, Louis Charles	*Maryland*
Doctor, Rattansha M.	*India*
Erwin, John Joseph	*West Virginia*

Name	State
Fahndrich, Carl Gustav	*Maryland*
Finney, Roy Pelham	*Virginia*
Fleck, Roland F.	*Pennsylvania*
Ginsburg, Leon	*Maryland*
Gleason, Joseph Henry	*Massachusetts*
Gonzalvo, F. A., A.B.	*Dominican Republic*
Holden, F. Allan	*Maryland*
Hooper, Zebulon Vance	*North Carolina*
Hutnick, Stephen	*Pennsylvania*
Jackvony, Albert H., Phar.D.,	*Rhode Island*
Janer, Angel	*Porto Rico*
* Jones, Bennie R., B.S., D.D.S.	*Maryland*
Kane, Leo Vincent, A.B.	*New Jersey*
Kaufman, Edward Leo	*West Virginia*
* Kelly, Harold E.	*Virginia*
Kenure, James Thomas, B.S.	*Connecticut*
Kinney, James P.	*New York*
Knotts, Earl Paul, B.S.	*Maryland*
Kourey, Salem William	*Iowa*
* Kramer, John E.	*Maryland*
Lombard, Nicholas T., Phar.D.	*Maryland*
Lueders, Jr., William	*Maryland*
McGill, Waldo Knox, A.B.	*South Carolina*
Marshall, Charles Benton.	*West Virginia*
Martin, William Francis	*North Carolina*
Matthews, Stanley William,	*North Carolina*
Meadows, Stanley Joseph	*Maryland*
Medairy, George Curtis	*Maryland*
Medcalf, John William	*Ohio*
* Mercier, Albin Scott, A.B.	*Maryland*
Morris, Byron McNeely	*Pennsylvania*
Navarro, Armando Silva	*Porto Rico*
Pacienzo, Frank Anthony	*Maryland*
Perry, Clayton Charles	*Pennsylvania*
Pessagno, Daniel J., A.B.	*Maryland*
* Picker, Adolph	*Germany*
Ponte, Jr., Joseph Perry	*Massachusetts*
Pugh, James Clyde	*Ohio*
Quevedo, de, Rafael Garcia	*Porto Rico*
Quinones, Norberto A.	*Porto Rico*
Reddington, Lawrence Joseph.	*Maryland*
Reese, John G. M.	*Maryland*
Richardson, Ray W.	*Maryland*
Rigney, Jr., Lawrence Joseph.	*Delaware*
Schoenheit, Edward W.	*North Carolina*
Sheppard, H., Jr.,	*North Carolina*
Skaggs, James William	*West Virginia*
Smith, Frederick Bruce	*Maryland*
Stein, Nathan	*New York*
Tolson, Jr., Howard Lee	*Maryland*
Ward, Edwin J.	*Maryland*
Warren, John Freeman	*New York*
Wells, George Edward	*West Virginia*
* Willinger, Lawrence J.	*Maryland*
Wilson, Harold Lee, A.B.	*Delaware*
Wissig, George Leroy	*Maryland*
* Woodhull, Rollin Y.	*Oklahoma*
Woodruff, Julian Smith	*North Carolina*
Zinberg, Israel Saul	*Maryland*

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* Not in attendance the entire session.

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND, SESSION OF 1916–17.

Department of Arts and Sciences (St. John's College)	194
Department of Medicine	331
Department of Law	425
Department of Dentistry	207
Department of Pharmacy	95
Training Schools for Nurses	228
Total	1480

GRADUATES UNIVERSITY OF MARYLAND, SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, JUNE 1, 1917.

Name	State
Armstrong, Fred Francis	*Connecticut*
Audet, Charles Henry	*Massachusetts*
Bampfield, Fred J.	*Canada*
Barishaw, Samuel	*New Jersey*
Bennet, DaCosta F.	*Maine*
Bloom, George Homer	*Pennsylvania*
Bloom, Lawrence Hughes	*Pennsylvania*
Bohl, Louis Joseph	*New Jersey*
Bonner, Octavius B.	*North Carolina*
Brounshas, Ipolitas B.	*New York*
Burrows, Ernest Allen	*Massachusetts*
Carroll, Henry Roland	*Maryland*
Champlin, Roy D.	*New York*
Clark, Frederick Harlow	*Georgia*
Collins, Henry J.	*Massachusetts*
Covey, William Crocket	*West Virginia*
Cumin, Milton H.	*Maryland*
Daves, John Thomas	*Virginia*
Davidson, William Brown	*Rhode Island*
Doyle, Joseph F.	*New Hampshire*
Duffy, Vincent P.	*West Virginia*
Ehlers, Reginald G. M.	*California*
Eisenberg, Albert	*Maryland*
Eleder, Franklin Charles	*Maryland*
Fay, Daniel E.	*Maryland*
Fernandez, Luis J.	*Porto Rico*
Gallagher, William Edward	*New York*
Hartman, George Otto	*Ohio*
Hedrick, Erland H.	*West Virginia*
Hertzog, Francis Carl	*Pennsylvania*
Holm, Hans Christian	*Denmark*
Holmes, James	*Massachusetts*
Huff, Wheeler O.	*Maryland*
Kaufman, Edgar Wayne	*Pennsylvania*
Ketcherside, Hilary D.	*Arizona*
Kirk, William Van	*West Virginia*
Krause, Louis A.M.	*Maryland*
Lasher, Lemuel A.	*Pennsylvania*
Legge, Kenneth D.	*District of Columbia*
MacGregor, Allan W.	*Connecticut*
McClintock, George Lorenze	*Maryland*
Machin, Frank H.	*Maryland*
Marston, James Graham	*Maryland*
Martinez, Jose	*Porto Rico*
Mason, Frank Ebaugh	*Maryland*
Miller, Wilfred Porter	*New York*
Montgomery, Mathison J.	*Pennsylvania*
Moran, Arthur B.	*Connecticut*
Moyers, Emmett D.	*West Virginia*
Nohe, Carl Clyde	*West Virginia*
Nolan, Francis F.	*Virginia*
Norris, J. Edward	*Maryland*
Ogden, Frank Nevin	*Maryland*
Payawall, Juan L.	*Philippine Islands*
Peeler, Casper Smith	*Florida*
Petrulias, George A.	*Greece*
Porterfield, Marvin H.	*West Virginia*
Reddig, Clarence Mansfield	*Pennsylvania*
Reitzel, Elbert Coy	*North Carolina*
Rigau, Gabriel	*Porto Rico*
Rigby, Samuel B.	*Utah*
Rodriguez, Antonio	*Porto Rico*
Salan, Joseph	*Indiana*
Shinn, Herbert L.	*District of Columbia*
Silverstein, Max	*New Jersey*
Skilling, John Galen	*Maryland*
Smith, Leroy Henry	*Maine*
Smith, Leo L.	*Oklahoma*
Steine, Albert	*Massachusetts*
Tarkington, Grayson E.	*Arkansas*
Thomas, Charles Roberts	*Maryland*
Vaughan, George W.	*Maryland*
Viewig, Max William	*West Virginia*
Weber, John J.	*Maryland*
Welch, Robert S. G.	*Maryland*
Wheeler, Howard Laurence	*Maryland*
Whistler, Edward L.	*Pennsylvania*
White, George Lawrence	*Maryland*
Williams, William C.	*North Carolina*
Wolff, Carl Otto	*North Carolina*
Wolford, Roy Azariah	*West Virginia*
Worrell, Churchill F.	*Virginia*

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PRIZEMEN

University Prize—*Gold Medal*.....Louis A. M. Krause

Certificates of Honor

Edgar Wayne Kaufman
Luis J. Fernandez
Frank Nevin Ogden
Carl Otto Wolff
Franklin Charles Eleder

THE UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS.

UNITED IN 1915, AND HEREAFTER THE TWO SCHOOLS WILL BE CONDUCTED AS ONE.

As a result of the merger accomplished in 1915 the combined schools offer the student the abundant resources of both institutions, and, in addition, by earlier combination with the Baltimore Medical College, the entire equipment of three large medical colleges.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was chartered in 1807, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties, of Divinity, of Law and of Arts and Sciences, and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

Established thus for more than a century, the School of Medicine of the University of Maryland has always been a leading medical college, especially prominent in the South and widely known and highly honored throughout the country.

The beautiful college building at Lombard and Greene Streets, erected in 1814–1815, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837), and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867) and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own

hospital, and in this hospital intra mural residency for the senior student, now available for the whole class, was first established.

In 1913 juncture was brought about with the Baltimore Medical College, an institution of 32 years growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated under the Legislative enactment in 1872 and established on Hanover Street in a building afterwards known as the Maternité, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the College was removed to its present location at Calvert and Saratoga Streets. By this arrangement, medical control of the City Hospital, now the Mercy Hospital, was obtained, and on this foundation in 1899 the present admirable college building was erected.

CLINICAL FACILITIES.

HOSPITALS AND DISPENSARIES.

UNIVERSITY HOSPITAL.

The University Hospital, which is the property of the Faculty of Physic of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye cases. By successive additions this hospital was increased to more than fourfold its original accommodations, there being added to it a large clinical amphitheater, a students' building for the accommodation of the thirty clinical assistants, and a nurses' building for the accommodation of the pupils of the Training School for Nurses. The yearly increase in the number of patients seeking admission to the hospital, however, more than kept pace with the increase in accommodations, and the Faculty therefore erected an entirely new and modern hospital of fully double the capacity of the former building.

The University Hospital is constructed of brick and Tennessee limestone in the Colonial style of architecture, fronting 175 feet upon Lombard Street, and about the same on Greene Street. It is supplied with the most modern and approved system of heating, ventilation,

etc., and equipped with all modern requirements and conveniences for the care of the sick, and for the clinical instruction of the students of the University.

It is one of the largest and finest hospitals owned and controlled by any medical school in America, and in point of architectural beauty, convenience and completeness of arrangements and equipment compares favorably with other hospitals.

An important adjunct to the hospital is the postmortem building, which is constructed with special reference to the instruction of students in pathological anatomy.

The hospital is situated opposite the University building, so that the student loses no time in passing from the lecture halls to the clinical amphitheater.

A portion of the hospital is used as a marine hospital for foreign seamen. The great importance of Baltimore as a shipping point brings into her harbor many vessels from all parts of the world, and the sick sailors who are cared for in the wards of the institution give the students an opportunity to observe a large variety of diseases. Another considerable portion of the building is used as a Municipal Hospital, and contains charity beds supported by the city of Baltimore. This department of the hospital is taxed to its utmost capacity to afford accommodations for the patients seeking admission.

Owing to its location, being the nearest hospital to the largest manufacturing district of the city, the University Hospital receives for treatment a very large number of accident cases of all kinds, both slight and serious. These cases, as well as patients suffering from the various diseases of our own climate, occupy the beds, and add greatly to the facilities of clinical teaching enjoyed by the school. The facilities for clinical instruction have been greatly enlarged by an appropriation by the State of Maryland for the support of free beds for patients from the various counties.

MERCY HOSPITAL.

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga streets, then owned by the Washington University, in 1875. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly

growing demands upon it. However, it was not until 1888 that the Sisters of Mercy with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the corner stone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space has compelled the erection of additions until now there are accommodations for 351 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

Mercy Hospital is located in the center of a city of 700,000 inhabitants and is under the exclusive medical control of the College of Physicians and Surgeons. It adjoins the College building and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching as there is no time lost in passing from one to the other.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

During the calendar year of 1916 there were treated in the wards of the Hospital 6,073 patients. That the emergency service is very large is shown by the fact that during this time 5,810 ambulant cases were treated in the accident department. In other out-patient departments there were treated 9,533 patients, making a total of 21,416 ill or injured people who applied for treatment during one year.

THE MARYLAND GENERAL HOSPITAL.

The Maryland General Hospital situated at Madison Street and Linden Avenue has a capacity of 185 beds and furnishes a large amount of clinical material which is under the control of the Faculty of Physic for teaching purposes.

A new operating suite has just been completed, modern in every particular and adapted to the teaching of small sections of students. There is also a clinical amphitheatre for larger classes of students, in close proximity to the wards. The hospital treated during the last calendar year 2,692 patients in the ward and 8,549 outdoor patients. Seventeen hundred and thirty-two surgical operations were performed.

The hospital receives appropriations from the State of Maryland and the City of Baltimore for the support of charity cases.

FRANKLIN SQUARE HOSPITAL.

The Franklin Square Hospital has a capacity of 100 beds. During the year ending December 31, 1916, 2575 cases were treated in the hospital, and 1834 patients were treated in the dispensary. Eight hundred and fifty surgical operations were performed in the hospital.

LYING-IN HOSPITALS.

MATERNITY HOSPITAL OF THE UNIVERSITY OF MARYLAND.

This institution is also the property of the Faculty of Physic, and under its exclusive control and direction, and is conducted with the special purpose of furnishing actual obstetrical experience to each member of the graduating class.

New accommodations have been provided in the general hospital, and the Maternity Department now offers better facilities than ever before, while the large increase in clinical material has made it possible to offer excellent opportunities for post-graduate work.

MARYLAND LYING-IN HOSPITAL.

This hospital adjoins the Maryland General Hospital and furnishes an abundance of clinical material which is under the control of the Faculty of Physic.

MARYLAND LYING-IN ASYLUM.

This hospital was established by the College of Physicians and Surgeons in 1874. It is the pioneer institution of its kind in the State of Maryland and one of the first in the country.

THE WEST END MATERNITY.

The West End Maternity adjoins the Franklin Square Hospital and furnishes an abundance of clinical material, which is under the control of the Faculty of Physic.

OUT-PATIENT CLINIC AND DISPENSARY.

In connection with the University Hospital an out-door obstetrical clinic is conducted, in which every case has careful prenatal supervision, is attended during labor by a graduate physician and

graduate nurse—one senior student also being present—and is visited during the puerperium by the attending student and graduate nurse. Careful prenatal, labor and puerperal records are kept, making this work of extreme value to the medical student, not only from the obstetrical standpoint, but in making him appreciate the value of social service and public health work.

NUMBER OF PATIENTS.

During the year ending December 31, 1916, the number of patients treated in the Lying-In hospitals connected with the School was as follows:

Number of Confinements in Hospitals	1133
Number of Confinements, Out-Patient Department	1171
Average number of cases seen by each student of the graduating class.	46

THE MUNICIPAL HOSPITALS—BAY VIEW.

The clinical advantages of the University have been largely increased by the liberal decision of the Board of Supervisors of City Charities to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness in study, and the use made of it in medical teaching.

The Municipal Hospitals consist of the following separate hospitals:

The General Hospital, 160 beds.

The Hospital for Chronic Cases, 88 beds.

The Municipal Hospital for Tuberculosis, 190 beds.

City Detention Hospital for Insane, 450 beds.

THE PRESBYTERIAN EAR, EYE AND THROAT CHARITY HOSPITAL.

This institution was founded in 1877, through the efforts of late Dr. J. J. Chisolm, then Professor of Diseases of the Eye and Ear in the University of Maryland. It is one of the largest special hospitals in the country.

During the year 1916 there were admitted to the Dispensary and Hospital, 10,272 persons.

The Dispensary and wards of this hospital afford ample facilities for the study of diseases of the eye, ear, nose and throat.

Professor Woods and Dr. Looper are members of the staff, and the clinics are at all times open to the students of the University of Maryland.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN.

This institution contains seventy-five beds for the active treatment of deformities. It is situated at "Radnor Park," a colonial estate of sixty-five acres at Hillsdale, one mile from the western city limits, reached by trolley.

This institution has city, state, endowed and private beds and every modern facility for the treatment of orthopedic cases as well as a most beautiful park-like environment and farm, and is closely affiliated with the University of Maryland.

ST. VINCENT'S INFANT ASYLUM.

The facilities of this institution, containing 250 infants and children, have been kindly extended to the University of Maryland by the Sisters of Charity. This large clinic enables this school to present to its students liberal opportunities for the study of diseases of infants and children.

INSTITUTIONS FOR THE TREATMENT OF THE INSANE AND FEEBLE MINDED.

The Sheppard and Enoch Pratt Hospital for the Insane This institution is one of the most modern hospitals for the treatment and care of the insane in this country. It is well endowed and its superintendent is Dr. Edward N. Brush, Professor of Psychiatry at the University of Maryland. In this hospital intensive treatment and study of mental diseases is carried on; a large number of the patients entering voluntarily. The students under the direction of Dr. Brush and his assistants in a series of clinics are shown the early manifestations and the various stages of mental diseases, the methods of treatment, and their effects.

Mount Hope Retreat for the Insane. This hospital contains an average of 1000 patients and is attended by Dr. Chas. G. Hill, Professor of Psychiatry of this faculty. Under the direction of Dr. Hill and his assistants the students are given opportunity for the study of large groups of patients showing all phases of various mental and nervous disorders.

Spring Grove State Hospital. This hospital, a state institution for the treatment of the insane, has a capacity of 780 beds. Dr. J. Percy Wade, associate in Psychiatry, is the superintendent. Students of this school are given a limited number of clinics at this institution.

Springfield State Hospital. This large state institution for treatment of mental diseases is situated at Sykesville, Md. Dr. J. Clement Clark, Associate Professor of Psychiatry is its superintendent. There are accommodations for 1400 patients. At this institution under charge of a capable director is located a modern psychopathic ward where intensive study of the various mental diseases is carried on. Each session the students of this school are given several clinics by Dr. Clark and his assistants.

Rosewood State Training School. This hospital situated n the suburbs of Baltimore is owned and controlled by the State of Maryland. It contains 700 beds devoted to the treatment and training of the feeble minded and epileptics. Dr. Frank W. Keating is the superintendent and is Instructor in Psycho-Asthenics in the University of Maryland. Sections of the Fourth Year class are sent to this hospital for instruction in the proper care of feeble minded and epileptics.

DISPENSARIES.

The three dispensaries associated with the University Hospital, Mercy Hospital and the Maryland General Hospital are organized upon a uniform plan in order that the teaching may be the same in all. Each dispensary has the following departments: Medicine, Surgery, Children, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopedics, Proctology, Dermatology, Throat and Nose, and Tuberculosis.

All students in their junior year work in the departments of Medicine and Surgery each day in one of the dispensaries.

All students in their senior year work in the special departments one hour each day.

Some idea of the value of these dispensaries for clinical teaching is shown by the number of patients treated. For the year 1916 over sixty thousand visits were made to the dispensaries.

In addition to these the Dental Department, situated upon the grounds of the University, conducts a daily clinic which is open to medical students.

University Hospital Dispensary Report, January 1st to December 31st, 1916.
John Houff, M.D., Dispensary Physician

DEPARTMENT	NEW CASES	OLD CASES	TOTAL
Surgical	1,478	3,204	4,682
Medical	1,071	2,119	3,190
Nervous Diseases	331	2,142	2,473
Genito-Urinary	535	1,448	1,983
Eye and Ear	976	2,821	3,797
Women	656	943	1,599
Children	574	737	1,311
Skin	408	757	1,165
Throat and Nose	543	617	1,160
Stomach	283	394	677
Tubercular	392	570	962
Orthopedic	129	635	764
Obstetrical	400	461	861
Diseases of Rectum	48	93	141
	7,824	16,941	24,765

Mercy Hospital Dispensary Report, January 1st, to December 31st, 1916.
B. S. Hanna, M.D., Resident Physician

DEPARTMENT	NEW CASES	OLD CASES	TOTAL
Surgery	1,275	3,178	4,453
Genito-Urinary	1,088	3,702	4,790
Stomach	806	1,798	2,604
Nose and Throat	652	1,492	2,144
Skin	501	1,164	1,665
Gynecology	772	1,617	2,389
Neurology	710	1,872	2,582
General Medicine	1,438	3,293	4,731
Children	942	1,728	2,670
Eye and Ear	707	1,666	2,373
Orthopedics	93	73	166
	8,984	21,583	30,576

Maryland General Hospital Dispensary Report, March 1, 1916 to February 13, 1917. Emma N. Belbot, Ph.G., Registrar

DEPARTMENT	NEW CASES	OLD CASES	TOTAL
Surgical	560	1,490	2,050
Medical	620	810	1,430
Nervous	20	25	55
Genito-Urinary	400	1,020	1,420
Eye and Ear	410	1,335	1,745
Women	230	200	430
Children	200	140	340
Skin	125	110	235
Throat and Nose	240	210	450
Obstetric	214	46	260
Proctology	34	40	74
Stomach	20	40	60
	3,073	5,576	8,549
Grand total			63,881

LABORATORIES.

ANATOMICAL LABORATORIES.

These laboratories are in charge of Dr. Smith and his assistants. The University has recently built its own storage and embalming plant, which supplies an abundance of anatomical material. Dissecting tickets must be countersigned as evidence of satisfactory dissecting. Anatomical material is furnished in abundance, free of charge.

CHEMICAL LABORATORY.

The Chemical Laboratory is under the supervision of Dr. Simon, aided by the Demonstrators. Each student during his course has assigned him a table and is fully supplied, with all necessary apparatus and chemicals.

Students of the first year's class will be required to devote six hours weekly to work in this department.

LABORATORY OF EXPERIMENTAL PHYSIOLOGY.

This laboratory occupies the first floor of Gray Laboratory; it includes a large student laboratory, with capacity of forty students, a room completely equipped for mammalian experimentation, a stock-room, and an office for the professor in charge. Within the same building there is an animal room in which there is kept a constant supply of material for experimentation and demonstration. The laboratory is equipped with ample apparatus: there is a complete set of student apparatus available for each group of two students, while the special apparatus for laboratory experimentation and class-room demonstration is adequate for the needs of the courses.

LABORATORY OF PHYSIOLOGICAL CHEMISTRY.

The second year class is given practical instruction in the chemistry of the sugars and proteins as well as a detailed course in the chemistry of the various secretions. The experiments performed by each student are adapted to illustrate not only the physiological but also the pathological conditions which may result in various diseases from perverted metabolism. The chemistry of the food stuffs and its practical bearing upon diet is especially dwelt upon.

The course is essentially practical, only including so much theoretical physiology as is necessary for a proper knowledge of the subject. Graduates and advanced students competent to undertake such work, who desire to pursue special chemical investigation, are given the opportunity under suitable regulations.

LABORATORY OF HISTOLOGY AND EMBRYOLOGY.

This laboratory is fully equipped for teaching Histology and Embryology.

There is a large collection of charts, specimens and apparatus used in teaching. The necessary equipment for the practice of technique is provided.

LABORATORIES OF PATHOLOGY AND BACTERIOLOGY.

The subject of special bacteriology is taught during a portion of the second year in a well equipped laboratory containing sterilizers, water baths, and other necessary equipment for this purpose.

The subject of histopathology is also taught during the second year in a properly equipped laboratory. The details concerning this work are described under the subject of Department of Pathology and Bacteriology.

The instruction in gross pathology is obtained during the third year by attendance upon the autopsies at the University Hospital, the Mercy Hospital, and the Maryland General Hospital, and special instruction in this subject is also given by demonstrations with a large amount of pathological material at the City Hospitals situated at Bay View. The subject of gross pathology is also taught in the third year by means of lectures and demonstrations to sections of the third year class and a special effort is made to apply this subject to the explanation of the symptoms and clinical signs of disease. The instruction in autopsy technique is also given personally to small groups of students.

LABORATORIES OF CLINICAL PATHOLOGY.

These laboratories are fully equipped for the study of practical laboratory work in its relationship to clinical medicine. Each student is supplied with a locker, containing sufficient apparatus for any ordinary examination.

The wards and out-patient departments of the hospitals furnish an abundance of material for study.

By reason of individual equipment, much work outside of class hours is expected of the student.

The class rooms are adequately lighted, and are conveniently situated for teaching purposes.

LIBRARIES.

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 13,392 volumes, a file of 87 current journals, and several thousand pamphlets and reprints. During the year ending December 31, 1916, 488 volumes were added. It is well stocked with recent literature, including books and periodicals of general interest. The home of the Library is Davidge Hall, a comfortable and commodious building in close proximity to the class rooms and the laboratories of the Medical Department. The Library is open daily during the year, except in August, for use of members of the Faculty, the students, and the profession generally.

Other libraries of Baltimore are the Peabody (181,000 volumes), the Enoch Pratt Free Library (280,000 volumes) and the Library of the Medical and Chirurgical Faculty. The last named library receives the leading medical publications of the world and complete sets of many journals are available.

The libraries are open to students of the Medical School without charge.

The proximity of Washington puts the immense libraries of the national capital at the disposal of students of this school.

THE MUSEUM.

The museum occupies a separate apartment in the main building. It is under the care of the curator, Dr. J. Holmes Smith and his assistants. It contains a large collection of anatomical preparations, plaster casts, charts, models, etc., used in teaching anatomy. It contains also a number of specimens of comparative anatomy. There is a large collection of gross pathological specimens and cut sections mounted for demonstration. For the department of obstetrics, there is an excellent collection of normal and abnormal human embryos.

PUBLICATIONS.

Two journals are published by the University. *The University Gazette* is devoted to the interests of the entire University and is published under the auspices of the General Alumni Association. *The Bulletin of the University of Maryland School of Medicine and College of Physicians and Surgeons* is the publication of the Medical School. Dr. Nathan Winslow is editor.

ANNUAL APPOINTMENTS.

On February first of each session the following annual appointments are made from among the graduates of the school.

TO THE UNIVERSITY HOSPITAL

Medical Superintendent.
Five Senior Residents, viz:
  Two Resident Surgeons.
  One Resident Physician.
  One Resident Gynecologist and Obstetrician.
  One Resident Pathologist.
Thirteen Junior Residents on a rotating service.

A number of students are appointed each year, at the close of the session, as Clinical Assistants in the University Hospital for the summer months.

TO THE MERCY HOSPITAL.

Medical Superintendent.
Six Resident Surgeons.
Five Resident Physicians.
One Resident Gynecologist.
One Resident Obstetrician.
Two Accident Service Residents.
One Ambulance Surgeon.

TO THE MARYLAND GENERAL HOSPITAL.

Medical Superintendent.
Four Senior Residents, viz.:
  One Resident Surgeon.
  One Resident Physician.
  One Resident Gynecologist.
  One Resident Obstetrician.
Eight Junior Residents on a rotating service.

Each resident serves a term in every department, including the pathological laboratory, and Maryland Lying-In Hospital.

Many appointments to other hospitals of Baltimore are made annually, to which graduates of this school are eligible.

REQUIREMENTS FOR MATRICULATION.

Admission to the course in medicine is by a completed Medical Student Certificate issued by the Board of Medical Examiners of Maryland. This certificate is obtained from Prof. Isaac L. Otis, the Entrance Examiner of the Board, on the basis of satisfactory credentials, or by examination and credentials, and is essential for admission to any class.

The requirements for the issuance of the Medical Student Certificate are:

(A) The completion of a standard four-year high school course, or its equivalent, and, in addition,

(B) One year of college credits in chemistry, biology, physics, and two modern languages, to be approved by the examiner.

(A) DETAILS OF THE HIGH SCHOOL REQUIREMENT.

1. Graduation from an accredited high school after pursuing a four-year course based upon an eight-year elementary course or its full equivalent;

or

2. Successfully passing entrance examinations in the following subjects:

(a) Required Ten (10) Units

	Units.
English 3 years	2
Elementary Algebra to quadratics	1
Plane Geometry (first five books)	1
Two years of a foreign language	2
Two of the three sciences—Biology, Chemistry, Physics	2
American History and Civics	1
Ancient History or History of Great Britain and Ireland	1

(b) Electives, Five (5) Units

(1) History and Political Science:

Mediaeval and Modern History	1 or ½
General History	1 or ½
Civics	½
Economics	½

	Units.
(2) Language:	
English IV	1
French 1 or 2 years	1 or 2
German 1 or 2 years	1 or 2
Greek 1 or 2 years	1 or 2
Hebrew 1 or 2 years	1 or 2
Italian 1 or 2 years	1 or 2
Latin 1 or 2 years	1 or 2
Scandinavian 1 or 2 years	1 or 2
Spanish 1 or 2 years	1 or 2
(3) Mathematics:	
Advanced Algebra	1
Plane Trigonometry	½
Solid Geometry	½
(4) Science:	
Physical Geography and Geology	1
Astronomy	½
Physiology and Hygiene	½
(5) Vocational and cultural subjects:	
Agriculture	1
Bookkeeping	1
Domestic Science	1
Drawing: Mechanical 1 and 2	½ each
Freehand 1 and 2	½ each
Manual Training	1
Music	1
Stenography	1

One unit in any subject is the equivalent of work in that subject for four or five periods per week for a year of at least thirty-six weeks, periods to be not less than forty-five minutes in length. One unit is equivalent to 2 semester credits or 2 points.

(B) DETAILS OF THE COLLEGE REQUIREMENT.

a. The preliminary college year shall extend through one college session of at least thirty-two weeks of actual instruction, including final examinations.

b. In excellence of teaching and in content, the work of this preliminary college year shall be equal to the work done in the freshman year in standard colleges and universities.

c. This preliminary college year shall include courses in physics, chemistry, biology and two of the three languages, English, French and German, each course to embrace at least six or eight hours of didactic and laboratory work in each subject, as shown in the schedule below. It is advisable to make the choice of the two

languages other than that of the mother tongue of the high school preparation.

Schedule

SUBJECT	LECTURES OR RECITATIONS PER WEEK	LABORATORY PERIODS PER WEEK	TOTAL HOURS PER SEMESTER	TOTAL SEMESTER HOURS PER YEAR
Physics (1)	2	2	4	8
Chemistry (1)	2	2	4	8
Biology (1)	2 or 3	2	4	8
Two of the Three: German (3)	3		6	12
Two of the Three: French (3)	3			
Two of the Three: English (3)	3			
Total	12 or 13	6	18	36

Each laboratory period must extend over at least two hours.

Or, expressed in class hours

SUBJECT	TOTAL HOURS LECTURES OR RECITATIONS	TOTAL HOURS LABORATORY WORK	TOTAL MINIMUM HOURS DIDACTIC AND LABORATORY
Physics (1)	64	128	192
Chemistry (1)	64	128	192
Biology (1)	64 or 96	128	128
Two of the Three: German (3)	192		128
Two of the Three: French (3)			
Two of the Three: English (3)			
Total	384 or 416	384	768 or 800

The valuation of credentials can be made by the Entrance Examiner only, and *all* students are advised to obtain from him or from the Dean blank forms on which to prepare a full statement of their previous education well in advance of their coming to Baltimore. Such statements are to be submitted to the Entrance Examiner for his advice as to the course to be pursued.

The Entrance Examiner for Maryland is Prof. Isaac L. Otis, Lombard and Greene Streets, Baltimore. To him must be submitted the credentials of all applicants, and by him is issued the certificate upon which the student is matriculated.

The student is earnestly advised to qualify himself under his State law, and, where such certificates are issued, to receive the

medical students' certificate from the State authorities before entering upon his medical studies. By adopting this course difficulties may be avoided.

Graduates in Medicine desiring to take the Senior Course, without being candidates for the degree, and therefore without examination, may receive a certificate of attendance.

After January 1, 1918, two years of college work will be required for admission to the course in Medicine.

COMBINED COURSE IN ARTS AND MEDICINE.

St. John's College, Annapolis, Md., founded in 1696, is by contract of affiliation styled and recognized as the Department of Arts and Sciences of the University of Maryland.

Students who have completed the Junior Year in St. John's College and who have made an approved choice of electives may if they desire it do the entire work of the Senior Year in the Medical School of the University. If they successfully complete the work of the first medical year they are graduated with their class with the degree of A.B., from St. John's College.

By taking advantage of this privilege a man may complete the Undergraduate and Medical courses in seven years.

During three of these years or until he has completed the work of the Junior class he is a resident student in St. John's College and for four years he is a student in the Medical School in Baltimore.

At the end of the fourth year he receives the A.B. degree, and at the end of the seventh year the M.D. degree, but credit from the Medical School cannot be accepted in subjects for which credit has already been given in the College of Liberal Arts.

In order to meet the increased requirements for matriculation taking effect January 1, 1914, a special Pre-Medical Course in Chemistry, Physics, Biology and French or German is now offered in St. John's College.

RULES.

1. Tickets for practical anatomy must be countersigned by the proper demonstrators. Unless properly countersigned, a ticket will not be accepted as evidence of a completed course.

2. All students are required to stand the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

3. A laboratory charge of $10 will be made to each student. A microscope will be furnished each student in the school for his exclusive use. The charge for this will be $5.

4. The graduation fee, which is $30, must be deposited with the Dean before the candidate can be admitted to final examination. This fee is returned in case the examination is unsuccessful.

5. Should a student be required to repeat any year in the course he must pay regular fees.

6. A student failing in final examination for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examinations in such other branches as may be required, should he be again permitted to enter the school as a candidate for graduation.

7. The general fitness of a candidate for graduation will be taken into consideration by the Faculty as well as the results of his final examination.

All the above rules, as well as the fees stated below, relate to the year ending June 1, 1918, only. The right is reserved to make changes in the curriculum, requirements for graduation, fees and all the regulations whenever the Faculty deem it expedient.

FEES.

Matriculation fee (paid each year)	$5.00
Tuition fee (each year)	165.00
Graduation fee	30.00

Tuition fees are due and payable during October, and if the entire amount is paid at the Dean's office before November 1, the tuition fee for that year will be $160.

The above fees apply to all students who matriculate in this institution for the first time, in any class, for the session beginning October 1, 1915.

Students who have already attended one or more full courses of instruction in this institution will be entitled to complete the course in medicine at the current rates in force at the time of their first full course of lectures in this institution.

Fees for individual courses not less than $25 each.

FACULTY PRIZE.

To stimulate study among the candidates for graduation, the Faculty offers a Gold Medal to the candidate who passes the best

general examination. Certificates of Honor are awarded to the five candidates standing next highest.

SCHOLARSHIPS.

The Dr Samuel Leon Frank Scholarship.

This scholarship, established by Mrs. Bertha Rayner Frank as a memorial of the late Dr. Samuel Leon Frank, an alumnus of this University, entitles the holder to exemption from the payment of the tuition fee of that year.

It is awarded by the Trustees of the Endowment Fund of the University in each year upon nomination of the Faculty of Physic, "to a medical student of the University of Maryland, who in the judgment of said Faculty, is of good character, and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student only, who has successfully completed one year's work in the medical course, and no student may hold such scholarship for more than two years.

The Charles M. Hitchcock Scholarships.

From a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University, two scholarships have been established which entitle the holders to exemption from payment of tuition fees for the year.

These scholarships are awarded annually by the Faculty of Physic to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Faculty satisfactory evidence of good moral character, and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship.

This scholarship, established by Prof. Randolph Winslow, M.D., LL.D., entitles the holder to exemption from the payment of the tuition fee of that year.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination of the Faculty of Physic, to "a needy student of the Senior, Junior, or Sophomore Class of the Medical School.

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship.

"He must be a person of good character and must satisfy the Faculty of Physic that he is worthy of and in need of assistance."

The University Scholarship.

This scholarship, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Faculty of Physic to a student of the Senior Class who presents to the Faculty satisfactory evidence of good moral character, and that he is worthy of and in need of assistance to complete the course.

The St. John's Scholarship.

This scholarship is awarded annually by the Faculty of Physic upon the nomination of the President of St. John's College.

It entitles the holder to exemption from the payment of the tuition fee of that year.

NOTICE TO STUDENTS

The personal expenses of students are at least as low in Baltimore as in any large city in the United States. The following estimates of student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience:

Items.	Low.	Average.	Liberal.
Books	$ 18	$ 32	$ 50
College Incidentals		15	20
Board, eight months	96	112	128
Room rent	48	65	80
Clothing and washing	35	50	100
All other expenses	10	20	75
Total	$207	$294	$453

Students will save time and expense upon their arrival in the city by going direct to the School of Medicine on the University grounds, N.E. corner of Lombard and Greene Streets, where the Superintendent of Buildings, who may be found at his office on the

premises, will furnish them with a list of comfortable and convenient boarding houses suitable to their means and wishes.

The Dean will, if desired, attend to the collection of checks and drafts for students.

For further information apply to

J. M. H. Rowland, M. D., *Dean*,
Lombard and Greene Streets.

ORGANIZATION OF THE CURRICULUM.

The following curriculum is the result of a recent and thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the question of electives is one which very soon will be depended on to solve some of the difficulties.

The curriculum is organized under ten departments.

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Chemistry including Physiological Chemistry.
4. Materia Medica and Pharmacology.
5. Pathology and Bacteriology.
6. Medicine (including Medical Specialties).
7. Surgery (including Surgical Specialties).
8. Obstetrics.
9. Gynecology.
10. Ophthalmology and Otology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body and laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of teachers insures attention to the needs of each student.

In many courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

ARRANGEMENT OF CLASSES.

All the teaching of the freshman class is done at Calvert and Saratoga Streets. All the teaching of the sophomore class is done at Lombard and Greene Streets.

The junior class has three hours of didactic teaching each morning. For clinical instruction and laboratory work this class is divided into two sections and the year into semesters. Each section will work for one semester at the University Hospital and one semester at Mercy Hospital.

The senior class is divided into three sections and for this class the year is divided into trimesters. Each section receives clinical instruction for one trimester in the University Hospital, Mercy Hospital and the Maryland General Hospital. In the afternoon the whole class is assembled and has two hours of didactic teaching each day.

This distribution of the classes is made in order to utilize to the best advantage the laboratory space and to bring the students into daily contact with patients in all three of the large hospitals and dispensaries.

DEPARTMENT OF ANATOMY INCLUDING HISTOLOGY AND EMBRYOLOGY.

J. Holmes Smith, M.D.....Professor of Anatomy
Tilghman B. Marden, A.B., M.D.
Professor of Histology and Embryology and Assistant in Anatomy
J. W. Holland, M.D.....Associate Professor of Anatomy
J. L. Wright, M.D.....Associate in Anatomy and Histology
F. L. Jennings, M.D.....Assistant in Anatomy

First Year. Didactic. Three hours each week for thirty-two weeks. This consists of lectures, recitations and conferences.

This course embraces the integuments, myology, angiology, osteology, syndesmology and the peripheral nerves.

Laboratory. Ten hours each week for thirty-two weeks. Abundance of good material is furnished and the student is aided in his work by competent demonstrators. Examinations are held at regular intervals throughout the session, and each student will be held to strict account for material furnished him.

Osteology. Two hours each week for thirty-two weeks. Lectures, demonstrations, and recitations. Each student is furnished a skeleton and a deposit is required to insure its return at the end of the session.

Second Year. *Didactic.* Three hours each week for thirty-two weeks. Lectures, recitations and conferences.

Laboratory. Ten hours each week for sixteen weeks. This course includes topographical and applied anatomy of the body cavities and viscera and the cerebro-spinal and sympathetic nervous systems with special demonstrations of important subjects to the class in small sections.

The teaching of anatomy is illustrated by means of charts, diagrams, special dissections and the projection apparatus.

Histology.

First Year. Lectures, recitations and laboratory work, nine hours each week during first semester; three hours each week during second semester. The most important part of the work will be done in the laboratory, where each student will be provided with a microscope, apparatus, staining fluids and material necessary for the preparation of specimens for microscopical examination. An important aid to the course is the projection microscope which is used for the projection upon a screen of magnified images of the specimens actually used in the laboratory.

Embryology.

Lectures, recitations and laboratory work; six hours each week during the second semester.

This course includes the study of the development of the chick, and the fundamental principles of mammalian embryology. In the laboratory, the hen's egg will be studied in its various stages of development, and sections of the chick at different periods of

incubation will be made and studied microscopically. The latter part of the course will be devoted to the study of sections through different regions of a mammal.

DEPARTMENT OF PHYSIOLOGY.

JOHN C. HEMMETER, M.D., PH.D., SC.D., LL.D.....Professor of Physiology
BARTGIS MCGLONE, A.B., PH.D.....Professor of Physiology
CHARLES C. CONSER, M.D.....Associate Professor of Physiology
FIRMADGE K. NICHOLS, A.B., M.D.....Associate in Physiology
HENRY T. COLLENBERG, A.B., M.D.....Associate in Physiology

The course in Physiology extends throughout the First and Second Years. It consists of a series of lectures, covering the field of human physiology, laboratory work, demonstrations, and frequent recitations. It is constantly in the mind of the department that this course is introductory to the study of medicine. The recitations cover the subject-matter of the lectures and the experiments performed in the laboratory.

FIRST YEAR. 1. This course includes lectures and recitations upon the physiology of the blood and circulation, respiration, muscle and nerve, a portion of the central nervous system, and special senses, and such chemical and physical facts as are necessary for a proper understanding of the physiology taught. Two lectures and a recitation weekly throughout the year. Dr. McGlone.

SECOND YEAR. 2. *Didactic instruction.* During this year the remaining topics of physiology are covered by lectures and demonstrations. As in the first year frequent recitations will be held. The subject-matter includes the physiology of digestion and secretion, nutrition, eye and ear, and the cranial central nervous system. Lectures, demonstrations, and recitations, three hours per week. Dr. Hemmeter, assisted by Drs. Conser or McGlone.

3. *Experimental Physiology.* This is a laboratory course in the dynamics of muscle and nerve, studies in circulation and respiration, and physiology of the special senses. Apart from the acquisition of the facts of physiology, the student is taught to observe accurately, record carefully the results of his observations, and from these results draw an independent conclusion. He is also trained in the use of instruments which are of value to him in his clinical years. Three hours weekly throughout the year. Drs. McGlone, Conser, Nichols and Collenberg.

4. *Special Mammalian Physiology.* This is a Laboratory course intended for advanced Laboratory students (optional) who may wish to do special work in this line of physiology. Hours to be arranged. Dr. McGlone.

5. *Research in Physiology.* Properly qualified students will be admitted to the laboratory which is well adapted for post-graduate study and special research. Hours will be arranged to suit individuals. Dr. John C. Hemmeter.

DEPARTMENT OF CHEMISTRY.

CHARLES E. SIMON, A.B., M.D.....Professor of Physiological Chemistry
E. F. KELLY, Phar.D.....Associate Professor of Chemistry
H. BOYD WYLIE, M.D.....Associate Professor of Physiological Chemistry
FRONTIS LENTZ, Phar.D.....Assistant in Chemistry

FIRST YEAR. *Organic Chemistry.* 1. Lectures and Recitations; two hours per week throughout the session.

The course in organic chemistry is given to freshmen and extends throughout the year, one afternoon being devoted to practical work in the laboratory, and two hours a week to lectures and recitations.

The aim of this course is to familiarize the student with the great rôle which the compounds of carbon play not only in industrial life, but also in medicine, and to lay a foundation upon which he may take up profitably the study of these special organic compounds which are so intimately connected with the manifestations of animal and plant life, and which form the basis of the course in physiological chemistry of the sophomore year.

SECOND YEAR. *Organic and Physiological Chemistry.* 1. Lectures and recitations. One hour per week throughout the session.

This course is essentially a laboratory course extending throughout the year, in which the student studies practically the chemical properties of the various groups of food stuffs, their products of digestion and katabolism, as well as the various organic compounds which enter into the composition of the different tissues and organs of the body.

The practical work is supplemented by a course of lectures in which the student is introduced not only to the chemical aspects of physiological processes, but also to those deviations from the normal which are met with in disease.

DEPARTMENT OF MATERIA MEDICA AND PHARMACOLOGY.

SAMUEL J. FORT, M.D.....Professor of Materia Medica and Pharmacology
BARTGIS MCGLONE.....Associate Professor of Pharmacology
H. L. SINSKEY, M.D.....Associate in Materia Medica

FIRST YEAR. Two hours per week throughout the session, didactic lectures on Materia Medica. Dr. Fort.

A laboratory course in Pharmacy and prescription writing, two hours per week. Dr. Sinsky.

SECOND YEAR. Two hours per week throughout the session on Pharmacology. Dr. Fort.

A laboratory course of two hours per week throughout the session, on the physiological and toxicological action of the more important drugs. Dr. McGlone.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY.

WM. ROYAL STOKES, M.D.....Professor of Pathology and Bacteriology
STANDISH MCCLEARY, M.D.....Professor of Pathology
H. R. SPENCER, M.D...Associate Professor of Pathology and Bacteriology
WM. GREENFELD, M.D....Associate Professor of Pathology and Bacteriology
H. J. MALDEIS, M.D.....Associate Professor of Pathology
FRANK W. HACHTEL, M.D.....Associate in Pathology and Bacteriology
C. H. DOUTHIRT, M.D.....Assistant in Bacteriology

Instruction in pathology and in special bacteriology is given in the laboratories to the students of the second year. The course in pathology includes the demonstrations of the gross and microscopic lesions of the various viscera, and the subject of general pathology including inflammation, degeneration and infiltration and tumors.

In special bacteriology the various methods of sterilization and preparation of culture material, the study of the pathogenic microorganisms of vegetable origin, and the bacteriological study of milk, water, sewage and other such materials, are given. The bacteriological diagnosis of the infectious diseases and vaccine therapy are also included in this course. Animal inoculations and autopsies are performed in connection with the bacteria studied, and the diagnoses by means of serum reactions are also given.

In the third year the subject of pathology is continued, special use being made of museum specimens, and the special relationship of gross and microscopic lesions to clinical symptoms and signs of

disease is especially emphasized. Autopsy technique is also taught to small groups of students by special instruction at the autopsies performed at the various hospitals, and the specimens obtained at such autopsies are demonstrated to the entire class. The animal parasites are also taught in this year.

In the fourth year the specimens from autopsies are studied with reference to clinical histories and gross and microscopic anatomy. Special emphasis is laid upon the correlation of the anatomical findings with the clinical symptoms and diagnosis. These clinical pathological conferences are also illustrated with sections of fixed material or lantern slides.

Courses in surgical and gynecological pathology are also given to the fourth year students, but these courses are under the direction of the Departments of Surgery and Gynecology.

MEDICAL JURISPRUDENCE.

Second Year. One hour each week for entire session.

Medical Jurisprudence. This course embraces consideration of medical evidence and testimony, confidential communications, malpractice, indications of death, pregnancy, delivery, infanticide and insanity.

CLINICAL INSTRUCTION.

DEPARTMENT OF SURGERY.

Randolph Winslow, A.M., M.D., LL.D.....Professor of Surgery
Arthur M. Shipley, M.D.....Professor of Surgery
Ridgely B. Warfield, M.D.....Professor of Surgery
Archibald C. Harrison, M.D.....Professor of Surgery
Alexius McGlannan, A.M., M.D.
Professor of Clinical Surgery and Surgical Pathology
Frank Martin, B.S., M.D.....Professor of Clinical and Operative Surgery
J. D. Blake, M.D.....Professor of Clinical Surgery
Joseph H. Branham, M.D.....Professor of Clinical Surgery
Albert T. Chambers, M.D.....Professor of Clinical Surgery
Nathan Winslow, A.M., M.D.....Clinical Professor of Surgery
Alfred Ullman, M.D.....Clinical Professor of Surgery
Walter D. Wise, M.D.....Clinical Professor of Surgery
Joseph W. Holland, M.D.....Clinical Professor of Surgery
William W. Requardt, M.D.....Associate Professor of Surgery
J. C. Lumpkin, M.D.....Associate Professor of Clinical Surgery
H. C. Blake, M.D.....Associate Professor of Clinical Surgery

ROBERT P. BAY, M.D.....Associate Professor of Clinical Surgery
FRANK S. LYNN, M.D.....Associate Professor of Surgery
ELLIOTT H. HUTCHINS, A.M., M.D.....Associate Professor of Surgery
THOMAS R. CHAMBERS, A.B., M.D.....Associate Professor of Surgery
HARVEY B. STONE, A.B., M.D.....Associate Professor of Surgery
R. W. LOCHER, M.D...Associate Professor of Operative and Clinical Surgery
ARTHUR G. BARRETT, M.D.....Associate in Surgery
B. M. BERNHEIM, A.B., M.D.....Lecturer on Blood Vessel Surgery
F. L. JENNINGS, M.D.....Instructor in Surgery
A. M. EVANS, M. D.....Assistant in Surgery
E. P. SMITH, M.D.....Assistant in Operative Surgery

The course in surgery is progressive, and aims to ground the student firmly in the principals of surgical science in order that later he may be prepared to build upon a firm foundation the superstructure of surgical art.

SECOND YEAR. During this year a practical course of bandaging is given upon the manikin; the student being required to apply personally the various forms of bandages to the different parts of the body.

THIRD YEAR. Surgical Pathology and Principles of Surgery. Lectures, recitations and clinics, three hours weekly. Drs. Shipley and Warfield.

The class is divided in sections and receives instruction in history taking, gross surgical pathology and surgical diagnosis at the bedside and in the dead house in the City Hospitals at Bay View. Drs. Shipley and Lynn.

Operative Surgery. Instruction is given in operative surgery upon the cadaver and on dogs. The class is divided into sections and each section is given practical and individual work under the supervision of the instructors.

This course begins with the study of the general principles of operative surgery; anaesthesia, asepsis, antisepsis, description of instruments and sutures, etc.

The various operations are first described and demonstrated by the instructor, and the student afterward practices them upon the subject.

The entire subject of operative surgery is fully covered. Dr. Martin and assistants.

The class will be divided into small sections for Dispensary service in the University and Mercy Hospitals.

FOURTH YEAR. *Fractures and Dislocations.* Illustrated by charts, drawings, specimens, X-ray demonstrations, lantern slides, and the balopticon, two hours a week for the first semester. Dr. Winslow.

Surgery of the Blood Vascular System, Hernia, Surgery of the Scrotum and its contents, one hour a week for the first semester. Dr. Warfield. At the end of this semester, an examination will be given.

Surgery of the Thorax and Thoracic Wall, the Abdominal Cavity, and of the Head, Neck, and Spinal Cord, two hours a week for the second semester. Dr. Harrison.

Surgical Clinics. Surgical clinics will be given at the University, Mercy, and Maryland General Hospitals, weekly, to one third of the class in each hospital. Drs. Winslow, Warfield, Harrison, and McGlannan.

The class is divided into sections for ward instruction in surgery, for instruction in operative surgery and surgical diagnosis, and the post-operative treatment of surgical conditions, six days a week for two hours each day in each of the three hospitals. Drs. Winslow, Shipley, Warfield, Harrison, Martin and McGlannan.

ANAESTHESIA.

S. Griffith Davis, M.D.....Associate Professor of Anaesthesia
Frank S. Lynn, M.D.....Associate Professor of Anaesthesia
Samuel W. Moore, D.D.S.....Instructor in Anaesthesia
A. M. Evans, M.D.....Instructor in Anaesthesia

The administration of anaesthetics is taught didactially and practically and students are required to administer anaesthetics under the direction of an instructor.

DERMATOLOGY.

T. Caspar Gilchrist, M.R.C.S.,L.S.A.,M.D.....Professor of Dermatology
Melvin Rosenthal, M.D.....Associate Professor of Dermatology
John R. Abercrombie, A.B., M.D .....Associate Professor of Dermatology
L. W. Ketron, A.B., M.D.....Associate Professor of Dermatology
Harry M. Robinson, M.D.....Demonstrator of Dermatology

Clinical conference one hour each week to entire class. This course will consist of demonstrations of the common diseases of the skin. Dr. Gilchrist.

Dispensary instruction, University Hospital, Mondays, Wednesdays and Fridays in the diagnosis and treatment of the common skin diseases. First trimester, Dr. Ketron; second trimester, Dr. Abercrombie; third trimester, Drs. Abercrombie and Ketron. Dispensary instruction, Mercy Hospital, Dr. Rosenthal.

ORTHOPEDIC SURGERY.

R. Tunstall Taylor, A.B., M.D.....Professor of Orthopedic Surgery
Albertus Cotton, A.M., M.D.....Professor of Orthopedic Surgery
Compton Riely, M.D .....Clinical Professor of Orthopedic Surgery
Sydney M. Cone, A.B , M.D.....Clinical Professor of Orthopedic Surgery
Henry J. Walton, M.D.....Associate in Roentgenology
W. H. Daniels, M.D.....Demonstrator in Orthopedic Surgery
John Evans, M.D.....Instructor in Roentgenology
C. Reid Edwards, M.D.....Assistant in Orthopedic Surgery

In this course didactic, clinical, bed-side and out-patient instruction will be given. This instruction is provided in the University Hospital Amphitheater and Dispensary, Maryland General and Mercy Hospitals and Dispensaries, Kernan Hospital and Industrial School for Crippled Children at "Radnor Park," and in the Dispensary of same at 2000 North Charles Street.

The senior class will be divided into three parts, each section spending one trimester in the University, Mercy and Maryland General Hospitals in rotation; and by the avoidance of duplication, the subject will be adequately covered. Lectures, clinics and quizzes will be held at each of the three hospitals once a week. If possible, in addition, a weekly bed-side clinic will be held on Saturdays for small sections of the class at "Radnor Park."

The course will cover instruction in special methods and instruments required in this surgical specialty, including X-Ray technique; Wolff's law; tuberculosis of bones and joints; deformities of the feet; non-tuberculous deformities of the feet and joints; the paralyses; the bursal, tendinous and muscular conditions producing orthopedic affections; rickets; scurvy; osteomalacia; chondrodystrophies; wry-neck and the use and application of orthopedic apparatus.

DISEASES OF THE THROAT AND NOSE.

Samuel K. Merrick, M.D.....Professor of Diseases of the Throat and Nose
John R. Winslow, A.B.,M.D..Professor of Diseases of the Throat and Nose
Frank Dyer Sanger, M.D.....Professor of Diseases of the Throat and Nose
George W. Mitchell, M.D.
Associate Professor of Diseases of the Throat and Nose
H. C. Davis, M.D...Associate Professor of Diseases of the Throat and Nose
George Murgatroyd, M.D....Associate in Diseases of the Throat and Nose
William Caspari, M.D.....Associate in Diseases of the Throat and Nose
H. L. Sinskey, M.D.....Assistant in Diseases of the Throat and Nose

THIRD YEAR. Clinical Lectures. One hour each week throughout the session. Drs. Merrick, John R. Winslow, and Sanger.

FOURTH YEAR. Dispensary instruction daily in small sections at the University, Maryland General, and Mercy Hospitals. Ward classes one hour each week at the University, Maryland General, and Mercy Hospitals.

GENITO-URINARY DISEASES.

GIDEON TIMBERLAKE, M.D.....Professor of Genito-Urinary Diseases
PAGE EDMUNDS, M.D.....Clinical Professor of Genito-Urinary Diseases
W. B. WOLF, M.D.....Associate Professor of Genito-Urinary Diseases
A. J. UNDERHILL, A.B., M.D..Associate Professor of Genito-Urinary Diseases
ANTON G. RYTINA, A.B., M.D.
Associate Professor of Genito-Urinary Diseases

The course, which is entirely clinical, is taught chiefly by personal instruction in the dispensaries of the University, Mercy and Maryland General Hospitals, one trimester being spent at each hospital. The student assumes the responsibility of certain cases under the supervision of instructors.

The course includes the diagnosis, pathology and treatment of venereal diseases and syphilis together with a careful study of the less common genito-urinary diseases. The course includes instruction in urinalysis, in endoscopic and cystoscopic examinations and the use of other instruments for the diagnosis and treatment of genito-urinary diseases. Many minor operations are performed in the out-patient department by students under the supervision of the chiefs of clinic.

DISEASES OF THE COLON AND RECTUM.

G. MILTON LINTHICUM, A.M., M.D.
Professor of Diseases of Rectum and Colon
CHARLES F. BLAKE, M.D.....Professor of Diseases of Rectum and Colon
J. DAWSON REEDER, M.D.
Associate Professor of Diseases of Rectum and Colon
ERNEST G. MARR, M.D.....Instructor in Diseases of Rectum and Colon

FOURTH YEAR. This course is for instruction in diseases of the Colon, Sigmoid Flexure, Rectum and Anus.

One lecture a week throughout the year will be given in the Clinical Amphitheater of the Hospitals. The lecture will cover the essential features of the Anatomy and Physiology of the large intestine; as well as the various diseases to which it is subject. The

importance of diseased conditions and malpositions of the intestines, in relation to systemic disturbances, will be emphasized by demonstrations.

In small groups, the students will be taken into the wards and dispensaries of the University, Mercy, and Maryland General Hospitals, where different phases of the various diseases will be taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in examination of the rectum and sigmoid will be made familiar to each student.

A course in Proctoscopy will be given in the City Hospitals at Bay View, where abundance of material is always obtainable.

DEPARTMENT OF MEDICINE.

Charles W. Mitchell, A.M., M.D.
Gordon Wilson, M.D.
Cary B. Gamble, Jr., A.M., M.D.
Julius Friedenwald, A.M., M.D.
John S. Fulton, A.B., M.D.
Chas. G. Hill, A.M., M.D.
Joseph E. Gichner, M.D.
Irving J. Spear, M.D.
Edward N. Brush, M.D.
John Ruhräh, M.D.
Andrew C. Gillis, A.M., M.D.
Edgar B. Friedenwald, M.D.
Thomas W. Keown, AB., M.D.
Wm. I. Messick, M.D.
A. H. Carroll, M.D.
H. Boyd Wylie, M.D.
J. E. Poulton, M.D.
H. D. McCarty, M.D.
John E. O'Neill, M.D.
G. F. Sargent, M.D.
Frank W. Keating, M.D.
G. S. M. Kieffer, M.D.
J. F. Hawkins, M.D.
D. D. V. Stuart, Jr., M.D.
E. E. Mayer, M.D.
M. H. Todd, A.B., M.D.
John S. Fenby, M.D.
E. Le Compte Cook, M.D.
Frank J. Powers, M.D.
J. W. V. Clift, M.D.
D. C. Streett, AB., M.D.
John C. Hemmeter, M.D., Ph.D., Sc.D., LL.D.
William F. Lockwood, M.D.
Standish McCleary, M.D.
Jose L. Hirsh, A.B., M.D.
Harry Adler, A.B., M.D.
Chas. O'Donovan, A.M., M.D., LL.D.
J. M. Craighill, M.D.
Chas. W. McElfresh, M.D.
C. Hampson Jones, M.B., C.M., M.D.
G. Carroll Lockard, M.D.
Harvey G. Beck, M.D., D.Sc.
E. B. Freeman, B.S., M.D.
J. Clement Clark, M.D.
Hubert C. Knapp, M.D.
G. M. Settle, A.B., M.D.
T. Fred Leitz, M.D.
Wm. H. Smith, M.D.
J. Percy Wade, M.D.
R. C. Metzel, M.D.
Wilbur P. Stubbs, M.D.
J. Harry Ullrich, M.D.
J. J. O'Mara, M.D.
Benjamin Pushkin, M.D.
J. E. Brumback, M.D.
J. G. Stiefel, M.D.
Theodore Morrison, M.D.
M. Feldman, M.D.
C. C. Hableston, M.D.
S. D. Shannon, M.D

PHYSICAL DIAGNOSIS.

SECOND YEAR. Didactic lectures and practical demonstrations in medical topography and the physical conditions in health, preparatory to the course in physical diagnosis in the third year. Two and one-half hours each week during the second semester.

THIRD YEAR. The class is divided into small groups, and each section receives instruction for the entire session in the medical dispensaries of the hospitals. During the second semester, the students under the supervision of instructors examine and treat patients in the medical dispensaries. During one semester small groups are sent for the afternoon to the city hospitals at Bay View for special instruction in history taking and physical diagnosis. Two hours a week throughout the year is devoted to physical diagnosis. Full class conferences one hour a week throughout the session.

CLINICAL MEDICINE.

THIRD YEAR. Lectures and recitations on the principles of medicine, for three hours a week throughout the session. Clinical conference, one hour each week throughout the session.

FOURTH YEAR. Lectures, recitations and clinics to the entire class three hours a week throughout the session.

A clinical pathological conference is held once a week throughout the session, at which the material obtained through operations or at autopsy is studied in relation to the clinical findings.

The whole class, divided between the three hospitals and again subdivided into small groups, receives bedside instruction twelve hours a week throughout the session and has the care of the hospital patients under the direct supervision of the hospital staff, making all examinations and keeping the clinical history of the patient.

During one trimester the student must live in the hospital dormitories, and in this manner receive experience as an intern.

Dispensary instruction is given nine hours a week in the specialties of medicine.

PEDIATRICS.

THIRD YEAR. Lecture recitation one hour a week throughout the session.

FOURTH YEAR. Clinic recitation one hour a week throughout the year and in addition ward class instruction to small groups one hour a week during one trimester.

Dispensary instruction in pediatrics is given to small groups throughout the year.

THERAPEUTICS.

Physical Therapeutics. This course consists of weekly lectures and demonstrations on hydrotherapy, thermotherapy, massage, rest and exercise, the Weir Mitchell Treatment, radiotherapy and electrotherapeutics. The basic physiologic principles and actions of the above mentioned agencies are given full consideration and study, and the practical application is observed in the hospital and clinic and in visits to various institutions having well equipped departments for treatment by physical means.

THIRD YEAR. This course is supplementary to that on clinical medicine and an effort is made to familiarize the student with the practical treatment of disease. (One hour a week.)

FOURTH YEAR. This subject is covered in conjunction with the teaching of clinical medicine.

GASTRO-ENTEROLOGY.

FOURTH YEAR. Clinic recitation to each third of the class for one hour a week throughout the session. Dispensary instruction to small groups during part of the session. Practical instruction in the wards in the differential diagnosis of diseased conditions of the alimentary tract.

TUBERCULOSIS.

A practical course is given in the tuberculosis dispensary and at the Municipal Tuberculosis Hospital to small groups, the abundance of the material, both of "incipient" and "advanced cases" making this course of value in the practical recognition of the physical signs of the disease.

NEUROLOGY.

THIRD YEAR. Lectures and recitations one hour each week to entire class throughout the year. This course comprises the study of the anatomy and physiology of the nervous system, the method

of neurological examination, and relationship of signs and symptoms to pathological conditions. The material at the University, Maryland General, and Mercy Hospitals is available.

Fourth Year. Clinical lectures and recitations; one hour each week throughout the entire session.

Clinical Conference, one hour each week to the entire class. This subject is taught at the University, Maryland General, and Mercy Hospitals. All cases presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the cases before the class. These cases are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

Ward Class Instruction. In small sections, two hours each week during entire year at the University, Maryland General, and Mercy Hospitals. In these classes the students come in close personal contact with the cases in the wards under the supervision of the instructor.

Dispensary Instruction. Small sections are instructed in the dispensaries of the University, Maryland General, and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their earlier as well as later manifestations.

Electro Therapeutics. Instruction in the uses of the various types of electrical apparatus is given by lectures and demonstrations in the clinics, the ward classes, and the out-patient department.

PSYCHIATRY.

Fourth Year. This subject is taught by means of didactic and clinical lectures. Abundant material is at the command of this department in the various institutions which are presided over by the teachers in psychiatry. The student is brought into contact with the early manifestations of mental disease in the dispensaries of the University, Maryland General, and Mercy Hospitals, and in a series of clinics opportunity is afforded to observe the course and later manifestations of the disease, often in these same patients, at the Sheppard Enoch Pratt Hospital, Springfield State Hospital, Spring Grove State Hospital, Mount Hope Retreat, Maryland Training School for the Feeble Minded, and City Detention Hospital.

STATE MEDICINE.

Fourth Year. Lectures and demonstrations one hour each week to the entire class throughout the session.

The course in state medicine begins with a study of structure and function of the social organism, as revealed by the numerical analysis of population, births, deaths, sickness and migration. Elementary instruction and practice are given in vital statistics; in medical notification, registration and certification; and in the laws and ordinances concerning public health. The specific hygiene of the preventable diseases is next taken up, such choice being made as will familiarize the student with the epidemiology of the more important communicable diseases, and with the main instruments of prevention: notification, inspection, segregation, isolation, immunization and disinfection. The course is planned from the view point of official practice in public hygiene.

One lecture is given each week to the members of the Senior Class, frequently by Government officials who are recognized authorities on diseases peculiar to the tropics.

DEPARTMENT OF OBSTETRICS.

L. E. Neale, A.M., M.D., LL.D.....Professor of Obstetrics
Geo. W. Dobbin, M.D.....Professor of Obstetrics and Gynecology
J. M. H. Rowland, M.D.....Professor of Obstetrics
Bernard Purcell Muse, M.D.....Professor of Clinical Obstetrics
Charles E. Brack, M.D.....Clinical Professor of Obstetrics
Glenn M. Litsinger, M.D.....Associate Professor of Obstetrics
J. K. B. E. Seegar, M.D.....Associate Professor of Obstetrics
H. S. Gorsuch, M.D.....Associate in Obstetrics
Maurice Lazenby, M.D.....Associate in Obstetrics
Emil Novak, M.D.....Associate in Obstetrics
J. McF. Bergland.....Associate in Obstetrics
H. N. Freeman, M.D.....Instructor in Obstetrics
M. E. Douglass, M.D.....Instructor in Obstetrics
Wm. B. Schapiro, M.D.....Assistant in Obstetrics

Third Year. Lectures and recitations two hours each week by Drs. Neale and Dobbin to entire class. Special obstetric and gynecologic pathology three hours each week by Drs. Brent and Lazenby to class sections in the Pathologic Laboratory. Clinical Obstetrics (bedside and manikin work) three hours each week at the University Hospital by Dr. Neale and his assistants,

and at the Mercy Hospital by Drs. Brack, Litsinger, Lazenby and Novak.

Examinations, one at end of first semester and final one at end of the year. The results of these examinations considered in conjunction with the student's practical work, will determine the grade for the year's work, which grades, if sufficient to give student advanced standing, will count as one-half of the final grade in Obstetrics.

Fourth Year. *Lectures and Clinical Conferences.* Two hours each week to the entire class. Drs. Neale, Dobbin and Rowland.

Ward Classes and Operative Obstetrics (Manikin work). Four hours each week to sections of the class.

Students are required to attend obstetric cases before, during and after confinement in the University Hospital, Maryland Lying-In Hospital and Maryland Lying-In Asylum, as well as in the out-patient department. Each student is required to conduct and make accurate records of at least twelve confinement cases. These out-patient cases are conducted under the supervision of post-graduate instructors, two in number, who devote their whole time to this work.

Mid-year and final examinations will be held, the results of which, considered in conjunction with clinical work and recitations, will make up the remaining half of the final grade.

This School is peculiarly fortunate in the clinical material available for this important branch of medical teaching; more than 2000 cases in the three hospitals and their out-patient departments make a practically inexhaustible clinic.

DEPARTMENT OF GYNECOLOGY.

William S. Gardner, M.D.....Professor of Gynecology
W. B. Perry, M.D.....Professor of Clinical Gynecology
J. Mason Hundley, M.D.....Professor of Clinical Gynecology
Hugh Brent, M.D.....Associate Professor of Gynecology
Abraham Samuels, M.D.....Associate Professor of Gynecology
E. H. Hayward, M.D.....Associate in Gynecology
Geo. A. Strauss, M.D.....Associate in Gynecology
R. G. Willse, M.D.....Demonstrator of Gynecology
W. K. White, M.D.....Instructor in Gynecology
R. L. Mitchell, M.D.....Instructor in Gynecology
H. S. Street, B.S., M.D.....Instructor in Gynecology
J. M. Fenton, M.D.....Assistant in Gynecology
Maurice Lazenby, A.B., M.D.....Assistant in Gynecology
L. H. Douglass, M.D.....Assistant in Gynecology

THIRD YEAR. *Didactic Work.* Lectures and recitations one hour each week throughout the session.

Laboratory. Special pathology, both gross and microscopical, studied in connection with the clinical history of each specimen, two hours each week for one semester.

FOURTH YEAR. *Didactic Work.* Lectures and recitations one hour each week throughout the session.

Clinical Work. Six hours weekly for one trimester. In this course a student writes the clinical history of each patient in the ward, makes a general physical examination including the blood and urine, before the patient is brought before the class. One student under supervision gives the anesthetic, a pelvic examination is made by six students, and any operation required is then done before a section of the class small enough to see clearly what is being done and how it is done. On a subsequent day the whole group examine microscopically sections prepared from material removed from patients that have been before them.

DEPARTMENT OF OPHTHALMOLOGY AND OTOLOGY.

HARRY FRIEDENWALD, A.B., M.D...Professor of Ophthalmology and Otology
HIRAM WOODS, A.M., M.D.....Professor of Ophthalmology and Otology
J. FRANK CROUCH, M.D....Professor of Clinical Ophthalmology and Otology
WM. TARUN, M.D.....Clinical Professor of Ophthalmology and Otology
CLYDE A. CLAPP, M.D.....Associate in Ophthalmology and Otology
H. K. FLECKENSTEIN, M.D.....Associate in Ophthalmology and Otology
JOSEPH I. KEMLER, M.D.....Associate in Ophthalmology and Otology
J. W. DOWNEY, M.D.....Associate in Otology
EDWARD A. LOOPER, M.D., D.Oph..Instructor in Ophthalmology and Otology
R. D. WEST, M.D.....Assistant in Ophthalmology and Otology

THIRD YEAR. *Practical Course in the anatomy,* gross and microscopic, and in the *physiology of the eye and the ear;* this course consists of dissections, microscopic sections, demonstration on models, etc., once weekly throughout one half the year.—Dr. Tarun.

Practical Course in the Methods of Examination of the eye, including the use of the ophthalmoscope, and of the ear, including the tests of the auditory apparatus.—Drs. Fleckenstein and Downey.

FOURTH YEAR. *Didactic Course in Diseases of the Eye* once weekly October to February, Dr. Woods; February to close of session, Dr. Harry Friedenwald.

Didactic Course in Diseases of the Ear, Dr. Crouch once weekly for half the year.

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Clinics in diseases of the eye and ear to sections of the class once weekly, by Drs. Harry Friedenwald, Woods and Crouch.

Dispensary Instruction to small sections.

The courses in Ophthalmology and Otology are designed to familiarize the students with the common diseases of the eye and ear, their recognition and treatment, with a view to meet the needs of the general practitioner. Special emphasis is laid upon the relation between diseases of the eye and the ear and systemic diseases of other organs.

LABORATORIES OF CLINICAL PATHOLOGY.

Charles E. Simon, A.B., M.D.....Professor of Clinical Pathology
H. J. Maldeis, M.D.....Associate Professor of Clinical Pathology
G. Howard White, A.B., M.D....Associate Professor of Clinical Pathology
Charles C. W. Judd, A.B., M.D.....Associate in Clinical Pathology
H. Boyd Wylie, M.D.....Associate in Clinical Pathology
W. M. Lewis, M.D.....Associate in Clinical Pathology
H. M. Todd, M.D.....Associate in Clinical Pathology

During the *third year* the student is thoroughly drilled in the technique of clinical laboratory work so that he shall be capable of performing all routine examinations which may be called for during his fourth year, in connection with the work in the wards and the dispensary. To this end every student is provided with a microscope for his exclusive use, and every two students with a special laboratory outfit, including blood counters, hemoglobinometers, burettes, pipettes, beakers, test tubes, evaporating dishes, and staining reagents.

The instruction is to a great extent individual, which is rendered possible, owing to the unusually large teaching staff in this department.

The practical work is supplemented by a series of didactic lectures, recitations and demonstrations in which the clinical significance of the microscopical, chemical, bacteriological and serological findings in connection with the examinations of the blood, gastric juice, feces, sputum, urine, exudates and transudates, are thoroughly considered.

During the *fourth year* the student applies in the student laboratories of the various affiliated hospitals what he has learned during the preceding year. To give an idea of the extent to which this work is carried it may be mentioned that at one of these hospitals

alone over 7000 examinations of various kinds were made by students during the past academic year.

The student laboratories are open at all hours of the day, and from 9 to 11 a.m. a special instructor is available to give any assistance that may be desired.

THE UNIVERSITY HOSPITAL TRAINING SCHOOL FOR NURSES.

MARY E. SULLIVAN, R.N., M.U.H. 1911, *Superintendant of Training Schools.*

The University Hospital Training School for Nurses was organized December 14, 1889, and offers a three years' course of training.

Those wishing to obtain the course of instruction must apply personally or by letter to the Superintendent of Nurses, who will furnish printed instructions respecting the personal information to be given by applicants. Letters of application should be accompanied by a statement from a clergyman testifying to good moral character and from a physician certifying to sound health and unimpaired faculties. Applicants must be between twenty-one and thirty-five years of age, of at least average height and physique, and must give satisfactory evidence of fitness in disposition and temperament for the work of nursing.

If approved, applicants are received into the school for a period of six months on probation, during which time demonstration classes are held, and instruction is given in the elementary part of the training.

Classes are formed and pupils are received in the spring and autumn.

High school graduates and women of higher education are given the preference. Their superior preparation makes them better fitted for the opportunities that are opening up in the profession of nursing. Graduates of this school are eligible for Red Cross and all Government work.

The Superintendent of Nurses decides as to the fitness of probationers for the work, and the propriety of retaining or dismissing them, and she may at any time terminate the connection of a pupil with the school in case of misconduct, inefficiency or neglect of duty.

Except under special circumstances failure to pass the examinations at the end of the first year is considered a sufficient cause for the termination of a student's connection with the school.

Students reside in the home and serve as assistants in the various departments of the Hospital for the full three years. They are expected to perform any duty assigned to them by the Superintendent of Nurses.

After the period of probation, students are required, when on duty, to wear the dress prescribed by the Hospital, which is blue and white striped gingham, with white apron and cap and linen collar and cuffs. Probationers are not allowed to wear this dress.

To the University Hospital belongs the honor of bestowing upon its graduates a cap that possesses a real history—the Florence Nightingale cap, installed by Miss Parsons, a graduate of St. Thomas Hospital, London, and the first superintendent of the University Hospital Training School for Nurses.

Day Nurses are on duty from 7 a.m. to 7 p.m. with one hour for dinner, and three hours for rest and recreation. They are given an afternoon each week and part of every Sunday. Each student is required to devote at least one hour daily to lecture, class work or study. A vacation of three weeks is allowed each year.

In sickness all students are cared for gratuitously, but the time so lost must be made up.

The course of training includes practical instruction in the nursing of medical, surgical, orthopedic, gynecological patients, obstetrics, the nursing of children, and the operating room work.

A course of lectures is given by the physicians and surgeons of the University, and class instruction with demonstrations by the Superintendent of Nurses and her assistants. Examinations are held at stated periods.

When the full term of three years is ended, the nurses thus trained will be at liberty to choose their own fields of labor, whether in hospitals, in private families, or in the various branches of social work which offer opportunities for the woman of ability. A diploma is given upon completion of course of training.

In addition to board, lodging and a reasonable amount of laundry work, each student receives an allowance of $5.00 per month to defray the expenses of uniforms, text-books, etc., incidental to her training.

GRADUATES, 1917.

ADELINE BELL CAVANO.....*Maryland*
JANE ADALINE PENNEWELL.....*Maryland*
MYRTLE MAY FAHRNEY.....*Maryland*
ELIZABETH LOUISA MARSH.....*Maryland*
BERTHA MAY QUIGLEY.....*Maryland*

Marguerite Eugenia Risley	*Maryland*
Lucy Edith Mouse	*Maryland*
Laura Augusta Keffer	*Virginia*
Lillie Seaton Hedges	*Maryland*
Anna Carlyle Robinson	*New Jersey*
Nancy Josephine Klase	*Virginia*
Jemima Minnis	*Pennsylvania*
Nancy Minnis	*Pennsylvania*
Catherine Ethel Monroe	*Maryland*
Emily Elizabeth Kenney	*Delaware*
Annette Purcelle Stoneham	*Virginia*
Ellen Christene Lloyd	*Maryland*
Elsie Mae Simpson	*Maryland*
Helen Louise Dearmyer	*Michigan*
Rhetta Catherine Shertzer	*Pennsylvania*
Norma Augusta Thorn	*New Jersey*
Anna Roeder Mohler	*District of Columbia*
Olive Ellen Murray	*Maryland*
Leonora Andrews Cecil	*Maryland*

THE MERCY HOSPITAL TRAINING SCHOOL FOR NURSES.

The Mercy Hospital Training School for Nurses, conducted by the Sisters of Mercy and connected with the College of Physicians and Surgeons, was organized and incorporated under the general laws of the State of Maryland in 1899. Its first students were graduated in 1901; and on the passage of the bill for registration in 1904, the Sisters of Mercy, connected with the Hospital service, received certificates as registered nurses.

The Training School was affiliated with the Board of Regents of the State of New York in 1906; and, in the same year, the Alumnae Association was incorporated, having been previously connected with the Associated Alumnae of the United States. The graduates, as active members, have been much interested in the movements of the Maryland Association of Graduate Nurses, to whom they have given every encouragement to uplift the profession in its many works of district nursing, tuberculosis campaign, Red Cross movements, etc.

The requirements for entrance are: highest moral standing, health, intelligence, and a High School education or its equivalent. The age limit is twenty to thirty-five years.

After a three months' probation, candidates, if they possess the necessary qualifications, are admitted to the Training School proper, receiving five dollars a month wherewith to secure uniforms, text books, etc., the education they receive being considered their compensation. The right is reserved to dismiss pupils for any cause

which may be deemed sufficient by the Sister Superior or Superintendent.

The course of training comprises three years of theory and practice. The clinical advantages are exceptional. The medical, surgical, orthopedic, gynecological, obstetrical, children's and dietetic departments give valuable practical experience. The nurses are taught the theory of nursing by class recitations and demonstrations by efficient Sister instructors. Supplementing this training is a course of lectures from the ablest professors of the University of Maryland School of Medicine and College of Physicians and Surgeons, who are untiring in their efforts to keep the School abreast with modern scientific developments.

GRADUATES, 1917.

SISTER M. HILDA BUSHMAN	*Maryland*
SISTER M. HILDEGARD HOLBEIN	*Maryland*
SISTER M. ALOYSIUS KAVANAUGH	*Georgia*
BEULAH DOHL ATKINS	*Virginia*
ELOISE BISER	*Maryland*
MARY BURKE	*Pennsylvania*
ANNA BELLE BURNS	*West Virginia*
MARY ESTELLE CARVER	*Maryland*
MARY CAROLINE CHRISTY	*West Virginia*
MARJORIE ALRICKS DUNCAN	*Maryland*
MAE AGNES FANNIN	*Virginia*
HELEN EDNA HARBOUR	*West Virginia*
MARY ADELIA KELLY	*Maryland*
ADLA MARIE MANSUR	*Syria*
MADELINE DE SALES ROCHE	*Pennsylvania*
ANNE ROSALIA SAPPINGTON	*Maryland*
EDNA FRANCES SAPPINGTON	*Maryland*
AURELE BEATRICE VOGEL	*Pennsylvania*
MARY RUTH WORTHINGTON	*Maryland*

MARYLAND GENERAL HOSPITAL TRAINING SCHOOL FOR NURSES.

MISS GEORGE ALLEN HUTTON, R.N., *Superintendent of Training School.*

The Maryland General Hospital Training School for Nurses has been in successful operation since 1891.

In 1909 the Training School was registered with the Board of Regents of the State of New York.

Its purpose is to give to young women desiring to understand the science and acquire the art of nursing the sick and injured, the opportunity, through instruction and training, to qualify themselves for efficient and skillful work in their humane and useful mission.

A candidate for admission must be between 19 and 35 years of age.

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UNIVERSITY HOSPITAL

MARYLAND GENERAL HOSPITAL

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons

VOL. II OCTOBER, 1917 No. 3

THE ORGANOTHERAPY OF MENSTRUAL DISORDERS

BY EMIL NOVAK, A.B., M.D., F.A.C.S.

Baltimore, Maryland

INTRODUCTORY

Although Claude Bernard is commonly credited with the discovery of the internal secretions, it was Brown-Sequard, some thirty-four years later, who first directed attention to the therapeutic possibilities of organ extracts. On a memorable evening, June 1, 1889, he announced the remarkable rejuvenating effects produced in himself by the subcutaneous injection of testicular extract. The unwarranted hopes produced by this enthusiastic report have long since been dissipated. However, the miraculous results which were claimed for this early experiment in organotherapy are perhaps chiefly responsible for the unreasonable attitude of many clinicians toward the whole subject of organotherapy. I believe there are many whose use of these substances is based, either consciously or unconsciously, upon the notion that their therapeutic effects are, or should be, more or less specific. Unless they *are*—unless, for example, the success in a given case is at least comparable to the brilliant results of thyroid treatment in myxoedema—there is a tendency to be discouraged and to look upon the whole treatment as unsatisfactory.

As a matter of fact, organotherapy should be looked upon as only a species of drug treatment. Like the drugs which we use in combating disease, the organ extracts are definite chemical substances. In the case of at least one of them, adrenalin, we know the exact chemical composition. Only a relatively small proportion of drugs in common use—quinine, mercury and salvarsan are the best examples—are specifics against certain diseases. The great majority are useful because they are effective against certain individual manifestations of disease. In the same way, the organ extracts, with the single exception of thyroid extract, exert an adjuvant rather than a specific effect. Viewed in this light, and considering the relative newness and lack of development of this form of medication, there would seem to be no justification for discouragement with the results so far achieved.

ORGAN EXTRACTS WHICH MAY BE USED IN THE TREATMENT OF MENSTRUAL DISORDERS

The female generative apparatus is more or less closely linked up with a number of endocrin glands. Most important, of course, is the ovary. Other ductless glands which influence the reproductive activities are the thyroid, the pituitary, the suprarenal cortex, the thymus, and the pineal body. It is not surprising that extracts prepared from all these organs have been employed in the treatment of disorders of menstruation. In the case of extracts from the suprarenal, thymus, and pineal bodies the results are as yet so vague and uncertain that it would seem unprofitable to discuss them here. I believe it will be accepted that in the organotherapy of menstrual disorders, the physician's armamentarium may well be limited to extracts made from the thyroid, the ovary and the pituitary body.

Thyroid extracts. In many ways the most satisfactory of all the organic extracts in the treatment of menstrual disorders is thyroid extract. Hertoghe's (1) statement that "the best method of stimulating the ovary, testicle, suprarenal, and hypophysis is by way of the thyroid, which governs and controls all the internal secretory organs" is perhaps not capable of scientific proof, but it has much to commend it from a practical point of view. While from a theoretical point of view the influence of thyroid should be less direct and less potent in menstrual disorders than ovarian substances, these considerations are more than counterbalanced by the greater re-

liability of thyroid preparations, by our more precise knowledge of their pharmacodynamics, and by the greater potency of their action in general. A great advantage in thyroid medication is the fact that administration of the extract by mouth, most commonly in the form of the tablets, yields eminently satisfactory results.

Pituitary extract. The now well-known pituitary extract, prepared commercially under a variety of names (pituitrin, hypophysin, infundibulin, etc.) is derived from the posterior lobe of the hypophysis. Its value in an increasing number of conditions is now well recognized. Most brilliant, perhaps, have been its results in such obstetrical conditions as uterine inertia, post-partum hemorrhage, etc. Its value as a diuretic and as an enterokinetic, and perhaps even more its remarkable virtue in the control of diabetes insipidus, are also worthy of note. As yet it can hardly be said to have earned a place of much importance in the treatment of menstrual disorders, even though its employment in certain of the latter is based upon very rational indications. Encouraging results have, however, been reported by a number of investigators, and it is possible that a wider experience may demonstrate that it has a definite place in the treatment of certain disorders of the menstrual function.

It is prepared in both a solid form, for administration by mouth, and in the form of the solution, suitable for hypodermic administration. So far the results of the ingestion method have been distinctly disappointing. Whether this is due to defective methods of preparation or to a nullifying effect of the gastro-intestinal secretions can not be stated. By far the most effective method of giving pituitary extract, however, is by the hypodermic method, for which purpose the substance is commercially prepared in ampoules suitable for hypodermic injection. Most commonly the injections are made subcutaneously, but by some the intravenous method is highly recommended.

Extract of ovary or corpus luteum. Since the ovary is the organ which directly controls the menstrual function, it would seem that quantitative disorders of the latter would most logically be treated by administration of the active principle of the ovary. While in certain menstrual disorders ovarian extract has yielded results which are very encouraging, in other types, as will be shown, the results have been more or less disappointing. The probabilities are that at least two, and perhaps more, hormones, are produced in the

ovary. It seems to me to have been fairly well established that the hormone which is responsible for the occurrence of menstruation is formed by the corpus luteum. The internal secretion which is concerned with the fixation of the ovum in the first portion of pregnancy, on the other hand, more probably is derived from the so-called interstitial glands, i.e., the theca-lutein cells of atretic follicles, or from the paralutein cells of the corpus luteum, which I described in a recent paper (2). As to this point, however, there is as yet no definite proof.

Finally, we must not overlook the fact that, according to the best evidence, the ovaries in females, like the testes in males, determine the development of the so-called secondary sexual characteristics, such as the height and configuration of the body, the distribution of hair, the character of the voice, the development of the breasts, etc. What portion of the ovary is concerned with this function is not known. From the fact that corpora lutea ordinarily are not present until menstruation is inaugurated, it seems possible that the stroma of the ovary may be the important element in this respect. At any rate, it would seem justifiable to conclude that the constituent of the ovary most directly concerned with the function of menstruation is the corpus luteum, and that other ovarian elements are probably more important in the regulation of such phenomena as growth, determination of the secondary sex characteristics, etc.

I mention these matters because they appear to throw some light on the much discussed question as to whether we should employ extracts made from the corpus luteum alone or from the entire substance of the ovary. Based on the above considerations, I have personally been inclined to the use of corpus luteum preparations in the management of disturbances revolving about the menstrual function. On the other hand, in cases which involve endocrinal relationships more profoundly, and especially those in which there is some disturbance of growth or body type, I have leaned toward extracts made from the whole ovary. Whether or not this distinction is well taken it is difficult to decide, especially in view of the fact that the results in all forms of ovarian therapy are unfortunately still very inconstant.

TYPES OF MENSTRUAL DISORDERS IN WHICH ORGANOTHERAPY IS INDICATED

General considerations. Up to the time of puberty there is very little difference between the sexes. At this period a new force in the life of the boy or girl makes itself felt. The gonads, which have hitherto lain more or less dormant, now dominate the picture. As already mentioned, it is to them that is attributed the development of the secondary sexual characteristics, and, in the case of the female, the inauguration of menstruation. In the majority of cases, the influence of the gonads asserts itself sufficiently gradually to occasion relatively little disturbance of the girl's life. In a certain proportion of cases, however, the gonads are apparently projected into activity with such suddenness and force as to bring about a great upheaval in the endocrin field. Menstrual disorders, especially in the direction of an excess of the flow, are thus brought about. On the other hand, the slow awakening of ovarian influence, whether direct or indirect, may result in amenorrhea or in conditions of retarded development.

During reproductive life there is under normal conditions an even balance of the endocrin glands, so that the gonadal endocrin which causes menstruation exerts its rhythmic influence at regularly recurring intervals. Disorders in one link or another of the ductless gland chain are of course not uncommon, often causing, among other symptoms, one form or another of functional menstrual aberration. In some cases menstruation is deficient or absent, in others excessive.

Finally, at the age of the menopause, the ovarian factor withdraws itself from the stage in a manner not unlike that of its entrance. Sometimes the withdrawal is gradual, sometimes abrupt. In some instances, the associated endocrin commotion is so slight or so gradual that no noteworthy symptoms are produced; in others, again, the upheaval is so great that serious subjective symptoms manifest themselves. Moreover—and this is more pertinent to our present discussion—functional menstrual disorders are frequently observed. While the usual and normal result is diminution and final disappearance of the menstrual flow, there may be, in a minority of cases, a functional menorrhagia. Cases of this type are of the greatest practical importance, especially from a diagnostic standpoint.

The safe rule in the management of uterine bleeding at or near the age of the menopause is to suspect the existence of cancer in all cases where the cause is not obvious on inspection or palpation. In many instances curettage is necessary to make the diagnosis certain, or at all events, to exclude the possibility of cancer. Without going into details, however, the fact remains that in a certain definite though perhaps small group of cases, uterine bleeding may occur in the entire absence of gross or microscopic changes in any of the pelvic organs, and that in most of these cases, the responsible factor is a disturbance of one or more of the endocrin glands.

Amenorrhea. During the first year or two of menstrual life, periods of amenorrhea are commonly observed, lasting from two to several months. This may occur even in girls who are entirely healthy in every respect, i.e., who are not suffering from such conditions as anemia, tuberculosis, etc. This physiological amenorrhea requires no treatment except perhaps reassurance of the patient. If, on the other hand, menstruation does not appear at the normal age, and if such a primary amenorrhea is associated with other evidences of lack of development, it is reasonably certain that there is some disturbance of endocrin function. Unfortunately it is not always possible, in the present state of our knowledge, to determine just what the endocrin defect is. In the majority of cases, it is probable that the fault lies with the ovaries or with the pituitary, and hence administration of extracts from these glands is indicated. For reasons which I have already indicated, my preference in this group of cases is for extracts made from the entire ovary rather than from the corpus luteum alone.

In certain cases delayed puberty appears to be a manifestation of hypothyroidism, although, as will be emphasized later, the latter condition more frequently causes menorrhagia than amenorrhea. Finally, in cases which fail to respond to other organic extracts, some resort to the use of thymus or pineal gland substances, although the results are rarely striking. On the whole it is obvious that the treatment of the menstrual and developmental disorders of puberty by means of ductless gland extracts is as yet extremely unsatisfactory, owing to our lack of knowledge of the pathologic physiology of these conditions. The use of extracts in these disorders is almost entirely empirical and often disappointing.

On the other hand, organotherapy in cases of this type is, in my judgment, infinitely safer than the administration of emmenagogues.

The extracts themselves are of course not emmenagogues, except in the very indirect sense that they may correct the endocrin defect which is responsible for the amenorrhea. On the other hand, the employment of emmenagogues, so frequently resorted to in the past, is based on the theory that they give rise to a pelvic hyperemia which promotes menstruation. Even if this were true, it would be hard to conceive how such an artificial pelvic hyperemis could induce the occurrence of the normal rhythmic menstrual flow. Furthermore, the prolonged administration of such emmenagogues, through the persistent pelvic congestion they entail, may easily predispose to serious pelvic discomfort and disease.

Much of what has been said with regard to the functional amenorrhea of puberty applies also to the functional amenorrhea of later life. I need scarcely say that we are not here concerned with those cases which are clearly secondary to such debilitating systemic conditions as tuberculosis or anemia. The most common type of functional amenorrhea is that which is designated as adiposogenital dystrophy (dystrophia adiposogenitalis) or Fröhlich's syndrome. I shall not here go into the discussion of this interesting condition except to say that its two principal characteristics are obesity and sexual hypoplasia, the latter manifesting itself in the woman most conspicuously by scantiness or absence of the menstrual flow. Practically all the older text books of gynecology mentioned adiposity as a cause of amenorrhea. Instead of adiposity causing amenorrhea, or vice versa, as some have believed, we know now that both conditions are themselves the result of the same underlying cause, i.e., deficiency of the pituitary body, as has been so clearly demonstrated by Cushing and his co-workers.

The rational treatment of Fröhlich's syndrome would seem to be the administration of pituitary substance to counteract the hypopituitarism which has been shown to be responsible for the condition. The results yielded by this substance, whether given by mouth or hypodermically, have been unsatisfactory. Somewhat better results are obtained from the exhibition of ovarian substances or of thyroid extract. Of the two latter, I must say that my best results have been with thyroid. As regards the ovarian or corpus luteum substances, I have rarely seen even temporary reëstablishment of the menses, while, on the other hand, contrary to what one might theoretically expect, there has been even a tendency to increase rather than decrease of the body weight. I do not know

how to explain the good results not infrequently obtained from thyroid extract, nor do I believe they will be susceptible of explanation until our knowledge of endocrin inter-relationships is far more advanced than it now is. Its administration, in doses of from 1 to 5 grains a day, is often followed by reappearance of the menses, and practically always a marked reduction in body weight.

The probability that most of these cases are to be looked upon as really of pluriglandular origin, and the uncertainty of action of the various individual extracts, has led many to resort to polytherapeutic measures in the management of these cases. Thus, in adiposogenital dystrophy, I have often used thyroid and corpus luteum extracts together with good results. There would seem to be much justification for this, especially since the addition to the thyroid of corpus luteum in any ordinary amount is unattended with danger. Various proprietaries are stated to contain extracts of a number of the ductless glands in varying proportions and amounts. All of which, again, shows how important a rôle empiricism, based on a few small molecules of fact, plays in our modern efforts at organotherapy.

Uterine hemorrhage. In a certain small proportion of cases, menorrhagia or metrorrhagia at the time of puberty is due to definite pathological lesions in the pelvic organs, such as hyperplasia of the endometrium, neoplasms of the ovary, etc. With this type of bleeding we are not here concerned. Much more frequently, however, hemorrhage at this period of life occurs in the entire absence of any demonstrable pelvic disease. As a rule, it is the result of one form or another of endocrine disturbance, most frequently in the thyroid gland or the gonads. I know of no reliable observations incriminating any of the other ductless glands, although it is of course quite possible that they may at times play a rôle in the causation of uterine hemorrhage.

With regard to the thyroid, there has been some difference of opinion as to the effects of hyper- and hypo-thyroidism upon the menstrual function. The weight of evidence supports the view that, generally speaking, hyperfunction of the thyroid, as in Graves' disease, tends toward diminishing the amount of the menstrual flow, while on the other hand, hypothyroidism is more likely to be associated with excessive menstruation. This is the view which is supported by Hertoghe (3), as well as by Sehrt (4). The latter found, in a series of 55 cases of uterine bleeding of "idiopathic"

origin, fully 38 which exhibited definite signs of hypothyroidism. On the other hand, there can be no question that at times menorrhagia is observed in women with undoubted hyperthyroidism, as in some cases of well marked Graves' disease. These apparent paradoxes are of course not uncommon in the field of endocrin pathology. As yet no satisfactory explanation can be offered for them, although it is probable that many, perhaps most, of the recognized clinical syndromes are the result of pluriglandular rather than uniglandular involvement. Hence the not infrequent overlapping of symptoms.

The menorrhagia of hypothyroidism is at times observed in girls in whom menstruation has appeared late and in whom there are other evidences of tardy development. The diagnosis of its hypothyroid origin is usually suggested by the existence of a more or less complete array of the symptoms which are now generally recognized as indicative of defective function of the thyroid. These I shall not detail here, except merely to emphasize the importance in this connection of obesity; the transitory "white indolent oedema" which may be noted in the eyelids, cheeks, feet or fingers, and which does not pit on pressure; the harsh, dry skin, with tendency to chilliness; and the hirsute derangements, such as falling out of the hair or thinness of the eyebrows, especially in their outer third.

The treatment of uterine bleeding of hypothyroid origin is simple enough, consisting essentially in the administration of thyroid extract. It must not be forgotten that this substance is a powerful agent whose use must always be rigidly supervised by the physician. Excessive dosage gives rise to the characteristic symptoms of hyperthyroidism, such as tachycardia and tremor. When abuse of the drug is protracted, serious injury may be inflicted upon the cardiovascular system.

The average dosage of thyroid extract in these cases of mild hypothyroidism should never exceed five grains a day, and in most cases it will be much less. The patient should be observed at least once a week to determine her tolerance and to make sure that no harm is resulting from the use of the thyroid. The principal criterion should be the condition of the heart. If the heart rate is not accelerated, one may feel assured that no hyperthyroidism exists. If, on the other hand, if it is found that the use of the thyroid is accompanied by a gradually mounting pulse rate, together with nervousness, tremor, etc., the dose should be cut down. For prolonged administration 1 or 2 grains a day is usually sufficient.

An important guide to the action of thyroid extract is its effect upon the body weight, which is practically always diminished. This, as is well known, is the result of a stimulating effect upon the oxidation processes in the body. It is seldom advisable for the patient to lose weight at a faster rate than 2 or 3 pounds a week. The total loss of weight depends, of course, upon the initial body weight and upon the duration and intensity of the treatment, as well as upon such adjuvant measures as dietetic regulation, exercise, etc. In suitable cases the treatment yields striking results within a month, menstruation becoming normal and the health being improved in every way. Instead of discontinuing the thyroid medication abruptly it is wise to diminish the dosage gradually, and to keep up small doses for a considerable period of time.

Pituitary extract has also been employed in the treatment of uterine hemorrhage. When the latter is due to atony of the uterine muscle, as in post-partum or post-abortive cases, the results are, as is well known, highly gratifying. This can not be said of uterine hemorrhages of other types. The feeding of pituitary extract by mouth is attended with as little success in the usual case of non-obstetrical uterine hemorrhage as in most other conditions in which it has been used. Somewhat more satisfactory appear to have been the results when pituitary extract has been given subcutaneously or intravenously. The latter method, in the hands of Kalledey (5), is stated to have yielded good results. Such reports, however, are still too few to make any great impression on therapeutic practice. In spite of Kalledey's contention to the contrary, it seems likely that any hemostatic effect produced by pituitary extract in these cases is due to the resulting tonic contraction of the uterine mucle rather than to any corrective endocrinal effect.

Dysmenorrhea. Since this paper aims only to sketch the more important indications for organotherapy in menstrual disorders, we need make only a passing reference to the fact that some have used ovarian substances in the treatment of primary dysmenorrhea. This practice is obviously based on the doubtful theory that the underlying cause of this symptom is a hypergenitalism. At any rate, the results, so far as I have been able to learn, have been of no particular value. If ovarian extract is to be employed in cases of apparent underdevelopment of the generative apparatus, the extract made from the entire ovary would seem preferable to that made from the corpus luteum alone, for reasons which have already been indicated.

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A CASE SIMULATING EXTRAUTERINE PREGNANCY

By Hugh Brent, M.D., F.A.C.S.

Baltimore, Md.

In the consideration of extrauterine pregnancy, it is essential to formulate a symptom-complex that answers the requirements of the individual gynecologist in relation to the questions of diagnosis and treatment. It so happens that the usual "Extrauterine" presents definite evidences of its presence that are constant and characteristic. I have, in those cases presenting the following symptoms and signs, made the diagnosis with confidence, and this has been in almost every instance confirmed by operation.

1. Menstruation missed or scant.
2. The reappearance of the menstrual flow after an interval of eight weeks or less.
3. Its persistence as an irregular hemorrhage, or a brownish sanguinous discharge.
4. The supposition on the part of the patient that an abortion is in progress.
5. The passage of decidual shreds or a decidual uterine cast.
6. A moderate fall in the hemoglobin index.
7. Paroxysmal colicy pain in the right or left side of the pelvis.
8. A soft tender extrauterine mass.
9. Tympanites and general tenderness over the lower abdomen.

These are the classic signs and symptoms, and I personally believe that in these cases extrauterine pregnancy may be diagnosticated without reservation, and the abdomen opened on this assumption.

Two rather common causes of error are found in small ovarian cysts with twisted pedicles and unilateral salpingitides. I wish to record a case in which this classic symptom-complex existed as a result of the association with an early uterine abortion of a rather common intestinal lesion.

The patient is a young woman who has never before been pregnant. Menstruation on January 9 was scant, and the period in February

was missed. A few days later, she began to bleed profusely. The accompanying pain was general over the lower abdomen but particularly severe in the left side. The bleeding being profuse, a curettage was done by her family physician and a mass of soft tissue removed but no foetus found. The discomfort and tenderness persisted in the left side, and I saw her in consultation the evening of the day of operation. She was pallid with a pinched and anxious look. There was no elevation of temperature, the pulse was 120 and of low tension. The left lower abdomen was tender and slightly rigid. On bimanual examination, the uterus was enlarged, soft, and fairly movable, and a soft fullness in the region of the left tube was thought to be intestinal. The left vaginal fornix was excessively tender; the right half of the pelvis negative. As the patient was in poor condition, just recovering from an anaesthesia and an inflammatory process could not be excluded, a conservative mode of treatment was adopted.

Extrauterine pregnancy was strongly suspected, and it was decided to open the abdomen should the symptoms persist. The next day was passed comfortably, but that night she was seized with violent colicy pain in the left pelvic fossa, that was only relieved by two hypodermics of morphia, $\frac{1}{4}$ grain each.

I saw the patient at 3 a.m. The physical signs were the same as on the previous examination and a tubal abortion was unreservedly diagnosed.

OPERATION

The abdomen was opened by a mid line incision. There was no blood in the peritoneal cavity. The uterus was enlarged, soft, and in position. The tubes and ovaries were normal. The palpable portion of the ureters showed no stone. The appendix was post-coecal and normal. Several scybalous masses could be felt in the sigmoid, and on handling, this portion of the gut was observed to contract forcibly. The abdomen was closed in the usual manner. The pain persisted in the left side in a modified degree for several days but the patient made a good recovery.

OPERATIVE DIAGNOSIS

Uterine abortion, localized spastic ileus of the sigmoid

Intestinal pain produced by spastic contraction is not infrequent in women and the rather frequent left sided dysmenorrhoeas may

be accounted for on the assumption that they are the result of sigmoid spasm. This assumption I believe to be justified particularly in neurotic individuals who do not exhibit palpable pelvic lesions.

Spastic contraction of the intestine as the result of irritation is well exemplified in the reported cases of gall-stone ileus. In this instance, the scybalous masses furnished the irritating element that precipitated the attack.

Enemata might clarify the situation in cases of this character, but in extrauterine gestation, enemata, in my opinion, are contraindicated. Be that as it may, in this particular instance the colon had been apparently emptied by this means on the day of curettage. That the spasm in this case was unaccompanied by the usual evidences of intestinal obstruction was evidently due to its location in the terminal portion of the canal and its paroxysmal character.

In reviewing the situation, I can only reach the conclusion that in the face of the overwhelming evidences of extrauterine gestation, the treatment by abdominal section was entirely justified, and under similar circumstances I would employ the same procedure.

Cases of this character are not amenable to differentiation and must be accepted as the occasional, though inevitable "surprising finding" that is associated with modern surgery.

THE NEWER OTOLOGY IN ITS RELATIONSHIP TO OTHER BRANCHES OF MEDICINE

A Report Concerning the Department of Neuro-otology of the Mercy Hospital Dispensary

By Jesse W. Downey, Jr., M.D.

Baltimore, Md.

Nearly two years ago, through the interest of Dr. Harry Friedenwald and with the coöperation of Dr. A. C. Gillis, it was my privilege to establish in connection with the Neurologic Clinic of the Mercy Hospital Dispensary a Department of Neuro-otology. So far as I am able to determine this was the first neurologic clinic in Baltimore where the Bárány tests were made as a routine measure on all patients in whom their use was indicated, and on all cerebro-spinal cases of syphilitic origin. A complete report concerning the latter group of cases was presented before the 1917 Session of the American Otological Society, and a résumé of this report has been published in the *American Journal of Syphilis* (July, 1917, vol. i, no. 3,

p. 616) under the title, "The Value of The Complete Examination of the Ear in Syphilis."

Anatomically, the internal ear must be considered as consisting of two distinct portions; the cochlea and the vestibule and semicircular canals. The former contains the end-organs of hearing, the latter the end-organs of equilibration. The nerve fibers from both sets of terminals are carried for a time in the common trunk of the eighth nerve, but in the brain the pathways are diverse and the cortical centers are separately located. In other words, the internal ear presides over two entirely dissimilar and unassociated special senses, audition and equilibration. The physiology of equilibration is, of course, a complex matter, its problems, however, have been greatly simplified by the phenomenal work of Bárány in devising and elaborating the tests of the vestibular apparatus.

Because the so called static labyrinth (the saccule, the utricle and the semicircular canals) is the end-organ and has equilibration as its sole function, it can be dogmatically stated, *that vertigo is always caused by a disturbance of its normal function.* This, of course, does not mean that the lesion must be within the inner ear, but there must be a direct irritation of the vestibular apparatus or vertigo is impossible. As Fisher and Jones have expressed it, "the stomach itself, or the kidneys, or the heart can no more produce vertigo than they can produce sensations of flashes of light, hallucinations of sound, or obsessions of smell."

The tests of the static labyrinth which bear the name of Robert Bárány of Vienna, and for the devising of which he received the Nobel Prize, give very constant results in normal individuals when carried out with accuracy and minute attention to details. The tests are based on the over-stimulation of the nerve terminals in the ampullae of the semicircular canals and in the vestibule, which is produced by setting into motion the endolymph contained in these structures. The tests are performed by rotating the individual in a smoothly revolving chair of special design, or by irrigating the ear with water above or below the temperature of the body. The objective evidence of this vestibular over-stimulation is; nystagmus depending in character upon the set of canals which are stimulated, pastpointing of the extremities and falling of the body to one side or the other depending upon the sensation of vertigo produced. The tests present details too numerous to be cited in a report of this kind, but a brief explanation is readily understood. The semicircular canals are

placed approximately in the three positions of space; if for example, a person is placed in a rotating chair with the head upright and turned rapidly the endolymph in the horizontal canals is set into motion; when the chair is stopped the endolymph continues to move, producing an exaggerated movement of the hair cells in the ampullae of the canals. If the person is now directed to open his eyes and look straight ahead it will be seen that the eyes are twitching from side to side in the horizontal plane and in the direction of the flow of the endolymph. The existence of nerve pathways from the static labyrinth to the eye-muscles has long been known and the study of this induced nystagmus is, therefore, of great importance. The patient will also experience the sensation of vertigo, and if he is directed to keep his eyes closed he will say that he is still turning but in a direction opposite to that in which the chair has been turned. This induced vertigo will cause him to "pastpoint" an object which before the test he had had no difficulty in locating with his eyes closed. If the vertigo is in a plane parallel to the floor the sensation will not be unpleasant, and there will be little difficulty in preserving equilibrium; but if the patient is rotated with his head forward 90 degrees, and then suddenly made to take the upright position, he will immediately fall in the direction that he has been turned. These are the normal reactions from over-stimulation of the static labyrinth. The same phenomena may be induced by douching the ear with hot or cold water.

By the use of the two methods it is possible to test both static labyrinths together, or separately; and what is more important, one set of canals at a time, the last is accomplished by placing the head in various positions so as to bring the canals into the desired plane and by using cold or heat to set the flow of the endolymph in a certain direction. It is hardly necessary to say, that for the rotary tests the canals must be approximately in the horizontal plane, and in the vertical position for the caloric examination.

The results are very constant in normal individuals. The United States Government has accepted a standard formulated by Isaac H. Jones of Philadelphia which is as follows: After turning a person ten times in twenty seconds, after-nystagmus should last for twenty-six seconds. This should be the same in both right and left turning. A variation of eight seconds is allowable. The patient should "pastpoint" three times in the direction of turning after ten turns in ten seconds. Incline patient's head forward 90 de-

grees, turn five times in ten seconds, on stopping the patient raises his head to the upright and he should fall in the direction in which he has been turned. (See Special Regulation No. 50, Aviation Section, Signal Corps, 1917, War Department. "Unless each test is normal it is cause for rejection.")

To Jones and his co-workers of the Philadelphia School belong the credit of having put the Bárány tests upon the most practical basis yet presented. They teach that each semicircular canal has a separate nystagmic and vertiginous tract of its own, and they have been able to locate and to postulate with a high degree of assurance the neuraxial pathways of the vestibular branch of the eighth nerve. To all who have followed their work it will be patent that what I have here said is but a condensation of their teachings as expressed in their several contributions to the subject. As yet we have attempted no original work at the Mercy Hospital, but we have closely followed the Philadelphia methods. Our findings in over a hundred cases have paralleled theirs, and though we reserve the right to draw our own conclusions, the value of the examination has been definitely proven.

It must not be considered that this work is of value to the otologist alone, or that it is only a physiological question of scientific interest. As a matter of fact, the findings are of an extremely practical nature; and, more often than not, they involve questions which are entirely without the realms of otology and must be referred to the neurologist, the internist, the brain surgeon, the syphilographer, and last, and by no means the least, to him, who must in part be all of these in one—the family physician. In a larger number of cases, the ear exhibits only a symptom of a remote pathologic condition. May I make this plain by the citation of one case?

Case 1. Mrs. D. S., age 45, consulted me April 11, 1917, complaining of slight deafness in the left ear and attacks of vertigo. She had had these vertiginous attacks at intervals for five years, the deafness was more recent. The hearing tests demonstrated a partial nerve deafness of the left ear. The vestibular examination showed a marked reduction in the duration of the nystagmus aroused from the left ear. Induced vertigo was reduced in duration and there was no pastpointing. Otologically, I was dealing with a labyrinthine irritation; the cause was probably outside the ear, therefore, I sent a full report to her family physician and asked for a general examination. He replied as follows: "Mrs. S. has been

under treatment for a gastro-intestinal condition brought on from constipation. I have considered her vertigo a part of the symptom-complex, but I am happy to know that you have found some definite trouble with the ear which I trust you will be able to correct." The doctor had missed my point; there was definite trouble with the ear, but the treatment was in his hands. I referred her back to him with this explanation. Renewed effort from a gastro-intestinal standpoint relieved her greatly. It was very interesting to watch the ear as an index of her progress or retrogression. For several days after an attack of vertigo the vestibular responses would be markedly reduced. If she was free from her toxemia the nystagmus would increase almost within normal limits. Undoubtedly, some permanent injury had been done to the ear. By a correct determination of the cause, however, it was quite possible to stay the process of auditory nerve degeneration.

The practical value of the Bárány tests in this case is obvious. We were able to say that the vertigo was actual. That the lesion of the vestibular apparatus was a toxic irritation of the nerve terminals. We were also able to relieve her distressing symptoms and probably to save her from total deafness. I have one case on record, that Dr. H. K. Fleckenstein was good enough to let me see, in which both the cochlea and the vestibular function were destroyed during one attack of severe ptomaine poisoning.

Patients complaining of "dizzy spells" are often the bane of a physician's existence. Is this vertigo due to an actual lesion or is it psychic?

Case 2. C. W. F., age 30, a fireman, was injured by a stream of water from a high-pressure hose striking him in the left ear. This occurred in 1914, since that time the man has never been able to return to his work and has complained of vague attacks of vertigo, and unconscious spells. To all other methods of neurologic examination, except the Bárány tests, he is normal. He has, however, a definite error in his vestibular responses indicating a neuraxial lesion. Whether this is due to the injury or not I cannot say, but I am quite willing to say that his vertigo is not imaginary.

Case 3. J. A. H., age 32, head injury July 24, 1916. I examined him March 13, 1917. He had apparently recovered entirely from his injury but complained of slight vertigo especially when reclining. Dr. A. C. Gillis could find no neurologic sign to sustain the man's suit for damages. The Bárány tests made with the greatest care

gave absolutely normal responses. The man, was persuaded to accept the compensation offered, and to take his case out of court.

I have five cases on record of head injuries followed by total or partial destruction of the vestibular function. One patient, referred by Dr. Harry Friedenwald, has been totally deaf in both ears for twenty years following a fracture of the skull. He does not know, at present, the sensation of vertigo. He can be put through every conceivable rotary and caloric test without the slightest objective reaction or vertiginous sensation. It is absolute proof that the end-organs of equilibration have been destroyed; it is indisputable evidence that a person cannot be dizzy without internal ears. A similar case is one in which both auditory and static labyrinths have been destroyed by the ravages of inherited lues. Another case has been studied in which all labyrinthine function has been destroyed by meningitis.

Forty-three cases of syphilitic auditory lesions have been recorded among the number are included cases of meningitis, gumma of the cerebellum, tabes, paresis and lesions during the, so called, secondaries. This work has been thought worthy of a separate report, and with the exception of the history of one case it is here sufficient to say: That syphilitic auditory neuritis is by no means uncommon, that often the otologist is in the way to discover the first manifestation of a cerebrospinal invasion, that the vestibular tests often furnish a means of following these cases and that the treatment should be undertaken and continued by the neurologist or the syphilographer. I think that I have offered convincing proof of these statements in the reports which have been published. One case is of sufficient interest to bear repeating here.

Case 4. E. R. age, 38 colored, admitted July, 1916, complaining of deafness and tinnitus. The hearing defect was not marked but was typically luetic, and the vestibular responses showed marked irritability of the static labyrinth. The blood Wassermann was negative. At this time there were no neurologic signs. The woman was urged to have a spinal puncture but refused and drifted away from the clinic. She returned in May, 1917, complaining that she was much deafer. At this examination it was noticed that her pupils were irregular and sluggish to light. She consented to a spinal puncture, which showed: Cell count, 31. Wassermann strongly positive. Globulin tests positive. The woman is undoubtedly a tabetic, and the ear lesion antedated the Argyl Robertson pupils by at least six months.

The value of the Bárány tests in localization of cerebellar and brain-stem lesions has been greatly developed by the Philadelphia School. We who have closely followed this work feel that it has been placed upon a much more logical physiological basis than that of the Vienna School. Localization depends chiefly upon the theory that each semicircular canal has a separate nystagmic and vertiginous tract of its own. Lesions within the labyrinth or in the nerve trunk itself before it reaches its deep origins in the brain must inhibit both the nystagmic and vertiginous responses, and from all the canals in the majority of instances. If we get normal nystagmic responses from one set of canals and absence of vertigo from the same set of canals we must be dealing with a lesion situated in a separate nerve pathway that we know exists, though we may not as yet know its exact location in the brain. One case, referred by Dr. Chas. Bagley, Jr., will furnish an example. This patient, a child of twelve, undoubtedly had a cerebellar tumor. The report to Dr. Bagley was as follows: "As a whole the ear tests would indicate a cerebellar lesion of the right side in the region of the middle and inferior cerebellar peduncles with some invasion of the pons." Dr. Bagley replied: "Exploration of the N. B. case revealed a rather extensive glioma of the right cerebellar hemisphere. The tumor consisted of a very vascular portion which seemed to extend from the middle lobe and perhaps from the region of the roof nuclei downward toward the foramen magnum, the cystic portion was about the size of a small lemon and extended well out toward the lateral surface of the right hemisphere. A further attempt will be made to remove the tumor at a later date."

I have purposely avoided mentioning the marvelous benefit that Bárány 's work has been to pure otology. Primarily I have wanted to show the mutual value of the complete examination of the ear to men in diverse lines of work. Naturally, I have reported those cases which we have been able to definitely establish. I have on record some twenty cases in which we have not been able to determine the etiology of a beginning perception deafness and perverted vestibular responses, there are two in which an extension of a tubercular middle ear process is doubtless the cause, arteriosclerosis plays a part in several. But very little has been investigated concerning the perversions of the ductless glands in their effect on the ear. One of the largest unexplored fields in medicine today can only be opened up by the combined efforts of the internists, the neurologist and the

otologist. The eighth nerve is the most liable of all the cranial nerves to become diseased, its complete destruction means the loss of two special senses, its involvement, *per se*, is a rarity, its partial degeneration from toxines of remote origin is an everyday occurrence. With the Bárány tests the diagnosis is not difficult; etiologically and therapeutically, we are too often at sea.

LIFE ON THE RIO GRANDE

By Dr. Nathan Winslow

First Lieutenant Medical Reserve Corps

La Noria, Texas, July 5, 1917.

A year ago today I joined the colors, being ordered to report at Fort Sam Houston, San Antonio, Texas, for assignment to duty. From thence I was sent into Mexico, coming out with the Pershing expedition, February 5, last, on which day we re-entered the United States at Columbus, N. M., the city Villa put on the map. Thence I traveled overland to El Paso, remaining in that city less than a week, when I was ordered into the Big Bend District of Texas, reaching Marfa the twenty-first day of February, and leaving the twenty-third for Shafter, where Co. B, of the 34th Infantry, was guarding a large silver mine. That station was abandoned May 21, and I was ordered to report at my present station, La Noria, for duty with B Troop, of the 6th Cavalry, and on June 20 the station at Glenn Springs, 20 miles from here to the south and west, was also put under my care.

I now spend half the week at one place and half at the other. The country is poorly watered and seldom sees rain. However, since my arrival, it was fortunate enough to be visited by quite a downpour, the first I have seen in eleven months. My means of conveyance from one station to another is horse-back, and as the temperature ranges anywhere from 110 to 150, such a ride is not the most pleasant work imaginable, as there are no trees to break the sun. As a matter of fact the country is devoid of vegetation, save cactus, mesquite, grease-wood and a few other varieties of scrub growth, the names of which I am unfamiliar with. As far as you can see there are mountains and bounding flats called mesas, which are here and there cut up by arroyas or gullies. From my tent I have a view of at least ten miles in every direction, and all the land I see is not as valuable

as one city lot, 50 by 150 feet, there not being enough nourishment on it to support anything living, save burros and jack rabbits, and these obtain a very skimpy diet at that.

It is hard to imagine or picture such a desolate country, few roads and these natural, and most of the traveling being done over trails. Along the Rio Grande, which is about eight miles from here, some farming is done, but only on a small scale. At this point the river cuts through high mountains on either side of the border, and makes a complete semi-circle, so that this part of the United States is in a loop of the Rio Grande, my station being the farthest south of any in the Big Bend, one 76 miles from the railroad, and the other 96.

At Glenn Springs there is a wax factory, the wax being made from a native weed called candellaria, and a little south and west of that place is a quick-silver mine. As far as I can learn these are the only industries in the section. Wherever water can be found a few cattle and goats are raised, also a few garden vegetables, the soil and climate being such as to permit anything to grow luxuriantly on which water can be gotten.

The Fourth of July I spent at Glen Springs. In the evening the members of Troop A gave a vaudeville performance. The talent was very good and so I spent a thoroughly enjoyable time. The dinner was great, but any dinner would be great to me at which ice cream was served.

There are no doctors in this country, and if there were there would be no living for them, as the population is too scattered and destitute. One seldom sees an American, the Mexican being far in the majority, and generally speaking, a most worthless cuss, not the little brown brother that our worthy President pictures him. He is mean, lazy, treacherous and like a rattlesnake, not to be trusted. He does not know the truth when he sees it, and would rather lie than eat. Personally, I see no future for the Northern Mexican. He needs a strong hand over him, and will for a long time to come. At present there is nothing doing in the way of work in Northern Mexico, and how the people manage to live is a wonder to me. I guess it is because they need little to keep body and soul together. This they obtain by stealing either on this or the "otra las" of the river.

I hope from these few and extremely disjointed remarks the readers of the *Bulletin* may obtain a little insight into life on the border. There is nothing like it in the United States. The people of the Eastern States have no idea of the poverty and misery incident to

true border life. The inhabitants live either in "dobe" huts or thatched huts of one or two rooms, in numbers of anywhere from ten to twenty. There are no beds, the occupants, men, women and children, huddling together on a dirt floor; but withal they seem happy. The West may be great, but for me Maryland is good enough.

I am glad to hear that the University of Maryland is doing its bit in the struggle in which we are now engaged. We have just started and before we see the thing through there will have to be great sacrifices on our part, before the right to live one's life in peace and security can be assured. I fear the people as a whole do not as yet appreciate the enormity of our undertaking. In a short time lists of those who have made the most supreme sacrifice within the power of man, to contribute to the security of one's fellow, will be posted. It is useless to suppose that of all those from the University of Maryland, who have to go to the front, will be spared this toll. I therefore suggest that the authorities of the several departments, in event of such a misfortune, have at least, once a year, the roll call of those lost, and a member of the student-body answer: "Died on the field of honor." In this way will the ideals of the University be furthered, and in event of another such calamity befalling our nation the members of the University will the more readily offer themselves to their country.

As to myself, I don't know what is before me. I am a veteran of the Spanish-American, the Mexican Punitive Expedition and now the Teuton-American wars, and so far have never been under fire. I can assure my readers I am not hankering for the experience, but if called on for such a service I hope to do my full duty. The times are perilous, the government needs men, skilled in the professions. I beseech all my readers, who are young and healthy, to give their services freely.

GUNSHOT INJURIES OF THE SPINAL CORD, WITH REPORT OF TWO CASES[1]

By C. W. Roberts, M.D., U. of M., 1906

Instructor in Surgery, Emory University, Atlanta, Georgia

Of the many conditions which excite the pity of the surgeon, there is none that presents a spectacle more to be deplored than that class, doomed to a life of uselessness, of partial or complete invalidism by

[1] Reprinted from the *Southern Medical Journal*, September, 1917.

injuries that have disorganized or encroached upon the spinal cord. Surgery demonstrates anew its pre-eminent right of existence when, by the application of its precepts, we are enabled occasionally to change the aspect of one of these unfortunate victims.

In civil practice, injuries of the spinal cord are frequently seen, produced by gunshot wounds. The symptoms following such an injury furnish the key to treatment. A certain school of surgeons advise and practice exposure of the cord over the seat of injury in all cases, holding that the real extent of injury to the cord can only be determined by exploration and that no harm is done by this procedure. A more conservative view, adopted at present as the exercise of better surgical judgment, favors waiting in cases of suspected, severe cord injury to determine whether or not the cord is completely divided. Regeneration of nerve tissue in the cord, after complete division, is a mooted question. It would seem to be proven that regeneration is only possible when the divided nerve is surrounded by the nucleated sheath of Schwann. Notwithstanding, a few reported cases of suture of completely divided cords, with partial restoration of function, would seem to justify further clinical test. At any rate, the present teaching and accepted practice favors operative procedure in all cases where, by clinical signs or by the use of the X-ray, there are evidences of pressure exerted upon the cord.

In gunshot injuries, fragments of vertebra are frequently driven against or into the cord, and in many cases the bullet itself is buried within the cord substance.

The brilliant results obtained by laminectomy in relieving paralysis and anesthesia, in cases where the cord's function has only been disturbed by pressure, has firmly established this procedure in the minds of all enlightened medical men. If, in a given case of gunshot injury to the cord, there is sudden and complete paralysis of motor and sensory nerves below the segment of cord involved in the injury, the expectant plan of treatment should be followed. Complete severance of the cord is likely. Gradual improvement in such a case might justify operation later. X-ray examination should be practiced in all cases and where evidences of pressure are manifest by the presence of a buried bullet or a dislocated bone fragment, operation would not only be advisable but imperative.

In cases where a paralysis gradually comes on following the injury or where paralysis is confined to nerves of motion and there is simply

anesthesia of sensory nerves, the pathology likely to be associated in such injuries will be found to be pressure exerted upon the cord by bone fragments, the local presence of the bullet or the formation of blood clots. It should be urged upon the profession that operative delay in this class of cases is most disastrous. Prolonged pressure causes atrophy of cord substance with an end-result as hopeless as that seen in complete severance. It is in this class of cases where surgery comes into brilliant play and touches, as if by the hand of magic, an apparently hopeless case into the optimism of restored health.

All gunshot injuries, therefore, that may be suspected of having involved the spinal column demand our thoughtful attention lest we overlook an opportunity to bring such individuals under the scrutinizing eye of present day diagnostic methods which continue to bring order out of chaos.

The following case reports, taken from my records, illustrate the two classes of cases into which all gunshot cord injuries may be simply divided. First, cases in which cord function is suspended by pressure; that is, bone, bullet or edema from contusion, or partially destroyed by severance of its nerve bundles; and secondly, cases in which the cord is either completely cut across or otherwise totally disorganized by some rare bullet injury such as I bring to your attention in this report.

CASE REPORTS

Case 1. White, male, age 28, injured by having been shot as he ran away from an officer, resisting arrest. A large buckshot entered his back two inches to the left of the second lumbar vertebra, causing the fleeing prisoner immediately to fall. He was unable to get up and complained of inability to use his legs. On examination nothing but a small wound of entrance was noted about the seat of injury. The spinal column apparently was not disturbed. The patient could not move either leg, but had slight sensation in both, more marked in the right leg. Reflexes lost in the tendon of the quadriceps extensor and very weak in the cremaster muscles. Marked anesthesia of the skin below the level of the third lumbar vertebra. Bowels and bladder functions lost, soon becoming involuntary. After some three weeks of detention in prison, during which time all these symptoms had become exaggerated, the patient was sent into the hospital for treatment. There was now complete

paralysis of motion and only slight sensation of both lower extremities, complaint of agonizing, boring pain down the course of the sciatic nerves in both legs, marked decubitus, involuntary stools, dribbling urine, and septic fever. The wound in his back had healed. X-ray examination showed bullet apparently located in the spinal canal on the level with the first lumbar vertebra. Operation was urged. Laminectomy was performed, the spinous processes and lamina of the twelfth thoracic, first and second lumbar vertebrae being resected. The spinal cord was observed to be very edematous, filling the canal snugly. On opening its membranes a large quantity of serum gushed out as if under pressure. Palpating the cord, the bullet was felt buried in the cord substance. A longitudinal opening into the cord was made by blunt dissection and the bullet removed. It proved to be a large buckshot. The cord was constricted at the seat of the bullet and many of its fibres evidently cut by the entrance of the shot. The bony canal was intact, the bullet having entered through the lamina of the second lumbar vertebra, making a small opening without shoving fragments of bone into or against the cord. The membranes of the cord sutured, leaving a small drain, owing to the marked edema present, and the soft parts were closed over the rent in the spinal column. Patient was put to bed without any spinal fixation apparatus and was treated afterward as in any ordinary operation not involving the spinal column. Four weeks later the patient was dismissed, the wound healed, function of bowels and bladder completely restored, sensation and motion in right leg approaching normal and marked improvement in sensory and motor power of left leg, although it could not be lifted from the bed. There was still aggravating pain down the course of the sciatic nerve, especially at night, requiring morphia. A report from him three months later stated that he was walking about his farm with one crutch and was comfortable. A gradual but slow improvement in left leg. A recent report, now more than twelve months since operation, states that he is still on one crutch, but otherwise well. Still unable to use left leg.

The assumption seems justified that this was a case in which the majority of the symptoms resulted from pressure exerted by the buried bullet and intensified by edema of the cord and its membranes. Persistance of paralysis in the left leg would also indicate that certain nerve fibers in the cord were severed.

Case 2. White, male, age 26, injured by having been shot by a large calibre pistol as he rode away from a house at which he had been engaged in an altercation. Patient immediately lost all power to hold his body erect and fell over into the bottom of an automobile in which he was riding. When brought to the hospital for examination it was learned that immediately following the injury there had been complete loss of motion and sensation in both upper and lower extremities. There was absence of pain. The mental faculties and special senses were not disturbed. Examination showed a wound of entrance two inches to the right of, and on a level with, the second thoracic vertebra. There was no evidence of the bullet's having produced injury to the lung tissue. No wound of exit was found. Complete motor paralysis was noted from the junction of the head and neck downward and a complete sensory paralysis from the level of the armpits downward. Not a muscle of the body could be moved except those rotating the head. An X-ray picture was secured, showing the section of the spinal column on a level with the wound of entrance. This picture showed particles of lead deposited in the course of the bullet which was thus proven to be slightly upward, entering the spinal canal between the first and second thoracic vertebrae. The bullet was not found in this picture. Remembering that the motor nerves supplying the upper extremities come out from the cord in the cervical region, and that in the case under investigation there was paralysis of these nerves, a second picture was made showing the cervical vertebrae and the bullet apparently imbedded in the cord substance between the first and second cervical vertebrae. It was then evident that the bullet, having entered the canal about the second thoracic vertebra, had been deflected up the spinal canal and had destroyed the cord on its way.

Operative interference was not considered in this case. Death resulted on the fourth day. Laminectomy done at post-mortem found the bullet lying within the membranes of the cord between the first and second cervical vertebrae. The cord had been completely destroyed throughout the bullet's course in the spinal canal.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

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THE UNIVERSITY AND THE WAR

How does the war affect the medical school is often asked? At the time of the declaration of war by the United States we were told by what we regarded as authoritative persons, that it was not intended to take medical students into the military service and they were to be encouraged to continue their studies. Of course some were patriotic and could not be restrained and others belonged to military organizations and were obliged to go into service. The selective draft, however, made no exemption of medical students and as most students are within the draft age, healthy and without dependents it was natural that a large number should be called. This raised such an outcry throughout the country that the President has made special regulations for medical students by means of which second, third and fourth year students may be furloughed to complete their medical studies. This will ease the situation considerably but not entirely, as freshmen and pre-medical students are not exempted. There will therefore be fewer entering the freshman class than would have been the case if there had been no war.

Then again many of the professors and instructors have been called into service; and some of our most acceptable teachers will be unable to fill their chairs this session. Fortunately we shall have a sufficient number left, so that the courses will not be materially interrupted.

One of the ways in which the war has hit us the hardest is the interference with the internes in our hospitals. Many of our internes and assistants have been called and the hospitals are very short of residents. This has been partially overcome by appointing senior students in the place of graduates but this will be very unsatisfactory when the session is in progress. We shall, therefore, have to do more work ourselves and get along as best we can with the aid of nurses.

The University of Maryland Base Hospital, or Base Hospital No. 42

The base hospital formed under the auspices of the University of Maryland was completed some time ago and has been accepted by the government. It is awaiting orders. It is under the direction of Dr. Archibald C. Harrison, with the rank of Major. Quartermaster, Dr. Wm. K. White; Registrar, Dr. Edward A. Looper, 1st lieutenant. Surgeons, Dr. Frank Martin, major; Hugh Brent, Herbert H. Haynes, Daniel C. Patterson, Chadburn A. Andrews, Eugene H. Haywood, Edw. S. Johnson and Thos. R. Galvin. Medical staff, Dr. Cary B. Gamble, Jr., major; Wm. H. Smith, captain; J. Burr Piggot, W. Corbin Streett, Harry M. Stein, and Ervin Mayer; Dr. John Evans and D. C. Wharton Smith, Laboratory. Some members of this unit have already been assigned to other duty but whether they have been detached permanently or only temporarily is not known. Major Gamble has been placed in charge of medical work at the large cantonment at Camp Meade, Md., where 40,000 of the new National Army recruits are being trained, while Lieutenant Looper has been on duty at a training camp in Pennsylvania. Major Harrison was ordered to the Rockefeller Institute in New York for instruction in the treatment of the wounds of war, and Major Martin and Captain Smith to Philadelphia to be instructed in brain surgery. Other members have been assigned to training camps for instruction in military matters.

The David Streett Memorial Scholarship

Since our last issue several donations have been made to this fund. The amount necessary to complete the fund has not been received, however. Surely the alumni of the old Baltimore Medical College will not allow this effort to perpetuate the memory of their

former dean and professor to fail for the lack of a few dollars. Let each one make a small contribution and the scholarship will soon be completed. Send your checks to the Dean.

DEATHS

The many friends of Dr. C. E. Scholl were shocked to learn of his death by reason of a vicious assault made upon him by a Logansport man. The following concerning the affair is in part taken from the Logansport *Journal-Tribune.*

Dr. Charles E. Scholl, an infirm veteran of the Civil and Spanish-American wars, 75 years of age, and Bert W. Viney, 44 years of age, a traveling salesman were the principals.

West of Dr. Scholl's residence is a vacant lot whereon about four years ago a tennis court had been built and, to drain it, the boys had built a little ditch for the water, running it into the alley and the mouth of it came just to the rear of Scholl's lot.

This spring Dr. Scholl was seized with the "get-a-garden" fever and put the lot into garden truck. The owner of the lot told him of the drain to take away the water and Dr. Scholl, finding the mouth of the drain stopped, took a hoe and scraped it open.

The next day it was closed. Scholl opened it. Again it was closed and again he opened it. And it went that way for a week or so.

Sunday morning, Dr. Scholl walked out to look at his garden and found the drain closed. Coming into the house he said, according to Mrs. Scholl, "It does beat all the way those children will close up that drain; I guess I'll open it again," and taking his hoe the aged man made for the back of the lot. Mrs. Scholl stood at the kitchen window and watched him as he started opening the drain. She saw Mr. Viney come out of his back door and go down the back yard and on out into the alley where the doctor was working and he began talking to him. Just then Mr. Viney struck Dr. Scholl a powerful blow and he fell to the ground unconscious. His entire right side was paralyzed and death resulted on June 17, 1917.

Dr. J. William Watson, P. & S. 1900, died in Brookline, Mass., June 23, 1917, following an operation for appendicitis.

ITEMS

Lieutenants John Lutz and H. L. Wheeler, lately assistants at the University Hospital, have been ordered to Fort Oglethorpe.

Dr. John S. Fulton, professor of state medicine, and secretary of the Maryland State Board of Health, has been appointed one of a board of three editors to compile the statistics of the medical and surgical history of the present war as far as it concerns the participation of the United States.

Dr. Fulton is known as an able administrator and a forceful and lucid writer.

Dr. Fred Rankin, first assistant to Dr. E. S. Judd at the Mayo Clinic, visited the University Hospital last week. He said all our men there were hard at work and making good.

Lieutenant Erasmus H. Kloman, U.S.R., also visited the Hospital to see old friends. He has been at Fort Oglethorpe until recently when he was ordered to Camp McClellan at Anniston, Ala.

Lieutenant E. LeCompte Cook, U.S.R., has been ordered to the Walter Reed Hospital in Washington.

Captain Chas. W. Rauschenbach, U.S.R., is stationed at Fort Myer, Va., where he has been acting as an instructor.

Dr. S. R. Edwards announces his resignation as oculist and aurist to the Calumet and Hecla Mining Company, and his association with Dr. J. G. Huizinga, in the practice of ear, eye, nose and throat diseases, 205–207 Widdicomb Building, Grand Rapids, Michigan.

Dr. Robert L. Kennedy, U. of M. 1910, of Bascom, Florida, was married to Miss Emma Elias Dozee on June 14, 1917.

Getting orders to go to Anniston, Captain William J. Coleman, superintendent of the University Hospital and assistant surgeon of the Fourth Regiment, decided to get married first and took as his bride Miss Laura S. Chapline. The wedding took place at the rectory of Holy Trinity Protestant Episcopal Church and was performed by the Rev. William D. Gould, former chaplain of the regiment and rector of Holy Trinity. Major Robert P. Bay, chief surgeon of the First Brigade, Maryland National Guard before it

was mustered into the Federal service, and Mrs. Bay were the only witnesses. Doctor Coleman's marriage was to have taken place late in September.

Dr. and Mrs. Henry F. Hill of Baltimore have announced the marriage of their daughter, Miss Lucy Courtney Hill, and Lieutenant E. Barrett Prettyman, U.S.R. The ceremony took place at Greenville, S. C., where Lieutenant Prettyman is stationed at Camp Seviere.

Captain William J. Coleman, surgeon of the Fourth, a tall, thick-bodied, silent man, whose brown eyes twinkle merrily under his peaked hat many times when he does not think it necessary to speak, will be a source from which great nervous reserve power will be drawn by the regiment when it needs that power most. Captain Coleman was, for several years, the superintendent of the University Hospital, where he acquired much experience with surgical cases and the even temper which so distinguishes him. He was married on the evening before General Gaither and the advance guard of Maryland troops went to Anniston. And he actually managed to appear among the uniformed figures moving about in the darkness, of the Camden yards that night wearing the expression of a man pleased with the situation, for he went with them. A man who can manage that has the quality of cheerfulness which is treasure in an army.—*Copied from the Baltimore Sun.*

The following recent graduates of the University of Maryland have passed their examinations for assistant surgeons in the United States Navy and have been recommended by the President for commissions: Robert S. G. Welch, George L. White, Mathison J. Montgomery, Francis C. Hertzog and Herbert L. Shinn.

The following have passed the Maryland State Examining Board: D. H. Carroll, A. Eisenberg, W. H. Flynn, W. T. Ferneyhough, R. K. Foxwell, L. J. Fernandez-Garcia, H. S. Holloway, W. O. Huff, J. G. Marston, F. E. Mason, K. E. McCamey, J. E. Norris, N. N. Ogden, J. L. Payawall, George W. Rice, J. J. Roberts, J. G. Skilling, C. R. Thomas, H. L. Wheeler and Theodore Warner.

Dr. Frank Dwyer, P. & S. '13, now located in Detroit, Michigan, recently visited Mercy Hospital.

CORRESPONDENCE

Somewhere in Macedonia,
June, 1917.

Dear Mr. Editor.

The splendid news of America's "declaration of war" has reached us even in this far away corner of the fighting line and it comes like a deep-throated cheer from the bleachers, to a weary team in the second half of a hardly contested game. Its moral effect will be felt by every soldier of the allied forces, making the ultimate issue more than ever sure.

It is refreshing to read of the enthusiasm sweeping across the old U. S. A., the gigantic preparation of material, the solid financial backing, the eagerness for military training, and the splendid recruiting figures.

I feel and know that the old University of Maryland is abreast of the others in the latter effort, so might I suggest, Mr. Editor, that you publish a list of University of Maryland men who "join up" or who are already in the Services, so that we may know in whose hands the honor of the old school rests.

I should greatly appreciate a copy of the Bulletin.

Sincerely yours,
Aide-Major Chas. Hardwicke,
Univ. of Maryland '04.

Ambulance Divisionnaire No. 5. Secteur Postal, 502, Armée Française d 'Orient.

Batavia, Java,
April 9, 1917.

Dear Dr. Stokes:

Thank you very much for your kind letter, with references and reprints; they were just what I wanted.

We have finished our researches in malaria and hookworm in the Malay Peninsula and I am now off for the South Sea Islands where we will take up another phase of the work in Fiji.

Our report has gone on to New York and contains some interesting things about malaria and hookworm.

We hope to return to America in September.

Please give my kindest regards to all my old friends and with best wishes to yourself and many thanks for your kindness,

I remain, very sincerely,
S. T. Darling.

Co. 8 Camp Greenleaf M. O. T. C.
Fort Oglethorpe, Ga.

Dear J. M. H.

Just a word to tell you that some of the men making good are old B. M. C. men. Lieutenant Colonel Brooke of a class following mine is in charge of instruction here and is a highly efficient man.

Quite a number of Alumni are here and every one is alert and on to his job. They compare favorably with any men in camp. My son is in Washington and expects to go to France with the next contingent.

Yours sincerely
M. L. Todd, *Captain M. R. C.*

BULLETIN

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Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons

VOL. II DECEMBER, 1917 No. 4

LESSONS FROM RECURRENT OCULAR INFLAMMATION AND EYE DISCOMFORTS NOT RELIEVED BY REFRACTION CORRECTION[1]

BY HIRAM WOODS, M.D.

Professor Diseases of the Eye and Ear, University of Maryland, Baltimore, Maryland

When an eye inflammation occurs again and again and treatment directed solely to the eye does not prevent recurrence, there must be something outside the eye causing the trouble. The same reasoning applies to what is called asthenopia, or painful vision. When careful refraction work, or adjustment of muscular anomaly, fail to relieve and the eye is free from disease, the cause must be extra-ocular. This at once brings general medicine into the case. From the oculist's standpoint, it means appreciation of the necessity of looking for these extra-ocular causes; from the general practitioner's, attention to eye disorders, organic or functional, as an index of remote conditions. Some of these causative systemic disorders have been appreciated for a long time; some have been given undue prominence, some hardly thought of.

Syphilis and tuberculosis belong to the first class; what is called

[1] Read at the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, Havre de Grace, October 31, 1917.

chronic rheumatism, to the second. Eye lesions during acute articular rheumatism are very rare unless the rheumatism is of gonococcic origin. Most of us, whether specialists or practitioners, appreciate the gross manifestations of syphilis and tuberculosis. We do not always appreciate the more subtle eye manifestations of either; nor do we always think of the causes that lay behind what we call chronic rheumatism and the different ways these causes may manifest their presence. It is of some of these inadequately appreciated causes of eye inflammations or discomforts that I want to speak briefly.

Regarding recurrent ocular inflammations: three very common are hyperaemic blepharitis, recurrent corneal ulcers in children and iritis.

The first, hyperaemic blepharitis, usually gets well if refraction error is properly corrected. Improper correction makes matters worse. When, in spite of proper correction, there is recurrence, suspicion of some outside cause should be excited. A study of these cases over a good many years, has led me to believe that the causative element will often be found in one of two directions, the nose and throat or gastro-intestinal canal.

The nasal conditions themselves are not particularly marked. There may be no secretion, no obstruction to breathing, but there is oedema and sometimes hypertrophy of the inferior turbinals. Occasionally without lesion of the turbinals, on examination, one finds a congenital narrow meatus. In other words, there is no room for temporary engorgement of the turbinals. When this occurs the swelling may not be enough to impede nasal respiration, but it may, and I believe often does, produce a hyperaemia about the nasal end of the lacrimal duct and opens the way to mild infection. This is not sufficiently virulent to produce abscess, but is potent in setting up a congestion which, through the tear duct, involves the lids. I have seen case after case of this lid hyperaemia get well when a No. 1 Theobold probe was passed into a narrow lacrimal duct without splitting the punctum and stay well after weak caustic applications (2 to 5 per cent solution of silver nitrate) had been made to the inferior border of the turbinal. Turbinectomy is rarely indicated. It may be positively injurious.

In another class where the cause lies in the respiratory passages, it is difficult to say whether the lid inflammation comes from a temporary engorgement or from toxic absorption. I allude to chronic

tonsil disease. The tonsils may not be enlarged, indeed often are buried between the pillars, but diseased crypts can be found and tonsillectomy prevents recurrence of lid congestion.

The gastro-intestinal condition, probably acts through the swelling of the mucous membrane of the nose which is recognized as one of the symptoms of this disorder. At any rate, if careful inquiry be made, it is often found that the patient, has the characteristic symptoms which it is unnecessary to describe. There is excessive indicanuria, and regulation of diet puts a stop to recurrence.

Recurrent corneal ulcers, in children, seen usually in the lower and inner quadrant of the cornea, are another example of the same thing. In lid disorders brought about by these remote causes, irritation and hyperaemia are the factors. In corneal ulcers, there are added loss of corneal epithelium and infection. A certain number of these little patients have enlarged cervical glands and one is strongly tempted to suspect a tubercular cause. Be this as it may, the same nasal or intestinal conditions are found as in the first class and their regulation stops the recurrence of the eye disease.

Recurrent iritis is, according to my experience, frequently due to causes not generally recognized. When there is neither history nor evidence of lues, the Wassermann is negative and tuberculosis is excluded, but the eye disease occurs at intervals, three, four or a dozen times, one is very apt to find a history of muscular pains and soreness or definite joint involvement. With or without the latter, the ultimate cause is often found in an old gonococcus infection. In a careful study of a number of cases of recurrent iritis, attributed to rheumatism because there were so-called rheumatic symptoms, the writer has traced both rheumatism and iritis to this cause. In quite an extensive experience, he has observed but one case of iritis associated with primary articular lesions. As regards what is called chronic rheumatism with its near relations, gout, myalgia, torticolis, lumbago, etc. iritis is not infrequently seen interchangeably or in connection with one or the other, but both iritis and the other disturbances are due to some obscure focus of infection. At least so the writer believes. The fact that the iritis gets well or is improved by administration of salicylate of sodium, is no proof of rheumatic origin, for in intestinal toxaemias which frequently lie at the bottom of all these things, salicylates form an excellent corrective.

A word in regard to the ocular manifestations of hereditary lues. Interstitial keratitis is its most frequent manifestation. I have

seen a few cases in which there was a long period of asthenopia, or distress on eye work, before visible manifestations of this disease developed. After a while it occurred to me that when I was unable to relieve these symptoms by optical treatment and there was reason to suspect hereditary dyscrasia, constitutional treatment might be indicated. I cannot prove the fact by a positive Wassermann, for these cases naturally belong to a class in which such investigation is extremely difficult. In some cases, however, keratitis develops after a long period of asthenopia and relief of the asthenopia is obtained from the administration of mercury when refraction correction fails. It should be borne in mind that the uveal tract is often involved in interstitial keratitis; so is it in the production of asthenopia. Refraction errors cause irritation from uveal hyperaemia. It is conceivable that a systemic cause, capable of producing such severe lesions as keratitis and iritis, might for a long time keep up a like irritation before visible lesions appear.

What is true of unsuspected lues is, I believe, sometimes the case with unsuspected malaria. A malarial keratitis is definitely recognized. It is a rare disease, i.e., rare in the sense that the malarial organism can be found, but it often improves on quinine. Whether it is because of an anti-malarial or general tonic influence, is hard to say. Here again the specialist, looking for a cause for persistent asthenopia which refraction correction does not relieve, sometimes finds great benefit from this drug. The frequent occurrence of eye discomforts after a prolonged malarial poisoning is well known.

Recurrent phlyctenular inflammations have been a battle ground for many years. The disease is seen chiefly in children of the so-called scrofulous type. So often does this occur, that many observers believe that phlyctenular disease is always indicative of tubercular infection. Undoubtedly it often is, but on the other hand, there may be no other evidences of tuberculosis and recurrence ceases when a hygienic mode of life is adopted. It is generally believed, however, that recurrent phlyctenular inflammation means a toxaemia of some kind and the physician who treats such a case, be he specialist or general practictioner, without searching for this toxic focus, is failing in his chief duty.

In conclusion, a few words about headache and eye pains. In office practice the specialist meets usually three varieties of head pains: first, the supra-orbital and temporal, band-like pains which usually come on awakening in the morning and last quite constantly

throughout the day. A school child comes home at midday because his head hurts him too badly to allow him to study. These are the headaches which are usually traced to hyperopia or astigmatism and are almost always relieved by refraction correction. They may be due to other causes and the refraction error be only one factor. Experience only can determine the extent to which the eyes are causing the pains. Occasionally in spite of a refraction error, the patient is better off without its correction.

The second variety is the pain in the eyeballs themselves. In the writer's experience, pain *in* the eyes is not particularly characteristic of refraction error; the latter is at most a contributing factor. Such pains are very common after witnessing a moving picture show or following a play on the stage. They are usually due to muscular defects. Sometimes the anomaly is easily demonstrated and sometimes it is hard to unearth. Again, the oculist fails with anything at his special disposal to relieve these cases and they are ultimately traced to sinus disease. So far as possible, the presence of sinusitis should be investigated in all cases of intrinsic eye pains.

The third variety of headache is migrane. None of us know just what migrane is. We are familiar with its clinical history—a feeling of exhilaration and good health before the attack, then possibly formication, scintillating scotoma or some other prodrome, followed by severe pain and terminating in prostration and vomiting. Some cases of migrane are cured absolutely by special eye treatment, some are helped to a greater or less degree and others not at all. The explanation is doubtless that any form of peripheral irritation in a person predisposed to migrane can produce an attack. Sometimes the eyes constitute the sole peripheral irritation, sometimes they are merely contributory, while again the refraction error may have nothing to do with it. It is a question of diagnosis.

The entrance into general medicine of scientific dentistry is an enormous step in advance. With recognition of the fact that the eye disorders recorded above, and others of even more serious nature may be due to systemic absorption from pus foci, we must always include the teeth when looking for points of infection. This means not only a careful clinical study of the teeth, but X-ray pictures of all dead teeth. Pain is not always a guide. There is a very practical drawback to this line of investigation and treatment. Removal of pus foci from most parts of the body sacrifices very little, if anything. It is not so with useful teeth and teeth showing shad-

ows in the pictures are often painless and very useful. We cannot always say in advance that removal of a proved focus will cure the eye or other manifestation of infection. I have known useful teeth to be sacrificed on X-ray findings without the least benefit to the eye disease. On the other hand, I have seen results little short of miraculous—relief of pain, clearing up of blind spots, clearing of vitreous, etc. We have to estimate the probabilities and sometimes take the chance.

The connection between eye diseases and the so-called endocrine glands—thyroid, thymus, pituitary, pineal, adrenals—is now under very careful study. The most common manifestation—exophthalmic goiter, is familiar. Experimental medicine shows that corneal and lens troubles can be produced by interference with the endocrine functions. There is reason to believe that a number of obscure eye troubles, functional or organic, will eventually be traced to the same structures, but at present the matter is too vague to justify dogmatic statement.

It has been my desire to show that ophthalmology can not be regarded as a separate specialty, meriting attention only from those in exclusive practice. Any eye trouble, no matter how simple it apparently is, is worthy of attention from the internist and if it is recurrent, it has still greater significance. That, after all, is the real lesson of such a study as the above.

THE CAUSE OF EXTRA-UTERINE PREGNANCY[1]

By William S. Gardner, M.D.

When a fertilized ovum lodges in a Fallopian tube it very soon destroys the portion of the tube in direct contact with it, and at the same time destroys anything that might have caused that particular ovum to lodge at that particular place. The resulting inability to show a definite cause of lodgment has given rise to many diverse explanations of the failure of the ovum to pass through the tube.

Herzog admits that he does not know the cause of tubal pregnancy, but states that "certain alleged causes, formerly frequently cited as responsible for tubal pregnancy, such as inflammatory diseases of the uterus and tubes, must be absolutely discarded. We

[1] From the Gynecological Laborarory of the University of Maryland School of Medicine and College of Physicians and Surgeons.

know that these very diseases accused of being the cause of tubal pregnancy, make a woman sterile for the time being, and therefore exclude tubal as well as normal uterine pregnancy." On the other hand Mall after mentioning some of the rarer tubal anomalies says: "Much more commonly associated with tubal pregnancy is a chronic inflammation followed by adhesions and kinking of the tube." In regard to the mucous membrane of the tube he says, "Such an inflammatory process is signalized not only by an inflammatory reaction in the tube wall, but also by pronounced changes within the tube lumen, the most common of which is a condition known as follicular salpingitis. The tubal folds hypertrophy, and, when sections are made, small cavities are seen between the folds; hence the term follicular."

From these statements and others of a similar trend it is clear that no common ground has been reached by investigators as to the definite cause of the lodgment of the ovum in its passage from the ovary to the uterus, and that further observations on this subject might throw some light upon it. To aid in this work I have taken twenty pregnant tubes that had sufficiently long undilated portions remaining between the pregnancy and the uterus to make a block and have examined them microscopically. In eight instances sections from the opposite tube also have been made.

To properly interpret sections of this kind the reactions and results due to infection in the tubes and also the reactions due to pregnancy in the uterus must first be noted.

REACTIONS AND RESULTS DUE TO INFECTION

One of the first changes that commonly takes place in an infected tube is the sealing up of the fimbriated extremity. A tube closed in this way does not allow either the spermatazoa or the ovum to pass and consequently there is never a tubal pregnancy when this has occurred. While the sealing up of the end of the tube is the rule there are many exceptions leaving a large number with patulous fimbriated extremities. The explanation of these differences in the effect on the fimbriated end probably is in the intensity of the inflammatory process, the patulous extremity being found most frequently following a mild infection, and the closed tube following a more virulent type.

The degree of reaction and the results of an infection of the mucosa

and wall of the tube are directly as the virulence of the infection and its duration.

The changes in the wall of the tube can be dismissed after noting the presence of the round cell infiltration which varies greatly with the virulence of the infection, and in some instances, lingers after the active reaction has disappeared from the mucosa.

The changes in the mucosa are marked by round cell infiltration and the destruction of epithelium. This destruction of epithelium is greatest on the free borders of the folds, and is responsible for the adhesions that remain after the infection subsides.

It should be remembered that active infections of the tube are always short lived processes. When the recession comes we find that there are permanent changes in the mucosa. If the mucosa is not destroyed entirely and the fimbriated end of the tube is open, there remains one of two conditions; either the folds of the tube are seen adhering to each other, forming numerous secondary canals within the calibre of the tube, or; the partly destroyed folds are enormously thickened by the increase of connective tissue. Not infrequently both of these conditions are found in the same tube. It would hardly be possible for any one of the secondary channels formed by the adhesion of folds of the mucosa to each other to retain a uniform calibre. The manner of their formation necessarily results in the calibre of each channel varying throughout its length. The round cell infiltration in the mucosa has disappeared. In some instances there still remains some round cell infiltration in the walls, but when the process is complete, all round cell infiltration disappears.

REACTIONS DUE TO PREGNANCY

In the uterine wall, during pregnancy, the striking features are the increase in the size of the cell elements of the normal wall with the apparent decrease in the chromatin, and a marked round cell infiltration. This round cell infiltration is of exactly the same character as is seen in infections of the uterine wall, except that it is never so intense as that present in the more virulent infections. The same changes are noted in the walls of the tubes in tubal pregnancies.

FINDINGS IN PREGNANT TUBES

Of the twenty tubes examined all but one showed results of a past infection. The one in which there was no such evidence was

associated with a large uterine fibroid and the pregnant tube was found crowded down in the pelvis under the tumor. In all the others were found the same changes that have been described as being found subsequent to salpingitis. In some the folds of the mucosa were partly destroyed and the remaining ones were much thickened by an increase of the connective tissue. In othere there were many adherent folds converting the lumen of the tube into numerous separate canals. The sections of course show the condition of the mucosa at only one point between the pregnancy and the uterus, but when we bear in mind that the longitudinal folds of the mucous membrane extend the whole length of the tube, and that a gonorrhoeal infection in a tube extends the whole length of the tube, it is fair to presume that the condition of the lumen at the point the ovum lodged was similar to the condition at the point of section.

The sections of all the tubes showed the same enlargement of all the cells making up the walls and the round cell infiltration that is present in the uterine wall during pregnancy. The only difference being that the reaction of the normal cells and the round cell infiltration is apparently greater in the wall of the pregnant tube than in the wall of the pregnant uterus. In one or two sections the round cell infiltration is so intense as to indicate the presence of an active inflammatory process. However, it is very difficult, if not quite impossible to draw a sharp line of distinction and say that one tube has in it a process of infection plus the reaction due to pregnancy, and the other one is a tube that has been infected and has at present only the reaction due to pregnancy. I believe that it is not necessary to be able to make this distinction with accuracy, because as has been noted previously the tendency, at least in some instances, is for the mucosa to recover from an active infection before the wall does, and it is quite within the possibilities for the mucosa to so far recover from an infection as to allow the passage of spermatazoa without the appearance of an active infection having disappeared from the walls of the tube.

THE TUBE OPPOSITE THE PREGNANCY

Among the eight tubes examined from patients in whom a pregnancy was present in the opposite tube, one was found that was normal, showing only the cell changes that result from pregnancy.

This tube is from the patient who had the fibroid previously mentioned. Two tubes were much distended; one was filled with blood and one with pus. Four showed many adhesions between the folds of the mucosa splitting the lumen of the tube up into numerous channels of various sizes. Four showed great increase in the connective tissue in the remaining folds. Two had the blood vessels of the walls markedly dilated and filled with blood. All of them showed round cell infiltration in the walls of the tube. In other words, the picture presented by all except one was that of a tube that had been infected, but in which there was no active process at the time the tube was removed. Even the tube distended with pus showed by the condition of the small amount of mucosa remaining that the process was an old one long since inactive.

From these findings it is clear that nineteen out of twenty of these cases of extra-uterine pregnancy followed an infection of the tubes. Not a single one of the opposite tubes showed an infection present at the time the tube was removed. I do not believe that the round cell infiltration in any of the pregnant tubes was other than that due to the pregnancy, although it is possible that an impregnated ovum may lodge in a tube before the reaction due to an infection has entirely disappeared from the walls. These sections show that the impregnated ovum lodges in tubes that have been infected, in which the permanent results of the infection of the mucosa are present, but in which the mucosa is free from infection at the time the pregnancy takes place.

The term "follicular salpingitis," applied to the results of the infection of the mucosa should be discarded, because there are no follicles and it is not a salpingitis, but a condition post infection.

THE CHEMICAL DISINFECTION OF WOUNDS BY THE USE OF DICHLORAMIN-T

By Alexius McGlannan, M.D.

Baltimore, Maryland

The chemical disinfection of wounds has attracted the attention of surgeons since 1870, when Lister published his article on the "Antiseptic Treatment of Compound Dislocation of the Ankle." Many and varied experiments have been made for the purpose of developing chemical agents of greater desirability than his car-

bolic acid and for simplifying the technique of their use. Through such researches aseptic surgery was developed.

The Halogens attracted the attention of experimenters many years ago. Labarraques Solution, Javelle Water and Bromine Water have all been used at one time or another, while iodine has come into very general use as a result of the studies of Grossich of Fiume.

The infected wounds of the present war have brought into prominence the need for a reliable germicide capable of destroying the infecting bacteria promptly, and at the same time protecting the normal tissues. Only a few weeks of the war passed before it became evident that our ordinary antiseptic methods were powerless to combat the severe infections caused by contamination with the intensively cultivated soil of Flanders.

The experimenters therefore were called upon to devise new agents and methods for control of these conditions. Two rapidly fatal types of infection were prominent namely, tetanus and gas gangrene. In both of these the invading organism is an anaerobic bacillus. The attention of the investigators was thus directed toward an oxidizing agent as the type of chemical to be used.

Hydrogen dioxide and similar compounds were used without success. Finally Dakin experimented with mixtures giving up free chlorine in contact with the wound. The hypochlorites have this property and their solutions proved active antagonists to the bacteria. Labarraques Solution and Javelle Water were discarded, because the strongly alkaline liquid proved deleterious to the normal tissues. Finally Dakin devised a nearly neutral solution of sodium hypochlorite, containing between 0.45 and 0.50 per cent sodium hypochlorite, and which is not alkaline to powdered phenolphthalein but is alkaline to alcohol solution of this substance. When a solution, accurately made to contain this quantity of hypochlorite, is placed in a wound, the reaction of the tissues is so altered that the bacteria can not grow on such soil. To produce this condition, the solution must be constantly present in the wound and its composition at the time of its instillation must not vary beyond the limits given.

Carrel devised a technique for the use of Dakin's solution. Tubes of special character are used to carry the solution into all parts of the wound. The liquid is either injected or instilled at regular intervals, so that the entire wound is always moist with the hypochlo-

rite solution. Preliminary to the introduction of the tubes, all damaged tissue is removed from the wound by surgical operation with careful haemostasis. Dependent drainage is not employed and the wound is made so that the solution may be retained rather than flow out easily. Once every twenty-four hours the wound is dressed, at which time, under the aseptic precautions, the tubes are removed, the wound and its surroundings cleansed, the tubes reintroduced and a new dressing applied.

When the Carrel technique is carefully carried out, the disinfection of a wound by means of Dakin's solution gives marvellous results. Daily cover slip preparations will show the rapid disappearance of all bacteria from an actively suppurating wound, so that in a few days the wound may be closed by suture.

This technique is not easily carried out and departure from its details will end in a failure.

Looking for a simpler method of disinfecting wounds with chlorine, LeConte, Sweet, Dakin and others (*Jour. A. M. A.*, July 7, 1917, lxix, 27) have developed a method, using Dichloramin-T, an organic compound containing available chlorine. This substance is soluble in oil of eucalyptus, and the solution so obtained may be diluted with petroleum oil. The oils must be chlorinated, because the di-chloramin gives up its chlorine easily in the presence of organic matter. A solution of chlorinated oil will liberate its chlorine slowly over a period of from eighteen to twenty-four hours instead of from one-half to two hours as is the case with solutions of the alkaline hypochlorite. The oil must be free from hydrochloric acid.

A 7.5 per cent solution of Dichloramin-T, in equal parts of chlorinated eucalyptus oil and petroleum is sprayed, poured or dropped into the wound after its surgical preparation has been made by ordinary cleansing methods and all evident foci of infection and devitalized tissues have been excised. With a deep wound the cavity is filled with the solution. A dependent drainage opening should be plugged up while the oil is being poured into the wound and distributed to all its surfaces, after which the drainage may be reestablished.

Spraying the wound will be found the most economical as well as the most efficient method for covering its surface.

A very small quantity of gauze should be used in the dressing to avoid absorption of the oil. The wound will require attention but once in twenty-four hours, when the dressing should be renewed.

The economy in material, etc., is shown in Sweet's report from the University of Pennsylvania Base Hospital.

My experience with the method has been in the treatment of twelve cases of infected wounds and two fresh wounds in which the tissues were badly contused. This is a pitifully small number when compared with Lee's 7228 cases, reported at the Clinical Congress of Surgeons (*Jour. A. M. A.*, November 3, 1917, lxix, p. 1540), but in any civil hospital the number of infected wounds must necessarily be few compared with those in a Military Hospital.

In one case we kept a bacteriological control. From an infinity of bacteria, the number fell to 24 after the first day's treatment. The count on successive days was 12, 8, 4, 4, 2, 4, 2, $\frac{1}{6}$, $\frac{1}{12}$.

Our experience with Dichloramin-T has been sufficiently good to justify its further use. It possesses the great advantages of simplicity in its use, of combination with certain long approved principles of wound handling, and of economy in the use of dressing material. It must be borne in mind however, that it can not be expected to take the place of proper surgical manipulations. When possible all foci of infection and devitalized tissues must be removed by surgical operation. Chemicals can not replace technique in surgery.

THE USE OF THE DAKIN-CARREL METHOD IN THE TREATMENT OF INFECTED WOUNDS

By James C. Lumpkin, M.D.

Baltimore, Maryland

The search for a perfect germicide began when Lister first applied the principles of Pasteur to the practice of surgery. The perfect germicide should meet two simple requirements. It must kill bacteria while causing no harm to the cells of the living body. The usual germicides were found to retard healing, and so the profession had learned to rely on soap, water and alcohol, but chiefly on the natural bacterial resistance of the patient; but when the present European war began, it was a question of dealing with antiseptic surgery rather than aseptic surgery. It was then that the crying need of an ideal antiseptic was realized. Dr. H. D. Dakin, a French chemist of renown who was doing research work, began experiments to find this agent, and soon reported that he believed he

had found a substance which would kill bacteria without irritating the wound, and this substance was a neutral solution of chlorinated soda. Dr. Carrel, who is at the Carrel Hospital in France, decided that if this were true, then some method should be devised to keep this solution in constant contact with the wound, and so with the well known Carrel apparatus he tested out this solution much to the satisfaction of Dr. Dakin and himself, and since then we have heard a great deal about the Dakin-Carrel method of treating wounds.

First Case. About ten months ago I had a patient with a compound comminuted fracture of the femur. The shaft of the bone was terribly splintered and infected. After worrying with him for many months without results, I decided to try the Dakin-Carrel treatment. The patient under ether, the wound was freely opened and curetted; the tubes were inserted and the wound irrigated every two hours night and day; in three weeks the discharge had stopped, and in four weeks the patient was well.

Second Case. A boy of twelve, with osteomyelitis of the femur. This child was very ill, the thigh was a bag of pus. This case was treated the same as the first, and in three weeks the discharge had stopped, but a sinus remained, due to some uncovered bone.

Third case. Osteomyelitis of tibia and fibula. This boy, a lad of thirteen, was very ill, had been operated on twice without result. The wound was cleaned out and the Dakin-Carrel treatment started as in the previous cases, and in six weeks the discharge stopped and treatment discontinued.

Fourth Case. Compound fracture dislocation of both feet. The malleoli were forced through the bottom of the feet with fracture of several bones of feet. After reduction the Dakin-Carrel treatment was started as in the other cases, but one foot had to be amputated and the other healed after a long time.

Fifth Case. A penetrating wound of the leg which was infected, Dakin solution started and in one week patient was well.

Sixth Case. Osteomyelitis of leg. Was operated on and treatment started; in five weeks discharge stopped.

Seventh Case. Compound fracture of leg, badly infected. With usual treatment discharge stopped and solution discontinued in three weeks.

Eighth Case. A badly crushed foot with infection. After free incisions, Dakin solution was used, but without results; the foot had to be amputated.

I will not take up your time reporting more cases, but there were fifteen in all, with three failures.

The Dakin-Carrel treatment is not a cure-all. I believe the reason we do not get a more perfect result in our cases is because we do not pay enough attention to the details. If we just push tubes in an infected wound without cleaning that wound of devitalized tissue, we need not expect results; and especially if we only irrigate the wound a few times a day. I think the treatment does absolute harm unless the wound is irrigated at regular intervals of two hours; because after the tubes are placed in the wound, gauze is so arranged around them as to hold the solution in until flushed out by the next irrigation; therefore, if the secretions are allowed to remain in the wound for a long period, the pus is sure to do damage to the tissue.

REMARKABLE FECUNDITY

By Paul E. Reynolds

Senior Medical Student

On October 29, 1917, Agnes Peters, aged 44, colored, who resides at 518 Wilson Street, called upon the Outdoor Obstetrical Department of the University of Maryland to attend her in confinement.

The undergraduate, who was assigned to the case, arrived at the home of the patient about one-half hour after being called. He found one child already delivered and after ligating and cutting the cord, the patient was put into bed for examination.

The patient's abdomen was tremendously distended, extending up to the costal margin, and when the patient was flat on her back the abdomen would rest on the bed, either to one side or the other, of the patient. Upon palpating the abdomen the diagnosis of triplets was suspected, but the rigidity of the uterine muscle rendered examination difficult.

The mother asked permission to squat on the floor. She said that she had delivered all of her previous children in this position. About fifteen minutes after assuming this posture the patient delivered a second baby, a boy, the first being a girl. About fifteen minutes after the birth of the second child the third, a boy, was spontaneously delivered.

The mother was put into bed and the placenta delivered spon-

taneously by the Duncan method. The placenta was very large and had two sacs, one having attachments for two cords and the other for one.

The previous history of the mother is quite interesting. She has now been confined eighteen times and has given birth to twenty-three children, of whom only eight are living. This is her fourth multiple pregnancy, she having had twins three times. She could explain the cause of her children's death but vaguely. Her first child was born sixteen years ago.

Twins aborted at fourth month	2
Twins died of cholera infantum very young	2
One of twins died with hemorrhage from umbilicus	1
One child stillborn at term	1
Two children stillborn at six months	2
One child stillborn at seven months	1
One child stillborn at eight months	1
One child killed in accident	1
Total accounted for	11

This leaves four children for whose death no cause could be given.

The large number of premature labors and stillbirths would point suspiciously toward a luetic infection, but the fact that she had normal labors at term, with healthy children, between these stillbirths and premature labors would seem to discount this suspicion. The patient explains two of her premature labors by a history of injury. She says she fell down a flight of stairs with the twins which she aborted at four months. In another pregnancy the patient strained herself lifting.

The children born at this confinement were all living and weighed $6\frac{1}{4}$, $6\frac{1}{4}$, 7 pounds respectively in order of birth. The first was a girl and the second and third were boys. As far as could be seen they were all delivered with the vertex presenting. The mother lost only 350 cc. of blood which is a very nominal amount for a multiple pregnancy.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

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PROFESSOR CHARLES CASPARI, JR.

Through the death of Professor Caspari, the distinguished dean and professor of pharmacy in the School of Pharmacy, the University has met with a great loss. He was one of the most eminent pharmacists in the United States, a man of great erudition, of great ability, of great industry and, withal, of great modesty. In addition to his duties in the College, he was the efficient head of the Pure Food and Drugs Bureau of the State Board of Health, and he was responsible for the betterment of conditions in the dairies, canneries, packing houses, slaughter houses and many other industries; and he prosecuted fearlessly those whom he detected in any adulteration of the food products or of the standard of medicinal preparations.

As an author of text-books on pharmacy and joint author of the *U. S. Pharmacopeia*, the *National Dispensatory* and other works he was known widely in both America and Europe.

THE SESSION OF 1917–1918

Notwithstanding the unsettled conditions resulting from the war the medical school opened at the usual time without any great diminution in the number of students. Even if there had been no war the attendance would have been diminished, in consequence of the increased restrictions which are being constantly placed on the entrance and advancement of students by the state boards and the national associations.

While some of the upper class-men have gone into the military service, those who have been drafted have been furloughed to continue their work. The freshmen are subject to the draft and it is very gratifying that under these conditions such a large freshman class has been enrolled. Exclusive of special students the number of matriculates is about 270, divided as follows, seniors, 63; juniors, 48; sophomores 63; freshmen, 96.

David Streett Memorial Scholarship

We are pleased to announce that a goodly number of contributions to this fund have been received since our last issue. This memorial to Prof. David Streett, for twenty-five years dean of the Baltimore Medical College, should appeal strongly to his old pupils. There must be from 1500 to 2000 alumni of the college scattered over this country, and a contribution of $5 from each graduate would be more than sufficient to endow this scholarship. Send your contributions to J. M. H. Rowland, Dean.

The Pathological Endowment Fund

This fund is gradually increasing. One of the great needs of the institution is an endowed pathological department, for which the sum of $100,000 is desired. We would be gratified if those who have subscribed to this fund would send in their checks, and we solicit contributions from all our graduates and friends for this purpose.

The Hospital Interne and the War

Among the many difficulties that now confront the civil hospitals is that of securing internes. On the out-break of the war it was stated by the authorities that medical men would not be accepted for service in the army who had not had at least one year of approved hospital work, and that internes would not be disturbed until they had completed their term of service in the hospital. Of course many of those who had already served one or more years in the hospitals promptly applied for commissions in the Medical Reserve Corps and were assigned to the training camps or to duty in this country or abroad. It was supposed that internes would be exempted from the selective draft but that proved not to be the case and they were drafted equally with others. In order to escape con-

scription those who were called in the first draft made haste to enter the Medical Reserve Corps and many of them have already been assigned to service. The upshot of the matter is a serious shortage of residents in the hospitals and a lot of half baked medical officers in the army. The hospitals have attempted to remedy the scarcity of internes by calling upon senior students but, at best, this can only be partially successful as such students will have their time fully occupied with their studies during eight months of the year. In order to relieve the hospitals, as well as to secure better prepared medical officers, the President has modified the regulations governing the discharge of internes from draft, but we fear too late to be of much service this year.

The following communication has been received concerning this matter.

ORDERS

War Department,
Office of Surgeon General,
September 4, 1917.

The following regulations governing the discharge of hospital internes and medical students from draft under the selective-draft law of May 18, 1917, have been made by the President:

"First. Hospital internes who are graduates of well-recognized medical schools or medical students in their fourth, third, or second year in any well-recognized medical school who have not been called by a local board may enlist in the Enlisted Reserve Corps provided for by section 55 of the national defense act under regulations to be issued by the Surgeon General, and if they are thereafter called by a local board they may be discharged on proper claim presented on the ground that they are in the military service of the United States.

"Second. A hospital interne who is a graduate of a well-recognized medical school or a medical student in his fourth, third, or second year in any well-recognized medical school, who has been called by a local board and physically examined and accepted and by or in behalf of whom no claim for exemption or discharge is pending, and who has not been ordered to military duty, may apply to the Surgeon General of the Army to be ordered to report at once to a local board for military duty and thus be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. With every such request must be inclosed a copy of the order of the local board calling him to report for physical examination (Form 103), affidavit evidence of the status of the applicant as a medical student or interne and an engagement to enlist in the Enlisted Reserve Corps of the Medical Department.

"Upon receipt of such application with the named inclosures the Surgeon General will forward the case to the Adjutant General with his recom-

mendations. Thereupon the Adjutant General may issue an order to such interne or medical student to report to his local board for military duty on a specified date, in person or by mail or telegraph, as seems most desirable. This order may issue regardless of the person's order of liability for military service. From and after the date so specified such person shall be in the military service of the United States. He shall not be sent by the local board to a mobilization camp, but shall remain awaiting the orders of the Adjutant General of the Army. The Adjutant General may forthwith issue an order discharging such person from the military service for the convenience of the Government.

"Three official copies of the discharge order should be sent at once by the Adjutant General to the local board. Upon receipt of these orders the local board should enter the name of the man discharged on Form 164A and forward Form 164A, together with two of the certified copies of the order of discharge, to the mobilization camp to which it furnishes men. The authorities at the mobilization camp will make the necessary entries to complete Form 164A, and will thereupon give the local board credit on its net quota for one drafted man."

1. It will be observed that paragraph first of the foregoing deals with internes and students who shall *not* have been called by a local board, and provides that they may enlist in the Medical Enlisted Reserve Corps under regulations to be issued by the Surgeon General, such enlistment entitling them to discharge from draft if thereafter called.

2. An application for enlistment under this paragraph must be forwarded to the Surgeon General with the affidavit of the applicant; supported by the certificates of his school authorities, showing his present status as interne or student, and particularly how long he has been an interne in the one case, or the year of the medical course that he is pursuing in the other.

3. An interne who has served one year or more as such will not be enlisted in the Medical Enlisted Reserve Corps under this regulation.

4. An interne who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, at the end of one year of interneship. Applications for commission in the Medical Reserve Corps, from internes who at the expiration of one year's interneship are called for duty as members of the Medical Enlisted Reserve Corps, or from internes whose year of interneship is about to expire, will receive proper consideration.

5. A medical student (undergraduate) who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, upon failing to pass from one class to another, or upon failing to graduate.

6. The second paragraph above quoted deals with internes and students who *shall have been* called for service by a local board under the selective-draft law, and contemplates their discharge from the draft, upon condition that they shall enlist in the Medical Enlisted Reserve Corps.

7. It will be the policy of the Surgeon General as a rule to recommend discharge from the draft upon the condition indicated, the discharge to be fol-

lowed by a call to active duty under the enlistment in the Medical Enlisted Reserve Corps at the expiration of a complete year of interneship or upon the failure of the student (undergraduate) to pass to the next higher class or to graduate.

8. Internes and students who are enlisted in the Medical Enlisted Reserve Corps by virtue of these regulations, and are not called into active service under such enlistments, are required to report their status to the Surgeon General as follows: Internes, at the end of each three months' period, such report to show the total amount of interneship since graduation, and to be countersigned and attested by the Medical Superintendent of the hospital; students, at the end of each semester, such reports to show whether the students qualified for advancement, and to be countersigned by the deans of their respective schools or by subordinate officers representing the deans.

9. In the execution of these regulations the Department will not recognize interneships in hospitals, sanitariums or other institutions conducted for profit, or in small private hospitals (50 beds or less), or new interneships established or added since May 18, 1917, to those previously, existing at, any hospital, excepting such as may have been newly established and added by reason of a proportional increase in the bed capacity of such hospital; nor will it recognize interneships in the case of any graduate appointed thereto later than August 1 following his graduation.

By order of the Surgeon General:

ROBERT E. NOBLE,
Lieutenant Colonel, Medical Corps.

CORRESPONDENCE

RIO GRANDE, P. R.
September 14, 1917.

Dr. J. M. H. Rowland, Dean,
University of Maryland School of Medicine, Baltimore, Md.

MY DEAR DOCTOR:

It gives me unlimited pleasure to drop you a line once in a while and let you know how we are getting along down here, in sunny Porto Rico.

The graduates of the University of Maryland School of Medicine, residing in this country, as well as the medical profession at large, are rejoiced at the appointment of Dr. Alejandro Ruiz Soler (1907) as Commissioner of Health. This is a department of new creation, embraced within the text of the new Constitution given to our country by Congress, and we all feel proud that one of our *alma mater* men has been the first Porto Rican doctor to hold such a high and honorable position. Long before this appointment was confirmed by the Porto Rican Senate, Dr. Ruiz Soler had been connected, in positions of great merit, with the previously existing "Service of Sanitation," under the direction of Dr. W. F. Lippitt, of the U. S. A. Medical Corps. He has been for a long time a leading bacteriologist and hygienist, and enjoys a highly esteemed reputation as a practitioner of medicine. There is no doubt but that the Department of Health will flourish under his management, and that

his desire to bring Porto Rico up to such a standard as to favorably compare with the most advanced states of the Union, will be crowned with success.

Yours most sincerely,

Luis C. Boneta, M.D.
1908, Univ. of Md. (B. M. C.)

Maryland Brigade Headquarters,
Camp McClellan, Anniston, Ala.
September 9, 1917.

Editor University Bulletin:

Although I have not written you before this date I don't want you to think for one minute I have forgotten you but, to be perfectly honest with you, they have had me on the go pretty much all the time since I have been here, but work and I never fall out, so I enjoy it as far as that is concerned.

Well this is some great camp here, the like of which I have never seen before. Camp McClellan is situated in the mountains of Alabama, and they are real mountains with plenty of tall pines and plenty of streams and springs. We are about eight miles from the city of Anniston, the camp covering an area of 36,000 acres. We have about 9000 troops here at the present time and about 3000 civilian employees building mess halls, latrines, roads, etc. Their presence although very necessary is very detrimental as far as sanitation is concerned, and they are coming and going all the time, it is a common occurrence to see seventy-five to one hundred being paid off every day, take their tools and go on their way. The Maryland Brigade Camp is at the extreme southern portion of the camp. The land is rolling, covered with pine trees and rocks, with small streams running through it in every direction, there is a great deal of work to be done to prepare it for our troops, whom we hope to see here within the next ten days. We have a delightful spot on the top of a hill, General Gaither's Headquarters, but as soon as the Fourth Regiment arrives I suppose I will return to duty with them. So far I have no complaint to make, my work consists of sanitation, medicine, surgery and I guess I might say consultation for I think I have seen about every case in camp of any note, having been called in by the various doctors with the commands of the various states here.

So far I have done all the major surgery; have to take the cases into a private hospital in Anniston as they are just starting the foundation for the base hospital here. As soon as that is completed, and perhaps before that, they will have a regular here to take charge of the surgery and then I will have to take a back seat. So far my cases have all done fine, couldn't ask for better results and I have to thank my professors at the U. of M. for preparing me to do such work. On two occasions the men running the hospital have asked me to help them out on a couple of difficult cases of their own. Of course, having the operative cases in town, it takes quite a little of my time to go back and forth to see and dress them, and no doubt you will laugh when I tell you my means of transportation is in one of those side-car motor cycles. Not so bad at that, but the roads are in dreadful shape due to so much hauling by the heavy army trucks and the recent rains.

It is scorching hot here days, but at night a blanket feels quite comfortable.

General Morton is in command of the camp and he is some General. I understand he is a great disciplinarian, believes in hard work and efficiency.

The Maryland troops and perhaps the Virginia troops will be consolidated when they get here to make up two regiments of 3608 men to the regiment, then there will be what is known as a Depot Brigade or reserve so nobody knows just where we will be placed, perhaps some officers will be sent home, some will go in the Depot Brigade and some will go to France. I understand they will all be given a fair chance to make good and it will be a case of the "survival of the fittest," so I am in hopes to be among those that survive.

Very truly yours,
[Signed] W. J. Coleman,
Captain U. S. N. G.

In France.
August 2, 1917.

Editor of the Bulletin:

As I have been fortunate enough to find a piece of paper and a very bad pen, I shall write you. I left America not knowing a soul, but came across with the Roosevelt Hospital Unit from New York. I expect you know Drs. Peck, Russel and Floyd. They are all Majors in the unit. We were separated at Liverpool so I don't know where they are. While in London I saw Jenkins. He is at a hospital near London doing ear and throat work with a Dr. O'Malley. He told me that Toulson was in the North of England somewhere, but that Callahan had been sent on to France. I had six days in England and then was sent out here. Am with a field ambulance belonging to a Scotch division.

To give one an idea of your impressions here is a man's sized job, for it is entirely unlike anything I have ever dreamed. First you are struck by the most appalling noise. Everywhere it is whiz bang, crash, boom, etc. The nights have a luridness that makes Dante's picture of hell fade into utter insignificance. You hear the whistle of a shell, then the explosion, followed by falling buildings. You soon learn, unconsciously to judge a shell by its sound, whether it will come near or far, though if near you are helpless to protect yourself. Apropos of that, it is remarkable what moral courage a roof over your head gives, whether it be of canvass or the roof of a building, though both give no protection at all. At all times, day and night, men are marching past in smaller or larger bodies. As to work you are overwhelmed at times and do nothing at others, the latter very rare, however. Men are brought in in batches, of 20 to 50 with every conceivable kind of wounds. Head, chest, abdominal, fractures, etc., etc. throughout the whole category. The worst are sent on back to casualty dressing stations after arresting hemorrhage and applying dressings. At present I am in charge of what is called a Divisional Rest Station. We are in an old Nunnery and have about 350 patients, I being the only medical man (doctor) here. You work and work till you are ready to drop and then work some more. I haven't taken off my clothes in over two days. Was relieved today for twelve hours so am writing in peace. To me

the most alarming cases were those who had been gassed. I would like to tell you all about them that I have noticed but this is the only piece of paper I have and it is a long story. The field ambulance has seven doctors, one lieutenant colonel who is administrator only. All are excellent fellows, quite a lot older that I am, the average age being about forty I guess.

If I come out of this O.K., I shall certainly have seen such things that you would see nowhere else but here. Hear I am to be transferred to our troops as soon as a sufficient number come across.

You will pardon use of both sides of paper and scribble for we have to write under adverse circumstances, to put it mildly.

Hoping that you are enjoying the best of health, I am,

Yours sincerely,

JOHN E. EVANS, U. of M. 1916.
1st Lieutenant M. O. R., C. U. S. A.
With 45th Field Ambulance, B. E. F., France.

150 DHARAMTALLA ST., CALCUTTA, IND.,
July 23, 1917.

My Dear Dr. Winslow:

Your courteous letter at hand and I express herewith my appreciation. Kindly present my regards to my dear Prof. of Obstetrics, Dr. Rowland; he puts me in vital touch with The University of Maryland.

I have volunteered under His Majesty the King for service in the I. M. S. as Lieutenant. I am now awaiting orders. As you can appreciate, this is an uncommon thing. I will probably be the only American serving in the Indian Medical Service. Sometime I will be able to write a little of my experiences in the tropics. I do not know as yet where I shall be stationed but probably Mesopotamia, possibly E. Africa, and least likely in some part of India.

Most cordially,

HERBERT W. KNIGHT, M.D.

P.S.—I shall return here after the war and the above is my permanent address.

2D NORTHERN GEN'L. HOSPITAL,
Beckett's Park, Leeds, England, 14/10/17.

Dear Dr. Rowland:

I am located, for the time being at least, at a big orthopedic hospital. It is a very wonderful place, and is occupied with all the stages in transforming cripples into men: the surgery of bone, joint, nerve, and so on, with accessories in the form of massage, electricity, gymnasium and workshops. I've had a lot of that sort of work before, and feel very much at home. And am with friends, the same with whom I worked in France. But I will be glad when the world settles down in peace and I can come home again. Will you give my regards to my friends in Baltimore?

Very sincerely,

MARTILLUS H. TODD,
1st Lieut., M. O. R. C., U. S. Army.

Camp Beauregard,
Alexandria, La., October 25, 1917.

Dr. J. M. H. Rowland:

Thought you might be interested to know how well B. M. C. is represented at Camp Beauregard. Major Burrows, an old alumnus of B. M. C. is here as chief of the Surgical Division of the Base Hospital. Captain Howard Smith is here representing the Public Health Service, in Charge of the Health work around Alexandria. He is to be, I believe, the Director of Health, and I, first lieutenant, am stationed at the Base Hospital for duty in the laboratory.

We have a large hospital and I am already kept busy working.

Will be glad to receive the U. of M. Bulletin here at this address.

With best wishes, I am,

Sincerely yours,

Lt. M. Maslon.

LITTLE PURE ZINC OXIDE ON THE MARKET

Examinations made by the Bureau of Chemistry of the United States Department of Agriculture show that very little zinc oxide on the market in the United States complies with the standards of the U. S. Pharmacopoeia. Nearly all of the samples examined contained an excessive amount of lead. The samples were labeled "Not U. S. P.—Containing Small Quantities of Lead," and therefore complied with the Food and Drugs Act. The labels on the packages in most instances will probably come to the attention of the druggists, but not to the attention of physicians. The medical profession will therefore not be advised as to whether or not zinc oxide preparations are made from standard ingredients. Conditions may arise where a zinc oxide preparation contaminated with lead may do injury. A limited supply of U. S. P. zinc oxide is available and physicians may protect themselves and their patients from possible injury by calling for such material on their prescriptions.

ITEMS

Dr. J. P. Young, U. of M. '94, has removed from Richburg, S. C., to Chester, S. C., where he will continue to practice his profession.

Dr. W. L. Funkhouser, U. of M. 1904, has removed from Rome, Ga., to Atlanta, where he will confine his practice exclusively to diseases of children. His address is Candler Building, Atlanta, Ga.

Dr. Louis Chargin, B.M.C. 1902, announces the removal of his

office to 166 West 87th street, New York. Practice limited to syphilology and dermatology.

Dr. F. C. Marino, senior resident gynecologist and obstetrician at the University Hospital, has been commissioned a first lieutenant in the Medical Reserve Corps and ordered to Camp Pike, Arkansas.

Academic Day was not held this year, owing to the disturbed conditions due to the war.

Dr. Hugh Brent, Captain, M.R.C., has been ordered to Philadelphia for training in plastic surgery of the face. In private life he is a gynecologist and associate professor of gynecology in the University of Maryland.

Mr. Harry H. Warfield, Manager of the University Hospital has received a commission as first lieutenant in the sanitary service and is expecting to be ordered to active duty shortly.

Miss Cassidy, secretary and stenographer to Mr. Warfield, has also received a call to government service, and has resigned her position at the University Hospital and has taken up her duties in Washington.

Misses Mary Virginia and Bessie Ward, efficient stenographers and secretaries at the University Hospital, have been called to Washington, the former to work in the office of the Surgeon General of the Army, the latter to a position at the Walter Reed Hospital.

Dr. Arthur M. Shipley, Major, M.R.C., is surgeon to the base hospital at Camp Meade, Md.

Dr. Gordon Wilson, Captain, M.R.C., is also doing medical service at Camp Meade.

Any graduates of the University of Maryland, the College of Physicians and Surgeons, or the Baltimore Medical College who are in the service of the Government or subject to call will kindly communicate that fact to the Dean of the Medical Department.

Dr. Samuel Taylor Darling, a graduate of the College of Physicians & Surgeons, who served at the great hospital at Ancon, Canal Zone, and for the past two and one-half years has been doing

research work for the Rockefeller Foundation at Singapore, and in Java, Borneo, Sumatra and other islands of the Pacific, has accepted the chair of hygiene in the University of Sao Paulo, Brazil.

DEATHS

Dr. John Edwin Rigg died at his home at Wilkinsburg, Pa, on October 2, 1917, aged 62. He graduated at the College of Physicians and Surgeons in 1879.

Dr. W. J. F. Blaney died at St. Joseph's Hospital, Baltimore, following a surgical operation, aged 44. He graduated at the University of Maryland in 1896.

John Francis Mumford, Newtown, Conn., P. S. Baltimore, 1913, died at Raynham Centre, Mass., about October 10, 1917, aged 26.

Dr. Floyd J. Hodge, B. M. C. 1908, died suddenly at his home at Florence, Mass., on August 34, 1917, aged 34 years.

BOOK REVIEW

White and Martin's Genito-Urinary Surgery and Venereal Diseases
By Edward Martin, A.M., M.D., F.A.C.S., John Rhea Barton Professor of Surgery, University of Pennsylvania; Benjamin A. Thomas, A.M., M.D., F.A.C.S., Professor of Genito-Urinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine and Instructor in Surgery, University of Pennsylvania, and Stirling W. Moorhead, M.D., F.A.C.S., Assistant Surgeon to the Howard Hospital, Philadelphia, Pa. Illustrated with 422 engravings and 21 colored plates. Tenth edition. J. B. Lippincott Company, Philadelphia and London.

The first edition of this standard work was published in 1897, just twenty years ago, and the tenth edition is now before us. Dr. J. Wiliam White, one of the original authors died in 1916, and the survivor Dr. Edward Martin found it necessary to associate Dr. Benjamin A. Thomas and Dr. Stirling W. Moorehead with himself in the revision of the book. The result is not so much a revision as a re-writing of the work, as much new matter has been added and much that was old has been eliminated. The new edition is, therefore, up to date in every particular. It is a comprehensive treatise embracing

every phase of the surgical diseases of the reproductive and urinary organs of the male sex, and of the venereal diseases in their various manifestations. The subject of syphilis alone is a monograph of 296 pages, in which are fully described the various laboratory methods for the diagnosis of this disease, as well as the latest views in regard to its treatment.

For the general surgeon the practical character of the book will prove very attractive and very useful, as much work on the kidneys, bladder, prostate and other genito-urinary organs must be done by the general surgeon rather than by the specialist.

We have no hesitation in commending the tenth edition of White and Martin's well known treatise to our readers.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Bulletin of University of Maryland School of Medicine and College of Physicians and Surgeons, published six times a year, at Baltimore, Md., for October 1, 1917.

Name of Editor, Nathan Winslow, M.D. (In the military service at present.)

Managing Editor, Randolph Winslow, Greene and Lombard Streets, Baltimore, Md.

Business Managers, Randolph Winslow, J. M. H. Rowland, and W. S. Gardner.

Publisher, University of Maryland, School of Medicine and College of Physicians and Surgeons, Lombard and Greene Streets, Baltimore, Md.

Owners, University of Maryland School of Medicine and College of Physicians and Surgeons, Lombard and Greene Streets, Baltimore, Md.

Known bondholders, mortgagees, and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities. (If there are none, so state.) None.

Randolph Winslow, Acting Editor.

Sworn to and subscribed before me this 26th day of September, 1917.

[SEAL] MARY VIRGINIA WARD,
Notary Public.
(My Commission expires May 1, 1918.)

CHARLES WELLMAN MITCHELL

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons

VOL. II FEBRUARY, 1918 No. 5

CHARLES WELLMAN MITCHELL, A.M., M.D. LL.D.

FEBRUARY 4, 1859—DECEMBER 28, 1917.

Christmas week exacted a big toll from the medical profession of Baltimore. G. M. Litzinger, Charles F. Bevan, Theodore C. Janeway and Charles Wellman Mitchell passed to The Great Beyond. Each stood for the best medical ideals: each had a conception of duty which balked at no personal sacrifice: each had the mind and heart to follow Weir Mitchell's advice, "Find the man behind the patient:" and because they had these ideals, this spirit of self sacrifice, this realization of the force of the man-power in practice, they have left saddened hearts, and we who remain are all the poorer.

Dr. Mitchell possessed a marked individuality. It would be easy to outline his activities and to let these speak for themselves: but to show why he excelled, as a practitioner or teacher, to demonstrate in print the real secret of his power, is another matter. One felt it, acknowledged and bowed to it. His intimates in college and medical-student days, and, later, men, who held toward him the relation of student to teacher, first became aware of the fact that they had in Mitchell a companion or teacher whose mind was trustworthy, and whose sense of relation was that of service. So, they trusted him. Possibly someone will read these lines who will recall a sudden and unwelcome summons from his seat in the clinical amphitheater to

the arena and the opening of a discussion on a theme apparently quite foreign to the case in hand. And soon, it dawned on him that all his own thinking had been wrong, and when he went back to his seat he knew not only what to think about, but how to do it. How did the lecturer know that this particular student, among a hundred or more, was floundering and just how to approach his difficulty? The answer would be the key to Mitchell's power as a teacher. And it would let one in, also, to one of the secrets of his success in practice. He knew what to analyze and how to do it. When he did not know, he waited and analyzed his own ignorance. A recent letter to the writer of this sketch from a graduate of a few years back contains a bit of advice Mitchell once gave him in handling a case of doubtful diagnosis: "Less food, more water, no medicine." That was never forgotten: and it made a better doctor of the man to whom it was said.

Born in Baltimore, Charles Mitchell was educated at the City College. He entered the Sophomore class at Princeton University in the fall of 1876. He graduated in June 1879, and entered the University of Maryland, Medical Department, the same autumn.

In his services to the University of Maryland and the University Hospital, Dr. Mitchell, after graduation in 1881, served as assistant resident physician for two years. After his return from Europe, in 1885 he became resident physician and held this position for three years. In successive years he had as his assistant Drs. Ridgely B. Warfield and Frank Martin. He entered the teaching corps in 1888, and it is noteworthy that his first title was lecturer on pathological anatomy. He held this position for six years, when he received the additional title of Clinical Professor of Medicine. His success as a clinical teacher in the twenty-four years since then, has more or less overshadowed his early work in pathology. This branch of medicine, now so emphasized, got scant attention in those days. Symptoms, physical signs and treatment formed the student's triad. Mitchell had just returned from Vienna where the new basis of medical thinking was being taught. Given the chance to illustrate pathogenesis to such students as chose to follow him, he soon attracted not only the students of the better sort but graduates of recent years. He opened up to his friends many lines of thought and study, hitherto unknown. In 1896 he entered the Faculty as professor of materia medica and clinical medicine. Two years later he came into the teaching position which has afforded the greatest success and pleasure

from his own, and profit from the student's standpoint, professor of pediatrics and clinical medicine.

Early in the nineties Dr. Mitchell had his first attack of bronchopneumonia. For a time little hope was entertained of his life. He eventually recovered, but another mild attack followed in two or three years, and the writer feels sure that he lived in almost constant apprehension. His next severe illness was in February, 1916, and, by a strange coincidence, the man who then afforded him greatest comfort was the one whose death came in the same week of last year, Dr. Janeway, who in his short life in Baltimore, endeared himself to so many of us. Mitchell's duties as practitioner and teacher took all his time and energy. So far as the writer knows, he has left but one thing in print: and he would not have left that had not the manuscript been almost forcibly taken from him and printed at the request of the State Faculty. Allusion to this paper will be made presently. He felt that a great deal of medical writing was rather to exploit the writer than to instruct: that unless one had something new he should not write. That clean-cut, thoughtful analysis of existing information, from a man of his powers, would be useful was something he either would not believe, or had not the energy to make. Probably it was the latter plus his overpowering desire to read. He read not only medicine but fiction and history: from the latter he knew how to formulate the philosophy of life at that time and how one epoch logically followed another. To get him on this, his favorite theme, was a pleasure his intimate friends craved and sometimes obtained. The novel which had some moral in it would be the text of conversation for an indefinite period. *The Inside of the Cup*, and *The Melting-Pot* seized him. He felt what one meant to the Church, the other to the country. He had, in the strict sense, no politics except a desire to get the best possible government and detestation for the spoils system. His memorable speech protesting against the removal of Dr. Jones as Assistant Health Commissioner is still fresh in memory. His appearance in medical societies was not specially frequent and never volunteered: but when asked, as he often was, to take a part of a symposium, he did so, and men always came to hear him.

There was one exception, The Medical Journal Club. This was organized in 1888 by a number of men, then quite young, and the reason for its existence was formulated by Mitchell as "a place to blurt out ignorance." In a way it was: but it was also a place to which the members brought only their best, and its power in stimu-

lating good work and promoting friendship was incalculable. It still has a nominal existence; and, whether or not, after the war and when its members can take up normal life, it will again become active, it has served its purpose. It made us think; it made us tolerant of differences of opinion, and it took us away from school prejudices. Mitchell was its leading spirit.

The resolution of the Faculty, written by Mitchell's close friend, Ridgely B. Warfield, expresses as well as words can express, the secret of our lost friend's power. That resolution reads:

December 29, 1917.

At a special meeting of the Faculty of Physic of the University of Maryland assembled to take action on the death of Dr. Charles W. Mitchell, it was resolved:

That the members of the Faculty, bereaved by the death of their colleague, desire to record their appreciation of his unusual talents, acquirements and virtues.

Throughout his whole career as administrator and clinician he has served the University with admirable ability and devotion. Guileless and unselfish, wise in counsel, a zealous and illuminating teacher, his life's work, terminated now at the top of its usefulness, has been marked by conspicuous vision and capacity. With the respect of all men, beloved by his friends, in his death the community is deprived of a distinguished physician of rare sympathy and understanding and of a public spirited citizen of the highest intelligence and probity.

RIDGELY B. WARFIELD, M.D.
HIRAM WOODS, M.D.
WILLIAM S. GARDNER, M.D.
Committee.

In conclusion, a word regarding the one paper he has left. It is entitled "The Physician's Duty in the Present Crisis." It is published in *The Medical and Chirurgical Faculty Bulletin* of May, 1917, and was read in April at Osler Hall. The war in Europe depressed Mitchell profoundly. From its beginning in 1914 he felt that our participation was only a question of time, because "we are too big to have the principle on which we live made safe without our help." That is the way he put it to the writer when on our summer vacation together in August, 1914.

When, finally, the President spoke on April 2 last, and the time came at the meeting of our State Faculty, three weeks later, for our state profession to respond, the choice of Mitchell, as our spokesman, was deemed the wisest that could be made. THE UNIVERSITY BULLETIN, in this national crisis, could do our Alumni, the country

over, no greater kindness than to print in full this patriotic call from "a voice that is stilled." Mitchell wrote; "The President's message is directed to the loves, not the hatreds of mankind. . . . It is the cry of humanity itself." . . . . "What is the duty of the physician in the present crisis? It is clear. Each one of us should in his own selective, not selected, way give the best that is in him toward the triumph of our cause." . . . .

Those who are engaged in teaching have especially important duties to perform. The times absolutely demand the most practical and intensive study of the problems requiring immediate solution. All the frills and fineries of medical teaching should be eliminated for the present, and thorough instruction should be given in camp, trench and ship sanitation, the treatment of wounds and wound infection, the epidemiology, prophylaxis and treatment of typhoid and typhus fever, malaria, dysentery, epidemic cerebro-spinal meningitis, yellow fever, and, that scourge of modern trench warfare, tuberculosis. Great stress too should be laid upon the shameful prevalence of venereal diseases among troops, and upon their disastrous effects upon efficiency. . . . .

"opportunity implies obligation, and privilege demands sacrifice." . . . .

Concluding his paper, Dr. Mitchell, letting his imagination take him "into the years to come," quoted from what he believed would be the 1917 history of our state medical profession:

"In 1917 the profession of Maryland came into its own. Among the people, in the hospitals, on the ships, and in the camps and in the trenches the physicians of the State, with rare skill and noble self sacrifice, did their work. Hundreds of Marylanders served with great distinction in all departments of the public medical service. Even more remarkable was the splendid spirit of cooperation shown by the members of the profession toward each other. Those in active service were treated most loyally by those who remained at home. The entire body of medical men showed an exalted patriotism for their country and self effacing devotion to their fellow men. They gave courage to those who faltered, hope to those who despaired, relief and solace to those who suffered during the long bitter war for the liberation of the world. They steadfastly kept up the good fight to the very day of triumph, the day which proclaimed to all men of every land and of every time, that the world was "safe for democracy," and that in the *Providence of God Himself, right is higher than might.* In the history of medicine in the state of Maryland, 1917 was the year of the great awakening.

To have this vision, and to see to it, that the dream comes true is the supreme duty of this hour."

Such were the patriotic ideals of the man we mourn: such his life-standards: such the unconscious expression of his own character. His wife, son and daughter have hosts of friends who grieve with them.

HIRAM WOODS.

PRELIMINARY REPORT ON THE PATHOLOGICAL FINDINGS IN NERVES FOLLOWING WAR INJURIES[1]

BY CAPTAIN SIDNEY M. CONE, M. O. R. C., U. S. A.

Clinical Professor of Orthopaedic Surgery, University of Maryland

From the Alder Hey Military Orthopaedic Hospital, and the Thompson Yates Laboratory, University of Liverpool

The incentive to the work I am doing on nerve pathology comes from Colonel Sir Robert Jones, who has placed the extensive material from the Alder Hey Military Orthopaedic Hospital in my hands. The University of Liverpool and Professor Ernest Glymm, Captain R.A.M.C.(T.), have given me every facility and aid in prosecuting my studies, and I am greatly indebted to them.

This is only a preliminary report of work covering three months' service at the hospital, and is produced prinicipally because I feel I can give some material assistance to other workers along these lines by presenting the staining re-agent which, after three months' work, I finally found to be most satisfactory. Without a good stain for axis cylinder and medullary sheath one cannot do nerve work in the laboratory. Many of the stains require unusual experience before they can be used satisfactorily. I tried Stroebe's stain without success. In order to make use of it Kennedy had to use the aniline blue for twenty-four hours. Bielschowsky's axis cylinder stain required several days and did no contrast staining; maybe it had to be done over again. It was most useful early in my work, as was also a modification of Howell and Huber's picric acid haematoxylin method. The stain I have to give workers in nerve pathology is one based on a technique I used in Heidelberg when working on nerve degeneration in Kühne's laboratory in 1895. It brings out the axis cylinders in distinct relief as pink covered by a thin line of purple-black—the medullary sheath "neurokeratin framework" faintly tinged purple-black—the red blood cells brown, the nuclei pink, muscle deep red, connective tissue unstained, or a very faint pink.

[1] Reprinted from the *British Medical Journal*, November 10, 1917.

Where the axis cylinders are just formed they always have a purple appearance. Not infrequently fine lines 1 to 2μ in width are seen among the wider fibrils, the finer ones appearing deeper stained than the wider ones because of the pink centres of the fuller-grown fibres. These forming axis cylinders may be easily picked out in adhesions as purple lines against a very faint pink connective tissue back ground. There are modifications in the structure of the axis cylinders and nerve fibres in denser connective tissue, but the staining reaction remains unmodified. In one specimen of unusually dense connective tissue formation in the proximal end of an excised nerve the axis cylinders were very irregular, varicose, and of a rough outline by turns, yet the purple border about the pink central tendril was present. Some of the larger fibres showed a vacuolated appearance, in which case the vacuoles were outlined by a fine blue-black stain. Tinel refers to this in "stump neuromas" as a *gonflement* of myelin.

As a rule, the fully developed nerve shows the axis cylinder "capped" at regular intervals by a pyramidal purple material deeply stained against the axis cylinder, and fading away gradually. Tinel speaks of this appearance as "bearded" or "prickled with thorns," and refers it to deeper silver impregnation at these points—the incisures of Lantermann.

TECHNIQUE

The specimens are hardened in 10 per cent (or, according to some laboratories' computation, 4 per cent) formalin and then carried through the alcohols to ether and absolute alcohol and celloidin. Although thin sections are preferable, good results are obtained with 20μ thick sections.

The section is washed in water, placed in carbol-fuchsin fifteen minutes, momentarily in water, 1 per cent osmic acid five minutes, water two minutes, watery safranin 50 per cent one minute, acid alcohol 1 per cent two minutes, 95 per cent alcohol five minutes. Absolute alcohol and oil of cloves are now used alternately until the section appears deep pink but translucent; it is then placed in xylol for two minutes and mounted in Canada balsam.

ADVANTAGES

The great value of seeing the nerve fibres distinctly outlined against connective tissue, cell proliferation, and blood vessels will be appreciated at once by those who examine tissue from the great number of excised "nerve callus" masses of war surgery.

In our experience we have had so far more than one hundred cases to examine. We have sectioned the excised nerves at proximal end,

distal end, middle, and adhesions, including muscle and fat. We have had old operations to go over in some of which Cargile membrane, fascia wrapping, or veins had been used. In one case a rabbit's nerve had been used as a graft. This material was stained in about twenty-five different ways before the above-described method was adopted. The only method that approached satisfaction was that of Bielschowsky.

METHOD OF EXAMINATION

Some of the notable observations in my work have been the irregularity of growth of new fasciculi of nerves in the proximal end of the nerve about the old parallel running fibres, as far as the bulbous enlargement at the wound. There is invariable infiltration of the nerves with blood, new formed capillaries within and about the nerve, and little evidence of round-cell infiltration (most of our nerves were injured over eight months earlier). Connective tissue formation of varying density both within and about the fibres is the rule. The peripheral end always shows a great cellular proliferation with elongated spindle-shaped nuclei, usually arranged in little clumps and interlacing, running in various directions, resembling the arrangement of nerve fibrils in the bulbous enlargements in the stumps we have examined. In some of these we found axis cylinders well stained; in others repeated staining failed to show fully formed nerves.

The method of operating on these old torn nerves has been pretty definitely outlined, and is done in the same way at most of the base hospitals where the paralysed are treated some months after the original wound has healed.

The nerve is exposed with careful regard to all anatomical relations —adhesions relieved by sharp dissection in a line parallel to the fibres. Blunt dissectors are used when adhesions are pretty well localized to the immediate seat of nerve tear or cut, where a bulbous enlargement is usually seen. The work on the denser adhesions about this point is facilitated by raising on the dissection elevators the freed portion of the nerve at the proximal and distal side of the bulbous mass included in adhesions. When the nerve in its continuity can be raised free of adhesions so much of it is excised as will leave greyish-pink moderately soft nerve ends. Here it is cut through and sutured with chromicized catgut. These sutures, about four in number, pass through the outer sheath. It may be necessary to stretch the ends,

transplant the nerve, and use an approximation suture which passes through the entire thickness of the nerve. The limb is placed in a position giving greatest relaxation to the nerve and muscles. Occasionally one meets with a case where relief of adhesions alone is deemed sufficient. There are cases where longitudinal incisions through the swollen injured part have been made. Cargile membrane, fascia, or muscle covering are used to protect the area of suture from future adhesions.

OBSERVATIONS AND RESULTS

The material removed at these operations has been placed at my disposal since June 14, 1917. I have used formalin as a rule as hardening agent, but picric and osmic acid have also been employed. Material from both ends, mid-portion (this is usually the bulbous part), and adhesions were examined in various ways and by different stains. Glycerin mounts were made of teased specimens, in which case the picric acid hardening and carbol-fuchsin-haematoxylin staining were most satisfactory. Howell and Huber recommended the picric acid-haematoxylin (Boehmer's) method. In fact, I find this haematoxylin most useful in the study of the cell proliferation. We invariably found good old nerve fibres in the proximal end, but very often these were intertwined by a mass of new young tendrils in small fasciculi and many young capillary blood vessels coursing in various directions about them.

In some cases no fibres at all were seen at the bulbous enlargement, but this was very rarely the case. As a rule old connective tissue, sometimes sclerotic in character, was found here, but even in this well-stained axis cylinders, single and in fasciculi, were detected (Tinel).

Wherever young fibrils were found there was a great cell proliferation. The distal end was always quite cellular, the nuclei of the cells, as a rule, were elongated and staff-shaped. In fact, the cellular areas here and in the bulbous portions frequently gave the appearance of a leiomyoma such as we so frequently find in the body of the uterus. Tinel calls such cellular areas gliomas. In a number of our cases we found quite a great many fasciculi of well-formed young nerves with axis cylinders in the distal end.

The adhesions invariably contained cellular young nerves, some with a faint line of myelin covering the axis cylinder, others grown to

adult age and well protected by medullary sheath and sheath of Schwann.

My examination of nerve bulbs from stumps corroborate Thomson and Kennedy's findings. I find more good fully formed nerves than connective tissue and an unusual proliferation of the cells of the sheath of Schwann, called by Tinel, von Bungner, and others, neuroblasts.

For those who wish to read the best that has been written on the subject of regeneration and degeneration of peripheral nerves, I would refer to the bibliography in articles written by Howell and Huber, von Bungner, Alexis Thomson, Kennedy, Stroebe, and Luciani's *Human Physiology*, vol. iii, translated by Welby.

The very recent book by J. Tinel, *Les Blessures des Nerfs*, published by Masson et Cie., 1916, gives a brief but comprehensive surgical pathology of injured nerves. My findings are in accord with his regarding the contents of the bulbous injured parts. He names the swelling a neuroma when it is made up of regenerated nerve fibres, such being usually found in the proximal (central) end. It is a pseudo-neuroma when it is made up of a thickening of the enveloping tissue by haemorrhage, fibrous tissue and proliferation of the neurological elements. This is usually found on the swelling of the peripheral end. He names these proliferating cells from the sheath of Schwann neuroblasts, with von Bungner, S. Meyer, and Kennedy.

Gluck thinks that there are real large protoplasmic ganglion cells among the sheath of Schwann cells, which are responsible for the formation of the new fibril.

I find great numbers of these neuroblasts in adhesions and at both ends, but particularly in the distal end—so numerous, in fact, that I can well understand why Tinel should use the term glioma for such cellular areas of the "pseudo-neuroma."

Tinel definitely states that the regenerating nerve always proceeds from the central end, using the old sheaths for a pathway and attracted by the "neurotropismus" of the proliferating cells of the sheath of Schwann. This neurotropismus or chemiotropic influence referred to by Langley and Anderson, and admirably worked out experimentally by Forssman, is not an uncommon explanation of the influence and only part played by the distal end.

Some say that the distal end produces good nerves autogenetically, others believe that they grow up to a certain stage and only form well-developed axis cylinders when brought in communication in some

way with nerve centres; and here we have another use of the cells as expressed by Tinel. Mott,Halliburton, and Edmunds consider the activity of these neurilemma cells to be nutritional in nerve repair.

I will go quite fully into the various views about new nerve growth, as borne out by my pathological material, in a later, fuller communication.

ADDENDUM

I wish to add to the above a description of some interesting microscopic findings which are of assistance in interpreting conditions as seen in the stumps of nerves, adhesions, and the nerve callus. In staining the specimens, the safranin used as described above is omitted; it is not an essential part of the staining method.

Ranvier described what he called "renflements biconiques;" Tinel writes of nerves "barbelé" or "hérissée d'épines;" von Bungner, Stroebe, and others have disputed about the incisures of Lantermann. Stroebe even denied that neurokeratin is in the medullary sheath. Arndt with Kuehne, Kuhnt, Joseph, and Tuckett, arrive closer to our pictures when they speak of a neurokeratin sheath and myelin framework, "a sheath-like element stained with acid fuchsin" which surrounds the axis cylinder. Ranvier was not very far away when he wrote of a colloid material about the axis cylinder at the constricting node. However they look upon the axis cylinder in its relationships to the medullary sheath, there is no question but that most histologists have kept them distinctly separate. The above-named physiologists, through the neurokeratin material, worked to varying degrees by the different men into the framework of the medullary sheath and immediate surroundings of the axis cylinder, blended them into a more harmonious connexion.

It is to demonstrate this connexion that my stain is especially adapted. I have referred above to the fine single and double lines of purple (more accurately called mauve) about even the smallest axis cylinders. This is due to the neurokeratin contents of the youngest fibre.

Two histological points are to be noted even in the youngest fibrils of adults or embryo; one is the cones, barbs, *renflements biconiques*, or whatever they be called, and the other is the so-called vacuoles, *gonflements* of myelin moniliform appearance of the fibrils, due to the neurokeratin framework. They show so clearly with my neuro-

keratin stain that the photographs I am preparing will speak better than words.

There is one fact that should be noted, however—that is, that stretching or compressing a nerve draws out this neurokeratin support into cone-shaped form, leaving the point finely drawn out along the axis cylinder, which it ensheaths, and the base toward the sheath of Schwann, each cone being from 10 to 40μ long, depending on the amount of stretch. The base appears more deeply stained—not so; it is merely that, being at the wider attachment, there is a greater amount of it stained at the point viewed; this masses the pigment.

There are a number of interesting points that one can explain, and work is now in progress to put a correct interpretation on many long and acrimoniously discussed questions.

PRESENTATION OF MEMORIAL FLAG BY DAUGHTERS OF AMERICAN REVOLUTION

Address of Welcome by Thomas Fell, LL.D., D.C.L., Provost of the University

Madam President, Daughters of the American Revolution, Ladies and Gentlemen:

In times of peace many of us have visited France and England, and during this present time, when war is devastating Europe, our thoughts and feelings are continually there.

Those of us who have visited Oxford University in England, will remember the Bodleian Library. There are few places on earth where one can meet so much of thrilling interest in conjunction with so much that is precious to learning.

In Duke Humphreys Hall, where the silence is broken only by whispers, and the occasional rustle of a leaf, repose the million or more of volumes which contain the story of the world's intellectual life.

Here and there between the stacks and the walls are treasures of a different sort; memories of men and women who have lived, things of no literary value, but full of human interest, portraits, letters, autographs. Here are to be seen the exercise books of the young scholars, Edward VI and Elizabeth; also the Shelley relics.

It is in sympathy with a similar sentiment that we are gathered here today. We value the memory of General LaFayette, who

helped our republic in its struggle for freedom, and many traditions of his presence both here and in Annapolis still exist. We speak of how he was entertained in our college halls, and how he was greeted by the maidens of Annapolis, who strewed flowers in his path as he passed along the streets, waving banners with the words inscribed: "Lafayette, the dear friend of our fathers, will always be dear to the hearts of their children."

It is therefore very fitting that this flag, dedicated to the memory of General LaFayette, should be placed in the Library of the University of Maryland, for life and learning are intimately connected; books are nothing, neither have they title to interest nor a place apart from men; and a school exists not merely to preserve documents and hand down the husk of letters, but rather to inspire and stir great souls to lead the living present and by recalling the deeds of the heroes of the past to point to a grander future.

Thus we demonstrate that a seat of learning is and must be, not less than an intellectual centre—a social force.

Therefore it is a great pleasure to me to declare how welcome the Daughters of the American Revolution are, and how much we appreciate the motive which has brought them here today.

Address by James M. H. Rowland, M.D., Dean of the Medical Department

Mr. Provost, Ladies and Gentlemen:

One hundred and forty years ago there crossed the seas a young nobleman of France, accompanied by a few friends. These Frenchmen came from the land of their birth to the New World, because they were thoroughly imbued with the principle that men everywhere were endowed with the inalienable right of liberty; and they desired to help our forefathers establish this principle in America. Nobly did they succeed. Today we are sending our very best across the seas in the other direction. Of the teachers, students, hospital residents, nurses, and servants attached to this institution at the beginning of the War, nearly two hundred have either already gone or are ready to go, that we may help France and our other noble allies to establish this principle for the whole world, so that wherever a man may be born, he must be born free. It is our earnest prayer that the men we are sending may do their duty as well as those splendid Frenchmen of old did theirs.

Remarks by Henry D. Harlan, LL.D., Dean of the Law Faculty

Those who honor the heroes of the past, who hold up their virtues to the emulation of the present, not only ennoble themselves, but give guaranties of security to the future.

It is therefore a singular pleasure for me as the representative of the Law Department of this University, to have a part in this patriotic ceremony, so happily conceived by the Daughters of the American Revolution in honor of the great Frenchman without whose aid that Revolution could not have been successful, whose heart burned with the pure flame of patriotic ardor and whose name is the most illustrious name on the roll of those whom this University has included among her adopted sons. It is particularly appropriate that honor and reverence and gratitude should be paid to that distinguished man at this time, when the great debt of the United States to France, noble, generous, heroic France, has been revived by her present sacrifices and untold suffering in the cause of freedom and justice, and the rights of men and nations; for thus the same quality of unselfish patriotism that inspired her LaFayette to volunteer his services in aid of the New Republic which had just come into existence, founded upon the principles of liberty and equality, shall be held up before the youth of this country as they go to take a place upon the soil of France beside the armies of our noble Allies, recognizing that the battle of freedom which France has been so heroically fighting is our battle, that they may be ready as he was to give even life itself in order that the just cause upon which our country has embarked may prevail and triumph.

Nowhere can be found a more splendid example to youth, of loyalty and devotion to a patriotic undertaking than that afforded by LaFayette. He was but a youth of 19, when hearing at a dinner party in Metz that "the remote, scattered and unprotected settlers of the wilderness had solemnly declared themselves an independent people," resolved to abandon the pleasure of the "gayest court and capital of the world," to leave his young wife and child and to risk his life and fortune in the cause for which his heart "at once enlisted."

No sinister motive, no self interest dictated the course of LaFayette. He thought not of cost or sacrifice. His courage was not dimmed by obstacles. Hardships he bore without complaint. Wounds deterred him not. Believing the cause upon which he had

entered to be a just one, he followed its fortunes with unquenchable devotion. In him was illustrated the impulsive, generous, heroic spirit of France, the spirit that is willing to give all, to sacrifice all, even life for a glorious aim. It is the spirit that we of the Universities and Schools would see instilled into our youth today, in order that liberty may not perish from the earth, and it is because this occasion has given opportunity to hold up this spirit to honor that we are so grateful to the Daughters of the American Revolution.

ADDRESS BY MRS. RUTH LEE BRISCOE, LIBRARIAN OF THE UNIVERSITY OF MARYLAND, AND MEMBER OF THE NATIONAL SOCIETY OF THE D. A. R.*

Madam State Regent and Daughters of the American Revolution, Mr. Provost, Regents, Professors, and Students of the University of Maryland, ladies and gentlemen:

"General LaFayette paid three visits to America; the first in 1777, the second in 1784, the third in 1824. A period of forty-seven years intervened between the first and last visits and many changes had taken place. George Washington, his beloved commander, was no longer here to welcome him. Adams, Jefferson, and Madison, his most intimate friends in the old days, had each, in his turn, served as chief Magistrate of the young republic which he had helped to found. James Monroe, who fought with General LaFayette in the battle of Brandywine, was now President of the United States. The area of the nation had broadened, and the number of States had nearly doubled since the Revolution. The Capital had been moved from Philadelphia to Washington, which had been founded and partly built. Dorothy Payne, successively Mrs. Todd and 'Dolly Madison,' while no longer presiding over the White House, still held her high place as 'Queen of American Society.'

The new generation which had come upon the scene gave General LaFayette a reception which was spontaneous in its enthusiasm and his progress through the country was marked by a series of ovations. In response to the requests of the people, he made a tour of the twenty-four states then in the Union, covering in all about 5000 miles. He was received with honor by the President, with special distinction by Congress, was presented with a purse containing $200,000 and a

*Authorities quoted: Cordell, E. F., History of the University of Maryland, "Old Maryland," various American histories, newspaper editorials.

township of land. Early in his visit, he made a pilgrimage to the tomb of General Washington and participated actively in various functions—the dedication of a Monument to Baron de Kalb, the laying of the corner-stone of Bunker Hill Monument, etc."

The University of Maryland, as the leading seat of learning in this state at that time, determined to contribute its share to the honors being accorded him, by conferring upon General LaFayette a literary title. The motion to confer the degree was made by Prof. Granville Sharp Pattison of the Board of Regents of the University of Maryland, and the ceremony took place in Anatomical Hall, October 9, 1824 at 10 a.m. This is the first recorded instance of the conferring of the degree of LL.D. by this University, and the episode is one of the most interesting in her early history. "The building was in gala attire, the lobbies covered with rich brussels carpet and the seats fitted with cushions of crimson moreen. On his arrival at the University, General LaFayette was received at the gate by a Committee and escorted to the hall where the Provost, Regents, and a distinguished company of ladies and gentlemen awaited him. As he entered, the entire assemblage rose,—General LaFayette bowing gracefully in response to their warm greetings. He was accompanied by his son, George Washington LaFayette and a number of his Revolutionary companions.

"After a speech of felicitation, Rt. Rev. James Kemp, the Provost, conferred upon General LaFayette the degree of LL.D., with a diploma and a handsome silver case in which to contain it. On receiving it the General expressed to the Provost his appreciation of this proof of respect and attachment from a body so dignified. The ceremony being concluded, the guests were presented to General LaFayette and later he inspected the rooms and the equipment of the institution. He particularly examined the immense galvanic apparatus invented by the Professor of Chemistry and seemed highly gratified by the number and beauty of the anatomical specimens. He took leave of the members of the University under the portico and drove off amid the cheers of the assembled citizens."

Within a radius of three city blocks, as the bird flies from the University of Maryland, lie the graves of many of our Revolutionary patriots. St. Paul's Cemetery holds the remains of Samuel Chase, a signer of the Declaration of Independence, Colonel John Eager Howard, the hero of the battle of Cowpens, and later Governor of Maryland, and Colonel Tench Tilghman, General Washington's

Aide-de-camp who bore the news of General Cornwallis' surrender at Yorktown to Congress assembled in Philadelphia. In Westminster Churchyard, are interred the bodies of General Samuel Smith, the defender of Fort Mifflin, Dr. Andrew Aitken, Colonel Paul Bentalou, and many others of distinction. These were the comrades-in-arms of General LaFayette, and three of them, General Smith, Colonel Howard and Colonel Bentalou were present with him on that memorable occasion in the University of Maryland.

Peace to the ashes of our patriots and heroes!
Peace and hallowed memory!

"On Fame's eternal camping-ground,
Their silent tents are spread,
And glory guards with solemn round,
The bivouac of the dead!"

ADDRESS BY CAPTAIN JACQUES ROUVIER, ARMY OF FRANCE

Ladies and Gentlemen:

What a pleasant thing for a soldier of France to be tonight amongst the "Daughters of the American Revolution" and how these words: "American Revolution" sound sweetly to a French ear. Our thoughts fly back to the glorious past and in this very room where LaFayette was graduated a Doctor of Laws we cannot help thinking of him, of de Grasse and many another Frenchman who left everything in France to fight for the Liberty and the Independence of this country. These men knew that it was a right cause to fight for; they knew that the Liberty of the New World was at stake and they had not the slightest hesitation because, ladies and gentlemen, whenever there was a just cause to be fought for, some Frenchmen were always ready to fight for it and these Frenchmen were always backed by the sympathy, if not by the useful efficiency of the whole French nation.

And in this glorious past, the gallant fighters of America and France, united by the same all-mighty will to establish in the New World a new area of freedom, of liberty, of justice, fought to the end, unabated by hard luck and reverse.

Now, ladies and gentlemen, another fight for a right, for a just cause is fought over there in the old world and it is not as in the time of LaFayette the liberty of the New World which is at stake, but the liberty of the world, of the whole world.

Did America calmly look on with folded arms at this titanic struggle? No. America could not remain unmoved, when a nation which claimed to be civilized trampled down all the laws of morals or honour and called treaties scraps of paper and committed such atrocities that we have to think of the Huns to find an equivalent.

America at that moment remembered LaFayette and with one mind France and America united together on the battlefield of Europe. And what a help you have extended to us! American people are not ungrateful and they pay their debts liberally, especially the debts of their hearts.

Now you are into this war (*your* war as well as *our* war) to the hilt and you are doing splendidly. I have watched your soldiers and I have been amazed at the astonishing progress they have made; I have been struck by their wonderful spirit. I have visited your factories and have been astonished by the efficiency of its workers. And when I am asked: "What can America do?" I would rather say: "What can not America do?"

I will try, ladies and gentlemen, to make you visualize more clearly under what conditions the war is waged and you will thus understand what you American people can do and are doing for the common cause.

This war is not like other wars where huge armies encountered on enormous spaces and fought for a few days, two or three, and delivered such crushing blows, suffered such appalling losses, that one of the armies was completely beaten and obliged to yield vast tracts of its country. Then after a time, another battle would be fought bringing the war to an end. Up to now, war lasted a short time; a few big encounters took place on a very large front and it was the end. Why make war in this way? because the Armies fought and not the Nations. Now this war represents the death grip of nations, of groups of nations which have mobilized all their resources in men, in industries, in intelligence. This war has lasted more than three years; the largest part of the front is transformed by means of material, of fortification into an enormous and unheard of fortress held by a few men and many machines, guns, machine guns, or automatic rifles, protected by barbed wire and trenches reinforced by concrete, served by a few men holding a very large front. On the other side are narrow fronts of 18 to 25 miles, vast numbers of men backed by a powerful material, guns wheel to wheel, great numbers of machine guns. All this material by means of tons of explosive hurled upon the

enemy levels the trenches, reduces to nothing the elaborate works of years, changes the villages to ashes and dust, changes even the very aspect of the landscape and transforms it in a dim and remarkable area where there is nothing but shell holes and shell holes.

To fight these battles, roads, railroads, must be built, shells must be turned, guns, machine guns, rifles and grenades manufactured; supplies must be provided for these hundreds of thousands of fighters!

You realize therefore that this war is more like an industrial sort of business than anything else and that the main features are the length of the effort required to win it, for a group of nations with all its available resources is not brought down with a single blow.

Another striking feature is the predominance of machines. In this country during the Spanish War, it was often referred to as: a man behind each machine. Nowadays, we could say: a machine behind each man.

There is also the predominance of mechanical elements, high explosives, gas, flame: against all these, men alone are not equal.

Ladies and gentlemen, you realize what a difficult task it is to obtain good results with such powerful means and we may ask; "How will we have them work harmoniously?"

In coördination and unity of direction reside victory. That is to say that all available resources will be used for the war, that all our means of action will be placed and utilized at the very moment, at the very spot, by highly efficient men.

Now, ladies and gentlemen, the great democracies of the United States and France with their gallant Allies, England, Italy, Belgium, Servia, Roumania, Portugal will fight for the good fight to the bitter end. We shall do this as our ancestors did, preferring death rather than be deprived of the most precious of all things: Liberty. We are the descendants of LaFayette and de Grasse and his followers and you have cultivated liberty and courage since Washington gave birth to the United States of America. Their descendants united again two centuries later for one cause, a greater one than in the 18th century, for then the liberty of the new continent was at stake and now, ladies and gentlemen, it is the Liberty of the World which is at stake! We are united together for the same cause, but on a greater scale and our efforts will be crowned with the same success.

America and France united cannot fail and when this big task is accomplished, then, ladies and gentlemen, I venture to say that we shall have deserved well of humanity. And as two centuries earlier

united together, we shall establish a new reign of Liberty and Democracy. And this huge task will and must be accomplished, whatever the costs may be.

Every sacrifice must readily be consented to, for, as Nelson said: "Our countries expect every man to do his duty."

Address of Mrs. Arthur Lee Bosley, State Regent, Maryland Society, Daughters of the American Revolution

It is peculiarly fitting that the Maryland Society, Daughters of the American Revolution, should be here today to pay tribute to the memory of the illustrious General LaFayette, when we remember that our members are descendants of Revolutionary heroes who fought side by side with the gallant troops of France, made possible by the generosity of General LaFayette.

It might be appropriate, at this time, to read the objects of our Society and what we stand for. Our National Society numbers more than 135,000 women.

The objects of our Society are:

1. To perpetuate the memory of the spirit of the men and women who achieved American Independence by the acquisition and protection of historical spots, and the erection of monuments; by the encouragement of historical research in relation to the Revolution and the publication of its results; by the preservation of documents and relics, and of the records of the individual services of Revolutionary soldiers and patriots, and by the promotion of celebrations of all patriotic anniversaries.

2. To carry out the injunction of Washington in his farewell address to the American people, "to promote, as an object of primary importance, institutions for the general diffusion of knowledge," thus developing an enlightened public opinion, and affording to young and old such advantages as shall develop in them the largest capacity for performing the duties of American citizens.

3. To cherish, maintain, and extend the institutions of American freedom, to foster true patriotism and love of country, and to aid in securing for mankind all the blessings of liberty.

You can well understand how broad is our work. In Red Cross work alone in Maryland, I believe, I am correct in saying that the Maryland Society, Daughters of the American Revolution leads all organizations.

Our hearts are filled with loving memories when we think of the close association of our own beloved Washington and LaFayette and, as in the days of our great struggle for American Independence, so today, in the great struggle for righteous liberty and the upholding of all that makes life dear and home sacred, we are again fighting, side by side with France and have carried our glorious Star Spangled Banner to French soil, to assist in making this possible; and there the Stars and Stripes will remain until the world is made safe for democracy.

How can we help but love France when we remember her wonderful courage and spirit of self-denial. Vive La France!

I know of no greater tribute that could be paid the memory of General LaFayette than to present the flag of our own dear country, a hallowed, sacred thing, next only to God Himself; and so, representing the Maryland Society, Daughters of the American Revolution, it is my great privilege and pleasure to present to the Library of the University of Maryland, our sacred National Emblem. I know you will guard it well and, come what may, our first thought will always be the protection of the sanctity of our beautiful Star Spangled Banner.

Acceptance of the Flag by Prof. Randolph Winslow on Behalf of the Board of Regents

Madam State Regent and Daughters of the American Revolution, Gentlemen of France, Ladies and Gentlemen:

On behalf of the Regents of the University of Maryland I thank you, Madam State Regent and the Daughters of the American Revolution, most sincerely, for the gift of this beautiful flag to the University. When we gaze upon this emblem of liberty of our country, which has now become, also, a symbol of liberty for the whole world, may our patriotism be stimulated into greater activity. But the University of Maryland has ever been patriotic from its earliest days to the present time. In the war of 1812, teachers of the medical school were in service with the troops at the battle of North Point and the bombardment of Fort McHenry. Passing over the Mexican War we come to the great civil war between the North and South, 1861–65, in which each one took sides according to the dictates of his own conscience. Dr. Edward Warren, professor of materia medica and therapeutics, jumped on the Norfolk boat after its gang plank

had been pulled in and threw his fortunes with the South. He became Surgeon-General of North Carolina and subsequently of Egypt. He died in Paris as Warren Bey.

Dr. William A. Hammond, professor of anatomy, espoused the cause of the North and became the Surgeon-General of the United States Army, and the founder of the wonderful medical museum and the great library of the Surgeon-General's office in Washington. He subsequently became a distinguished neurologist in New York. Many of our graduates served according to their convictions in the armies of both the North and the South. In the war with Spain in 1898, Dr. R. Dorsey Coale, professor of chemistry, and dean of the Medical School went out as Colonel of the 5th Maryland Regiment, and many of our men from all departments volunteered for service. You have heard the statement of Dr. Rowland that more than 200 of the teachers, students, internes and recent graduates of the Medical School have answered the call to the colors; so many, in fact, that the hospitals under our care are almost stripped of their staffs and have difficulty in conducting their work. The University of Maryland has therefore shown its loyalty by its deeds. Some of our boys are now in France striving in some measure to repay the debt that we owe to LaFayette and the other soldiers of France for their timely assistance in our struggle for independence. May the Stars and Stripes and the Tricolor of France wave together until victory is attained and the world is made safe for democracy.

I beg also to say that one of our most precious recollections is that of the visit of General LaFayette to this University and the conferring on him of the degree of Doctor of Laws in Anatomical Theatre on October 9, 1824. We also recall with pride his visit to our affiliated department at Annapolis, St. John's College.

Again, Madam, I accept this flag and extend to the Daughters of the American Revolution the hearty thanks of the Regents of the University of Maryland.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

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DEATH OF PROFESSOR CHARLES WELLMAN MITCHELL, A.M., M.D. LL.D.

Another blow of almost crushing force has overtaken us. On December 18, Dr. Charles W. Mitchell, professor of pediatrics and clinical medicine was taken with bronchopneumonia and died on the 28th of the same month. About two years ago he also had an attack of pneumonia, from which, after a prolonged and serious illness, he recovered. He seemed in better health this winter than usual and entered upon the work of the session with great enthusiasm. It is quite probable that he undertook too much and overtaxed his strength. Graduating with first honors in 1881, he soon went abroad and studied in Prague and Vienna under the best masters. Attaching himself to his alma mater, he filled the positions of assistant resident physician, and resident physician at the University Hospital and various minor grades in the medical school until in 1896 he was admitted to the Faculty as professor of materia medica and clinical medicine; subsequently he became professor of therapeutics and pediatrics and later of pediatrics and clinical medicine. Upon the retirement of Prof. Samuel C. Chew, he was made professor of medicine and pediatrics, which position he held for two years, when he resumed his previous chair of pediatrics and clinical medicine. Every position he occupied he filled with conspicuous ability. He was gifted with a ready and forceful speech, a clear and logical mind and the ability to impart knowledge in a convincing manner. He was a great ornament to the University and it will be difficult, if not

impossible, to fill his place. He was not only learned in medicine but was a highly cultured man in the humanities, being especially versed in history. He was an intimate friend and classmate of President Wilson, with whom he graduated at Princeton in 1879. Dr. Mitchell was intensely patriotic and his last public address was made at Osler Hall on April 24, 1917 on "The Physician's Duty in the Present Crisis," in which in burning words he urged the medical profession to show "an exalted patriotism for their country and self-effacing devotion to their fellow-men."

Presentation of a Flag to the Library of the University of Maryland by the Daughters of the American Revolution on December 14, 1917, in Commemoration of the Visit of General LaFayette to the University and the Conferring on Him of the Degree of Doctor of Laws, on October 9, 1824

A notable gathering took place in Davidge Hall on December 14, 1917, on the occasion of the presentation of a beautiful silk star spangled banner to the Library of the University by the Daughters of the American Revolution. This was intended, especially, to commemorate the visit of General LaFayette to the University and the conferring of the degree of Doctor of Laws upon the distinguished visitor on October 9, 1824. In addition to many prominent citizens of Baltimore, five officers of the French Army in full uniform added impressiveness to the occasion. They were Capt. Jacques Rouvier, Capt. F. de Casteja, Capt. Pierre Lautz, 1st Lieut. Henry Dupont, and 2nd Lieut. Alcide L. Martineau.

The programme was very attractive. The invocation was made by Rt. Rev. John Gardner Murray, D.D., Protestant Episcopal Bishop of Maryland, and addresses were made by Provost Thomas Fell, Dr. James M. H. Rowland, dean of the School of Medicine, Judge Henry Harlan, dean of the Law School, Mrs. Ruth Lee Briscoe, Librarian of the University and Captain Jacques Rouvier, representing the French Ambassador. The flag was presented in a graceful speech by Mrs. Arthur Lee Bosley, State Regent, D. A. R., and was accepted by Professor Randolph Winslow, on behalf of the Regents of the University of Maryland. One of the most attractive and inspiring features of the occasion was the singing of "America," "Joan of Arc," "The Marseillaise" and the "Star Spangled Banner" by Prof. Merrill Hopkinson of the Department of Dentistry.

The flag was unveiled by Mrs. William A. Buckingham, Chairman of the Committee.

The following description of the flag was furnished by Sisco Bros. from whom it was purchased.

An 18-inch three tier base and a 12 foot flag pole of solid oak, surmounted by a brass eagle. The flag is 6 by 6 feet, made of superior banner silk with hand-embroidered stars, and gold cords and tassels. On a sterling silver plate affixed to the pole is the following inscription:

December 14, 1917
Presented to the Library of the University of Maryland by the
Maryland Society, D. A. R.,
in Memory of
General LaFayette
upon whom was conferred the degree of LL.D.,
by the University of Maryland,
October 9, 1824.

BOOK REVIEWS

Poliomyelitis, in All Its Aspects. By John Ruhräh, M.D., Professor of Pediatrics in the University of Maryland School of Medicine and College of Physicians and Surgeons; Visiting Pediatrist to the Mercy Hospital; and Erwin E. Mayer, M.D., 1st Lieutenant Medical Officers Reserve Corps, U. S. Army; Former Senior Resident Physician at the Mercy Hospital; Instructor in Medicine in the University of Maryland School of Medicine and College of Physicians and Surgeons. Illustrated with 118 engravings and 2 plates. Lea and Febiger, Philadelphia and New York, 1917.

This book is an attractive volume of nearly 300 pages upon a very important subject, which recently has forced itself upon the attention of the medical profession of this country, as well as upon that of other civilized countries the world over. It seems evident that the disease is increasing in frequency since it is estimated that 24,000 cases of poliomyelitis have occurred in the United States since early summer of 1916, and that 18,000 of these were in New York City and the adjacent states. The general mortality was about 25 per cent. In Maryland during the same period 352 cases occurred with 111 deaths, a mortality of 31.53 per cent.

From these figures it can be seen that it is most important that we

should have an authoritative treatise upon this disease, in a convenient form and size. The authors state that they have "endeavored to collect the various facts concerning the disease as far as they are known at the present time and to give briefly such theoretic considerations as may seem to be either of interest or importance. They have attempted to gather in one volume the information which they themselves have wanted on the subject."

It seems to us that they have succeeded admirably in this attempt. From a historical standpoint the first mention of the condition seems to have been made by Underwood in 1784 and while occasional articles have appeared from time to time, it is only in recent years that the disease has been recognized as an acute infectious disorder of grave significance. Careful consideration is given to the pathology, manner of introduction and transmission, symptoms and treatment of the condition in both its acute and chronic forms. The book is a very useful addition to the literature of the subject and should fill an important place in the practising physician's library.

Diseases of the Skin: Their Pathology and Treatment. By MILTON B. HARTZELL, A.M., M.D., LL.D., Professor of Dermatology in the University of Pennsylvania. 51 colored plates and 242 cuts. J. B. Lippincott Company, Philadelphia and London. 1917. Price $7.

This is a complete treatise on diseases of the skin, of 753 pages, just issued by J. B. Lippincott Company. The book begins at the beginning which is the anatomy and physiology of the skin, then takes up general symptomatology, etiology and pathology of skin disorders. Chapters 7 and 8 are devoted to congestions and inflammations of the skin; chapter 9 to inflammations due to vegetable parasites and Chapter 10 to inflammations due to animal parasites. Then follow hemorrhages, hypertrophies, atrophies, anomalies of pigmentation, new growths, neuroses and diseases of the appendages of the skin. Every variety of skin disease is described, some of them conditions that are rare and but little known, others the usual forms of eruptions that are found in this country and in Europe. Not only are the strictly dermatological specialties carefully considered but the acute exanthemata, as scarlet fever, measles, smallpox and chickenpox, are also described and illustrated with beautiful colored plates. Indeed, the author states that "a not inconsiderable experience in general medicine extending over some years has

especially enabled him, as he believes, to survey the subject from the view-point of the general practitioner as well as from that of the specialist." Animal parasites are especially important at this time as the cause of skin lesions, as well as of such serious diseases as typhus fever. The consideration of this subject is limited to its local aspect. After looking over this book somewhat carefully we feel that it is a good work to place in the hands of the general practitioner and as a text-book for students.

MARRIAGES

Lieutenant George Perry Ross, M.R.C., formerly of Baltimore, but now stationed at Camp Greenleaf, Fort Oglethorpe, Ga., was married recently at Atlanta, to Miss Helen Marie Goutrain, of Baltimore. Lieutenant Ross graduated at the University of Maryland in 1915, and served as assistant resident surgeon at Bay View Hospital and later at the University Hospital.

On December 12, 1917, Dr. Raymond Lovejoy Johnson was united in marriage to Miss Martha Maxwell King, at All Saints Church, Atlanta, Ga. Dr. Johnson graduated at the University of Maryland in 1914 and served two years as assistant resident surgeon in the University Hospital. He will live at Waycross, Ga.

Acting Assistant Surgeon James Graham Marston, U. S. P. H. S., of Baltimore, and lately resident at the University Hospital, was married to Miss Valeretta Brandt of Forest Park, Baltimore on December 15, 1917.

DEATHS

DR. CHARLES FREDERICK BEVAN

To the Alumni of the College of Physicians and Surgeons the announcement of the death of Dr. C. F. Bevan will come as a shock. He had not been in good health for a number of years and had gradually retired from both private and hospital practice. He was operated on at the Union Protestant Infirmary for some upper abdomen trouble and was apparently getting on well when he was seized with a heart attack and died in a short time. Graduating at the University of Maryland in 1871, Dr. Bevan was appointed demonstrator of anatomy when the College of Physicians and Sur-

geons was opened in 1872, and after serving in this capacity several years he was made professor of anatomy, and upon the retirement of Dr. Coskery he succeeded to the chair of surgery. When Dr. Opie became incapacitated, Dr. Bevan succeeded him as dean of the college, a position he filled for about ten years. About six years ago he retired from his chair and from service at the Mercy Hospital. His death occurred on December 27, 1917, his age being sixty-seven years.

We regret to announce the death of Dr. Glenn M. Litsinger, associate professor of obstetrics in the medical school, which took place on December 26, 1917, of general septicaemia. He was a native of Delaware and graduated at Delaware College in 1895. Coming to Baltimore, he entered the College of Physicians and Surgeons, from which institution he received his degree. He located in Baltimore and had built up a large practice. He was forty-five years of age.

We learn with regret of the death of Dr. John Calvin Cummings, a graduate of the University of Maryland in 1884. He was stricken with apoplexy and died suddenly on November 6, 1917, at Harrisburg, Pa., aged sixty-three years.

On January 9, 1918, Dr. Thomas J. O'Donnell, 437 Warren avenue, Baltimore, died suddenly of heart disease, aged thirty-seven years. He was a very active practitioner and had an enormous practice. He graduated from Loyola College in 1899 and from the University of Maryland in 1903. His loss will be keenly felt.

Julius Royal Fisher, Akron, Ohio, a graduate of the College of Physicians and Surgeons in 1910, died at his home on December 23, 1917, of septicaemia, aged thirty-three.

Dr. Theodore Cooke, Sr., a graduate of the University of Maryland in 1859, received injuries from which he died on January 13, 1918. Dr. Cooke, who was in his eightieth year, was going to his summer residence in the country in an automobile, when the automobile skidded and turned across the tracks of the Emory Grove electric line; at the same time a trolley car crashed into the machine and the doctor's skull was fractured, which caused his death in a few hours. Formerly he was a prominent physician in this city, but had retired on account of age.

ITEMS

Dr. Nathan Winslow, who served with General Pershing's punitive expedition in Mexico and subsequently, until recently, in the big bend of the Rio Grande on the border, has been promoted from 1st Lieutenant to the rank of major. He has been in continuous service in difficult and arduous assignments since July, 1916, and has not had a single day of vacation, since he was called into service. He is now in the training camp at Fort Oglethorpe, Ga.

Dr. Arthur M. Shipley, Major in the Medical Reserve Corps, who has been in charge of the base hospital at Camp Meade, Md., has been ordered to Fort Oglethorpe preparatory to being assigned to duty in France.

Dr. Hugh Brent, Captain, M.R.C., has been ordered to Camp Meade, Md., as has Dr. Wm. H. Smith, Captain M.R.C.

Dr. Harry M. Stein, Medical Superintendent of the University Hospital, 1st Lieutenant M.R.C., has also been ordered to Camp Meade.

Dr. C. A. Reifschneider, senior assistant resident surgeon, has been assigned as medical superintendent of the University Hospital, in place of Dr. Stein.

Dr. Beverly W. Briscoe, U. of M., 1903, announces his removal to Addison, Pa., where he will continue to practise. The doctor says he has done well in his profession and has delivered 1000 women without a death, which is certainly a remarkable record.

Captain Gordon Wilson, M.R.C., has been promoted to Major, and is the head of the lung department at Camp Meade.

Lieutenant H. L. Wheeler, M.R.C., has been transferred from Fort Oglethorpe to the base hospital at Camp Bowie, Fort Worth, Texas. This hospital has a capacity of 1200 beds, which were filled at the time of writing, and *much* surgical work was being done.

Dr. J. Charles Norton, U. of M., 1912, has been commissioned a 1st lieutenant in the Medical Reserve Corps, and ordered to Fort Oglethorpe.

Dr. D. P. Etzler, assistant resident surgeon, University Hospital, has received his commission as a 1st lieutenant in the Medical Reserve Corps.

Dr. Jose L. Hirsh, professor of clinical pediatrics, has been appointed pediatrist to the University Hospital in succession to the late Prof. Chas. W. Mitchell. He has also announced that hereafter he will devote his attention exclusively to diseases of children.

It is announced that beginning with the session 1918–19 women students will be admitted to the medical school on equal terms with men. This innovation has been advocated for some time, but it was only on January 8 that the Faculty passed the resolution to admit them. There are several very important reasons why this should be done: first, the shortage of physicians owing to the war; secondly, the fact that as the medical school is receiving an appropriation from the state it is not proper that one-half of the youth of the state should be excluded from the benefit of this appropriation; thirdly, women have for years been admitted to the schools of dentistry and pharmacy and they have made excellent students.

Dr. Hugh R. Spencer, 1st Lt., M. R. C., Associate Professor of Pathology and Bacteriology at the University of Maryland, reported for active duty in the Government service on December 17, 1917. Almost immediately he sailed for France with a special laboratory mission, and, according to word received here, has arrived safely.

CORRESPONDENCE

Camp Meade, Md., Division H. Q.
January 8.

Dear Mrs. Ruth Lee Briscoe:

On behalf of the French officers at Camp Meade, I wish to thank you for the very fine and interesting books which you sent to us, as gifts, in remembrance of the very interesting ceremony which took place the other day at the Library of the University of Maryland.

And while the flag was being unveiled, it seemed to us, that we could hear the tread of all these youths of America, who came with the same unselfish motive that lead LaFayette forth, not for conquest, but for freedom—and we can already read approaching victory in the eyes of all these combatants, who have come to take their stand on our side—and who, very soon, will be able to do their share in establishing a liberty and a freedom that we and our posterity will enjoy forever.

Yours sincerely

Capt. F. de Casteja,
French Army.

FRANCE,
November 5, 1917.

Dear Frank:

I am writing this by the light of two candles, so don't expect too much. Spent two days in New York, nine days on the ocean, five days in London, seven weeks at Royal Herbert Hospital at Woolwich ten miles from London, one day in Southampton, one *very, very* sick, miserable night on English Channel in a fierce storm, two days at a rest camp at Havre, three days and nights traveling on train—sleeping as best I could and eating when we stopped and could grab a bite. One day or great part of a Sunday in Rouen, then landed at 3 a.m. at end of journey; wandered about a very dilapidated town wrecked by shells, slugged our own baggage, slept in a convent on floor on clothing roll and then rode about in ambulance with flare and boom of guns not far distant and then, about 10.30 p.m., landed at our camp.

Slept that night in a hospital and the next morning they served oatmeal in bed thinking we were patients. We are in a village—comfortable room, at least as much as you could ask for; meals good although not luxurious, and am learning a lot of regimental duties because you are an officer first and only a doctor when you get to the very bottom of the list. *Mud* is fierce but here we have had some sunshine. Pretty country, windmills, neat houses and gardens, where they have not been bombed or shelled, but oh! the places and country that have been devastated. Some places are deserts. Talk about your transports! You ride or walk along roads, and they are continually choked by a steady stream of traffic both ways. Motor lorries, trucks you call 'em. Never saw so many, never expect to see as many again. All kinds—but little Ford ambulances can go where no others can and are used way up front to get the wounded back. Peerless, Pierce, Packard trucks, Buick, Studebaker, Ford ambulances and any kind of a motor on wheels that will go.

Horses and mules are used extensively, also steam tractors and steam wagons. The village shakes to rumble of traffic day and night. We are at a bloody part of the line. Today I went within three or four miles of first line; but those guns do boom some. They shell in here but I am somewhat used to it.

We used to get it in England. Oh my, it was warm. Can see flashes from here of big guns and hear boom. Oftentimes a continuous affair. Advanced Dressing Station gets the men from the trenches and passes them back. Our men are up front, but because we are close to several C. C. S. (Casualty Clearing Stations) we get only the slightly wounded or sick. You see some can go up to units after few days or two weeks but we pass most of them back to Base. In an emergency we are equipped to do everything but just now others are too handy.

We work terribly hard. Two hours a day is our limit. We walk around and get familiar with things but probably we shall get it later up front.

Our Colonel told us he knew we were very much disappointed but they are all in the same boat. Every now and then, though, you do have to hustle. It is not the pleasantest thing to be bombed, however. No need for you in Army now; or are you in?

Write me news. No letters for about two months. Remember me to all. Expect to write Dr. Alec Muse very shortly.
Let you hear from me when I get a letter from you.

Yours fraternally,
JOHN W. V. CLIFT, First Lieutenant,
M. O. R. C. U. S. A.
Field Ambulance, B. E. F., France.

Met bunch Frat men. One with me here. Number close by.

Lieutenant J. R. Rolenson, M. R. C. writes from Camp Greenleaf, Fort Oglethorpe, Ga., on November 26, 1917:

"There are a large number of our graduates in this Camp and every one has shown his efficiency and competency. We are classified as A, B and C men, the first being the highest efficient record. Looper, Ross, Cook and a few old graduates have attained this standard—I was classified as a B man last week and tonight I was made the Captain of my Company. Ross is Captain of his at the present time also. This proves undoubtedly that we have done good work and I thought of informing you for the honor of our teachers and the school.

JOSE L. HIRSH, A.B., M.D.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. II APRIL, 1918 No. 6

DR. JOSE L. HIRSH

AN APPRECIATION

BY HARRY ADLER, A.B., M.D.

Baltimore, Md.

A proper appreciation of the character of Jose L. Hirsh is not easy; but if a close companionship and uninterrupted friendship of 29 years entitles one to form an estimate, this fact must stand sponsor. This almost life-long association may best be considered in three relations: as a friend, communal worker and physician. Modest and retiring by nature, he sought no friendships, but his geniality and amiability won for him a host of friends, who felt instinctively they could rely on his sincerity and feel safe in his companionship. His was the friendship that "doubles our joys and halves our sorrows."

In his favorite fields of charitable endeavor his results, to those familiar with them, speak for themselves. As president of the Educational Alliance not only was this institution brought to a high state of efficiency but it was effected in such a way as to endear him to all those with whom he came in contact, evidencing an executive skill of high order.

At our Hebrew Hospital he was the balance wheel of its medical activity, receiving the jarring complaints of those more interested in their personal desires than the welfare of the Hospital; smooth-

ing out the difficulties of those sincerely interested; accepting burdens of responsibility which in all human probability contributed to the hastening of his untimely end. At this writing it is difficult to see how his place can be filled.

And yet, perhaps saddest of all, it is to think of his loss in the field of medicine. Here he was just beginning to reap the rewards to which his excellent foundation, unusual skill and rare judgment in the treatment of diseases of children so richly entitled him. Becoming more widely known in this branch, directing this work at the Hebrew Hospital and having recently been appointed clinical professor of diseases of children at the University of Maryland, with the entire children's ward of the University Hospital under his individual control, he had just reached the eminence. The pity of it! Jose L. Hirsh was a lovable man. As friend, civic worker, physician, in each and all, his demise constitutes an irreparable loss. Who can look without regret upon the passing of that remarkable combination, a man with mind and heart?

THE UNCEASING WAR WITHIN OUR MIDST[1]

By Dr. Martin F. Sloan

Towson, Md.

There is within our country, indeed in our workshops, our meeting places and in our homes an enemy as treacherous in action, as persistent in energy and more cruel and devasting than the human foe we are being called upon today to combat on the European battlefields. I refer to the tubercle bacillus. It is estimated that 200,000 of the pick of our country, between the ages of 20 and 35 years, at the time of life when their mental and physical faculties are at their greatest development and when they should be most productive and useful, are being killed and another 500,000 are being partially incapacitated annually by this unseen foe. As this constitutes a medical problem and the greatest the human race has to battle with in times of war or peace, it behooves us as soldiers of the front ranks to be fortified with the most potent weapons of offense and defense against this germ and its disease, tuberculosis. Without attempting a review of this inexhaustible subject, it shall be the purpose of this paper to emphasize a few salient points which

[1] Presidential address delivered before the Baltimore County Medical Association, Baltimore, Md., January 17, 1918.

the writer deems so important in the armamentarium of the general practitioner.

In the pre-bacillus days, when tuberculosis was improperly and unscientifically called consumption, because most members of the same family became afflicted, it seemed as if the disease must be transmitted in utero or was inherited and that practically nothing could be done to prevent its presence in an exposed offspring. Science has disproven the correctness of this theory sufficiently for us to say without fear of successful contradiction, that tuberculosis is not inherited. On the other hand, investigators teach, almost without a dissenting voice, that infection takes place primarily and the disease has its beginning in infancy and early childhood when the tissues are peculiarly susceptible to bacterial invasion.

The lessons to be learned from the foregoing are, that a child born of tuberculous parents has not tuberculosis, a priori, but if separated from the parents or protected from them it has a reasonably good chance for health; and, that we must protect the *children* from careless and indifferent carriers of the disease. Unless we believe these truths and preach them and act upon them, we loose the golden opportunity, as far as tuberculosis is concerned, to fulfill the axiom of Pasteur, "It is within the power of man to eliminate every parasitic disease from the world."

After the entrance of the tubercle bacillus into the body of the child by way of the respiratory, digestive or glandular tracts, and after the first shock of contact has occurred, the life-long battle for supremacy begins. If the child has inherited no resistance and can develop none, it quickly passes from the field of combat with meningitis, enteritis, or acute pulmonary tuberculosis. Chronic pulmonary tuberculosis, as it exists in the adult, is seldom if ever found in a child. If inherent forces, on the other hand, come to the child's aid, the bacilli are held in abeyance, indeed become encapsulated as a rule in the glands somewhere in the body. Some researchers go as far as to claim that these encapsulated bacilli react to the future benefit of the child, endowing it with natural immunity against clinical tuberculosis for many years, and in some cases, for life, and also against a second infection from without. We may reasonably believe, however, that the two great antagonistic forces involved—organisms and resistance—are daily watching each other for a successful attack at each other's vitals. That a person infected in childhood does develop clinical tuberculosis in adult life, depends upon a com-

bination of allies which come to the aid of the implanted bacilli (endogenous infection) and not to a fresh invasion of new bacilli (exogenous infection). These are the predisposing causes without which further bacterial proliferation and disease are impossible. This brings out the point that as long as the bacilli are encapsulated the host is infected only; when the capsules break open and symptoms and signs appear, one has tuberculosis. Ninety per cent of all people are infected with tubercle bacilli, but probably not more than 5 per cent develop tuberculosis. We must make this distinction clear when quoting post mortem statistics to laymen or we are apt to produce apathetic consternation. These allies are numerous and give their best aid to the times of life when the tissues are undergoing internal readjustment, as puberty, the puerperal state and the menopause. Persons naturally poorly developed and who have been exposed should be observed and "built up," particularly at these times. Sir William Osler observes that "a tuberculous woman may pass safely through two pregnancies, but seldom a third." The older an individual the less favorable are his tissues as a medium for germ growth.

The predisposing causes of tuberculosis are, worry, certain other devitalizing diseases as typhoid, pneumonia, grippe, etc., childbearing, overwork; vicious habits; poverty and its vassals; and alcohol and its confederates. It is our duty and privilege to help in the extermination of these predisposing factors. Today, throughout our nation a death dealing blow is being struck at the most obstinate and insiduous of them all, alcohol. After an experience of eight years in the very first line of battle against tuberculosis in the dispensaries, hospitals, sanatoria and homes, I am convinced that alcoholism is the bedfellow, the hand-maiden of tuberculosis and that we shall never make much progress against this disease until we have curbed the use of alcohol.

As has been said, only about 5 per cent of the population develop clinical tuberculosis. Our figures are necessarily arbitrary. As our diagnostic acumen becomes more acute the number will become larger. It is in this sphere that the medical profession can render its greatest service to mankind. I make a special plea for a closer study of tuberculosis that earlier diagnosis may be made.

The diagnosis of incipient pulmonary tuberculosis is relatively a simple matter, provided the clinical instruments at our command—the stethoscope, the clinical thermometer, the microscope and the

scales—are used properly and carefully. More mistakes are made through carelessness than through lack of knowledge in the failure to recognize this disease. Every case of illness manifested by a cough, expectoration, fever and tachycardia demands the application of the stethoscope to every section of the bared chest. After the temperature is taken a specimen of sputum should be asked for. If not obtainable at that time, it should be saved when it is obtainable and not only one but at least three careful examinations of at least six specimens should be examined for tubercle bacilli before the sputum is declared negative. It must be remembered, however, that before bacilli appear in the sputum there must be destruction of lung tissue and when this occurs the disease is fairly well advanced. Incipient tuberculosis may exist for months before the appearance of bacilli in the sputum. In our groping for a diagnosis in this stage we must review the past medical history of the patient. Pulmonary tuberculosis seldom runs a continuous course from an initial attack, but moves along in periods of exacerbation alternating with periods of quiescence. The periods of activity are usually far apart in the early stages of the disease and, to the unsuspecting, have no clinical connection, and different exacerbations in the same individual seen by different physicians may have been diagnosed pneumonia, pleurisy, grippe, typhoid fever, malaria and "bad cold." Most of these conditions could have been eliminated absolutely by laboratory methods and certainly the true cause could have been ascertained most times by a sputum examination. Surely, then, when a history reveals one of these clinical diagnoses which was not supplemented by a bacteriological diagnosis, there is always room and reason for doubt as to the accuracy of that diagnosis. An uncomplicated pleurisy always means tuberculosis. In this, the temperate zone, an obscure frank pulmonary hemorrhage means tuberculosis. Louis, the eminent French physician, observed that tuberculosis in any part of the body in an adult is always accompanied by the disease in the lung. Do not believe that because there is no known case of tuberculosis in the family or "on either side of the house"—to use a familiar expression—the patient in question can not possibly have tuberculosis and permit this feeling to prejudice further search.

Pulmonary tuberculosis, according to extent of physical signs, is divided conveniently into the early and advanced stages. Some clinicians hold the presence of tubercle bacilli in the sputum as con-

stituting the dividing line, certainly their presence ends all further diagnostic controversy. In the early stage, loss of weight, hemoptysis, fever, debility, cough and expectoration are predominating symptoms. Confusing diseases which may have one or more of these symptoms are, thyroidism, mitral stenosis, enlarged tonsils, nasal conditions, concealed pus, decayed teeth, sinusitis, pyelitis, and syphilis, gastroptotic cases, circulatory disturbances and non-tuberculous lung infections.

Tuberculosis in the advanced stage may be confused with thoracic aneurysms and neoplasms, lung infarcts and abscesses resulting from foci in other parts of the body, bronchiectasis, foreign bodies in the lungs, syphilis, chronic pneumonic condition and actinomycosis. Again I say, examine the sputum. First, eliminate tuberculosis, then go after the other possibilities.

After the diagnosis of the case the purpose of this paper is accomplished. Leave to others the treatment. My farewell message, as President, to this noble organization of defenders of public health is to diagnose pulmonary tuberculosis, protect the children from the "open" cases and give an uninfected generation an opportunity to grow up.

SUBPARIETAL RUPTURE OF THE INTESTINES FROM TRAUMATISMS TO REDUCIBLE INGUINAL HERNIAE

By Randolph Winslow, M.D., F.A.C.S.

Baltimore, Maryland

Subparietal rupture of the intestines is a comparatively rare injury. The small intestine is much more frequently ruptured than the large, and the ileum is the usual seat of the laceration, though the jejunum and duodenum are also injured in a progressively diminished ratio. The causes of the rupture may be either direct blows on the abdomen, whereby the bowel is compressed against the bony structures, or a force which causes bursting of the distended viscera by a sudden displacement of their gaseous or liquid contents. While direct violence is the common cause of the injury, it is known that indirect violence may also cause this lesion, such as a fall upon the feet or the buttocks. Emanuel Senn reports an interesting example of the latter injury in the case of a woman who while walking fell to the ground, striking her right buttock.

At operation a small opening was found in the jejunum. The actual causative traumatisms are numerous, such as blows from narrow blunt objects, kicks on the abdomen, falls, and injuries to herniae. While the intestine may be ruptured or even completely torn across by such an object as a cart wheel passing over the abdomen, it is more usual to find that the injury is due to a comparatively small body striking the abdomen with great force. Gage and Lund both mention blocks of wood thrown off by circular saws as among the most common causes in New England. Kicks on the abdomen by a horse or by a man are also frequent causes of rupture of the bowel, or injuries from wagon poles or other narrow bodies. Falls on the abdomen are important causative agencies and would be likely to cause bursting of the intestine from sudden displacement of its contents. An interesting example of rupture of the alimentary tract by a fall occurred in the practice of my colleague, Dr. John D. Blake, in the case of a man who, after a hearty meal, was thrown from his buggy and ruptured his stomach with the escape of it contents into the peritoneal cavity. Laparotomy was promptly done and the man made a good recovery.

SYMPTOMS

The symptoms of a subparietal rupture are very similar to those of a penetrating wound or a perforating ulcer of the stomach or intestines. There is a history of a blow or other traumatism on the abdomen, followed usually by severe pain, rigidity of the abdominal walls, tenderness on pressure, vomiting, increased frequency of the pulse, with soon an elevation of temperature and a high leucocyte count. There may be marked tympanites and obliteration of the liver dulness, but these signs are by no means constant, nor is shock a constant or a reliable symptom. The patient, however, has received a mortal injury and he generally shows it in his facies. Of course the symptoms will depend somewhat upon the extent of the injury, a small opening may give exit to intestinal contents slowly and the inevitable peritonitis may not develop as rapidly as when the laceration is more extensive.

A remarkable illustration of this fact has recently come under my observation in the service of Dr. Page Edmunds. A man fell 30 feet striking on his back and fracturing some of his lumbar vertebrae. His abdomen became enormously distended and tym-

panitic. On opening his abdomen there was an escape of free gas but no aperture could be found in the intestines nor was any peritonitis present. There must have been a slow escape of gas from the intestines with subsequent closure of the opening. The operation was done four days after the fall.

As a subparietal laceration of the small intestine is always fatal, as far as we know, when unoperated on, it is of the utmost importance that a diagnosis should be made at the earliest possible moment. Contusions of the abdominal wall may present somewhat similar symptoms, but they are not usually so pronounced and tend to subside, while those of a rupture become progressively more accentuated. In any case of doubt it will be safer to open the abdomen and acertain the extent of the lesions than to wait in the hope that no serious injury has occurred.

While the general subject of subparietal injuries of the intestines is of great interest, my attention has been especially directed to the rôle of a hernia in the production of intestinal lacerations, since two such cases have come under my care in the past two years.

This experience was novel to me; but one would naturally think that herniae, especially large irreducible ones, would be very liable to injury from external force, and upon looking up the literature I find a number of such cases reported. The nature of the traumatism is practically the same as has been mentioned earlier. Of three cases recorded by Lund,[1] one was due to the kick of a horse, one to the kick of a man, and one to being struck by an iron bar on the pad of a truss. H. B. Stone[2] also records the case of a man, aged 51, who stumbled and struck the pad of his truss.

In my cases, one was injured by falling on the pad of his truss, and the other was struck on the right side of his abdomen by an automobile. Of the six cases here mentioned three resulted from blows on improperly applied trusses. A truss that is applied to an unreduced hernia is therefore an added source of danger to the wearer, since it prevents the free movement of the intestine and increases the liability of rupture. While the intestine may be lacerated by direct compression between the vulnerating object on the outside and the pelvic bones behind, it is probable that most ruptures are due to a bursting from violent displacement of the intestinal contents.

[1] *Boston Medical and Surgical Journal*, vol. cliii, p. 603.
[2] *Annals Surgery*, vol. lii, p. 358.

In this connection Lund says:

> In order to allow these ruptures by bursting to take place, both arms of a loop must be caught and compressed, otherwise the gas will not be pent in. Such conditions are obviously present in case of hernia, the loops being grasped in the rings so that the gas cannot escape, and the intestine having no muscular covering, simply the skin and the fascia of the hernia, being exposed to direct compression between the injuring body on the outside and the pelvic bones or aponeurosis, from which it cannot slip away, behind. It is obvious that intestine shut up in a hernia may be ruptured by a slighter blow than that free in the abdominal cavity.

Bunge of Koenigsberg, quoted by Campbell,[3] also says "when the contents are present in a hernial sac the free movements of the bowels may be interfered with, allowing a less active force an opportunity for inflicting damage."

It is also evident that an irreducible hernia will present conditions more favorable for rupture of the intestine than one that is reducible, and that the lesion may be less serious as the escape of intestinal contents may be confined to the hernial sac, while similar injuries of a reducible hernia are practically certain to be followed by the escape of fecal matter into the abdominal cavity and the production of general peritonitis.

In fact, when the gut is ruptured from a blow on a reducible hernia the intestine slips back into the abdominal cavity and the hernial sac is found to be empty.

I desire to place on record two cases in which blows upon reducible inguinal herniae were followed by rupture of the intestines.

RUPTURE OF INTESTINE FROM STRIKING PAD OF TRUSS

Case 1. M. J., farmer, aged 55, was admitted to University Hospital on August 9, 1915, complaining of "pain in the stomach." This trouble began on the night of August 7, while the patient was running in a field after some horses, when he stumbled, fell and struck the pad of a truss that he was wearing. A very short while after this he was seized with violent cramp-like pains in the abdomen, which were only controlled with large doses of morphia. During that night and the next day he suffered with pain, some nausea and vomiting. This man lived in lower Virginia and the accident occurred on Saturday night; and as no boats were running on Sun-

[3] *Annals Surgery*, vol. xlii, p. 605.

day, he was unable to get to Baltimore until thirty-six hours had elapsed. When he reached the hospital he was a desperately ill man, with great pain, board-like abdomen, tenderness on pressure and other symptoms of an acute peritonitis. There was no tympanites nor was there any ecchymosis or bruising of the abdominal walls. His expression was anxious and his features pinched. His mouth temperature was 100° and his rectal temperature was 103°; pulse 100, leucocyte count 20,000. A diagnosis of ruptured intestine was made and immediate operation advised. A right rectus incision was made from the umbilicus downwards. Upon opening the peritoneal cavity a great quantity of yellowish-brown fluid and pus escaped. The peritoneum and intestines were acutely inflamed and a wide-spread peritonitis was found. Floating loose in the abdominal cavity was found a watermelon seed. The appendix was found to be slightly congested, but not materially diseased. The intestines were covered with a plastic exudate and a small opening in the small intestine was found about 8 inches from the caecum. A large quantity of fecal fluid and pus was extravasated into the abdominal cavity. The opening into the bowel was about $\frac{1}{2}$ inch in length, and owing to the fibrinous exudate it was not thought that union would occur. The laceration, however, was closed with two layers of sutures, the cavity flushed out with salt solution and drainage established by means of rubber tubes and cigarette drains and the abdominal wound closed up to the drains. This patient had a somewhat stormy convalescence, but recovered and left the hospital on September 9, one month after admission.

RIGHT INGUINAL HERNIA WITH RUPTURED INTESTINE FROM A BLOW

Case II. T. F., white, aged 60, entered University Hospital on May 13, 1917, and was discharged well on June 23, 1917.

He has been a remarkably healthy man, but has had a reducible inguinal hernia on the right side for sixteen years, which, however, gave him no trouble.

On May 12, at 8 p.m., he was struck on the right side of the abdomen by an automobile. He says the hernia was down at the time of the injury and that after the injury he was unable to reduce it, though it had been easily reducible before. Immediately after the accident he had severe pains in the abdomen, which were general

in character, and two hours later he became nauseated and vomited. This was repeated several times during the night and the pain became more intense. His bowels moved freely in the morning. As he had an evident lump in his right groin, his physician judged he had a strangulated hernia and sent him into the hospital for an operation.

On admission his temperature was 99° by mouth, pulse 88, respiration 26. There was a lump in the right inguinal region about the size of a duck's egg, which was very tense and could not be reduced. The abdomen was neither rigid nor tender. The diagnosis of a strangulated hernia seemed justified and an operation was undertaken about twenty-four hours after injury. An incision about 5 inches in length, over the inguinal canal, revealed a large, tense, oedematous sac, very red and inflamed. This was isolated and opened and was found to contain no intestine but a large amount of fluid and a small piece of greenish substance which resembled pickle. The walls of the sac were very thick and intensely inflamed. On looking into the abdomen a large amount of creamy pus was discovered. An incision was then made upwards at right angle to the original incision, towards the umbilicus, and the appendical region was explored. The appendix was thickened and chronically inflamed but not ruptured, nor did it seem to be the cause of the peritonitis; it was, however, removed. The intestines were red and inflamed and bathed in pus, with patches of fibrin on their surface, but no perforation was discovered in the part examined. The stomach was also examined, but no perforation was found. I was at a loss to account for the peritonitis, but in the pus, however, were small particles suggestive of intestinal contents. The abdomen was drained with rubber tubes and cigarette drains and the wound closed up to the drains. The patient was placed in the Fowler position and proctoclysis instituted. Subsequently there was a discharge of fecal matter from the wound, quite profuse at first and gradually diminishing until it ceased and he was discharged well on the forty-second day.

RUPTURE OF THE URETHRA—ASSOCIATED WITH FRACTURE OF THE PELVIS

By Walter D. Wise, M.D., F.A.C.S.

Baltimore, Md.

Traumatic rupture of the male urethra is not an uncommon injury, yet its consideration in most textbooks of surgery is brief and without detail. The causes, aside from those cases occurring during instrumentation, are most frequently falls astride some object, blows in the perineum, or fractures of the pelvis.

In a series of six cases it was due to a crushing injury and fracture of the pelvis in five, the sixth case being due to the upward blow of a truck handle.

The rupture may be partial or complete—that is the entire thickness of the wall may not be torn through or if the entire thickness of the wall is torn, the whole circumference may not be. Rupture rarely occurs in the penile urethra. It is most frequent at the bulbo membranous junction though it can occur anywhere in the perineum, and the urethra may be pulled loose from the bladder and prostate, as in a case of Dr. Harrison's where it was successfully reimplanted.

In the cases where the urethra is lacerated by a fragment of a fractured pelvis, there are often injuries also to intra-abdominal organs and the damage to the perineal region is usually very extensive. There is prompt development of hematomata and bloody extravasations. Some of the tissues are pushed from their normal lines or positions, and practically all tissues are infiltrated and blood stained. In one case the bladder had been pushed almost entirely loose from its anterior attachments.

Symptoms. In the severely injured symptoms of other injuries may overshadow those of the ruptured urethra, as primarily it has no prominent signs. The discharge of a few drops of blood from the urethra is usually the sign that attracts attention, and a further examination will show swelling, discoloration or a hematoma of the perineum. The swelling may extend forward under the fascia and invade the scrotum and penis. If surgery is not promptly resorted to, urinary extravasation occurs, the perineum is filled and the urine begins to infiltrate the neighboring tissues. If the rupture has occurred in the membranous urethra, the urine is confined by the tri-

angular ligament "until a path of exit is made by suppuration or the surgeon's knife." If the rupture has been anterior to the triangular ligament the infiltration is into the scrotum and may pass up to the abdomen, but cannot on account of fascial attachments extend to the thighs. If the damage to the urethra has been posterior to the ligament the swelling points near the anus. The patient will be unable to void or if so not freely. There is often pain in the perineum though some of the patients did not complain of it. A detailed history should be obtained, and a careful examination of the pelvis made. If there has been a blow in the perineum and there is swelling, discoloration or hematoma in that region with blood coming from the urethra, even if only a few drops, the case is clear and no catheterism should be attempted. If there is a fractured pelvis with the above symptoms, the evidence is sufficient to warrant an operation without any intra-urethral examination. One must not depend upon obtaining the classical signs of false motion and crepitus to diagnose a fractured pelvis. Pain constantly localized at one point when pressure is made on the iliac crests (medially and antero-posteriorly) and inability to stand without pain in the hips when there is nothing wrong with the necks of the femurs, are strongly suggestive. These with a history of a crushing injury are almost conclusive. (If there is time and circumstances permit, of course an x-ray should be taken.)

Endoscopy is usually impracticable for obvious reasons. Catheterization is of little value, may be misleading, and is likely to be harmful. In one of our cases not seen for several hours after injury, a gentle catheterization with a soft rubber catheter gave several ounces of bloody urine. The catheter apparently went in the bladder, but this evidence was not relied upon, and on operating we found that we had only tapped a large well in the perineum. The urethra had been torn off near the neck of the bladder. The damage likely to be done by catheterization in addition to the false evidence suggested, is that the hemorrhage will be increased and that the proximal end of the urethra will be displaced, making the repair much more difficult.

Operation should be undertaken as soon as is compatible with other conditions, other injuries, shock, etc. The patient should be placed on the operating table in the lithotomy position, but the abdomen should be prepared for a possible supra-pubic cystotomy. In cases of slight or moderate trauma to the perineum with no

fracture of the the pelvis, the urethral repair is usually quite simple.

In a case where the damage to the urethra is only part of an extensive laceration, the repair becomes most difficult. The urethra may be displaced to one side of the median line; the tissues are blood stained and infiltrated, old hemorrhage in the form of fluid blood and clots obscures the field and new hemorrhage is severe.

The chief difficulty is, of course, finding the proximal end of the urethra. This is generally difficult and sometimes seems impossible. The end of the ruptured urethra is distinguished by a pinkish-gray fibrous appearance and great vascularity. The finding of this structure is greatly facilitated by operating under a fine stream of hot salt solution. If it is not found promptly, hemorrhage should be controlled by clamps and light packing and without changing the position of the patient a supra pubic cystotomy and retro-catheterization performed. The roof of the canal is first sutured, then the torn ends are united over a large catheter, using fine catgut on fine needles carefully handled. The approximation is made as complete as possible, although if only one-third or one-fourth of the circumference can be got together, it will usually give a good result. The catheter should be a large one, there is no disadvantage in this, and there are two advantages—it gives the healed urethra a larger calibre and is not so apt to clog with urinary sediment.

Drainage should be established down to the site of rupture. These drains may be of small rubber tubing and should be placed while the repaired portion of the urethra is still visible. The drains should be sewn to the skin with silk or silk-worm gut as they are needed for a considerable length of time. All dead space should be obliterated or drained.

The catheters were left in five to ten days; the case in which it stayed in five days doing as well as when left in longer. The perineal drains were not removed until the flow through the natural route was apparently normal.

A few weeks after healing has taken place, sounds should be passed at intervals on every case, no matter how large the stream may be. One of our cases stated that the stream was larger than before the accident and refused to allow us to pass sounds. Inside of six months he had a stricture of small calibre and had to be put under a general anaesthetic for dilatation, a procedure which might have been avoided.

A STUDY OF THE INFLUENCE OF OXYGEN ON LIVER NECROSIS (CHLOROFORM POISONING)[1]

By Hugh R. Spencer, M.D.

Associate Professor of Pathology and Bacteriology, University of Maryland

Necrosis of the liver cells is a common accompaniment of many diseases and varied types of poisoning, prominent among which are eclampsia, acute yellow atrophy and chloroform poisoning.

The lesions in these conditions vary in intensity and to some extent in location; thus, in typical cases of eclampsia the necrobiotic changes are seen to occupy the liver cells in the peripheral or portal vein zone, involving a scant rim of cells or, in other instances, the whole zone. In chloroform poisoning, on the other hand, the destructive changes begin about the central vein and are characterized by hyaline necrosis and a jumbling of the cells of this zone and the accumulation of fat in the midzonal and peripheral regions.

Experimentally, central necrosis can be readily produced, while primary midzonal or primary peripheral necrosis has not been observed under such conditions. The long standing question as to why central necrosis occurs in cases of chloroform poisoning and peripheral necrosis is common in eclampsia, has not as yet been answered. Numerous hypotheses have been advanced; thus, Whipple and Sperry (1) in discussing central necrosis in chloroform poisoning, mention the following possibilities:

1. The periphery of the lobule may be protected by its more efficient bile duct drainage.

2. The drug may have a specific action upon the liver cells about the center of the lobule.

3. The lack of arterial blood and the accumulation of waste products in the central vein region may render these cells more liable to injury.

4. The activity or the intensity of the poison may determine its point of attack. It is thus conceivable that dilute poisons might pass by the peripheral cells, accumulate in the center and attack the cells in this zone, as in chloroform poisoning, while more concentrated or more powerful poisons might attack the cells in the periphery of the lobule, with which they first come in contact and thus bring about necrosis in the peripheral zone, as in eclampsia.

[1] Reprinted from the *American Journal of Obstetrics and Diseases of Women and Children*, Vol. lxxvi, No. 6, 1917.

As Whipple and Sperry have said, the view that more efficient bile duct drainage may save the peripheral cells, is disproved by their observation that a dog with complete obstruction of the common bile duct showed typical central necrosis when poisoned with chloroform. A selective action of the drug cannot be accepted as an explanation, for after the central cells have been destroyed, the necrosis is frequently seen to involve the cells of the midzonal region and indeed in some instances, even the peripheral cells are found to have succumbed.

There remains then the possibility that in chloroform poisoning the central necrosis may be primarily due to the action of a dilute poison and accentuated by an accumulation of waste products about the center of the lobule.

In eclampsia, on the other hand, the peripheral necrosis may be due either to a selective action of the poison or, what is more likely, to the immediate action of a concentrated poison.

Irrespective of the location of the lesion, the thought that the administration of oxygen might be of value in such conditions was responsible for the following experiments, the prime object of which was to study the influence of inspired oxygen upon the lethal dose, the length of life and the extent of liver lesion in guinea-pigs poisoned with chloroform. This seemed worthy of consideration in view of certain well known facts in reference to eclampsia, to wit—its more frequent occurence in the late months of pregnancy, in primipara, in multiple pregnancy, in hydramnios and in cardiac insufficiency, conditions having to do either directly or indirectly with blood oxygenation, either through mechanical interference with respiration or through poor pulmonary circulation, as in cardiac insufficiency.

In these experiments, Mallinckrodt purified chloroform for anesthesia was used and the drug, instead of being administered by inhalation, was injected subcutaneously. This method was employed so that definite amounts might be given.

The chloroform was diluted with one part of paraffine oil, the oil serving as an indifferent vehicle and tending to reduce to a minimum the ulceration which sometimes appears at the site of injection. As a further precaution, the area of injection was rubbed so that the drug might be dissipated and more readily absorbed. As a matter of routine, a determined number of cubic centimeters or fractions thereof were administered to each hundred grams of animal weight.

TABLE 1

Series 1

NO.	DOSE	RESULT	REMARKS
	cc.		
16	0.05	Recovered	
17	0.1	Recovered	
18	0.2	Recovered	
19	0.25	Recovered	Ulcer at the site of injection about the fifth day
6	0.25	Dead, 3.5 days	Typical chloroform necrosis, involving from one-half to two-thirds of the lobule. Fatty changes, marked in peripheral zone
10	0.25	Dead, 4 days	Typical necrosis, involving slightly more than one-half of the lobule. Fat accumulation in the periphery is not marked though some is noted
7	0.5	Dead, 1 hour	Organs show no change
11	0.5	Dead, 3.5 days	Hyaline necrosis involves two-thirds of the lobule, this necrotic zone marked cell infiltration with much fat in the periphery
4	1.0	Dead, 8 hours	Liver cells about the center of the lobule, are possibly a little paler than normal. No definite change to be made out
8	1.0	Dead, 3 days	Entire lobule, save a few cells about the portal system, show a marked necrosis. Numerous wandering cells are present—but little fat is seen
12	1.0	Dead, 6 hours	No definite change
5	1.5	Dead, 6 hours	No definite change
9	1.5	Dead, 1 hour	No definite change

Two series of animals were used. One was injected and kept in atmospheric air, while the other was injected and immediately placed in an atmosphere containing two parts of air and one part of oxygen (by volume). This mixture was selected after experimenta-

TABLE 2

Series 2

NO.	DOSE	RESULT	REMARKS
	cc.		
23	0.05	Recovered	
26	0.1	Recovered	
20	0.1	Dead, 4 days	Typical chloroform necrosis, involving one-third to one-half of the lobule. A few wandering cells are seen with much fat in the periphery
24	0.1	Recovered	
21	0.2	Dead, 3 days	Typical necrosis, one-third to one-half of the lobule involved. Fat abundant in the periphery
27	0.2	Dead, 2 days	Necrosis involves one-half of the lobule, the cells are pale and hyaline. The amount of fat in the periphery is marked
22	0.25	Dead, 2.5 days	Slightly more than one-third of the lobule involved, few wandering cells and an abundance of fat in the periphery
13	0.25	Dead, 3.5 days	Necrosis involves from one-half to two-thirds of the lobule. Cell infiltration and fat accumulation is marked
28	0.25	Dead, 3 days	Typical necrosis, involving about one-half of the lobule, fatty changes in the periphery are not marked
14	0.5	Dead, 3.5 days	Necrosis involves from one-half to two-thirds of the lobule, much fat in the outer zone
15	Control	Remained healthy	Killed with ether, no change in the organs
25	Control	Remained healthy	Killed with ether, no change in the organ
29	Control	Remained healthy	Killed with ether, no change in the organs

tion with normal pigs in varying proportions of the gases, during which it was found that two parts of air and one part of oxygen was the richest oxygen mixture in which the animals could live in comfort. This mixture contained in round numbers about 46 per cent by volume of pure oxygen, an amount far exceeding that found in atmospheric air.

The animals of the second series were kept in a large sealed glass jar, the mixture of air and oxygen entering by a common tube which extended half way to the bottom of the jar. The exhaust gases escaped through a tube beginning one-fourth of an inch from the bottom, to prevent carbon dioxide accumulation.

The air and oxygen were obtained from tanks of the compressed gases and 200 cc. per minute per animal, were passed through. The amount was checked up four times daily and thus kept fairly constant. The animals of the second series were fed and cared for like those in series one. Accompanying each set of series two, there was a nonpoisoned guinea-pig as a control. The pathological changes occurring in the organs, especially in the liver, of the animals in both series showed lesions corresponding to those reported by Whipple and Sperry (1), Howland and Richards (2), Opie (3), and Wells (4).

In gross the liver is swollen, pale in color and definitely mottled with red central dots and pale yellowish peripheries. On section the same mottling is noted. Subcapsular hemorrhage and hemorrhage into the periphery of the organ have been described by Whipple and Sperry.

Microscopically, the characteristic lesion is seen about the centers of the lobules, marked by hyaline or bright pink staining cells. The cells usually retain their general contour but occasionally entirely disappear. The nuclei in this central zone of necrosis may stain normally, frequently they are obscured and ofttimes they show mitotic or pyknotic changes. The necrotic zone is often invaded by wandering cells, common among which are wandering mononuclear cells and leukocytes. In the outer zone or zones the characteristic change is a fatty one, fat droplets abounding in the liver cells toward the periphery.

The other organs may also show changes but these are not constant and are apparently of less importance.

As regards the findings in the animals of Series 1, all those which received doses under 0.25 cc. per hundred grams weight, survived.

One survived a dose of 0.25 cc., two were killed with a dose of 0.25 cc. and all animals which had been given a dose of more than 0.25 cc. per hundred grams weight, succumbed. The minimal lethal dose for animals of this series was, therefore, 0.25 cc. per hundred grams weight, possibly slightly above.

As to duration of life of animals of Series 1, those receiving a dose of 0.25 cc. per hundred grams weight lived on an average of three and three-fourths days plus (one animal survived). Of the animals receiving 0.5 cc. per hundred grams weight, one died in one hour and another in three and one-half days. Those animals receiving larger doses, as a rule, died in a comparatively few hours, though one that had been given 1.0 cc. per hundred grams weight lived for three days.

As to extent of the lesion in the liver of animals of this series, animals receiving 0.25 cc. per hundred grams weight showed in their livers characteristic changes involving from one-half to two-thirds of the lobule, while in the animal which received 0.5 cc. per hundred grams weight, an involvement of two-thirds or more of the lobule was noted.

Of the animals of Series 2, one with a dose of 0.05 cc. per hundred grams weight survived. Two which had been given 0.1 cc. also survived; while a third one was killed with a dose of 0.1 cc. No animal survived a dose of 0.2 cc. or more. Thus, the minimal lethal dose lies between 0.1 cc. and 0.2 cc. per hundred grams weight.

As to the duration of life of animals of Series 2, animals which received 0.2 cc. lived on an average of two and one-half days, while those receiving 0.25 cc. lived on an average of three days.

As to the extent of the liver lesion, animals receiving 0.2 cc. per hundred grams weight showed an involvement of from one-third to one-half of the lobule, those receiving 0.25 cc. showed involvement of from one-third to two-thirds of the lobule, while those receiving a dose of 0.5 cc. showed involvement of from one-half to two-thirds of the lobule.

CONCLUSIONS

1. The The inhalation of air mixtures rich in oxygen produces no appreciable change in the livers of normal guinea-pigs.

2. The administration of such air mixtures rich in oxygen reduces the minimal lethal dose of chloroform.

3. The administration of such mixtures brings about a slight reduction in the length of life, but apparently has little to do with determining the extent of the liver lesion.

Dr. J. M. H. Rowland,
Dean University of Maryland,
Baltimore, Md.

My dear Doctor Rowland:

Twenty-seven days from home finds me billeted in the principal hotel of a rather large city of France, awaiting orders to move to permanent quarters in a neighboring town. The voyage by sea was in a measure uneventful—we did encounter two rather severe storms and were naturally a little apprehensive, especially while we were in the war zone. The weather prior to sailing was extremely cold; at sea, however, it was very pleasant and indeed inland it is very much like our climate in April. The nights are cold and quite foggy but during the day the sun is quite warm. Have indeed been most fortunate in obtaining comfortable quarters—had a most excellent state room on the boat and our party occupied separate compartments—first class—on the French railroads.

Prices are fairly reasonable; I have an excellent room with all modern conveniences for 6 francs per day and mess with the French officers at 1 franc, 65 centimes per meal. The food is quite good, though I must say I am not yet in hearty accord with the war bread; it is rather hard, of a greyish brown color, and made, I judge, from the whole wheat, rye and potato flour. Uniforms and military equipment are cheaper than in the States—the best English whipcord, tailor-made, selling for $45.

The French people are very quiet and apparently law abiding, so much so that I have not seen a single police officer. I understand they have none. The streets are narrow and I might even say tortuous, the sidewalks are in many places only about a foot in width; the street cars are small, run quite close to the sidewalk and are abundantly plastered with advertisements.

One cannot help being impressed by the calibre of our officers and soldiers here in France: every man seems to be about his own serious business, and while wine shops are quite numerous, I have not seen a single man intoxicated.

Most of us are strangers in a strange land, as far as speaking French goes. We have accumulated quite a library of French dictionaries and manuals. I am sure it is very funny to hear our attempted conversations.

To be honest I think my vocabulary consists of about ten words—enough to get a meal on anyway; am quite familiar with the word "fromage," cheese, as it is a rather constant article of diet and really very good.

A line now and then would indeed be appreciated. Remember me to all at the University and believe me

Respectfully yours,

Hugh R. Spencer,
1st Lt. M. R. C. Stationary Laboratory No. 1,
American Expeditionary Forces, France.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

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DEATH OF PROFESSOR JOSE L. HIRSH, A.B., M.D.

On December 28, 1917, Dr. Charles W. Mitchell, professor of pediatrics, died and his death was regarded as a calamity for the University. About six weeks ago Dr. Jose L. Hirsh, professor of clinical pediatrics, who was the assistant of Professor Mitchell, was elected pediatrist to the University Hospital to fill the vacancy caused by the death of his chief. He was well qualified for this position by his education, training and experience, and it was thought that a difficult problem had been solved. On Sunday, March 17, 1918, about 6 p.m., after a busy day, Dr. Hirsh lay down to rest, but was soon disturbed by the ringing of his telephone. He answered the telephone and was heard to remark that he felt "grippy" and in a few minutes thereafter he was dead. He was known to have had a heart lesion for at least ten years but his general health appeared good. It is supposed that his death was due to cerebral embolism. He was born in Philadelphia 46 years ago but had lived most of his life in Baltimore. After passing through the City College he entered the Johns Hopkins University, from which he received the degree of A.B. in 1892. He graduated from the Medical School of the University of Maryland in 1895 and subsequently went abroad and pursued post-graduate work at the Universities of Berlin, Vienna and Gratz. Returning to this city in 1897, he connected himself with the University and became associate professor of embryology and of histology, and subsequently professor of pathology and bacteriology. After filling this chair

about fourteen years, he retired in order to devote himself to private practice. He was then elected professor of clinical pediatrics, as he was specializing in diseases of children.

By the death of Dr. Hirsh the University of Maryland has met with another great loss. He was a skillful physician, an excellent pathologist, and an earnest and acceptable teacher. He was stricken down at a comparatively early age and at the height of his usefulness.

Death of Professor Isaac H. Davis, M.D.. D.D.S.

Again we are called to lament the death of one of the most distinguished members of the teaching corps of the University, Dr. Isaac H. Davis, professor of operative and clinical dentistry. When the dental school was opened in 1882, Isaac H. Davis entered as a student and graduated in 1884. Since that time to the date of his death he had been connected with the institution, working up from minor positions to associate professor and, on the death of Prof. James H. Harris, to the full professorship of operative and clinical dentistry. He was the senior member of the dental faculty, though only 58 years of age. His illness, like that of the late Prof. Charles W. Mitchell, apparently, was the result of a fall on the ice during the early part of January, following which pneumonia developed and after a month's sickness terminated fatally. Dr. Davis was an acceptable teacher, a valued colleague and an esteemed member of his profession. Through his death the University has met with another great loss.

The Pathological Endowment Fund

There are still a number of persons who have promised to contribute to this fund but have not done so. We would greatly appreciate the payment of their subscriptions. This fund has reached a respectable sum but a much larger amount is needed. The object is to endow the department of pathology in order that we may have ample funds to meet the salaries of full time instructors and any other necessary expenses. Contributions to this fund are solicited.

The David Streett Memorial Scholarship

We know that these are not the times for much personal generosity, when the demands of our country are so urgent; nevertheless, we venture to call attention again to the David Streett Memorial

scholarship. To the Alumni of the old Baltimore Medical College, especially, we appeal for contributions to this fund. Five dollars from each living graduate would largely oversubscribe the amount needed. To other friends of Professor Streett we also appeal for contributions. Having put our hand to the plough, we do not like to look back and have to acknowledge that we have failed to raise the paltry sum needed to establish this memorial to our colleague and friend.

The University Hospital Training School for Nurses

The University Hospital Training School for Nurses was organized December 14, 1889, and the first class was graduated in the spring of 1892. The first superintendent of nurses was Miss Louisa Parsons, an English nurse trained under Florence Nightingale, the famous "Lady with the Lamp" of the Crimean War. This was the second school to be established in this city for the training of nurses, and in point of seniority is antedated only a few months. Classes have been graduated every year since 1892 and the graduates now number 399. These young women are now scattered broadcast over this country though a large proportion of them have located in Baltimore where they have become important members of the community. Indeed, the trained nurse has become an indispensable ally of the doctor in the treatment of the sick and without her assistance the busy physician would be greatly hampered in the performance of his duties. In these war times the activities of the trained nurse have been greatly multiplied, and not only are nurses needed as much as formerly to minister to the needs of the civil population but thousands of them are serving with the American Red Cross and in hospitals of the army and navy. Owing to the many demands made upon the young women of the country there is a scarcity of nurses at this time and not as many applications as usual are being received for admission to the training schools for nurses. We desire to call attention to the advantages offered by the University Hospital for the training of nurses. The new class is now being formed and those wishing to enter should apply in person or by letter to Miss Helen V. Wise, R.N., Superintendent of Nurses. Pupils must have had at least a high school education, or its equivalent, to entitle them to enter; but in some instances those with minor deficiencies may be allowed to make them up while in

training. The course of instruction extends over three years, during which time the pupil must reside in the nurses home at the hospital. The Nurses Home has been remodeled recently and combines the comforts and attractions of a boarding school with the opportunities afforded by a large hospital for a technical education. Medical attention is furnished free of cost to those pupils who may become sick and an attractive infirmary has been fitted up for their exclusive use. An ample corps of teachers is provided from members of the hospital staff, and others, specially selected for their fitness. The school is under the direction of the superintendent of nurses, assisted by a committee of the faculty of the University of Maryland.

OUR HONOR ROLL

It is impossible at this time to give the names of all the alumni of the University of Maryland Medical School, the College of Physicians and Surgeons and the Baltimore Medical College, who are in the military or naval service of the country but the number is very large. The following members of the teaching staff of the school of medicine, and internes of the hospitals under our care, have accepted commissions and most of them are now in active service in this country or abroad.

Lieutenant Colonel, J. Harry Ulrich.

Majors, Arthur M. Shipley, Gordon Wilson, Archibald C. Harrison, Cary B. Gamble, Jr., John S. Fulton, Frank Martin, R. Tunstall Taylor, Nathan Winslow, Page Edmunds, Edgar B. Friedenwald, Herbert C. Blake and Wm. J. Coleman.

Captains, Sidney M. Cone, Hugh Brent, Thomas R. Chambers, W. H. Smith, W. K. White, Edw. A. Looper, Gideon Timberlake, Chas. W. Rauschenbach, Daniel C. Hutton, R. G. Hussey, Standish McCleary, Irving J. Spear, and H. J. Walton. Drs. Harvey B. Stone and Bertram M. Bernheim are with the Hopkins Unit in France, and their present rank is unknown to the writer.

Lieutenants, F. E. Armstrong, Earle G. Breeding, L. H. Bloom, Geo. A. Bawden, I. B. Bronushas, O. B. Bonner, B. B. Brumbaugh, H. R. Carroll, R. D. Champlin, W. H. Council, F. H. Clark, C. C. Childs, E. LeCompte Cook, J. W. V. Clift, J. T. Daves, W. B. Davidson, C. R. Douthirt, W. H. Daniels, L. H. Douglas, F. C. Eleder, John Evans, J. E. Evans, C. R. Edwards, D. P. Etzler, H. M. Foster, F. R. Galvin, B. H. Growt, E. H. Hayward, A. F. Hutchins, B. M.

Jaffe, F. L. Jennings, C. L. Joslin, R. W. Johnson, E. S. Johnson, E. H. Hedrick, J. W. Holland, L. A. M. Krause, H. D. Ketcherside, F. X. Kearney, J. G. Skilling, J. H. Lutz, M. L. Lichtenberg, J. G. Martin, E. C. Mayer, F. C. Marino, F. E. Mason, R. W. McKenzie, F. K. Nichols, C. C. Nohe, A. F. Peterson, F. J. Powers, G. Rigau, Wm. Reier, Geo. P. Ross, L. J. Rosenthal, E. C. Reitzel, J. R. Robinson, C. A. Reifschneider, J. Salan, S. D. Shannon, D. Silberman, A. C. Sorenson, H. M. Stein, L. H. Smith, H. R. Spencer, D. C. Streett, H. E. Tarkington, W. H. Tolson, M. H. Todd, W. W. White, R. A. Wolford, C. Worrell, H. L. Wheeler.

Navy. F. S. Lynn, Horace Byers,F. C. Hertzog, G. C. Hartman, K. D. Legge, G. L. McClintock, M. J. Montgomery, R. G. Welch, G. L. White.

Nurses in Base Hospital 42

University Hospital

Miss Bernice Conner
" Charlotte Cox
" Margaret Ervin
" Julia Foley
" Mary Gavin
Mrs. Ivy Hair
" Carrie Hudnall
Miss Naomi Helland
" Emma Hoffmaster
" Anna Hurst
" Ellen Israel
" Irene Kaufman
" Josephine Klase
" Elizabeth Marsh
" Helen McSherry
" Ethel Munroe
" Harriet Parsons
" Marguerite Risley
" Jessie Singleton
" Lula Stepp
" Pearl Weaver

Maryland General Hospital

Miss Ruth Callaway
" May Callaway
" Florence Green
" Ina Keech
" Goldie Leach
" Lauiinne Stevens
" Nellie Storey

Mercy Hospital

Miss Rose May Burinsky
" Eloise Biser
" May Christy
" Alva Coleman
" Helen Costello
" Estelle Delevie
" Mae Fannin
" Lillian Gelwicks
" Helen Harbour
" Sara Gorman
" Louise Jennings
" Mary Keeffe
" Elinor Kelly
" Helen Larkin
" Agnes McCloskey
" Hazel Schweizer
" Bertie Weber
" Mary Ruth Worthington

Union Protestant Infirmary

Miss Elsie Edmondson
" Lucy Ginn
" Margaretta Gross
" Rosalie Hollyday
" Olive Reddin
" Sarah Saxelby
" Nannie More Smith
" Caroline Willis
" Nell Young

St. Joseph's Hospital

Miss Eva Bowden
" Frances Branley
" Alice Cunningham
Mrs. Edith McNalley
Miss Marion Gibson
" Mary O'Brien
" Anna B. Smith
" Sara Tiddy
" Theresa Tipping

Georgetown Hosp., Washington, D. C.

Mrs. Mary Galbally
Miss Mary Graham
" Jessie Hart
" Berta McAfee
" Freda McNeill

Miss Leola Nichols
" Winifred Nichols
" Marjorie Woodzell

Church Home and Infirmary

Miss Virginia Wedderburn

Hahnemann General Hospital

Miss Bertha Nelson

Easton Emergency Hosp. Easton, Md.

Miss Mary Landgraf

Nassau Hospital, Roaring Springs, Pa.

Miss Clara Alice Smith

The group of nurses from Mercy, Maryland General and other hospitals, includes the names of those attached to the Base Hospital No. 42, or the University of Maryland Unit only, and does not include the names of those who may be serving with other units, either in this country or abroad.

University Hospital nurses now in France: Gertrude Brady, Virginia Clendennin, Margaret Laws, Goldie Price, Elizabeth Robinson, Barbara Stouffer, A. M. Williams.

Our Veterans

The death of Dr. P. S. Field at an advanced age reminds us that we have other veterans still living who graduated even before he did, which was in 1852.

Dr. Cary B. Gamble, father of Professor, now major, Cary B. Gamble, Jr., graduated in 1846 and is probably the oldest living alumnus. He has retired from practice and moved out of the city. He is now 92 or 93 years of age.

Dr. John J. R. Krozer, graduated in 1848 and is 91 years old. He is still practicing in this city and when seen by the writer about a year ago was erect and vigorous, and did not look to be more than 70 years of age.

Dr. Henry M. Wilson graduated in 1850, and is now 89 years of age. He retired from professional work some years ago but is still

alert in mind though somewhat feeble in body. He is the father of Bishop Luther B. Wilson, who is also a graduate of the medical school of the class of 1877.

There are probably others of equal age with those mentioned above, but we do not recall them at this time. May these old veterans who have borne the burden and heat of the day live still many years to enjoy the fruits of their labors and a well earned rest.

ITEMS

Announcement of the promotion of Major J. Harry Ullrich, of Baltimore, to a lieutenant-colonelcy came in a telegram from Anniston, Ala. to the Baltimore Sun. He has been assigned to command the One Hundred and Fourth Sanitary Train, the big medical unit of the Blue and Gray Division.

Colonel Ullrich, then commander of Field Hospital No. 1, Maryland National Guard, was sent to Anniston last September as sanitary inspector of the division to which Maryland troops were attached.

The new lieutenant-colonel is an old Fourth Regiment man. He began his military career as a private in Company D of that regiment in November, 1894. In February, 1896, he was commissioned second lieutenant of Company H and in May, 1897, was promoted to be first lieutenant. He resigned in 1902 and served in the navy and in the United States Coast and Geodetic Survey Service as assistant surgeon.

A year later he went to Cumberland and took command of a company of the First Regiment. Returning to Baltimore, he was commissioned a captain in the Medical Corps, Maryland National Guard, and assigned to the Fourth Regiment. He was appointed surgeon of the regiment, with the rank of major, in December, 1912.

Some time before the Maryland troops were sent to the Mexican border Colonel Ullrich was transferred from the regiment to the command of the field hospital, which he led to the border. His command in the Blue and Gray Division is composed of four ambulance companies and four hospital companies, comprising former National Guard units from Maryland, Virginia, New Jersey and the District of Columbia.

Base Hospital No. 42, which is the University of Maryland unit, has been ordered to mobilize at Camp Meade, Md. for active service Major A. C. Harrison is in charge of this unit.

"FRANCE, November 22

"The *Signet* found me in France where I am attached to a field ambulance with the British expeditionary forces. I am writing this within half a mile of the front line trenches, sitting in my dug-out. I am in charge of an advanced dressing station where the wounded are brought in by stretcher bearers from the trenches. The activities in our part of the line are very quiet now; so our casualties are few. Our station is situated near a canal and is a long tunnel cut out of a small bank on the side of the canal. It is comparatively safe except for bombs and a direct hit by a large shell. After every barrage Fritz gets the wind-up and shells the vicinity of our dugout, but rarely does any damage.

"Life out here is very disagreeable to the pessimist, but it is a rare thing to run across one. Almost everybody is cheery and happy. Optimism is rife everywhere now because every one feels that we have won the war and are only marking time until the Boches sue for peace. We are all waiting for our own people to finish it off, and from the preparations that are being made at home, the enemy will be very unhappy next spring.

"The country around here is beyond description, and no one can realize the desolate waste until he sees it. The landscape is one vast sea of mud and shell holes and the ruined villages are rat-infested; but with it all life is exhilarating and interesting.

"Have run across several Phi Sigma Kappa men out here already, mostly medical men and all good fellows as usual."

W. H. TOULSON.[1]

Dr. Robert L. Mitchell who has been ill for several months has now recovered and is again attending to his work.

Major Nathan Winslow, M.R.C., has been assigned to the surgical service at the Embarkation Hospital at Camp Stuart, Newport News, Va.

[1] From *The Signet*, March, 1918.

Six Baltimore lieutenants in the Medical Corps were made captains yesterday in the Blue and Gray Division at Camp McClellan, Anniston, Ala., and promotions of responsibility were given to Maj. Fred H. Vinup and Capt. William J. Coleman, both of Baltimore, according to a special dispatch from a staff correspondent.

Major Vinup was made director of ambulances in the One Hundred and Fourth Sanitary Train, and Captain Coleman succeeded Major Vinup as regimental surgeon in the One Hundred and Fifteenth (Maryland) Regiment.

The lieutenants promoted to captaincies were Franklin B. Anderson, William H. Daniels, William T. May, Daniel C. Hutton, Louis Diener and Dwight H. Mohr. Captains Daniels and May went to Anniston with the old Maryland Field Hospital. Captain Anderson commanded the old Maryland Ambulance Company, now the One Hundred and Thirteenth Ambulance Company, and Captain Diener was a lieutenant in the same outfit. Captain Mohr was a medical officer in the old Fifth Regiment and Captain Hutton was in the old Fourth. Captain Coleman's new post puts him in line for promotion to a majority.—*Dispatch to Baltimore Sun, March 24, 1918.*

Major Charles Bagley, Jr., of Baltimore, now attached to the Surgeon General's office as head of the department of neurological surgery was ordered recently to inspect the Neurological School at New York, thence to go to Montreal, Quebec, Toronto, Ontario and Winnipeg, and on completion of his duty to return to his proper station.

Capt. Henry O. Reik of Baltimore is stationed at Camp Sheridan, Montgomery, Ala., and his brother, Capt. Andrew J. N. Reik, at Camp Jackson, Columbia, S. C.

Dr. Lewis A. Griffith, P. & S. 1879, Upper Marlboro, for many years a member of the State Examining Board, has been appointed by the President, inspector of explosives for the State of Maryland.

DEATHS

Dr. Philip S. Field, U. of M., 1852, died recently at Atlantic City. He had practiced in Baltimore for many years but had retired on account of the infirmities of age. He was a very active

man until rather recently and served as a contract surgeon in the army during the Spanish-American war when he was around 70 years of age.

Dr. Homer L. Clark, U. of M., 1885, died at a hospital in Pittsburgh, on or about February 25, 1918, aged 55. He had retired from the practice of medicine owing to a railroad accident he sustained about twelve years ago and during the remainder of his life devoted himself to literary pursuits.

Mrs. Mary Anna Chabot, widow of Dr. Lawrence Chabot, affectionately known as "Mother Chabot," died at the University Hospital on February 16, 1918. About forty years ago when Dr. William T. Howard was the most important figure at the University Hospital, Mrs. Chabot was his head nurse and she never lost her affection for the institution, hence she naturally turned to the hospital for succor when she was stricken with a serious disease. She was operated on successfully for this malady but continued to reside at the institution until she was carried off by a bronchopneumonia.

Dr. James G. Riddick, P. & S., 1883, formerly Mayor of Norfolk, Va., died at his home on February 15, 1918, aged 56.

R. H. Knapp, M.D., P. & S., 1881, died on October 19, 1917, at Youngville, Pennsylvania, at the age of sixty-three years. His death was caused by a mediastinal tumor.

CORRESPONDENCE

In France.

My Dear Dr. Winslow:

Was indeed glad to hear from you a short time ago. Mail is a rather uncertain thing out here, and when you do get a letter it cheers you up quite a bit.

Since last writing you I have been moved about quite a bit. Was with a battalion for a short while. From this was sent to a casualty clearing station where I was kept for five weeks. These proved the most interesting weeks that I have spent. There saw any and every kind of wound and many medical cases. Contrary to my former opinion of the English medical men, I found them "live wires" and doing admirable work. My stay with them was most pleasant and instructive. They really do wonders under all sorts of difficul-

ties. While there met Captains Heuer and Stone of the Hopkins, who with four other Americans were on a tour of inspection. They, like myself, were very favorably impressed with the type of work done at this place.

I would gladly have stayed there for "the duration," but as my division moved I had to move also. Was sent to a brigade of artillery and am still with them. I came here under rather peculiar circumstances. In some way the medical officer whom I replaced had incurred the dislike of the Colonel who asked to have him replaced. I don't know any of the particulars of the case, but of course it put me on edge to make good here. As I have been here quite a long time and have heard nothing to the contrary, I guess I am permanent for a time.

The disadvantage of being with the Artillery is that you are continually in the line, while with the infantry you have short spells out to rest up a bit. It is true that this is a quiet part of the line, but the artillery are going most of the time.

Have been interested, quite a bit, in the guns. In fact I had no idea that a gun was such a complicated and ingenious mechanism. I go about the gun pits and find them very interesting. We are occupying an old German gun emplacement. They are marvellous fellows with concrete, as you can see from these battery positions.

It is well nigh impossible to hear anything of our troops over here. Have no idea where or how many they are.

Have heard that we are to be kept with the British but don't know how true it is.

Hope things are progressing fine at the school in spite of the fact that several of the teaching staff are away. It must mean quite a bit of extra work for those of you still there.

It is already quite cold over here and rains nearly every day. You soon get accustomed to mud and being wet, so don't mind it. Am not looking forward to real winter with any enthusiasm at all.

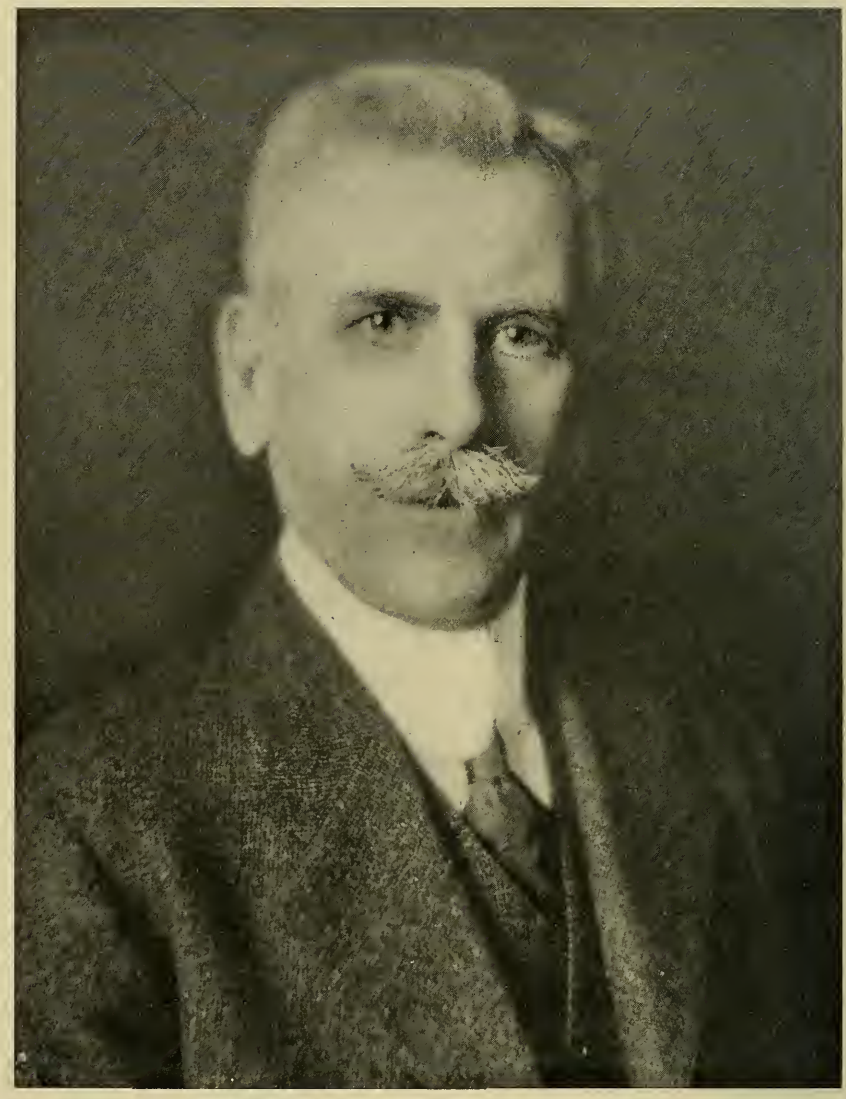
I hear from Pruitt occasionally, but not from any of the other boys from the University. In fact I don't know just where they are, as each division is isolated from the others and it is by chance only that you meet up.

Best wishes to you,

Cordially,

November 7, 1917. JOHN E. EVANS,

1st Lt. M. O. R. C. 70th Brigade R. F. A., B. E. F., France



CHARLES L. SUMMERS

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. III JUNE, 1918 No. 1

PROFESSOR CHARLES L. SUMMERS, M.D.

It gives us pleasure to announce that Dr. Charles L. Summers of Winston-Salem, N. C., has been elected professor of clinical pediatrics, and visiting pediatrician to the University Hospital.

Dr. Summers graduated from the University of Maryland in 1887 and for a number of years practised his profession in his native state. Some years ago he gave up general practice and specialized in diseases of children. After protracted study of this specialty under noted teachers in this country and in Europe he thoroughly equipped himself for the scientific practice of pediatrics, especially in the line of infant feeding; and we are fortunate to have secured the services of one so well qualified to perform the duties of the positions to which he has been appointed.

LIPODYSTROPHIA PROGRESSIVA*

IRVING J. SPEAR, M.D.

Professor of Neurology and Clinical Psychiatry, University of Maryland, Baltimore

The term "lipodystrophia progressiva" was first applied by Arthur Simons to a syndrome as described by him,[1] in 1911.

This condition is rather uncommon. Up to the present about twenty-four cases have been reported and the only case in American literature I have been able to find has been published by Herrman.[2] The most recent and comprehensive review of this subject is by F. Parks Webber,[3] who has collected all the reported cases and clearly discusses this condition, its probable causes, its course, the outlook in the various cases, and has reviewed them up to the time of his article and also several cases with which he was familiar but which had not yet appeared in the literature.

Lipodystrophia progressiva is a term applied by Simons to a syndrome beginning most frequently between the fifth and twelfth year, and chiefly affecting females. In this condition, there occurs a gradual, progressive emaciation, beginning in the face and progressing downward, involving the neck, shoulders, trunk and upper extremities, with, in most reported cases, an increased deposit of fat in the buttocks, thighs and—sometimes—the legs. The gradual disappearance of fat progresses until the appearance of the face is most characteristic. The cheeks become sunken, the eyes deeply set, the malar eminences prominent, the temporal regions sunken. When the patient smiles, the cheek is thrown into deep folds and the face generally has a cadaverous appearance. The neck becomes thin, the clavicles and scapulae stand prominently forward. The intercostal spaces are well marked; the breasts are pendulous and, owing to the disappearance of the fat, hard and nodular.

In contrast to this wasted appearance of the upper extremities and face, below the line of the iliac crests the individual presents a

* Reprinted from the Archives of Internal Medicine vol. xxi, Jan., 1918.

[1] Simons, Arthur: *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Berlin, 1911 (Originalien).

[2] Herrman, Charles: Progressive Lipodystrophy, *The Archives Int. Med.*, 1916, 17, 516.

[3] Webber, F. Parks: *Quart. Jour. Med.*, 1916–1917, Nos. 37 and 38, p. 131.

plump appearance; in some of the reported cases, even amounting to grotesqueness.

Usually, the attention of the family is first called to this condition by the emaciation which takes place in the face, and the fear of some disease prompts them to seek medical advice. The patients themselves complain little or not at all. In the advanced cases, there is sometimes a complaint of a feeling of chilliness and excessive perspiration; in other cases, a weakness or nervousness.

The condition, in all reported cases, progresses for a certain time and then seems to be arrested. The ages, in reported cases vary from 6 or 8 years to 39, the latter being the case of M. Laignel-Lavastine and Viard.[4]

In all the cases there is a gradual progression of the emaciation of the face, upper extremities and trunk and increase in size of the lower extremities over a period of ten to twenty years, after which there is spontaneous arrest.

In the two cases reported by J. Husler[5] which occurred in males beginning in early childhood, there was no corresponding increase in the size of the lower extremities. It seems to be the opinion of most of those who have reported these cases that this increase in the deposit of fat in the pelvic region and lower extremities is rather a characteristic of the female sex. It is my opinion that this characteristic is accentuated by the efforts made to overnourish the patient to counteract the wasting which takes place in the upper portion of the trunk, face, etc.

Much speculation has resulted as to the cause of the condition: one author regarding it as secondary to tuberculosis; others as being the result of abnormal functioning of the sympathetic system. Most authorities think there is some relationship between this condition and abnormal functioning of the endocrine glands. It would, however, appear to me that this condition is closely related to the muscular dystrophies; that here one deals with dystrophy of fat tissue and in the latter, a dystrophy of muscle tissue. If this be the case, we are dealing with an abiotrophy. The condition does not seem to influence the duration of life. Examination of the skin and subcutaneous tissue in the emaciated areas shows the only pathologic change that has taken place to be an almost complete disappearance of fat.

[4] Laignel-Lavastine and Viard: *Nouv. iconog. de la Salpétriére*, 1912, 25, 473 (with plate).

[5] Husler, J.: *Ztschr. f. Kinderh.*, 1914, 10, 116.

Microscopically, traces of fat are found in the sebaceous glands and around the hair roots. In Simons' article[6] there are most excellent illustrations in which there is a comparison made between the sections of skin taken from the patient suffering from lipodystrophia progressiva and a markedly emaciated patient suffering with tuber-

Fig. 1.—Author's patient at the age of 5.

Fig. 2.—Author's patient at the age of 8.

Fig. 3.—Author's patient at the age of 10.

culosis. These illustrations show very clearly that even in the most emaciated individual there still remains some fat which can be readily demonstrated microscopically beneath the skin; whereas in a patient with lipodystrophia progressiva, there is practically an entire disappearance of fat in this same region.

[6] Simons, Arthur: *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 1913, 19, 377.

Lipodystrophia progressiva must be differentiated from emaciation due to diseased conditions, such as tuberculosis, cancer, intestinal disease, nephritis, cardiovascular diseases, etc. This can readily be done by proper examination. It must be differentiated from facial hemiatrophy; from the emaciation that may occur in hyperthyroidism, at puberty, in the period of lactation, the menopause, etc.

Fig. 4.—Front and profile face views of author's patient.

Usually, if this condition is thought of and proper examination made, there is little difficulty in its diagnosis. The condition is slowly progressive and is limited to the fatty tissues of the face, neck, upper extremities and trunk; the muscles, bones, skin, vascular system, etc., not being affected.

The outlook as to life in these cases is extremely good; death, when it occurs, being due to some intercurrent condition. The condition usually advances for a number of years and then there is a spontaneous arrest. It does not interfere with the functional capability of the various organs or with physical or intellectual activity.

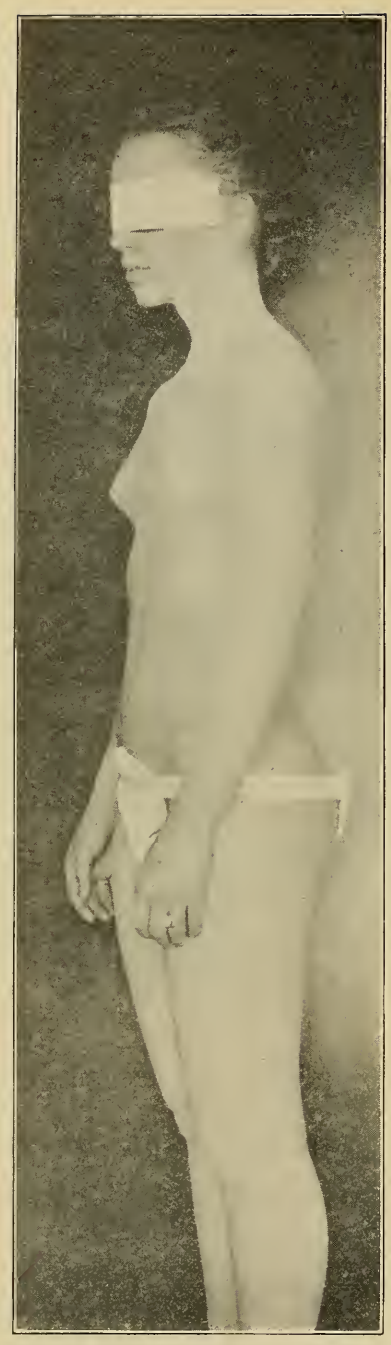


Fig. 5.—Lateral view of author's patient.

Fig. 6.—Back view.

The case reported by Herrman[2] existed for many years. The patient married and had several healthy children. Apparently, the chief objection to the condition is a cosmetic one. In the first case reported by Simons[1] the condition occurred in a dancer, and owing to the marring of her facial attractiveness, it interfered with her livelihood.

All sorts of treatments have been tried: the administration of the various glandular extracts, massage, electricity, tonics, overfeeding, hydrotherapy, etc. It would seem as if they were of but little use in allaying the progress of the condition. After a time, there occurred a spontaneous arrest. For cosmetic purposes, the injection of paraffin, fats and the transplantation of fat have been employed (Hollander[7]).

Report of a Case

The patient, T. M., aged 15, a schoolgirl, was seen in consultation with Dr. R. Tunstall Taylor, and examined in May, 1917.

The patient has the facial appearance of a very much older woman. She complains of a change in her facial appearance which has been progressive during six or seven years, her face growing thinner and thinner. Her shoulders, upper arms, chest and trunk have also become thinner, whereas her hips and legs have become fatter. These changes have been slowly but gradually progressing, as far as she and her mother can recall, for the past six or seven years.

Family history.—The father, aged 43, is healthy, not nervous. One paternal uncle is very nervous. Her mother, aged 39, is healthy, and very nervous. The patient has two brothers aged 9 and 12 years, and one sister aged 14. The brother aged 9, has epileptiform seizures of recent occurrence. The other brother and sister are healthy. There is no history of tuberculosis, cancer or chronic disease.

Past history.—The patient is the oldest child in the family. Her birth was normal. Following the birth of this child, the mother developed septicemia and was very ill, and this child was artificially fed; had gastric disturbances until the milk was properly modified. She teethed and walked at the normal time. At the age of 4 years the child had adenoids removed; at the age of 8, had scarlet fever accompanied by discharge from both ears. Between the eighth and ninth year she was operated on, having tonsils and adenoids removed. At the age of 9 years she first attended school. At the age of 10 years, she had whooping cough and at the age of 12 had measles. There is no history of trauma. Habits of living and diet are especially good.

Menstrual history.—Menstruation started at the age of 11; is regular, formerly painless, but lately there is some pain connected with the function.

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[7] Hollander, Eugen: *München. med. Wchnschr.*, 1910, 57, 1794.

Present illness.—Between the eighth and ninth years the mother first noticed that the child's face and neck were thin, for which she gave her a tonic, and as she did not improve, she was taken to a physician who advised a special diet. This was carried out for about one year. Despite this, the wasting of the face continued. Gradually this wasting was noticed in the shoulders, arms, chest, back and abdomen. At the same time it was observed that the hips, thighs and legs were large and plump. There are absolutely no other complaints.. The patient is athletically inclined and popular with her companions. Her appetite is good. She is happy, more or less constantly busy, has no aches or complaints, sleeps well, and if it were not for the appearance of her face, would be perfectly contented.

Physical examinations.—Height, May 13, 1917, 4 feet $11\frac{3}{4}$ inches; weight, 90 pounds without clothes.

Measurements.—Biceps, right, 8 inches, left, $8\frac{3}{4}$ inches; forearm, right, 9 inches, left $8\frac{3}{4}$ inches; wrist, right, 6 inches, left, $6\frac{1}{4}$ inches; thigh, right, $19\frac{3}{8}$ inches, left, $19\frac{1}{8}$ inches; calf, right $12\frac{5}{8}$ inches, left, $12\frac{5}{8}$ inches; ankle, right, $7\frac{5}{8}$ inches, left, $7\frac{5}{8}$ inches; chest over mammary glands, $28\frac{3}{8}$ inches; chest below mammary glands, 26 inches; waist, 23 inches; around crest of ilium, $23\frac{3}{8}$ inches; over anterior-superior spine, $26\frac{1}{4}$ inches; buttocks (greatest dimension), $33\frac{3}{8}$ inches.

The patient's face represents the appearance of a very emaciated, middle-aged woman, without being wrinkled. The eyes are sunken; cheeks and temple fossae hollow; neck thin, with muscles standing forth prominently. When she smiles deep folds form around the angles of the mouth running upward toward the zygomas. On palpating a fold of the skin in her cheek one is immediately impressed with its extreme thinness. The facial appearance is almost cadaverous.

The chest walls show well marked intercostal spaces. The shoulders are angular, with bony prominences on the clavicles, and the scapulae well defined. The spinous processes of the vertebral bodies extend prominently forth. The breasts are slightly pendulous and somewhat nodular. The axillary and pubic hair is well defined.

Below the iliac crests, the patient presents a quite different appearance. The buttocks are large and covered with a thick layer of fat; the thighs are large, well rounded with the development of much subcutaneous fat. The knees are dimpled and the calves of the legs large.

The skin is soft, elastic and of normal color, except on the face, where it appears paler than normal. There are no scars, indurations, etc. The skeleton is normally developed. Roentgen-ray examination of the skull, spine and upper extremities reveals no abnormalities. The joints are everwhere freely movable.

The head is well formed, ears set well, eyes set far back in the orbits. The tongue is clean, protruded in the midline. The patient has several teeth in bad condition, but this has been of very recent occurrence—within the past six months.

Chest.—Examination of the heart and lungs reveals absolutely nothing pathologic. Examination of the abdomen is negative, with the exception of a slight increase in the liver dulness, which extends one inch below the costal margin. The splenic dulness is also slightly increased.

Roentgenographic and fluoroscopic examination of the stomach shows it to be of the fish-hook type, prolapsed below the crest of the ilium in the upright position. The stomach, at the time of the examination, was actively contracting; emptying itself in three hours; the hepatic flexure of the colon is prolapsed, the first portion of the transverse colon being persistently fixed in the cecal region. There is a marked twenty-four-hour stasis. There is gastroptosis and enteroptosis. (Dr. Walton, roentgenographer.)

Eye, ear, nose and throat examination.—There is slight retraction of both eyelids. Convergence is normal; eye motions are normal; extra-ocular structures are normal. The pupils are active and equal. The fundi and fields are normal. Vision, right, 15/9; left, 15/9. Both eyes are emmetropic.

The nasal examination was negative.

Both ear drums are normal. Hearing for the tuning fork is normal. Large piece of tonsil tissue on the left side, and a fairly large sized mass on the right side. (Dr. William Tarrun.)

Urine: Single specimen, specific gravity 1.011. It is light yellow, clear, acid, with a faint trace of albumin. Sugar and blood are negative. Microscopically there are many epithelial cells, with an occasional white blood cell. There are no cast or red blood cells. A twenty-four hour specimen comprised 470 cc. Specific gravity, 1.014; urea, 9.75 grams; chlorids, 5 grams. Otherwise negative.

Blood: May 9, 1917. The Wassermann blood test was negative; hemoglobin, 90 per cent; leukocytes, 8000; red blood cells, 4,320,000. Polymorphonuclears, 54 per cent; small lymphocytes, 25 per cent; large lymphocytes, 15 per cent; eosinophils, 2 per cent; large mononuclears, 3 per cent; transitionals, 1 per cent.

Sputum: None obtained.

Stomach contents: A double test meal given at 7 and 11 a.m. and drawn at 12 shows much undigested material, especially egg yolk and starch granules. Free hydrochloric acid, 24 degrees; total acidity, 68 degrees; blood and bile negative.

Stool: Clay colored. Bile and blood are absent. There is an abundance of free fat present. Otherwise negative.

Renal function: Phenolsulphonephthalein, first hour, 151 cc., 69 per cent; second hour, 40 cc., 9 per cent.

Blood Pressure: Systolic, 105, diastolic, 55.

Sugar tolerance: May 12, 1917, 150 grams given without appearance in the urine. May 13, 1917, 200 grams given without appearance in the urine.

Pelvic examination: Special examination was not made.

Neurologic examination: Motor function, muscle power, tone and volume are normal.

Owing to the fact that this young woman is athletically inclined, there is remarkably good development and strength of her muscles. The muscles in the upper extremities, shoulders and neck all stand forth prominently. There are no abnormal movements; electrical reactions are normal. Coördination of the upper and lower extremities, normal.

Reflexes: All tendon reflexes are slightly increased. The superficial reflexes are all about normal. The Babinski reflex is absent.

Sensory functions: There is absolutely no disturbance of sensation in any of its qualities. The stereognostic sense is normal.

Vasomotor system: Nothing abnormal was noted.

Trophic function: There is marked absence of subcutaneous fat in the face, neck, shoulders, arms, chest, abdomen and back; also a marked increase in the subcutaneous fat in the buttocks, thighs, calves and legs.

The organic reflexes are normal.

Mental examination.—This shows an exceptionally intelligent young girl, who is quick and alert but somewhat emotional, inclined to be moody and rather sensitive. She sleeps rather lightly and is easily disturbed during the night.

CONCLUSION

The various diseases which might occasion wasting and those diseases in which atrophy of the bone, muscle, etc., occur were taken into consideration and in the absence of physical signs and symptoms they were excluded and a diagnosis of lipodystrophia progressiva was arrived at.

1810 Madison Avenue.

METHODS AND POSSIBILITIES IN THE CONTROL OF COMMUNICABLE DISEASES IN BALTIMORE[1]

By J. F. Hogan, M.D.

Assistant Commissioner of Health of Baltimore City

The control of communicable diseases is handled by the Bureau of Communicable Diseases of the Health Department. The function of this bureau is to strive to prevent all diseases which are of a communicable nature, and when such diseases occur to prevent the spread and lessen the death rate. The diseases with which Baltimore is most concerned at present are measles, diphtheria, typhoid fever, pneumonia, whooping-cough, scarlet fever, mumps and chickenpox.

DIPHTHERIA

Diphtheria is used as a criterion for all diseases of which a definite knowledge is had as to etiology or epidemiology; so that if the etiological factor or organism causing the trouble is identified, those in contact with the patient just prior to the onset of the disease are

[1] Read at the meeting of the Baltimore City Medical Society on April 5, 1918.

cultured, and if such persons are positive, they can be isolated so as to prevent further spread of the infection. In 30 per cent of the cases of diphtheria so far this year contact carriers have been detected. That is, when the nurses from the Health Department cultured those who had been in contact with a reported case, in fifty-eight instances one or more of these individuals who had been in contact gave positive cultures, although they showed no clinical evidence of the disease. It is the policy of the department to culture all contacts within

CITY	POPULATION	CASES	DEATHS	RATE PER 100,000
Milwaukee	About 436,000	787	90	22.6
Minneapolis	About 363,000		67	18.4
New York City	Over 5,000,000		1,158	20.0
St. Louis	Over 700,000		205	27.07
Detroit	About 572,000		415	72.58
Washington, D. C.	About 363,000		37	10.57
San Francisco	About 463,000		68	14.67
Seattle, Wash.	About 348,000	113	7	2.01*
Cleveland	About	1,856	155	22.98
Buffalo	About 468,000		108	23.05
Cincinnati	About 410,000		47	11.45
Jersey City	About 306,000		57	18.61
Chicago	Over 2,000,000		1,216	48.68
Pittsburgh	Over 579,000		131	22.60
Boston	Over 756,000		278	36.75
Providence	Over 254,000		80	31.35
Philadelphia	Over 1,000,000		441	25.80
Newark, N. J.	Over 400,000		50	12.23
Los Angeles	Over 503,000			7.34
Baltimore	Over 590,000	698	58	9.75

* So far as I can find this city has done better with diphtheria than any other city with a population over 300,000.

twenty-four hours, so that those having positive noses and throats may be isolated before it is too late to prevent the spread of the infection to other members of the family or to the community, and that those who are negative may be released from quarantine so that they may pursue their occupations.

Diphtheria, as we all know at the present day is conveyed chiefly by contact with either a clinical case or by a more common mode of conveyance—the human immune carrier. Most cases of clinical

diphtheria are sufficiently ill to be abed, and certainly unable to be out and about, while the carrier walks about, enters places of public assembly, rides on street cars, etc., coughs, sneezes and laughs explosively and thus spreads organisms to those who are not immune, and maybe to children who develop laryngeal diphtheria, which has caused 70 per cent of all the deaths from diphtheria so far this year. So far this year there have been twenty deaths from diphtheria, and of these fourteen were due to the laryngeal type. In the year 1916 Baltimore had the lowest death rate from diphtheria of any city in this country with a population of over 500,000 except that of Los Angeles. In the year 1917 there were 690 cases of diphtheria reported, with 58 deaths. This compares quite favorably with the other large cities of the country. For example see above table.

SCARLET FEVER

As the etiology of this disease is still an unknown factor, its epidemiology is a difficult problem; therefore, we have to be guided by clinical experience. Fortunately, this disease has been studied by so many able observers that we now possess a fairly accurate knowledge of the minimum length of time necessary to isolate a case in order to prevent secondary infections from that case. In other words, for this disease the cumulated experience has given us knowledge well-nigh as accurate as could be hoped for from planned experiments. At this present date this knowledge appears to warrant the release of an uncomplicated case at the end of thirty days from the appearance of the rash. Of course when discharges, either catarrhal or purulent, from the nose or ears are present, quarantine should be prolonged.

In every case of scarlet fever the patient is questioned regarding with whom he has been in contact for a short time before being ill, or if a school child, the members of the class are questioned by the school nurse to ascertain who have had sore throat recently, and those children who have had recent sore throat are examined for a fading rash, desquamation and the remaining traces of a strawberry tongue; and if any of these three signs are found the health warden is called in to make a more thorough examination of the child. Although our milk at present is pasteurized, a note is made in all cases of the milk supply.

MENINGITIS

This disease is handled in exactly the same manner as diphtheria. Contacts are cultured immediately, and if cultures are found to contain Gram-negative diplococci, further cultures are obtained and these are worked out to determine whether or not these Gram-negative organisms are true meningococci, and if so, the carrier is isolated. In all doubtful diagnosis of cases of meningitis which have proven fatal an autopsy is performed.

I might add that in all doubtful cases of poliomyelitis which have proven fatal autopsies are also required.

WHOOPING-COUGH

This most infectious disease caused thirty-eight deaths in the city of Baltimore last year. Although at the present day there is some difference of opinion regarding the pertussis vaccine, the burden of the proof is certainly most favorable towards its prophylactic value, and, therefore, it is well worthy of experiment, certainly from the preventive standpoint. The department is able to furnish physicians with pertussis vaccine at any time if given a few hours' notice in order to prepare the doses, and the use of this remedy is strongly advocated, especially in babies and younger children who have been exposed to whooping-cough. There were 10,000 deaths from whooping-cough in the United States in the year 1916. If this many deaths took place from plague the whole world would quarantine America. Over half of the deaths from whooping-cough occur in infants under the age of one year.

MEASLES

Last year there were fifty deaths from measles in Baltimore. This taken in connection with a large number of reported cases gives a small case fatality. It is true the disease itself, uncomplicated, has a death rate which is practically nil, but it must be borne in mind the great predisposition to pneumonia and probably tuberculosis.

Measles is mentioned in this paper as a request for coöperation on the part of the physicians in reporting this disease as soon as possible, that we may strive to prevent as many secondary infections as possible and prevent the infection of those who are ill-nourished and thereby unable to withstand an attack.

PNEUMONIA

Pneumonia is a communicable disease, conveyed by carriers of the pneumococcus, by clinical cases and by convalescents and perhaps by dirt. As much care should be taken by the attendant or nurse in a case of pneumonia as is taken in a case of diphtheria. No case of pneumonia should be attended without the use of a face mask. It is true that droplets of the saliva from the patient may enter the nose, naso-pharynx or pharynx of the attendant or nurse, and that attendant or nurse not develop pneumonia, yet she may become a virulent carrier and spread the disease to her family or others with whom she comes in contact. It is recommended that all cases of pneumonia be strictly isolated to prevent the case conveying organisms to others who may become carriers, or what is worse, may develop the disease. It is quite unnecessary to comment on the death toll of pneumonia of this present winter, both in civil and military life, and we, therefore ask that every precaution be used in controlling this disease, which is more fatal than any other acute infectious disease in this locality.

TYPHOID FEVER

In 1916 there were 776 cases of typhoid fever, of which number 125 were imported infections, that is, individuals who became definitely infected out of the city and came to Baltimore at the time of their illness—mostly people who went on vacations in a typhoid ridden district and returned here while feeling ill or just prior to the onset of the disease. In 1917 there were 544 cases of typhoid fever and 142 imported infections. The number of deaths from typhoid in 1916 was 88, and in 1917, 64. I am indebted to Dr. Wm. T. Howard for these figures and statistics, and it can be seen from them that an effort is made on the part of the Health Department to ascertain the source of infection in every case of typhoid fever. If we find that the patient became infected while out of the city, the health officer of that county or city is notified so that he may attempt to prevent the disease among his own people.

One of the great problems that now confronts us is that of con act infections, and for that reason we are urging a much wider use of antityphoid vaccination. The number of anti-typhoid vaccinations in Baltimore has always been unsatisfactory. In every case of typhoid fever the contacts who have not had typhoid should be immunized, and we are endeavoring to our utmost to have this done, as

last year there were eighteen known contact infections definitely traced to other cases, and all of these could have been prevented by the use of antityphoid vaccine. Whenever we receive a history of a previous case of typhoid fever in a household that individual is cultured, the cultures being taken from both urine and feces. We have found that one negative culture is not dependable, and, therefore, we are forced in some instances to require repeated cultures. This is often objected to by the family of the sick person, although the inconvenience is only trivial, as a culture test requires but a mild laxative and a collection of the specimen from the contact. The detection of typhoid bacilli in either the urine or feces may prevent that family from subsequent attacks of typhoid fever. We have on record at the department several cases of carrier infections lasting over a period of many years, in one of which the grandmother had typhoid fever sixteen years ago, and from that time until one year ago had been cooking for the family, having during the interim infected her daughter, one son and two of her grandchildren.

WHAT SHOULD BE THE REAL SIGNIFICANCE OF THE ENTRANCE OF THE STATE DENTAL ASSOCIATION INTO ASSOCIATE MEMBERSHIP[1]

By B. Merrill Hopkinson, C.D.D., A.M., M.D.

Professor of Oral Hygiene and History, Dental Department, University of Maryland

Cerebral myopia was the outstanding cause of a foolish action, seventy-eight years ago, upon the part of the regents of the University of Maryland, in denying the request of certain men who had a comprehensive vision of the possibilities of the scientific teaching of oral diseases, and at that remote date, asked the Regents to include in the curriculum of the Medical School certain branches of study bearing specifically upon the science and art of dental surgery. In the light of present day knowledge of the place occupied by this important subject, one can but regret that so much valuable time has been lost in classifying so significant a branch of the great healing art; for notwithstanding the establishment of separate schools, and the subsequent addition of dental departments to universities,

[1] Read at the annual meeting of the Medical and Chirurgical Faculty, April 24, 1918.

whereby dentistry has made marked progress as a so-called separate profession, with a degree of its own; valuable time has been lost, both to medicine and to the laity, by the non-recognition, more than three quarters of a century ago, of the fact that the oral practitioner is a specialist in medicine. Pray permit me to indicate to you a few of the reasons why I feel that many priceless years have been lost to science, and consequently to humanity.

Standing out in *alto relievo*, is the founding of séparate schools for the teaching of a branch of medicine, the awarding of a distinctive degree, and the establishing, of what to me, is the very acme of assininity, viz: the so-called dental profession.

Does any one within the sound of my voice discern any more reason why there should, or could, be a dental profession, than an ocular, laryngological or gynecological profession? Is it possible, scientifically, to take the teeth out of the human economy, and found a separate profession? There is but one way to do it, so far as I know, and it is that imperfect, inconclusive scheme, which has been, and is now pursued, viz: to educate a high grade mechanic, and, build around such a system of education a pseudo science, in which the aspirant, for the most part, takes as little interest as possible, while considering the contingency of a final examination for a degree. Pray let me make very clear to my hearers, at this point, that I do not in the least desire to detract from the usefulness of the dental school, or the labors of the worthy dentist, my beloved Father of revered memory having attained an exalted place in this class. I have been unjustly accused of attempting to belittle the dentist, and of speaking of him in a sneering and contemptuous manner. If I have been so understood in anything I may have said or written, I am extremely sorry. I have ever been opposed to the unworthy and ignorant dentist, the man, who, it has seemed to me, has striven diligently to keep dentistry down to the level of a trade. I have always spoken of the "dental profession," as a silly misnomer and shall continue so to do.

I have always regarded the present scheme of educating the oral specialist as an imperfect one, and have never failed, when opportunity offered, to advocate a complete revision in his educational régime.

I have hoped, and still hope, to live to see the day, *which will surely come*, because the medical man and the layman will demand it, when the present degree, Chirurgiae Dentium Doctorem, which for some

unknown and unexplainable reason the dentist affixes after his name as D. D. S., will be abolished, and the degree Medicinae Doctorem made the *sine qua non* for the practice of the stomatologist.

If the above is just cause for the charge against me, I plead guilty; but I shall still demur to the charge, and submit that my strictures are neither sneering, contemptuous nor belittling, but simply along the lines of elevating the general standards, educational and otherwise, of your dental brother, and I am confident that all within the sound of my voice will agree with me, when I say that such a procedure will be not only helpful to him but of incalculable value to his clientele. When one considers the handicaps of the dental practitioner, one can but say that the growth and development of his art have been marvellous, and the work and value of the dental school beyond our power to estimate; and yet, one cannot help wishing that the useful science and art of stomatology might have started in the proper form, as a related branch of medicine, so acknowledged from its birth, and not made to wait the lapse of more than three quarters of a century to be properly classified.

As a teacher, I have ever tried to hold the practice of the oral specialist before my students in the most exalted manner, and have labored earnestly to inspire them with the ideal aims and desires which should pervade the minds and hearts of twentieth century stomatologists.

I am more and more convinced that the curriculum of a university could be so arranged, that a dental student could acquire the technical part of his profession within the same limit of time in which he is engaged in seeking an M.D. If not, let him do as other specialists do and take an extra year in post graduate technique. The dental course is now four years, and if his time could not be so arranged in a medical course of the same length, as to acquire the requisite technique in his specialty, he would not have to do more than his brethren in other departments of medicine who determine to specialize.

Let us glance for a moment at the handicaps under which the dentist is laboring, as a supposed scientific professional man.

In the first place, a graduate of dentistry, after an expenditure of four years time, and tuition fees; finds after graduation, that he cannot obtain one year's credit in a medical school, should he determine to study medicine, a very laudable ambition, and eminently proper desire.

Truly this is, or should be an unexplainable paradox. Upon the other hand graduates of medicine are permitted to enter the second year class in a dental school, a frank admission that the medical man has received a better fundamental training. This is a condition which has been materially strengthened of late, by a change in dental education, whereby a dental student, heretofore attending the same lectures as a medical student, and subjected to the same final examination, in the so-called fundamental branches; now receives separate instruction and an abbreviated, emasculated course in anatomy, physiology, materia medica and therapeutics. This, in my opinion, is a distinct retrograde movement, and should not have been permitted by those responsible for the education of a twentieth century stomatologist. When he begins practice he is looked upon by many medical men not as an equal but as an alien, to be tolerated only, although he is practicing upon tissues of the human body as are all other specialists. His position in the army is even now, an inferior one, since the army surgeon in a majority of cases, attends to all pathological conditions of the mouth, with the exception of extractions, insertion of artificial dentures, fillings and treatment of diseased roots. The medical societies of this and other other countries do not recognize him as qualified to be admitted as a member upon an equal footing: the A. M. A. admitting him as a dental member, our Faculty permitting him to affiliate as an associate member, and the International Medical Congress refusing to recognize him as a part of the medical profession. The law recognizes him as a tradesman by requiring him to do jury duty. The No. 4 Bulletin of the Carnegie Foundation for the advancement of teaching, and the following I regard as a very serious condition, mentions colleges and universities of law, medicine and theology, medical education of women and the negro, an extremely unpleasant combination, allopath, homeopath, eclectic, osteopath, and all the rest of the hybrid breeds, but not a word about the science and art of dentistry now seventy-eight years old. In national, state and civic affairs, the dentist appears for the most part, to be voiceless, either on account of lack of education, inclination, or qualifications to hold positions of trust. The public values the services of the dentist by the number of cavities he has filled, the teeth he has extracted, or, because of the insertion of artificial dentures, and not in any sense because of his knowledge of the correlation of the mouth and other parts of the body in health and disease, or his scientific skill as a

prophylactitian. Many dentists advocate, and practice, a system of fees based upon the scheme of the plumber, at so much per hour! Finally, his influence is so nearly, if not quite, nil, or his interest of so little moment, notwithstanding his large numbers in this community, as to make it, thus far, impossible to secure an appropriation of a single dollar to minister to the frightful lack of oral hygiene in our public schools, notwithstanding many annual attempts to secure it.

The above is not a list of assets to make one's bosom swell with pride; and, if anything can be done in, or by this organization, through the recent association of memberships, to aid in eliminating such a grievous category of impedimenta from a group of men practicing as specialists in medicine, it will have accomplished a splendid work.

In amending our Constitution, one year ago, to the end that dentistry might be benefited by an association with this time honored Faculty, of which I have been privileged to be a member for thirty years, and as well, that the members of the Faculty might be brought into closer relation with dental subjects, by means of the gathering together of a library dealing with those subjects, plus the advantages to all concerned, accruing from the ties of mutual relationship and fraternal intercourse, a fine beginning was made.

This union has brought about the realization of a dream I have been dreaming for many years, and I have but one regret, viz.: that efforts of mine, made long ago, did not bear so happy a fruition.

I am well aware of the fact that almost all of the handicaps which have been enumerated, have their source of elimination in the changing of the educational system which has been in vogue since the formation of separate schools for the teaching of dentistry, and that the effort to change such a long established scheme must necessarily be a laborious and slow one.

If, however, the interest of the leaders of medical thought in the Faculty, has been sufficiently aroused to suggest the desirability, if not the necessity, for a better knowledge, upon the part of the general practitioner, of the science and art of oral diseases, why may it not be quite feasible to carry the idea further and make propaganda having for its object the more extended training of the mouth specialist, even to the proper limit of his first becoming a doctor of medicine? This is indeed the crux of the whole matter. If all men who propose to devote their talents to diseases of the oral cavity were doctors of medicine, the before mentioned handicaps would be at once removed, and they would be trained in such manner as to

enable them to take a broad and comprehensive view of that portion of the human anatomy, and all the processes, both local and constitutional, which affect it for good or ill.

It is of course necessary that the practitioner of dentistry should be a skilful mechanic, indeed to be a good surgeon presupposes the possession of a high grade of mechanical skill, and it is here that we find the maximum stress laid in the present day teaching of the dental student, very often to the utter exclusion of the scientific aspect of any given case.

Let us take one operation, if you please, which occupies so much of the time of both student and graduate. I refer to dental bridge work.

If the dentist were trained, fundamentally, as a scientific man, I am confident that this form of prosthesis would have been abandoned long ago; indeed it would never have been practiced by men who placed the ultimate good of a patient, above the development, construction and insertion of a mechanical structure, which is absolutely unscientific, unhygienic and unclean.

This form of restoration of lost dental organs, together with ill advised and ill-fitting gold crowns, has done more to bring reproach and opprobrium upon the dentist, than anything within his range of practice.

The days of the filthy unremovable bridge, are numbered, and its condemnation, in no uncertain terms by many scientific men, has helped to bring to the attention of all practitioners of medicine, the imperative need for higher scientific education upon the part of the dentist. Other reasons could be assigned why the mouth specialist needs a broader education, but time forbids their consideration. There is another side to this picture and upon it we find the painful lack of knowledge of the general practitioner of these subjects dealing with the mouth.

As an example, let me cite the fact that thousands of valuable dental organs are annually condemned and lost by order of the physician to the ruthless exodontist, who does the bidding of the man, whom, by so doing, he thus acknowledges as superior to himself, and, I am confident in many instances where he should have refused to abide by the dictum of one whose knowledge of the subject, was, to say the least, not above suspicion.

While I have ever deprecated the lack of knowledge possessed by the dentist, which has debarred him from being a well rounded scientific man, I have none the less disapproved the ignorance of the

average medical practitioner regarding the diseases of the mouth and teeth, and this same feeling is entertained when I consider the opportunities and responsibilities of the graduate nurse.

The course of lectures in Medicine should now include a requisite amount of special instruction relating to the mouth and teeth, and I have recommended as a part of the college curriculum of the prospective nurse, in the University of Maryland, systematic instruction in oral hygiene, thus far, I am sorry to say, without success.

There is no doubt, in my mind at least, that the general practitioner should be more familiar with pathological oral conditions, and while making propaganda for the better education of the mouth specialist, it would be well to suggest such a course, as noted above, in all medical schools having for its object much needed instruction in oral pathology.

Our Faculty has endorsed a provision for a composite examining board, admitting as members, Homeopaths and Osteopaths. This may strike some of us as rather revolutionary, but it shows, at least, that we are becoming less bigoted, and that we live in an age of progress. I trust the day is not far distant, when both the medical course and the state law, will be so amended, as to require instruction upon dental subjects, and to admit, nay, to demand the presence of a stomatologist upon the examining board; and finally to see the latter placed upon the Board of Health of city and state, as is the case in at least one of our states in the middle west.

Why may not the entrance of the State Dental Association into associated union here, lead ultimately to some such valuable and beneficent result?

We know, full well, that the final awakening of the medical wor d to the fact, that many constitutional maladies have their etiology in diseased mouths, is incontestable; and the impenetrable mystery of the matter is, that the awakening came so late in the realm of scientific medical progress. It was not a particularly pleasant or agreeable experience, I am sure, because it elevated the humble dentist to a station of equality.

We all know of the dangers of diseased teeth and roots to the general health, but I am hoping for the dawn of the day when the mouth specialist is sufficiently educated to refuse to sacrifice useful dental organs, or those which can be made useful by proper treatment, at the mandate of the physician, when, in his judgment, they should not be sacrificed.

When the layman places the opinion of the scientific medical man over against that of the dentist, who has been regarded for so many generations merely as a high grade mechanic, and unrelated to general medical science, the latter very naturally suffers, and, in many instances, rightly so.

All of this I trust will be changed in the early part of the twentieth century, and, thank God, the change is well under way. The dentist who is no longer content to be only a repairer and restorer of broken down and lost dental organs, but has extended his vision beyond the mouth in a search for the causes of the pathological conditions he finds there and is applying his knowledge to prevent these conditions; has taken his place alongside of his other scientific brethren, has become a teacher of prophylaxis, and is spreading the beneficent gospel of oral hygiene among the masses of mankind.

It is, as you all know, a practical impossibility to teach the average uneducated adult the necessity for clean and hygienic mouths; but, if the children can be taught this valuable lesson, they will readily and gladly absorb it, and become apostles for the spreading of the propaganda.

Here is the field in which you may be immediately helpful. I have told you that futile efforts have been made annually to secure an appropriation for school dental clinics. Careful examinations of the mouths of our school children, here and elsewhere, show that at least 90% actually require the services of the mouth specialist.

Does not this statement appeal to you, as it does to me, as an appalling state of affairs?

Just think for a moment of a pathological condition actually existing in the mouths of our poor school children, accounting for more absences, more poor scholarship, more bad conduct, more pain and discomfort, and ready susceptibility to general systemic disorders, than, probably, all other physical defects combined, being allowed to continue unaided and unchecked!

Is not the correction of this monstrous evil quite as necessary, in your opinion, as the teaching of music, drawing or calisthenics, and will you not lend the full force of your united and powerful aid in assisting your new associates to secure this great advance in civic hygiene?

This then, is a part also, of the true significance of the entry of your dental brethren into a closer bond with this organization; and if the ideals of a few of us, who have labored to make real a new era

in oral hygiene for our school children, be accomplished, through and by your sympathy and help, a great forward movement will be realized in the progress and uplift of dentistry, and in the fight against oral diseases among the masses.

I trust that you will not allow the recent affiliation to rest simply upon the basis of providing a new home for the dental men where they will find a great library for purposes of education, and available rooms for all kinds of meetings, as their portion of a constitutional agreement; and you will receive a small sum of money as annual dues, part of which is to be expended for an oral library section, as your part of the agreement.

May the real significance of the union, in addition to the suggestions previously made in this paper, be a closer fraternal feeling, more frequent and effective consultations, a mutual helpfulness in all those matters in which you need each others aid, repeated attendance upon each others meetings, and above and beyond all, such a stimulation upon your part for higher aims and scholarship as will some day break down the foolish barriers between what are now known as the medical and dental professions, and establish their union in one common bond by removing the handicaps from the stomatologist through his having become a full member of the great healing art.

STATEMENT OF THE OWNERSHIP, MANAGMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Bulletin of University of Maryland School of Medicine and College of Physicians and Surgeons, published six times a year, at Baltimore, Md., for April 1, 1918.

Name of Editor, Nathan Winslow, M.D. (In the military service at present.)

Managing Editor, Randolph Winslow, M.D., Greene and Lombard Streets, Baltimore, Md.

Business Managers, Randolph Winslow, J. M. H. Rowland, and W. S. Gardner.

Publisher, University of Maryland, School of Medicine and College of Physicians and Surgeons, Lombard and Greene Streets, Baltimore, Md.

Owners, University of Maryland School of Medicine and College of Physicians and Surgeons, Lombard and Greene Streets, Baltimore, Md.

Known bondholders, mortgagees, and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities. (If there are none, so state.) None.

Randolph Winslow, Acting Editor.

Sworn to and subscribed before me this 20th day of March, 1918.

[SEAL] WALTER E. SMITH,
Notary Public.
(My Commission expires May 3, 1918.)

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

RANDOLPH WINSLOW, A.M., M.D., LL.D. WM. S. GARDNER, M.D.

J. M. H. ROWLAND, M.D.

NATHAN WINSLOW, A.M., M.D., *Editor*

ANNUAL COMMENCEMENT, JUNE 1, 1918

The annual commencement was held on June 1 at the Lyric Theatre. The weather was scorching hot, but a large and enthusiastic audience sat through the exercises. Owing to war conditions the classes were smaller than usual and a number of those who graduated were already in the military service. The address of Dr. Wm. Wistar Comfort, *President* of Haverford College, was an inspiring and scholarly effort, in which he showed how much we are indebted to our ancestors for those traits of character which distinguish us as a nation and as individuals, and urged his audience to do nothing to make our ancestors ashamed of us, "seeing we are compassed about with so great a cloud of witnesses." Prof. Randolph Winslow presented Dr. Comfort for the honorary degree of Doctor of Laws, which was conferred on him by the Provost, Dr. Fell. Ex-Judge Henry D. Harlan, presented Prof. Henry Jones Ford, of Princeton University, for the same degree, which was also conferred by the Provost.

The exercises were as follows:

ORDER OF EXERCISES

Overture—"Merry Wives of Windsor" ..... *Nicolai*
Selection—"Her Regiment" ..... *Herbert*
Selection—"Allah's Holiday" ..... *Friml*
Excerpts from "Sunny South" ..... *Lampe*
1. Music—March, "University" ..... *Fritz Gaul*
2. Prayer by Rev. Geo. Clarke Peck, D. D.
3. Music—"The Star-Spangled Banner."

4. Address to the Graduates—William Wistar Comfort, Ph.D., Litt. D., President of Haverford College.
5. Music—"The Evolution of Dixie" ..... *Lake*
6. Conferring of Degrees by the Provost of the University.
   Candidates for the Degrees "Bachelor of Arts" and "Bachelor of Sciences" presented by the Dean of the Faculty of Arts and Sciences.
   Candidates for the Degree "Doctor of Medicine" presented by the Dean of the Faculty of Physic.
   Candidates for the Degree "Bachelor of Laws" presented by the Dean of the Faculty of Law.
   Candidates for the Degree "Doctor of Dental Surgery" presented by the Dean of the Faculty of Dentistry.
   Candidates for the Degree "Graduate in Pharmacy" presented by the Dean of the Faculty of Pharmacy.
7. Music—Trombone Solo ..... *Selected*
   George F. Gaul
8. Award of Prizes.
9. Music—March, "Jazzin Around" ..... *Fuller*
   Prof. Fritz Gaul, Director of Music

Candidates for the Degree "Bachelor of Arts"

Bourke, Clyde Edward
Burton, Charles Wesley, Jr.
Gardner, Edward Otis
Maddox, William Jennings
Mencke, Henry LeRoy
Sheppard, Azel Merrill
Wigton, William, Jr.
Wilson, Thomas Norwood
Nelson, James Wharton

Candidates for the Degree "Bachelor of Science"

Bose, Jogesh Chandra
Bradley, Drexel Dewey
Cook, James Russell
Decker, Walter Joseph
Elzey, Frank Walker
Lentz, Valentine
Mack, Worden Elmer
MacMannis, Thomas
Plassnig, Edwin
Polk, Earle Brodie, Jr.
Schuele, Albert Godfred
Smith, Russell Evans
Watson, John
DeVries, William Slack
Friend, Owen
Sheetz, Josef Robert

Candidates for the Degree "Doctor of Medicine"

Anderson, Lang W., South Carolina
Bonner, John Bryan, North Carolina
Borror, William Bruce, West Virginia
Briscoe, Everard, Maryland
Bross, Samuel I., Maryland
Brown, Joseph Lucien, Alabama
Cafritz, Edward A., District of Columbia
Carlin, Edward J., New Jersey
Clark, Harold C., New York
Dalton, William B., North Carolina
Darby, William Arthur, Maryland
Deliz, Ramon C., Porto Rico
Diebolder, Oscar A., Maryland
Ephraim, Myer, Maryland
Fazenbaker, Anderson Johnson, Maryland
Forbes, Sherman Balch, Florida

Frost, Nugent George, Massachusetts
Gavronsky, Samuel, New Jersey
Giesen, John Jacob, A.B., Virginia
Gore, Michael Alvord, A.B., District of Columbia
Grove, George Hedges, Maryland
Hart, Crawford Avery, A.B., North Carolina.
Hunter, Dewitt T., North Carolina
Johnson, Harley Monroe, South Carolina
Joyner, James C., North Carolina
Kocevar, Martin Francis, Pennsylvania
McDade, Brodie Banks, North Carolina
McDowell, John Stafford, New York
Macke, Clarence E., Maryland
Morgan, Jr., Zachariah Raphael, Maryland
Nicklas, John Michael Maryland
Putterman, Morris Nathan, Maryland
Ridgely, Irwin Oliver, A.B., Maryland
Robles, Charles Walter, Florida
Rousseau, James Parks, North Carolina
Sabiston, Frank, North Carolina
Seal, Gratta Earle, West Virginia
Sindler, Joseph, Maryland
Sledge, Robert Frankling, B.S., North Carolina
Speake, Thomas Carlyle, A.B., Maryland
Spoon, Jr., Samuel Clarence, North Carolina
Sweet, Alfred Norton Connecticut
Thompson, Theodore F., New Jersey
Trippett, Jr., Lemuel Harrison, A.B. West Virginia
Warlick, Henry C., North Carolina
White, Samuel Howard, A.B., South Carolina

Prizemen

University Prize—Gold Medal.....Ramon Deliz Mendez

Certificate of Honor

Samuel Howard White

Candidates for the Degree "Bachelor of Laws"

Altman, Nehemiah Jacoby, Maryland
Bartlett, Jr., Joseph Thomas, Maryland
Berman, Oscar, Maryland
Bernstein, Joseph, Maryland
Brown, Joseph Leo, Maryland
Bruce, James, Maryland
Byrant, Charles Harris, Maryland
Campbell, William Harrison, Tennessee
Carney, John Calvin, Maryland
Carter, James Treat, Maryland
Cohen, William, Maryland
Davidson, Abraham, Maryland
Dorsey, Frank F., Maryland
Edel, John Wesley, Maryland
Eyring, Richard, Maryland
Goodell, Robert Fiske, Maryland
Gray, Biscoe La Fayette, Maryland
Greenstein, Harry, Maryland
Griffith, Samuel Thomas, Maryland
Grinsfelder, Joseph, Maryland
Hayleck, Thomas L., Maryland
Hennegan, James Leo, Maryland
Hill, Gerald Washington, Maryland
Holden, James Joseph, Maryland
Jackson, Howard Elmer, Maryland
Jones, Russell D., Maryland
Kirkley, Stanhope Scott, Maryland
Kushner, Isaac, Maryland
Lichtenberg, Joseph, Maryland

Lippel, Clarence, Maryland
Lurman, 3rd., Gustav W., Maryland
McCready, George H., Maryland
Makover, Abraham Bernard, Maryland
Martenet, Edwin Jefferson, Maryland
Martenet, Jr., Oscar Conway, Maryland
Medairy, Bernard John, Maryland
Milbourne, E. Russell, Maryland
Miller, James Carlyle, Maryland
Newnam, E. Chandler, Maryland
De Pace, Daniel, Delaware
Pennington, James Stevens, Maryland
Powell, Earl Jerome, Maryland
Queen, Ralph Leslie, New Jersey
Reamer, Meyer, Maryland
Rollins, Henry Beale, Maryland
Schneider, Harry Frederick, Maryland
Siewierski, Peter Mark, Maryland
Siegel, Joseph, Maryland
Sinskey, Raymond Avvitt, Maryland
Snyder, Donald Leon, Maryland
Taylor, Irving, Maryland
Thawley, Wesley Earle, Maryland
Utt, Donald David, Maryland
Voloshen, Jacob, Maryland
Voloshen, Nathan, Maryland
Walsh, Daniel Eugene, Maryland
Weinstein, Nathaniel S., Maryland
Weiss, John Carroll, Maryland
Wheeler, Clarence Eldred, Maryland
Wilkins, John Richard, Maryland
Williams, Roger Brian, Maryland
Woolf, Millard F., Maryland
Zetlin, Maurice Wilson, Maryland

Candidates for the Degree "Doctor of Dental Surgery"

Abbott, John Elmer, New York
Badillo, Jr., Pedro, Porto Rico
Baker, Jr., Joseph William, Virginia
Bradshaw, Harold Frederick, Connecticut
Brazill, George Kingsley, Connecticut
Bressler, Clarke Smyser, Pennsylvania
Buck, Miles Standish, New York
Buehrer, Geoffrey Carl, Ohio
Charbonneau, Clarence Kenneth, New York
Charest, Romeo Philip, Massachusetts
Cohen, Clarence, New York
Colwell, Harvard Ellis, Maine
Conway, Clarence James, Canada
Cooper, Harold Ralston, Maryland
Cox, Ella Brookshire, North Carolina
Diaz, Santiago F., Porto Rico
Diehl, Crown Oscar, Maryland
Domnitz, Aaron, New York
Dunn, Max Benoit, Connecticut
Egan, James Francis, Georgia
Fitch, Jr., Wilmer Heman, Vermont
Fletcher, Ralph, Maine
Gaver, Oren Henry, Maryland
Gray, William Alexander, North Carolina
Greenberg, David, New York
Grossman, Abraham, New York
Hall, Warder Abraham, West Virginia
Hamel, Leonard Emery, Massachusetts
Hayes, Louis Vincent, New York
Hazlitt, Arthur Vincent, New York
Hines, James Francis, New Jersey
Hodgdon, Frank Alexander, Maine
Horn, Isaac Herman, Connecticut
Hutson, Walter Emory, Maryland
Joachim, Henry, New York
Karow, Leopold Herman, New York
Kirby, George Anthony, New York
Knoebel, Edward Leroy, Maryland
Koshi, George Sueo, California
Leggo, Thomas George, Connecticut
Lewis, Brownie Lee, North Carolina
Livingston, Abe, South Carolina
Luongo, Clement Paul, New York
McAndrew, Michael John, West Virginia

McCanless, Frederick Joseph, New York
Maristany, Carlos F., Porto Rico
Martin, Charles Byron, North Carolina
Mielcarek, Adam, New York
Milne, Douglas McDonald, Maine
Mitchell, Norma Reid, Virginia
Montgomery, James Benjamin, North Carolina
Mooney, John Albert, New Jersey
Moore, Wm. Tamerlane, North Carolina
Mora, Carmen Aurea, Porto Rico
Murray, Henry Von, North Carolina
Murray, William John, Connecticut
Neulander, Ignatius, New York
Noel, Ernest Shorey, Massachusetts
O'Donnell, Edward Joseph, West Virginia
Parke, William Hall, New York
Parks, Richard Cromwell, Maryland
Patterson, Gardner Henry, New York
Pharr, John Robinson, North Carolina
Phinney, Arthur Wesley, New York
Cubano, Santiago Rodriguez, Porto Rico
Rubin, David Abe, New York
Rutrough, Jesse Earl, Virginia
Sherman, John Lester, New York
Silverberg, Harry, New York
Slovin, Samuel Leon, Maryland
Smith, Charles Franklin, Maryland
Ston, George Cortland, New York
Sussman, Abraham, Maryland
Thomas, Charles Auburn, North Carolina
Underhill, John Morley, North Carolina
Varden, Jr., Robert Bentley, Pennsylvania
Via, Dan Otto, Virginia
Welch, Joseph Edward, New York
Wolverton, Lloyd Brown, West Virginia
Wolverton, Lawrence Ray, West Virginia
Yeater, Harvey Upton, West Virginia
Zeisler, Max Herman, New York

Prizemen

University Gold Medal for Highest Grade at Final Examinations
Oren Henry Gaver
Equal Honorable Mention for Second Highest Grade.....Dan Otto Via
Lloyd Brown Wolverton

Candidates for the Degree "Graduate in Pharmacy"

Black, George Everette, West Virginia
Corrick, Lester Scott, West Virginia
Demarest, H. Westfield, Maryland
Griggs, Walter G., Maryland
Hollingsworth, Joseph, North Carolina
How, George K., China
Hsi, Yindah, China
Jackson, Aquilla, Maryland
Kratz, Walter E., Maryland
Kriger, Benjamin Arthur, Maryland
Lathroum, Leo Baden, Maryland
Lowry, Walter A., North Carolina
Millenson, Irving, Maryland
Morrison, Harold P., South Carolina
Murphy, Jerome Edward, Maryland
Reindollar, William F., Maryland
Rettaliata, Leo C., Maryland
Simon, Louis H., Maryland
Solomon, Simon, Maryland
Smith, Jay Moseley, Maryland
Voshell, William Frederick, Maryland
Waples, William Ewing, Maryland

Prizemen

Gold Medal for General Excellence.....Joseph Hollingsworth
Simon Prize for Practical Chemistry.....George K. How

Senior Class—Honorable Mention:

George K. How William F. Voshell Simon Solomon

The Commencement of 1818

Through the courtesy of Dr. S. W. Dickinson, of Marion, Va., class of 1872, we are in receipt of the following notice of the commencement of 1818, just one hundred years ago and consequently of especial interest at this time. Dr. John D. Godman, to whom the prize medal was awarded for the best dissertation in the Latin language, subsequently became known the world over as an anatomist and naturalist. It is said that while he was still a student the professor of anatomy was taken sick and Mr. Godman assumed his duties and delivered the lectures on anatomy, to the great edification of his fellow students.

The following excerpt is from *The American Medical Recorder* conducted by several respectable physicians of Philadelphia, 1818, vol. 1, page 452.

University of Maryland

At a public commencement held at the Chemical Hall of the University, on the 6th day of April, 1818, the degree of Doctor of Physic was conferred on the following gentlemen, after they had defended their respective dissertations:

Wm. Willis, of Frederick County, Md., on inflammation.
Charles B. Stuart, of Charles County, do., on wounds.
George Dare, Calvert County, do., on gastritis.
Francis Barclay, Pennsylvania, on bronchocele.
Joshua Wilson, Harford County, Md., on sarcocele.
William P. Herbert, Harford, County do., on hydrocele.
Wm. McGee, Tennessee, bronchocele.
William Zollickoffer, Maryland, cynanche trachealis.
Michael Baer, Frederick County, Md., apoplexy.
Lewis Griffith, Harford County, Md., cholera.
James B. C. P. Thornton, Virginia, fever.
Benjamin Johnson, do., intermittents.
Thomas S. Chew, Harford County, Md., ophthalmia.
Joshua Cockey, Maryland, hepatitis.
David S. Gittings, do., evaporation.
Benjamin Lee, Virginia, cynanche trachealis.

Cyrus C. Marsteller, do., apoplexy.
Addison Daschiel, Maryland, aeroliths.
John Marrast, do., dysentery.
Joannes D. Godman, do., de aeris in altis Cocis humilibusque impari tempore.[1]
Benjamin King, do., interetis.
Robert Clark, do., gastritis.

[1] The prize medal for the best dissertation in the Latin language was adjudged by the faculty to Dr. Godman.

WM. GIBSON, *Dean.*

THE THREE TRAINING SCHOOLS FOR NURSES

The three large hospitals connected with the University of Maryland held their commencements for nurses in May and the following graduates were announced:

UNIVERSITY HOSPITAL

Class of 1918

Kinney, Maude Alice, Maryland
Viberg, Judith Sophia, Pennsylvania
Moore, Cecelia, Maryland
Bird, Julia Graham, Georgia
Oldhouser, Minnie Christine, Maryland
Dolly, Iva May, West Virginia
Carr, Esther Lamm, Maryland
Hook, Emma Kate, Maryland
Kirkley, Naomi Celeste, Maryland
Singleton, Jessie, North Carolina
Flowers, Jeanetta, North Carolina
Leister, Grace Blanche, Maryland
Barwick, Caroline Elizabeth, Maryland
Lauper, Margaret Ruth, Connecticut
McMillan, Martha Gladys, North Carolina
Turner, Marion Gertrude, Maryland
McCarty, Ellen Price, Maryland
Bay, Beulah Gertrude, Maryland
Linstrum, Gay Mister, Maryland
Ensor, Altha Elizabeth, Maryland
Ridgely, Florence Margaret, Maryland
Ridgely, Helen Lee, Maryland
Flaharty, Nellie Ault, Maryland
Ward, Mary Lee, North Carolina
Scout, Temperance Ann, Delaware
McDaniel, Lena Edna, West Virginia
Benson, Martha Harmon, Maryland
Yingling, Ruth Helena, Pennsylvania

MARYLAND GENERAL HOSPITAL

Graduates

Curtis, Iva Estelle, Maryland
Gladfelter, Alice Emma, Maryland
St. Clair, Emma Bell, Maryland
Clarke, May Brooks, Virginia
Crimstead, Blanche Vivian, West Virginia
Streett, Mary Grace, Maryland
Miles, Goldie May, Virginia
Horstman, Lois Helen, Maryland
Harvey, Louise Franklin, Virginia
Maul, May Isobel, Maryland
Klingstine, Frances Louise, Maryland

MERCY HOSPITAL

Class of 1918

Adams, Katherine Marie, Pennsylvania
Arnold, Ivy Regina, Maryland
Coneannon, Mary Ellen, Maryland
Conroy, Marie Adele, Pennsylvania
Dougherty, Marie Agnes, Pennsylvania
Doory, Agnes Placida, Maryland
Dutra, Lucy Arlene, Pennsylvania
Fitch, Mary Margaret, Pennsylvania
Flaig, Lulu Agnes, Maryland
Griffith, Grace Bright, Pennsylvania
Harding, Elizabeth Jane, Pennsylvania
Herbert, Sophie Vera, Maryland
Hobbs, Geraldine Cline, Maryland
Kinney, Marie Elizabeth, Pennsylvania
Kramer, Marie Esther, Maryland
Lankford, Minnie Mae, Virginia
McCann, Clara Josephine, Pennsylvania
Nowicki, Margaret Agnes, Maryland
O'Connell, Catherine Marie, Maryland
Schreiber, Gertrude Louise, Pennsylvania
Sharpe, Margaret Elizabeth, Maryland
Smeich, Theda Orlene, Pennsylvania
Smith, Stella Martini, Maryland
Van Wert, Emily Roberta, Maryland
Wagman, Violetta Ruth, Pennsylvania
Wagman, Bertha Rosalie, Pennsylvania
Wilson, Florence Ray, Pennsylvania
Wise, Ethel Augusta, Maryland
White, Rose Alma, Pennsylvania

WAR ITEMS

Lieutenant George F. Patton, M.R.C., of New York City, has been awarded the Croix de Guerre by the French government. During a heavy bombardment with poison gas shells, he found it was impossible to do his work while he was wearing a gas mask; hence at the imminent risk of his life he threw off the mask and continued his work until he was overcome by the gas. He was removed to a hospital while unconscious and fortunately recovered. He graduated from the Baltimore Medical College in 1910.

Lieutenant Wm. Michel, M. R. C., formerly of Baltimore, but practising at Frostburg, Md., previous to entering the army, was serving with the English forces when the great drive began. He was shot in the shoulder on the second day of the conflict. After having his wound dressed he continued his work for four days and nights without eating or sleeping. He then became exhausted and was removed to a rest hospital, where at last accounts he was recovering. He was formerly an intern in the University Hospital.

Lieutenant Daniel H. Lawler, M.R.C., of Bridgeport, Conn., was severely wounded on March 16. He had been in the advanced

trenches since October. The last accounts are that he is recovering from his injuries. He graduated from the University of Maryland in 1912 and served two years as resident physician at the Children's Hospital School. Previous to going abroad he married Miss Eva Wright, of this city.

Captain Charles W. Maxson, M.R.C., of Steubenville, Ohio, a graduate of the College of Physicians and Surgeons in 1910 has been wounded and taken prisoner by the Germans. Captain Maxson was serving with the British army when it became necessary to retreat but he refused to leave the wounded men in his charge and voluntarily submitted to capture.

Lieutenant Bartus T. Baggott, M.R.C., a graduate of the College of Physicians and Surgeons and formerly an intern at Mercy Hospital, has been in the thick of the fight and was in command of the stretcher-bearers at the battle of Cambrai.

It is feared that Dr. Burt J. Asper, U.S.N.R., a first honor man of the University of Maryland in 1911, was on the Collier *Cyclops* which has been missing and overdue for two months.

Lieutenant Wm. H. Jenkins, M.R.C., a former intern in the University Hospital, has been reported in the casualty lists from France as missing. It is thought that he has been taken prisoner.

The appeal for contributions to the University of Maryland Base Hospital Unit, as an emergency fund, met with a liberal response and about $11,600 was subscribed. This unit has also been thoroughly equipped with the necessary outfit for its work, by gifts from the Baltimore Chapter of the American Red Cross, amounting to $14,000; from Pike's Peak chapter American Red Cross, $12,000; and surgical dressings from the Baltimore chapter of the National Surgical Dressing committee, to the value of $1,610.

Students expecting to enter the Medical School in October, may, if they are within the draft age, join the Medical Enlisted Reserve Corps and be placed on inactive service until the completion of their medical course. Instructions as to the procedure necessary may be obtained from Dr. J. M. H. Rowland, Dean, University of Maryland, Lombard and Greene Streets, Baltimore. The matter should be attended to at once.

UNIVERSITY OF MARYLAND—GENERAL VIEW

UNIVERSITY HOSPITAL

MARYLAND GENERAL HOSPITAL

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. III JULY, 1918 No. 2

ANNUAL ANNOUNCEMENT SESSION 1918-1919

CALENDAR

1918–19

June 1 to September 30.—Daily Clinics at University, Mercy, and Maryland General Hospitals.

September 20.—Examination of Conditioned Students and Examination for Advanced Standing.

October 1.—Regular Session begins.

November 26.—Thanksgiving Recess begins. 6 p.m.

December 2.—Thanksgiving Recess ends. 9 a.m.

December 21.—Christmas Recess begins. 6 p.m.

January 2.—Christmas Recess ends. 9 a.m.

February 22.—Washington's Birthday.

April 16.—Easter Recess begins. 6 p.m.

April 22.—Easter Recess ends. 9 a.m.

June 2.—Commencement.

DEPARTMENTS

OF THE

UNIVERSITY OF MARYLAND.

THE UNIVERSITY is represented by five departments, each having a distinct Faculty of Instruction.

1st. The School of Liberal Arts at Annapolis, Md. St. John's College, Annapolis, Md., founded in 1696, has by affiliation become the Department of Arts and Sciences. The curriculum leads to the degree of Bachelor of Arts or Science.

2d. The School of Medicine in Baltimore, Md. The University of Maryland was established in Baltimore in 1807; The College of Physicians and Surgeons was established in Baltimore in 1872. The consolidated school offers a high grade course in medicine extending over a period of four years, and leading to the degree of Doctor of Medicine.

3d. The School of Law in Baltimore, Md. This school, founded in 1812 and reorganized in 1869, is designed by means of a course of study covering three years to qualify its students for the degree of Bachelor of Laws and for an intelligent practice of the Law.

4th. The School of Dentistry in Baltimore, Md., was founded in 1882, and is designed to teach the art of dentistry as an integral part of the School of Medicine. The course of study leading to the degree of Doctor of Dental Surgery covers a period of four years.

5th. The School of Pharmacy in Baltimore, Md., was established in 1841 as the Maryland College of Pharmacy, and affiliated with the School of Medicine in 1904. The course of study covers two years, and leads to the degree of Graduate in Pharmacy.

BOARD OF REGENTS

OF THE

UNIVERSITY OF MARYLAND.

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L. E. NEALE, M.D., LL.D.
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STANDISH MCCLEARY, M.D.
WALTER I. DAWKINS, B.PROF., A.M.

J. M. H. ROWLAND, M.D.

THE UNIVERSITY COUNCIL.

The duty of this council is to formulate the scheme of studies to be pursued by students desiring both an academic and a professional or scientific degree and to act upon such other matters as may be brought before them.

The Chancellor,
HON. EMERSON C. HARRINGTON,
Governor of Maryland.

The Provost,
THOMAS FELL, PH.D., LL.D., D.C.L.,
President of St. John's College.

J. B. RIPPERE, A.M.,
WALTER I. DAWKINS, B.PROF., A.M.,
For St. John's College.

RANDOLPH WINSLOW, A.M., M.D., LL.D.
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For School of Medicine.

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EDWARD H. RICHARDSON, M.D. HUGH W. BRENT, M.D.

Urologists.

GIDEON M. TIMBERLAKE, M.D. JOHN T. GERAGHTY, M.D.

Laryngologist.

FRANK DYER SANGER, M.D.

Pediatrician.

JOHN RUHRÄH, M.D.

Neurologist.

HENRY M. THOMAS, M.D.

ST. ELIZABETH HOME.

Attending Physician.

EDGAR B. FRIEDENWALD, M.D.
FRANK AYD, M.D.

Surgeon.

ALEXIUS MCGLANNAN, M.D.

Neurologist.

A. C. GILLIS, M.D.

STAFF OF NURSERY AND CHILD'S HOSPITAL.

Attending Physicians.

EDGAR B. FRIEDENWALD, M.D. HARRY GOLDBERG, M.D.

Consulting Physicians.

JOHN RUHRÄH, M.D. WM. S. BAER, M.D. WM. F. LOCKWOOD, M.D.
ALBERTUS COTTON, M.D.

Oculist and Aurist.

HARRY FRIEDENWALD, M.D.

Superintendent.

MRS. O. V. JONES.

ST. VINCENT'S INFANT ASYLUM.

Visiting Physicians.

Charles O'Donovan A.M., M.D.
J. E. Poulton, M.D.
F. J. Powers, M.D.
Eugene H. Hayward, M.D.
J. K. B. E. Seegar, M.D.
L. C. M. Parker, M.D.

Visiting Surgeons.

Frank Martin, B.S., M.D.
R. B. Warfield, M.D.
John D. Blake, M.D.
Alexius McGlannan, M.D.

Visiting Oculists and Aurists.

J. Frank Crouch, M.D.
Clyde E. Clapp, M.D.

Visiting Orthopedic Surgeons.

Sydney M. Cone, A.M., M.D.
Compton Riely, M.D.

Visiting Proctologist.

G. Milton Linthicum, A.M., M.D.

Pathologist.

Sydney M. Cone, A.M., M.D.

Resident Interne.

W. H. Ingram.

MARYLAND LYING-IN ASYLUM (MATERNITÉ)

Visiting Obstetricians.

George W. Dobbin, M.D.
Charles E. Brack, M.D.
Maurice Lazenby, M.D.

Resident Obstetrician.

Carl C. Nohe, M.D.

MARYLAND LYING-IN HOSPITAL.

Obstetricians.

J. M. H. Rowland, M.D.
L. E. Neale, M.D.

Associates.

J. K. B. E. Seegar, M.D.
H. S. Gorsuch, M.D.
H. N. Freeman, M.D.

Resident Obstetrician.

Edward J. Carlin, M.D.

UNIVERSITY HOSPITAL DISPENSARY STAFF.

J. A. Skladowsky, M.D., *Dispensary Physician.*

Medicine.

S. R. Clarke, M.D.
R. C. Metzel, M.D.
Eugene Kerr, M.D.
M. S. Schimmel, M.D
E. L. Cook, M.D.
Horace Byers, M.D.

Surgery.

R. P. Bay, M.D., *Chief of Clinic.*
Frank S. Lynn. M.D., *Associate Chief of Clinic.*
T. L. Phillips, M.D.
E. S. Perkins, M.D.
Charles R. Edwards, M.D.
H. M. Foster, M.D.

Pediatrics.

Charles L. Summers, M.D., *Professor of Clinical Pediatrics.*

J. S. Fenby, M.D., *Chief of Clinic.*
John Houff, M.D.
C. L. Joslin, M.D.
Norbert C. Nitsch, M.D.

Gynecology.

W. K. White, M.D.
R. L. Mitchell, M.D.
J. A. Skladowsky, M.D.
R. G. Willse, M.D.
L. H. Douglas, M.D.
D. Silberman, M.D.

Eye and Ear.

Wm. Tarun, M.D., *Chief of Clinic.*
E. A. Looper, M.D.
R. C. Harley, M.D.
G. Murgatroyd, M.D.

Skin.

John R. Abercrombie, A.B., M.D., *Chief of Clinic.*
H. M. Robinson, M.D.

Stomach.

Ernest H. Gaither, M.D.

Nose and Throat.

H. C. Davis, M.D., *Chief of Clinic.*
M. L. Lichtenberg, M.D.
E. G. Breeding, M.D.

Orthopedics.

R. Tunstall Taylor, A.B., M.D., *Professor of Orthopedic Surgery.*
Compton Riely, M.D., *Chief of Clinic.*
W. H. Daniels, M.D.

Genito-Urinary.

GIDEON TIMBERLAKE, M.D., *Clinical Professor of Genito-Urinary Diseases.*
A. J. UNDERHILL, M.D., *Chief of Clinic.*
W. H. COUNCILL, M.D.

Neurology.

IRVING J. SPEAR, M.D., *Professor of Neurology.*
G. M. SETTLE, M.D., *Chief of Clinic.*
B. PUSHKIN, M.D. J. A. SKLADOWSKY, M.D.

Proctology.

G. MILTON LINTHICUM, M.D., *Professor of Diseases of Rectum and Colon.*
J. D. REEDER, M.D., *Chief of Clinic.*

Tuberculosis.

J. E. O'NEILL, M.D., *Chief of Clinic.*

Obstetrics.

L. H. DOUGLASS, M.D., *Chief of Clinic.*
WM. B. SCHAPIRO, M.D.
H. N. FREEMAN, M.D.

X-Ray Department.

HENRY J. WALTON, M.D., *Roentgenologist.*
LEWIS P. O'DONNELL, M.D.

MISS FRANCES MEREDITH, *Chief Nurse, Out-Patient Department.*

DISPENSARY STAFF OF MERCY HOSPITAL.

Physician in Charge.

B. S. HANNA, M.D.

Surgery.

A. C. HARRISON, M.D. T. R. CHAMBERS, M.D.
E. H. HUTCHINS, M.D. F. L. JENNINGS, M.D.
A. M. EVANS. M.D. A. F. HUTCHINS, M.D.
W. W. REQUARDT, M.D.

Genito-Urinary Surgery.

ANTON G. RYTINA, M.D.

WM. J. TODD, M.D. A. E. GOLDSTEIN, M.D.
A. L. TUMBLESON, M.D. HARRIS GOLDMAN, M.D.

Orthopedic Surgery.

ALBERTUS COTTON, M.D. HARRY L. ROGERS, M.D.

Medicine.

B. S. HANNA, M.D. L. J. ROSENTHAL, M.D.
A. C. SORENSON, M.D.

Diseases of Stomach.

JULIUS FRIEDENWALD, M.D. JOHN G. STIEFEL, M.D.
T. FRED'K LEITZ, M.D. THEODORE MORRISON, M.D.
L. A. M. KRAUSE, M.D.

Nervous Diseases.

A. C. GILLIS, M.D. D. D. V. STUART, JR., M.D.
G. F. SARGENT, M.D. G. B. WOLFE, M.D.
OTTO H. DUKER, M.D. J. W. V. CLIFT, M.D.

Diseases of Children.

C. L. JOSLIN, M.D.
F. N. HILLIS, M.D. FRANK AYD, M.D.

Diseases of Women.

W. S. GARDNER, M.D. J. G. ONNEN, M.D.
A. SAMUELS, M.D. C. F. J. COUGHLIN, M.D.

Diseases of Nose and Throat.

FRANK DYER SANGER, M.D.
G. W. MITCHELL, M.D. W. F. ZINN, M.D

Diseases of Eye and Ear.

HARRY FRIEDENWALD, M.D.
H. K. FLECKENSTEIN, M.D. JOS. I. KEMLER, M.D.

Neuro-Otology.

J. W. DOWNEY, JR., M.D.

Diseases of the Rectum.

C. F. BLAKE, M.D.

Diseases of Skin.

MELVIN ROSENTHAL, M.D. B. V. KELLY, M.D.

MARYLAND GENERAL HOSPITAL DISPENSARY STAFF.

Committee in Charge.

WM. CASPARI, M.D., *Chairman.* G. M. LINTHICUM, M.D.
A. G. BARRETT, M.D.

Medicine and Children.

CHARLES O'DONOVAN, M.D. H. D. MCCARTY, M.D.

Surgery.

ARTHUR G. BARRETT, M.D. J. D. BUBERT, M.D.
GEORGE SHANNON, M.D.

Eye and Ear.

CLYDE A. CLAPP, M.D. REGINALD D. WEST, M.D.
J. E. BRUMBACK, M.D.

Nose and Throat.

GEORGE W. MURGATROYD, M.D. WM. CASPARI, M.D.

Gastro-Enterology and Proctology.

E. B. FREEMAN, M.D. ERNEST G. MARR, M.D.

Urology.

R. B. KENYON, M.D. E. H. K. ZELLER, M.D.

Gynecology.

W. B. PERRY, M.D. J. M. FENTON, M.D.
J. M. DENNY, M.D.

Dermatology.

R. B. KENYON, M.D. E. H. K. ZELLER, M.D.

Neurology.

GEORGE M. SETTLE M.D. A. C. GILLIS, M.D.
IRVING C. SPEAR, M.D.

MATRICULATES, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, 1917–1918.

POST-GRADUATES AND SPECIAL STUDENTS.

Name	State
Davis, Emily Haviland, B.A.	*Maryland*
Dickerson, John D., M.D.	*Maryland*
Dunn, John J.	*Maryland*
Eichhorn, Oscar Julius, A.B.	*Maryland*
Ewing, Clinton Leroy	*Maryland*
Gamble, John Reeves, M.D.	*Maryland*
Hollister, William, B.S.	*North Carolina*
Kelly, Mary Loretta	*Maryland*
McPherson, Paul Vestal	*North Carolina*
O'Donnell, Louis P., M.D.	*Florida*
Parker, James R., M.D.	*North Carolina*
Pinquard, Joseph, M.D.	*Tennessee*
Quillen, Emile B., M.D.	*North Carolina*
Scheurich, John A., A.B.	*Maryland*
Suzuki, Yoshio, M.D.	*Japan*
Weamer, J. A., M.D.	*Pennsylvania*

FOURTH YEAR CLASS.

Name	State
Allen, Eustace Andrew, A.B.	*Alabama*
Anderson, Lang W.	*South Carolina*
Bonner, John Bryan	*Norht Carolina*
Borror, William Bruce	*West Virginia*
Briscoe, Everard	*Maryland*
Bross, Samuel I.	*Maryland*
Brown, Joseph Lucien	*Alabama*
Cafritz, Edward A.	*District of Columbia*
Carlin, Edward J.	*New Jersey*
Clark, Harold C.	*New York*
Cooke, G. Carlyle.	*North Carolina*
Coulon, Frank N.	*New Hampshire*
Dalton, William B.	*North Carolina*
Darby, William Arthur	*Maryland*
Deliz, Ramon C.	*Porto Rico*
Diebolder, Oscar A.	*Maryland*
Ephraim, Myer	*Maryland*
Fazenbaker, Anderson Johnson.	*Maryland*
Forbes, Sherman Balch	*Florida*
Frost, Nugent George	*Massachusetts*
Gavronsky, Samuel	*New Jersey*
Giesen, John Jacob, A.B.	*Virginia*
Gore, Michael Alvord, A.B.	*District of Columbia*
Grove, George Hedges	*Maryland*
Hart, Crawford Avery, A.B.	*North Carolina*
Howell, James Edward, B.S.	*North Carolina*
Hunter, Dewitt T.	*North Carolina*
Johnson, Harley Monroe	*South Carolina*
Joyner, James C.	*North Carolina*
Kellam, John Wise	*Virginia*
Kocevar, Martin Francis	*Pennsylvania*
Lynch, Raymond Addison	*West Virginia*
McDade, Brodie Banks	*North Carolina*
McDowell, John Stafford	*New York*
Macke, Clarence E.	*Maryland*
* Mellor, Royal Benjamin	*Maryland*
* Michael, Marion Harlan	*Maryland*
Morgan, Jr., Zachariah Raphael	*Maryland*
Nicklas, John Michael	*Maryland*
Putterman, Morris Nathan	*Maryland*
Reynolds, Paul E.	*Maryland*
Ridgely, Irwin Oliver, A.B.	*Maryland*
Robles, Charles Walter	*Florida*
Rousseau, James Parks	*North Carolina*
Sabiston, Frank	*North Carolina*
Schaefer, John William, B.S.	*District of Columbia*
Seal, Gratta Earle	*West Virginia*
Shaffer, Stewart Seibert	*Pennsylvania*
Shaver, William T.	*North Carolina*
Sindler, Joseph	*Maryland*
Sledge, Robert Franklin, B.S.	*North Carolina*
Speake, Thomas Carlyle, A.B.	*Maryland*
Spoon, Jr., Samuel Clarence	*North Carolina*
Sweet, Alfred Norton	*Connecticut*
Taylor, Joseph Russell	*Pennsylvania*
Thompson, Theodore F.	*New Jersey*
Thoner, John George	*West Virginia*
Tierney, Edward Francis	*Rhode Island*
Trippett, Jr., Lemuel Harrison, A.B.	*West Virginia*
Warlick, Henry C.	*North Carolina*
White, Samuel Howard, A B.	*South Carolina*

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* Not in attendance the entire session.

THIRD YEAR CLASS.

Name	State
Adams, Edgar Paul	*Maryland*
Abbott, Lyman Sinclair	*Missouri*
Alagia, Damian Paul	*Maryland*
Barker, Frank T.	*Florida*
Boone, Jr., Walter	*South Carolina*
Brown, Jr., James	*North Carolina*
Buchness, John Adam	*Maryland*
Cregg, Herbert A.	*Massachusetts*
Davis, Charles W., A.B.	*North Carolina*
Davis, John Edward	*Virginia*
Deakyne, Walter Clifton	*Delaware*
Dye, Frank Ganes	*New York*
Flippin, Eugene Littlejohn.	*North Carolina*
Fort, Wetherbee	*Maryland*
Franceschi, Francisco	*Porto Rico*
Geyer, William ş G.	*Maryland*
Goldsborough, Charles Reubell, A.B., A.M.	*Maryland*
Hartenstein, Albert G., Ph. C.,	*West Virginia*
Helsabeck, Chester J.	*North Carolina*
Horine, Cyrus Flook	*Maryland*
Ingram, W. Hawkins	*Maryland*
Jacobowitz, Aaron	*Pennsylvania*
John, Baxter Schooley	*Virginia*
LaRue, Raymond T.	*Ohio*
Lonergan, Paul B.	*Pennsylvania*
Lumpkin, Morgan LeRoy, Ph.B.	*Maryland*
McElwain, Howard B.	*Pennsylvania*
McLeod, Walter Guy	*North Carolina*
Macis, Salvador Albanés, A.B., B.S.	*Nicaragua*
Mayoral, Jr., Joaquin	*Spain*
Miller, Daniel	*Maryland*
Morales, Pablo Otero	*Porto Rico*
Owens, William Duncan	*Georgia*
Phillips, Lawrence D.	*West Virginia*
Pittman, Henry Lee	*North Carolina*
Reynolds, Roy Rex	*Virginia*
Richards, Charles William Victor, B.A.	*Maryland*
Romine, Carl Chester	*West Virginia*
Stewart, Charles Wilbur	*Maryland*
* Timko, Louis M.	*Pennsylvania*
Tiemeyer, Arthur Charles	*Maryland*
Tull, Myron G., A.B.	*Maryland*
Vazquez, Rafael S.	*Porto Rico*
Whitted, Walter Puryear	*North Carolina*
Wild, Albert,	*Connecticut*
Wright, Harold E.	*New York*

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* Not in attendance the entire session.

SECOND YEAR CLASS.

Name	State
Artigiani, Philibert, Phar. D.	*Maryland*
Aubrey, John Forsyth	*Maryland*
Banvard, Navy Francis Xavier	*New Jersey*
Bernabe, Adolfo	*Porto Rico*
Billingslea, Charles Levine	*Maryland*
Broadrup, Earl Edgar	*Maryland*
* Broll, Harry R.	*Maryland*
Brumback, Lynn Hamilton	*Virginia*
Bubert, Howard M.	*Maryland*
Burton, Claud Carter, B.S.	*Kentucky*
de Cardona, Nestor	*Porto Rico*
Castro, Andrés Gutierrez, B.A.	*Costa Rica*
Clarken, Joseph A.	*New Jersey*
Comas, Alfredo Calero	*Cuba*
Dobihal, Louis Charles	*Maryland*
Erwin, John Joseph	*West Virginia*
Fahndrich, Carl Gustav	*Maryland*
Finney, Roy Pelham	*Virginia*
Fleck, Roland F.	*Pennsylvania*
Ginsburg, Leon	*Maryland*
Gleason, Joseph Henry	*Massachusetts*
Gonzalvo, Francisco Antonio	*Santo Domingo*
Hakim, Rattansha Merwanji	*India*
Holden, Frederick Allen	*Maryland*
Hooper, Zebulon Vance	*North Carolina*
Jackvony, Albert H., Ph.G., Ph.C., Phar.D.	*Rhode Island*
Janer, Angel	*Porto Rico*
Kaufman, Edward L.	*West Virginia*
Kinney, James P.	*New York*
Kenure, James T., B.S.	*Connecticut*
Knotts, Earle Paul, B.S.	*Maryland*
Kourey, Salem W.	*Maryland*
Lombard, Nicholas Thomas, Phar.D.	*Maryland*
Lueders, Jr., William	*Maryland*
McGill, Waldo Knox, A.B.	*South Carolina*
Mallet, Victor Joseph	*New York*
Martin, William Francis	*North Carolina*
Marshall, Charles Benton	*West Virginia*
Medairy, George Curtis	*Maryland*
Metcalf, John William	*Ohio*
Navarro, Armando Silva	*Porto Rico*
Orr, William Jennings Bryan	*North Carolina*
Perry, Clayton Charles	*Pennsylvania*
Pessagno, Daniel J., A.B.	*Maryland*
Pugh, James Clyde	*Ohio*
Ponte, Jr., Joseph Perry	*Massachusetts*
de Quevedo, Rafael Garcia	*Porto Rico*

Name	State
Quintero, Ernesto	*Porto Rico*
Reddington, Lawrence Joseph	*Maryland*
Reese, John Gottlieb Morris	*Maryland*
Richardson, Ray Walters	*Maryland*
*Rigney, Jr., Lawrence J	*Delaware*
Schoenheit, Edward William	*North Carolina*
Sheppard, Jr., Henry	*North Carolina*
Skaggs, James W	*West Virginia*
Smith, Frederick Bruce	*Maryland*
Tolson, Howard Lee, Jr.	*Maryland*
Ward, Edwin Janvier	*Maryland*
White, Thomas Francis	*Delaware*
Warren, John Freeman	*New York*
Wilson, Harold Lee, A.B.	*Delaware*
Wissig, George L	*Maryland*
Woodruff, Julian S	*North Carolina*
Zinberg, Israel Saul	*Maryland*

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* Not in attendance the entire session.

FIRST YEAR CLASS.

Name	State
Austerlitz, John S., Phar.D	*Maryland*
* Bacon, Charles Albert	*Maryland*
Badagliacca, Francis Lucian	*New Jersey*
Barnes, Bruce	*New Jersey*
Benson, Carl Fisher	*Maryland*
* Bentz, Felix John	*Connecticut*
Bernardo, John Ralph	*Delaware*
Bolewicki, Peter Edward, A.B	*Maryland*
Bonfiglio, Vincent	*Maryland*
Bose, Jogesh Chandra	*India*
* Bowers, Jr., Thaddeus Ray	*North Carolina*
* Brown, Harold Vardell	*North Carolina*
Butler, Joseph Charles	*Pennsylvania*
Costa, Oscar Guillermo	*Porto Rico*
Culver, Samuel H	*Delaware*
* Dean, Dawson F	*Ohio*
Decker, Walter Joseph	*Pennsylvania*
Evans, Arnold Lunda, B.S	*Kentucky*
Fisher, C. Fred	*West Virginia*
Fisher, Daniel Sebastian	*Pennsylvania*
Foley, Charles J	*Maryland*
Foreman, Tom Alexander	*North Carolina*
Franklin, Joseph Powell, A.B	*Alabama*
Freedom, Leon	*Maryland*
Fulton, William James	*Maryland*
Golley, Kyle Wood	*Maryland*
Grabill, John Stanley	*Maryland*
* Grempler, Karl F	*Maryland*
Guyton, John Willis	*Maryland*
Hardman, Carney	*West Virginia*
Hawks, Cyrus Eugene	*Virginia*
Henneberger, Cyril Russell	*Maryland*
Holofcener, Julius David	*Maryland*
Isear, Milton Roderick	*South Carolina*
Jaffe, Albert	*Maryland*
Johns, J. Carroll	*Maryland*
Joska, Vincent Vernon	*Maryland*
Joyner, George Richardson	*Virginia*
Keegan, Daniel Francis, A.B	*Massachusetts*
Kemp, Richard Joseph	*Maryland*
Kwilinski, Teofil Stanislaus	*New Jersey*
McCoy, Arley Von, A.B	*West Virginia*
* McCoy, Cecil Glen, A.B	*West Virginia*
Martinez, Ezequiel	*Porto Rico*
Matthews, Stanley William	*North Carolina*
Matthews, Jr., William Edward	*Maryland*
Melendez, Juan Santiago	*Porto Rico*
Mercier, Albin Scott, A.B	*Maryland*
Millan, Lyle Jordan	*Virginia*
Monninger, Arthur Ceril	*Pennsylvania*
Monserrat, Antonio	*Porto Rico*
* Morris, Byron McNeely	*Pennsylvania*
Nash, Alexander Edgar	*Connecticut*
* Nazario, Lorenzo	*Porto Rico*
O'Rourk, Thomas Rutter	*Maryland*
Pacienzo, Frank Anthony	*Maryland*
Paulson, Moses	*Maryland*
Peters, Edgar Allen Poe, B.S	*Kentucky*
Pillsbury, Harold Crockett	*Maryland*
Plyler, Ralph Johnson, A.B.	*North Carolina*
Pokorny, Joseph	*Maryland*
Quinones, Norbert A	*Porto Rico*
Reese, Harry Randolph	*Virginia*
Ries, Ferdinand A	*Maryland*
Robinson, Wilfred John	*Connecticut*
Romilly, Harold A	*Virginia*
Rosario, Pedro	*Porto Rico*
Rudisill, John David, A.B	*North Carolina*
Ryon, James Barry, A.B	*Maryland*
Sabin, Fred C	*New York*
Saporito, Archibald Richard	*New Jersey*
Savage, Philip Joseph	*Connecticut*
Schilling, Jesmond William	*Pennsylvania*
Scotellaro, Nicholas J	*New York*
Seay, Thomas Walter	*Virginia*
Shannan, George Edmon	*Maryland*
Sherman, Solomon	*Maryland*
Shircliff, Elliott Walter	*Maryland*
Shubert, Felix S	*Pennsylvania*
Stein, Nathan	*New York*
Stone, Saul G	*Ohio.*
Sullivan, Edmund John Joseph	*Maryland*
Szczerbicki, John Valentine	*Maryland*
Tilghman, Stanley James	*Maryland*
Trattner, Norman Frey, A.B.	*Pennsylvania*
Wangler, Herman Ernest	*New York*

Name	*State*
Weinberg, Edwin David, A.B.	*Maryland*
Wells, George Edward	*Maryland*
Wiest, Paul Foreman	*West Virginia*
Williams, Mortimer Harry	*Virginia*
Wilkerson, James Herbert	*Maryland*
Wilson, W. Wellford, Phar. D.	*Maryland*
Wolfe, James Clinton	*New Jersey*
* Wrenn, John Edwin	*Maryland*
Yeager, Leslie, A., B.S.	*New York*

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* Not in attendance the entire session.

GENERAL SUMMARY OF STUDENTS ATTENDING THE UNIVERSITY OF MARYLAND, SESSION OF 1917-18.

Department of Arts and Sciences (St. John's College)	211
Department of Medicine	282
Department of Law	256
Department of Dentistry	215
Department of Pharmacy	73
Training Schools for Nurses	245
Total	1282

GRADUATES UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, JUNE 1, 1918.

Name	*State*
Anderson, Lang W.	*South Carolina*
Bonner, John Bryan	*North Carolina*
Borror, William Bruce	*West Virginia*
Briscoe, Everard	*Maryland*
Bross, Samuel I.	*Maryland*
Brown, Joseph Lucien	*Alabama*
Cafritz, Edward A.	*District of Columbia*
Carlin, Edward J.	*New Jersey*
Clark, Harold C.	*New York*
Dalton, William B.	*North Carolina*
Darby, William Arthur	*Maryland*
Deliz, Ramon C.	*Porto Rico*
Diebolder, Oscar A.	*Maryland*
Ephraim, Myer	*Maryland*
Fazenbaker, Anderson Johnson	*Maryland*
Forbes, Sherman Balch	*Florida*
Frost, Nugent George	*Massachusetts*
Gavronsky, Samuel	*New Jersey*
Giesen, John Jacob, A.B.	*Virginia*
Gore, Michael Alvord, A.B.	*District of Columbia*
Grove, George Hedges	*Maryland*
Hart, Crawford Avery, A.B.	*North Carolina*
Hunter, Dewitt T.	*North Carolina*
Johnson, Harley Monroe	*South Carolina*
Joyner, James C.	*North Carolina*
Kocevar, Martin Francis	*Pennsylvania*
McDade, Brodie Banks	*North Carolina*
McDowell, John Stafford	*New York*
Macke, Clarence E.	*Maryland*
Morgan, Jr., Zachariah Raphael	*Maryland*
Nicklas, John Michael	*Maryland*
Putterman, Morris Nathan	*Maryland*
Ridgely, Irwin Oliver, A.B.	*Maryland*
Robles, Charles Walter	*Florida*
Rousseau, James Parks	*North Carolina*
Sabiston, Frank	*North Carolina*
Seal, Gratta Earle	*West Virginia*
Sindler, Joseph	*Maryland*
Sledge, Robert Frankling, B.S.	*North Carolina*
Speake, Thomas Carlyle, A.B.	*Maryland*
Spoon, Jr., Samuel Clarence	*North Carolina*
Sweet, Alfred Norton	*Connecticut*
Thompson, Theodore F.	*New Jersey*
Trippett, Jr., Lemuel Harrison, A.B.	*West Virginia*
Warlick, Henry C.	*North Carolina*
White, Samuel Howard, A.B.	*South Carolina*

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PRIZEMEN

University Prize—*Gold Medal* ..... Ramon C. Deliz

Certificate of Honor ..... Samuel Howard White

GRADUATES OF JUNE 1, 1917, NOT INCLUDED IN PUBLISHED LIST

Maddison, Walter E.	*Utah*
Martin, John Willis	*Maryland*
Wheaton, Harry W.	*New York*

THE UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS.

UNITED IN 1915, AND HEREAFTER THE TWO SCHOOLS WILL BE CONDUCTED AS ONE.

As a result of the merger accomplished in 1915 the combined schools offer the student the abundant resources of both institutions, and, in addition, by earlier combination with the Baltimore Medical College, the entire equipment of three large medical colleges.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was chartered in 1807, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties, of Divinity, of Law and of Arts and Sciences, and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

Established thus for more than a century, the School of Medicine of the University of Maryland has always been a leading medical college, especially prominent in the South and widely known and highly honored throughout the country.

The beautiful college building at Lombard and Greene Streets, erected in 1814–1815, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837), and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867) and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own

hospital, and in this hospital intra mural residency for the senior student was first established.

In 1913 juncture was brought about with the Baltimore Medical College, an institution of 32 years growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated under the Legislative enactment in 1872 and established on Hanover Street in a building afterwards known as the Maternité, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the College was removed to its present location at Calvert and Saratoga Streets. By this arrangement, medical control of the City Hospital, now the Mercy Hospital, was obtained, and on this foundation in 1899 the present admirable college building was erected.

CLINICAL FACILITIES.

HOSPITALS AND DISPENSARIES.

UNIVERSITY HOSPITAL.

The University Hospital, which is the property of the Faculty of Physic of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye cases. By successive additions this hospital was increased to more than fourfold its original accommodations, there being added to it a large clinical amphitheater, a students' building for the accommodation of the thirty clinical assistants, and a nurses' building for the accommodation of the pupils of the Training School for Nurses. The yearly increase in the number of patients seeking admission to the hospital, however, more than kept pace with the increase in accommodations, and the Faculty therefore erected an entirely new and modern hospital of fully double the capacity of the former building.

The University Hospital is constructed of brick and Tennessee limestone in the Colonial style of architecture, fronting 175 feet upon Lombard Street, and about the same on Greene Street. It is supplied with the most modern and approved system of heating, ventilation,

etc., and equipped with all modern requirements and conveniences for the care of the sick, and for the clinical instruction of the students of the University.

It is one of the largest and finest hospitals owned and controlled by any medical school in America, and in point of architectural beauty, convenience and completeness of arrangements and equipment compares favorably with other hospitals.

An important adjunct to the hospital is the postmortem building, which is constructed with special reference to the instruction of students in pathological anatomy.

The hospital is situated opposite the University building, so that the student loses no time in passing from the lecture halls to the clinical amphitheater.

A portion of the hospital is used as a marine hospital for foreign seamen. The great importance of Baltimore as a shipping point brings into her harbor many vessels from all parts of the world, and the sick sailors who are cared for in the wards of the institution give the students an opportunity to observe a large variety of diseases. Another considerable portion of the building is used as a Municipal Hospital, and contains charity beds supported by the city of Baltimore. This department of the hospital is taxed to its utmost capacity to afford accommodations for the patients seeking admission.

Owing to its location, being the nearest hospital to the largest manufacturing district of the city, the University Hospital receives for treatment a very large number of accident cases of all kinds, both slight and serious. These cases, as well as patients suffering from the various diseases of our own climate, occupy the beds, and add greatly to the facilities of clinical teaching enjoyed by the school. The facilities for clinical instruction have been greatly enlarged by an appropriation by the State of Maryland for the support of free beds for patients from the various counties.

MERCY HOSPITAL.

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga streets, then owned by the Washington University, in 1875. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly

growing demands upon it. However, it was not until 1888 that the Sisters of Mercy with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the corner stone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space has compelled the erection of additions, until now there are accommodations for 351 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

Mercy Hospital is located in the center of a city of 1,000,000 inhabitants and is under the exclusive medical control of the College of Physicians and Surgeons. It adjoins the College building and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching, as there is no time lost in passing from one to the other.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

During the calendar year of 1917 there were treated in the wards of the Hospital 5,488 patients. That the emergency service is very large is shown by the fact that during this time 5,912 ambulant cases were treated in the accident department. In other out-patient departments there were treated 8,714 patients, making a total of 31,343 ill or injured people who applied for treatment during one year.

THE MARYLAND GENERAL HOSPITAL.

The Maryland General Hospital, situated at Madison Street and Linden Avenue, has a capacity of 175 beds, and furnishes a large amount of clinical material, which is under the control of the Faculty of Physic for teaching purposes.

A new operating suite has just been completed, modern in every particular and adapted to the teaching of small sections of students. The Hospital has been remodeled throughout and new wards added at a cost of $50,000. The hospital treated during the last calendar year 2744 patients in the ward and 9980 outdoor patients. One thousand five hundred and twenty-five surgical operations were performed.

The hospital receives appropriations from the State of Maryland and the City of Baltimore for the support of charity cases.

FRANKLIN SQUARE HOSPITAL.

The Franklin Square Hospital has a capacity of 100 beds. During the year ending December 31, 1917, 1558 cases were treated in the hospital, and 2158 patients were treated in the dispensary. Eight hundred and ninety-eight surgical operations were performed. in the hospital.

LYING-IN HOSPITALS.

MATERNITY HOSPITAL OF THE UNIVERSITY OF MARYLAND.

This institution is also the property of the Faculty of Physic and under its exclusive control and direction, and is conducted with the special purpose of furnishing actual obstetrical experience to each member of the graduating class.

New accommodations have been provided in the general hospital, and the Maternity Department now offers better facilities than ever before, while the large increase in clinical material has made it possible to offer excellent opportunities for post-graduate work.

MARYLAND LYING-IN HOSPITAL.

This hospital adjoins the Maryland General Hospital and furnishes an abundance of clinical material, which is under the control of the Faculty of Physic.

MARYLAND LYING-IN ASYLUM.

This hospital was established by the College of Physicians and Surgeons in 1874. It is the pioneer institution of its kind in the State of Maryland and one of the first in the country.

THE WEST END MATERNITY.

The West End Maternity adjoins the Franklin Square Hospital and furnishes an abundance of clinical material, which is under the control of the Faculty of Physic.

OUT-PATIENT CLINIC AND DISPENSARY.

In connection with the University Hospital an out-door obstetrical clinic is conducted, in which every case has careful prenatal supervision, is attended during labor by a graduate physician and

graduate nurse—one senior student also being present—and is visited during the puerperium by the attending student and graduate nurse. Careful prenatal, labor and puerperal records are kept, making this work of extreme value to the medical student, not only from the obstetrical standpoint, but in making him appreciate the value of social service and public health work.

NUMBER OF PATIENTS.

During the year ending December 31, 1917, the number of patients treated in the Lying-In hospitals connected with the School was as follows:

Number of Confinements in Hospitals	1448
Number of Confinements, Out-Patient Department	677
Average number of cases seen by each student of the graduating class.	15

THE MUNICIPAL HOSPITALS—BAY VIEW.

The clinical advantages of the University have been largely increased by the liberal decision of the Board of Supervisors of City Charities to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness in study, and the use made of it in medical teaching.

The Municipal Hospitals consist of the following separate hospitals:

The General Hospital, 160 beds.

The Hospital for Chronic Cases, 88 beds.

The Municipal Hospital for Tuberculosis, 190 beds.

City Detention Hospital for Insane, 450 beds.

THE PRESBYTERIAN EAR, EYE AND THROAT CHARITY HOSPITAL.

This institution was founded in 1877, through the efforts of late Dr. J. J. Chisolm, then Professor of Diseases of the Eye and Ear in the University of Maryland. It is one of the largest special hospitals in the country.

During the year 1917 there were admitted to the Dispensary and Hospital 9,539 persons.

The Dispensary and wards of this hospital afford ample facilities for the study of diseases of the eye, ear, nose and throat.

Professor Woods and Dr. Looper are members of the staff, and the clinics are at all times open to the students of the University of Maryland.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN.

This institution contains seventy-five beds for the active treatment of deformities. It is situated at "Radnor Park," a colonial estate of sixty-five acres at Hillsdale, one mile from the western city limits, reached by trolley.

This institution has city, state, endowed and private beds and every modern facility for the treatment of orthopedic cases as well as a most beautiful park-like environment and farm, and is closely affiliated with the University of Maryland.

ST. VINCENT'S INFANT ASYLUM.

The facilities of this institution, containing 250 infants and children, have been kindly extended to the University of Maryland by the Sisters of Charity. This large clinic enables this school to present to its students liberal opportunities for the study of diseases of infants and children.

INSTITUTIONS FOR THE TREATMENT OF THE INSANE AND FEEBLE MINDED.

The Sheppard and Enoch Pratt Hospital for the Insane. This institution is one of the most modern hospitals for the treatment and care of the insane in this country. It is well endowed and its superintendent is Dr. Edward N. Brush, Professor of Psychiatry at the University of Maryland. In this hospital intensive treatment and study of mental diseases is carried on, a large number of the patients entering voluntarily. The students under the direction of Dr. Brush and his assistants in a series of clinics are shown the early manifestations and the various stages of mental diseases, the methods of treatment, and their effects.

Mount Hope Retreat for the Insane. This hospital contains an average of 750 patients and is attended by Dr. Chas. G. Hill, Professor of Psychiatry of this faculty. Under the direction of Dr. Hill and his assistants the students are given opportunity for the study of large groups of patients showing all phases of various mental and nervous disorders.

Spring Grove State Hospital. This hospital, a state institution for the treatment of the insane, has a capacity of 780 beds. Dr. J. Percy Wade, associate in Psychiatry, is the superintendent. Students of this school are given a limited number of clinics at this institution.

Springfield State Hospital. This large state institution for treatment of mental diseases is situated at Sykesville, Md. Dr. J. Clement Clark, Associate Professor of Psychiatry is its superintendent. There are accommodations for 1500 patients. At this institution under charge of a capable director is located a modern psychopathic ward where intensive study of the various mental diseases is carried on. Each session the students of this school are given several clinics by Dr. Clark and his assistants.

DISPENSARIES.

The three dispensaries associated with the University Hospital, the Mercy Hospital and the Maryland General Hospital are organized upon a uniform plan in order that the teaching may be the same in all. Each dispensary has the following departments: Medicine, Surgery, Children, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopedics, Proctology, Dermatology, Throat and Nose, and Tuberculosis.

All students in their junior year work in the departments of Medicine and Surgery each day in one of the dispensaries.

All students in their senior year work in the special departments one hour each day.

Some idea of the value of these dispensaries for clinical teaching is shown by the number of patients treated. For the year 1917 nearly seventy thousand visits were made to the dispensaries.

In addition to these the Dental Department, situated upon the grounds of the University, conducts a daily clinic which is open to medical students.

University Hospital Dispensary Report, January 1, to December 31, 1917. John Houff, M.D., Dispensary Physician

DEPARTMENT	OLD CASES	NEW CASES	TOTAL
Eye and ear	3,061	1,214	4,275
Surgical	2,309	1,392	3,701
Medical	2,174	1,162	3,33
Genito-Urinary	1,932	546	2 478
Skin	1,383	1,076	2 459
Nerve	1,973	338	2,311
Obstetrics	987	816	1,803
Women	986	725	1,711
Children	795	872	1,667
Nose and Throat	505	641	1,146
Tuberculosis	485	443	928
Orthopedics	577	119	696
Stomach	144	155	299
Rectal	79	59	138
	17,390	9,558	26,948

Mercy Hospital Dispensary Report, January 1, to December 31, 1917. B. S. Hanna, M.D., Resident Physician

	NEW CASES	OLD CASES	TOTAL VISITS
Surgery	1,332	3,970	5,202
Genito-Urinary	1,137	4,155	5,292
Stomach	809	2,230	3,039
Nose and Throat	609	1,209	1,848
Skin	420	1,009	1,429
Diseases of Women	851	1,541	2,392
Nervous Diseases	622	1,621	2,243
General Medicine	1,316	3,389	4,705
Children	716	1,452	2,168
Eye and Ear	730	1,654	2,384
Orthopedic	172	369	541
	8,714	22,629	31,343

Maryland General Hospital Dispensary Report, March 1, 1917, to March 1, 1918. Emma N. Belbot, Ph.G., Registrar

DEPARTMENT	NEW CASES	OLD CASES	TOTAL
Surgical	575	1,850	2,425
Medical	524	801	1,326
Nervous	31	83	110
Genito-Urinary	500	1,950	2,451
Eye and Ear	450	1,601	2,050
Women	323	350	673
Children	162	154	314
Skin	125	168	281
Throat and Nose	300	400	702
Proctology	102	252	357
Stomach	50	150	200
	3,142	7,759	10,889

LABORATORIES.

ANATOMICAL LABORATORIES.

These laboratories are in charge of Dr. Smith and his assistants. The University has recently built its own storage and embalming plant, which supplies an abundance of anatomical material. Dissecting tickets must be countersigned as evidence of satisfactory dissecting. Anatomical material is furnished in abundance, free of charge.

CHEMICAL LABORATORY.

The Chemical Laboratory is under the supervision of Dr. Simon, aided by the Demonstrators. Each student during his course has assigned him a table and is fully supplied with all necessary apparatus and chemicals.

LABORATORY OF EXPERIMENTAL PHYSIOLOGY.

This laboratory occupies the first floor of Gray Laboratory; it includes a large student laboratory, with capacity of forty students, a room completely equipped for mammalian experimentation, a stock-room, and an office for the professor in charge. Within the same building there is an animal room in which there is kept a constant supply of material for experimentation and demonstration. The laboratory is equipped with ample apparatus: there is a complete set of student apparatus available for each group of two students, while the special apparatus for laboratory experimentation and class-room demonstration is adequate for the needs of the courses.

LABORATORY OF PHYSIOLOGICAL CHEMISTRY.

The second year class is given practical instruction in the chemistry of the sugars and proteins as well as a detailed course in the chemistry of the various secretions. The experiments performed by each student are adapted to illustrate not only the physiological but also the pathological conditions which may result in various diseases from perverted metabolism. The chemistry of the food stuffs and its practical bearing upon diet is especially dwelt upon.

The course is essentially practical, including only so much theoretical physiology as is necessary for a proper knowledge of the subject. Graduates and advanced students competent to undertake such work, who desire to pursue special chemical investigation, are given the opportunity under suitable regulations.

LABORATORY OF HISTOLOGY AND EMBRYOLOGY.

This laboratory is fully equipped for teaching Histology and Embryology.

There is a large collection of charts, specimens and apparatus used in teaching. The necessary equipment for the practice of technique is provided.

LABORATORIES OF PATHOLOGY AND BACTERIOLOGY.

The subject of special bacteriology is taught during a portion of the second year in a well equipped laboratory containing sterilizers, water baths, and other necessary equipment for this purpose.

The subject of histopathology is also taught during the second year in a properly equipped laboratory. The details concerning this work are described under the subject of Department of Pathology and Bacteriology.

The instruction in gross pathology is obtained during the third year by attendance upon the autopsies at the University Hospital, the Mercy Hospital, and the Maryland General Hospital, and special instruction in this subject is also given by demonstrations with a large amount of pathological material at the City Hospitals situated at Bay View. The subject of gross pathology is also taught in the third year by means of lectures and demonstrations to sections of the third year class and a special effort is made to apply this subject to the explanation of the symptoms and clinical signs of disease. The instruction in autopsy technique is also given personally to small groups of students.

LABORATORIES OF CLINICAL PATHOLOGY.

These laboratories are fully equipped for the study of practical laboratory work in its relationship to clinical medicine. Each student is supplied with a locker, containing sufficient apparatus for any ordinary examination.

The wards and out-patient departments of the hospitals furnish an abundance of material for study.

By reason of individual equipment, much work outside of class hours is expected of the student.

The class rooms are adequately lighted, and are conveniently situated for teaching purposes.

LIBRARIES.

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 13,700 volumes, a file of 93 current journals, and several thousand pamphlets and reprints. During the year ending December 31, 1917, 408 volumes were added. It is well stocked with recent literature, including books and periodicals of general interest. The home of the Library is Davidge Hall, a comfortable and commodious building in close proximity to the class rooms and the laboratories of the Medical Department. The Library is open daily during the year, except in August, for use of members of the Faculty, the students, and the profession generally.

Other libraries of Baltimore are the Peabody (181,000 volumes), the Enoch Pratt Free Library (355,817 volumes) and the Library of the Medical and Chirurgical Faculty. The last named library receives the leading medical publications of the world, and complete sets of many journals are available.

The libraries are open to students of the Medical School without charge.

The proximity of Washington puts the immense libraries of the national capital at the disposal of students of this school.

THE MUSEUM.

The museum occupies a separate apartment in the main building. It is under the care of the curator, Dr. J. Holmes Smith and his assistants. It contains a large collection of anatomical preparations, plaster casts, charts, models, etc., used in teaching anatomy. It contains also a number of specimens of comparative anatomy. There is a large collection of gross pathological specimens and cut sections mounted for demonstration. For the department of obstetrics, there is an excellent collection of normal and abnormal human embryos.

PUBLICATIONS.

Two journals are published by the University. *The University Gazette* is devoted to the interests of the entire University and is published under the auspices of the General Alumni Association. *The Bulletin of the University of Maryland School of Medicine and College of Physicians and Surgeons* is the publication of the Medical School. Dr. Nathan Winslow is editor.

ANNUAL APPOINTMENTS.

On February first of each session the following annual appointments are made from among the graduates of the school.

TO THE UNIVERSITY HOSPITAL

Medical Superintendent.
Five Senior Residents, viz:
  Two Resident Surgeons.
  One Resident Physician.
  One Resident Gynecologist and Obstetrician.
  One Resident Pathologist.
Thirteen Junior Residents on a rotating service.

A number of students are appointed each year, at the close of the session, as Clinical Assistants in the University Hospital for the summer months.

TO THE MERCY HOSPITAL.

Medical Superintendent.
Six Resident Surgeons.
Five Resident Physicians.
One Resident Gynecologist.
One Resident Obstetrician.
Two Accident Service Residents.
One Ambulance Surgeon.

TO THE MARYLAND GENERAL HOSPITAL.

Medical Superintendent.
Four Senior Residents, viz.:
  One Resident Surgeon.
  One Resident Physician.
  One Resident Gynecologist.
  One Resident Obstetrician.
Eight Junior Residents on a rotating service.

Each resident serves a term in every department, including the pathological laboratory and the Maryland Lying-In Hospital.

Many appointments to other hospitals of Baltimore are made annually, to which graduates of this school are eligible.

REQUIREMENTS FOR MATRICULATION.

Beginning with this session, 1918-1919, women will be admitted to the Medical Department of this University.

Admission to the course in medicine is by a completed Medical Student Certificate issued by the State Department of Education of Maryland. This certificate is obtained from Prof. Isaac L. Otis, the Supervisor of Entrance to Professional Schools of the Department on the basis of satisfactory credentials, or by examination and credentials, and is essential for admission to any class.

The requirements for the issuance of the Medical Student Certificate are:

(A) The completion of a standard four-year high school course, including English, Biology, Chemistry, Physics and a modern language, or the equivalent, and, in addition,

(B) Two years of college credits, including chemistry, biology, physics, English and German or French.

(A) DETAILS OF THE HIGH SCHOOL REQUIREMENT.

1. Graduation from an accredited high school after pursuing a four-year course based upon an eight-year elementary course or its full equivalent;

or

2. Successfully passing entrance examinations in the following subjects:

(a) Required Eleven (11) Units

	Units.
English 3 years	2
Elementary Algebra to quadratics	1
Plane Geometry (first five books)	1
Two years of a modern language	2
The three sciences—Biology, Chemistry, Physics	3
American History and Civics	1
Ancient History or History of Great Britain and Ireland	1

(b) Electives, Four (4) Units

(1) History and Political Science:	
Mediaeval and Modern History	1 or ½
General History	1 or ½
Civics	½
Economics	½

	Units.
(2) Language:	
English IV	1
French 1 or 2 years	1 or 2
German 1 or 2 years	1 or 2
Greek 1 or 2 years	1 or 2
Hebrew 1 or 2 years	1 or 2
Italian 1 or 2 years	1 or 2
Latin 1 or 2 years	1 or 2
Scandinavian 1 or 2 years	1 or 2
Spanish 1 or 2 years	1 or 2
(3) Mathematics:	
Advanced Algebra	1
Plane Trigonometry	½
Solid Geometry	½
(4) Science:	
Physical Geography and Geology	1
Astronomy	½
Physiology and Hygiene	½
(5) Vocational and cultural subjects:	
Agriculture	1
Bookkeeping	1
Domestic Science	1
Drawing: Mechanical 1 and 2	½ each
Freehand 1 and 2	½ each
Manual Training	1
Music	1
Stenography	1

One unit in any subject is the equivalent of work in that subject for five periods per week for a year of at least thirty-six weeks, periods to be not less than forty-five minutes in length. One unit is equivalent to 2 semester credits or 2 points.

(B) DETAILS OF THE COLLEGE REQUIREMENT.

a. The preliminary college course shall extend through two college sessions of at least thirty-two weeks each of actual instruction, including final examinations.

b. In excellence of teaching and in content, the work of this preliminary college course shall be equal to the work done in the freshman and sophomore years in standard colleges and universities.

c. This preliminary college course shall include courses in physics, chemistry, biology and two of the three languages, English, French and German, each course to embrace at least six or eight hours of didactic and laboratory work in each subject, as shown in the schedule below. It is advisable to make the choice of the two

languages, other than the mother tongue, the same as that of the high school preparation.

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PREMEDICAL COLLEGE COURSE.

Sixty Semester Hours Required.

REQUIRED COURSES:	*Semester Hours.*
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English Composition and Literature (d)	6
French or German (e)	6–12

COURSES STRONGLY URGED:

Advanced Algebra, Solid Geometry and Trigonometry	3– 6
Additional courses in Chemistry	3– 6
An additional Modern Language—French or German (e)	6–12
Psychology	3– 6
Advanced Zoology, Embryology or Comparative Anatomy	3– 6

SUGGESTED ELECTIVE COURSES:

English (additional), Economics, History, Sociology, Political Science, Logic, Mathematics, Latin, Greek, Drawing.

SUGGESTIONS REGARDING INDIVIDUAL SUBJECTS.

(*a*) CHEMISTRY. Twelve semester hours required, of which six must consist of laboratory work. Of the twelve at least eight semester hours must be in general inorganic chemistry, of which four semester hours must consist of laboratory work. The remaining hours may consist of work in analytic or organic chemistry. When more than two years are spent in college, courses in organic, analytic or physical chemistry may be taken to advantage. Chemistry is probably the most important science fundamental to medicine.

(*b*) PHYSICS. Eight semester hours required, of which at least two must be laboratory work. It is urged that this course be preceded by courses in advanced algebra, solid geometry and trigonometry.

(*c*) BIOLOGY. Eight semester hours required, of which four must consist of laboratory work. This requirement may be satisfied by an eight semester hour course in either general biology or zoology, or by four semester hour courses each in zoology and botany.

(*d*) English Composition and Literature. The usual six semester hour introductory college course, or its equivalent, is required.

(*e*) French or German. A reading knowledge of one of these languages is required, and the requirement may be absolved by demonstration on examination, written or oral, of the ability to read fluently medical French or German. When the requirement is absolved by college work, the student must complete the six semester hour course following either the two semester beginner's college course, or the completion of two entrance units of high school work in the language. When the requirement is absolved by an examination, such examination shall be a standard examination, covering a course of at least six semester hours. If credit for such language has been counted toward the required fifteen units of secondary school work, no credit is to be given therefor in the total sixty semester hours of required college work. If the reading knowledge in one of these languages is obtained on the basis of high school work, the student is urged to take the other language in his college course. It is not considered advisable, however, to spend more than twelve of the required sixty semester hours on foreign language. In case a reading knowledge of one language is obtained by six semester hours of college work, another six semester hours may be well spent in taking the beginner's course in the other language; if this is followed up by systematic reading of scientific prose, a reading knowledge of the second language may be readily acquired. When a student spends more than two years in college he may well spend twelve semester hours of his college work in the second language.

The valuation of credentials can be made by the Supervisor of Entrance to Professional Schools only, and *all* students are advised to obtain from him or from the Dean, well in advance of their coming to Baltimore, blank forms on which to prepare a full statement of their previous education. Such statements are to be submitted to the Supervisor for his advice as to the course to be pursued.

The Supervisor for Maryland is Prof. Isaac L. Otis, State Department of Education, McCoy Hall, Baltimore. To him must be submitted the credentials of all applicants, and by him is issued the certificate upon which the student is matriculated.

The student is earnestly advised to qualify himself under his State law, and, where such certificates are issued, to receive the

medical students' certificate from the State authorities before entering upon his medical studies. By adopting this course difficulties may be avoided.

POST-GRADUATE STUDENTS.

Graduates in medicine desiring to take the work of the senior year without being candidates for the degree and, therefore, without examination, may receive a certificate of attendance on completing the full course satisfactorily.

The requirements for graduates in medicine admitted to the fourth year class as candidates for the degree of Doctor of Medicine are the same as those enforced against undergraduates admitted to advanced standing.

COMBINED COURSE IN ARTS AND MEDICINE.

St. John's College, Annapolis, Md., founded in 1696, is by contract of affiliation styled and recognized as the Department of Arts and Sciences of the University of Maryland.

Students who have completed the Junior Year in St. John's College and who have made an approved choice of electives may, if they desire it, do the entire work of the Senior Year in the Medical School of the University. If they successfully complete the work of the first medical year, they are graduated with their class with the degree of A.B. from St. John's College.

By taking advantage of this privilege a man may complete the Undergraduate and Medical courses in seven years.

During three of these years or until he has completed the work of the Junior class he is a resident student in St. John's College and for four years he is a student in the Medical School in Baltimore.

At the end of the fourth year he receives the A.B. degree, and at the end of the seventh year the M.D. degree, but credit from the Medical School cannot be accepted in subjects for which credit has already been given in the College of Liberal Arts.

In order to meet the increased requirements for matriculation taking effect January 1, 1918, a special Pre-Medical Course in Chemistry, Physics, Biology, English, Mathematics, and French or German is now offered in St. John's College.

RULES.

1. Tickets for practical anatomy must be countersigned by the proper demonstrators. Unless properly countersigned, a ticket will not be accepted as evidence of a completed course.

2. All students are required to stand the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

3. A laboratory charge of $10 will be made to each student. A microscope will be furnished each student in the school for his exclusive use. The charge for this will be $5.

4. Should a student be required to repeat any year in the course he must pay regular fees.

5. A student failing in final examination for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examinations in such other branches as may be required, should he be again permitted to enter the school as a candidate for graduation.

6. The general fitness of a candidate for graduation will be taken into consideration by the Faculty as well as the results of his final examination.

All the above rules, as well as the fees stated below, relate to the year ending June 1, 1919, only. The right is reserved to make changes in the curriculum, requirements for graduation, fees and all the regulations whenever the Faculty deem it expedient.

FEES.

Matriculation fee (paid each year)	$5.00
Tuition fee (each year)	175.00
Examination fee (paid each year)	10.00

There will be no graduation fee. No fees are returnable.

Tuition fees are due and payable during October, and if the entire amount is paid at the Dean's office before November 1, the tuition fee for that year will be $170.

The above fees apply to all students who matriculate in this institution in any class for the session beginning October 1, 1918.

SPECIAL COURSES.

Anatomy	$50.00
Physiology	50.00
Pathology	50.00
Embryology	50.00
Bacteriology	50.00
Physiological Chemistry	50.00
Pharmacology	50.00
Clinical Laboratory (four months)	100.00

X-Ray (four months) 100.00
Orthopedic Surgery (four months) 100.00
Genito-Urinary Diseases (four months) 100.00
Gynecology and Gynecological Pathology 100.00–150.00
Obstetrics, Out-Door ..... { 6 weeks ..... $25.00 / 4 months ..... 50.00 }
Out-Door and In-Door { 6 weeks ..... 50.00 / 4 months ..... 100.00 }
Surgery { Clinical Surgery / Operative Surgery / Surgical Pathology } ..... By arrangement
Medicine ..... By arrangement

If the courses are taken during holidays or if special supervision is desired or additional material required, the charge is made accordingly.

FACULTY PRIZE.

To stimulate study among the candidates for graduation, the Faculty offers a Gold Medal to the candidate who passes the best general examination. Certificates of Honor are awarded to the five candidates standing next highest.

SCHOLARSHIPS.

The Dr. Samuel Leon Frank Scholarship.

This scholarship, established by Mrs. Bertha Rayner Frank as a memorial of the late Dr. Samuel Leon Frank, an alumnus of this University, entitles the holder to exemption from the payment of the tuition fee of that year.

It is awarded by the Trustees of the Endowment Fund of the University in each year upon nomination of the Faculty of Physic, "to a medical student of the University of Maryland, who, in the judgment of said Faculty, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student only, who has successfully completed one year's work in the medical course, and no student may hold such scholarship for more than two years.

The Charles M. Hitchcock Scholarships.

From a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University, two scholarships have been established which entitle the holders to exemption from payment of tuition fees for the year.

These scholarships are awarded annually by the Faculty of Physic to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Faculty satisfactory evidence of good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship.

This scholarship, established by Prof. Randolph Winslow, M.D., LL.D., entitles the holder to exemption from the payment of the tuition fee of that year.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination of the Faculty of Physic, to "a needy student of the Senior, Junior, or Sophomore Class of the Medical School.

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship.

"He must be a person of good character and must satisfy the Faculty of Physic that he is worthy of and in need of assistance."

The University Scholarship.

This scholarship, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Faculty of Physic to a student of the Senior Class who presents to the Faculty satisfactory evidence that he is of good moral character and is worthy of and in need of assistance to complete the course.

The St. John's Scholarship.

This scholarship is awarded annually by the Faculty of Physic upon the nomination of the President of St. John's College.

It entitles the holder to exemption from the payment of the tuition fee of that year.

NOTICE TO STUDENTS.

The personal expenses of students are at least as low in Baltimore as in any large city in the United States. The following estimates of student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience:

Items.	Low.	Average.	Liberal.
Books	$ 18	$ 32	$ 50
College Incidentals		15	20
Board, eight months	112	128	144
Room rent	48	65	80
Clothing and washing	35	50	100
All other expenses	10	20	75
Total	$223	$310	$469

Students will save time and expense upon their arrival in the city by going direct to the School of Medicine on the University grounds, N.E. corner of Lombard and Greene Streets, where the Superintendent of Buildings, who may be found at his office on the premises, will furnish them with a list of comfortable and convenient boarding houses suitable to their means and wishes.

The Dean will, if desired, attend to the collection of checks and drafts for students.

For further information apply to

J. M. H. Rowland, M. D., *Dean*,
Lombard and Greene Streets.

ORGANIZATION OF THE CURRICULUM.

The following curriculum is the result of a recent and thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under ten departments

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Chemistry including Physiological Chemistry.
4. Materia Medica and Pharmacology.
5. Pathology and Bacteriology.
6. Medicine (including Medical Specialties).
7. Surgery (including Surgical Specialties).
8. Obstetrics.
9. Gynecology.
10. Ophthalmology and Otology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body, and laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of teachers insures attention to the needs of each student.

In many courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

ARRANGEMENT OF CLASSES.

All the teaching of the freshman class is done at Calvert and Saratoga Streets. All the teaching of the sophomore class is done at Lombard and Greene Streets.

The junior class has three hours of didactic teaching each morning. For clinical instruction and laboratory work this class is divided into two sections and the year into semesters. Each section will work for one semester at the University Hospital and one semester at Mercy Hospital.

The senior class is divided into three sections and for this class the year is divided into trimesters. Each section receives clinical instruction for one trimester in the University Hospital, the Mercy Hospital and the Maryland General Hospital. In the afternoon the whole class is assembled and has two hours of didactic teaching each day.

This distribution of the classes is made in order to utilize to the best advantage the laboratory space and to bring the students into daily contact with patients in all three of the large hospitals and dispensaries.

DEPARTMENT OF ANATOMY INCLUDING HISTOLOGY AND EMBRYOLOGY.

J. Holmes Smith, A.M., M.D.....Professor of Anatomy
Tilghman B. Marden, A.B., M.D.
Professor of Histology and Embryology and Assistant in Anatomy
J. W. Holland, M.D.....Associate Professor of Anatomy
J. L. Wright, M.D.....Associate in Anatomy and Histology
F. L. Jennings, M.D.....Assistant in Anatomy

First Year. Didactic. Three hours each week for thirty-two weeks. This consists of lectures, recitations and conferences.

This course embraces the integuments, myology, angiology, osteology, syndesmology and the peripheral nerves.

Laboratory. Ten hours each week for thirty-two weeks. Abundance of good material is furnished and the student is aided in his work by competent demonstrators. Examinations are held at regular intervals throughout the session, and each student will be held to strict account for material furnished him.

Osteology. Two hours each week for thirty-two weeks. Lectures, demonstrations, and recitations. Each student is furnished a skeleton and a deposit is required to insure its return at the end of the session.

Second Year. *Didactic.* Three hours each week for thirty-two weeks. Lectures, recitations and conferences.

Laboratory. Ten hours each week for sixteen weeks. This course includes topographical and applied anatomy of the body cavities and viscera and the cerebro-spinal and sympathetic nervous systems with special demonstrations of important subjects to the class in small sections.

The teaching of anatomy is illustrated by means of charts, diagrams, special dissections and the projection apparatus.

Histology.

First Year. Lectures, recitations and laboratory work, nine hours each week during first semester; three hours each week during second semester. The most important part of the work will be done in the laboratory, where each student will be provided with a microscope, apparatus, staining fluids and material necessary for the preparation of specimens for microscopical examination. An important aid to the course is the projection microscope which is used for the projection upon a screen of magnified images of the specimens actually used in the laboratory.

Embryology.

Lectures, recitations and laboratory work; six hours each week during the second semester.

This course includes the study of the development of the chick, and the fundamental principles of mammalian embryology. In the laboratory, the hen's egg will be studied in its various stages of development, and sections of the chick at different periods of incubation will be made and studied microscopically. The latter part of the course will be devoted to the study of sections through different regions of a mammal.

DEPARTMENT OF PHYSIOLOGY.

Bartgis McGlone, A.B., Ph.D.....Professor of Physiology
Charles C. Conser, M.D.....Associate Professor of Physiology
Firmadge K. Nichols, A.B., M.D.....Associate in Physiology
Henry T. Collenberg, A.B., M.D.....Associate in Physiology

The course in Physiology extends throughout the First and Second Years. It consists of a series of lectures, covering the field of human physiology, laboratory work, demonstrations, and frequent recitations. It is constantly in the mind of the department that this course is introductory to the study of medicine. The recitations cover the subject-matter of the lectures and the experiments performed in the laboratory.

First Year. 1. This course includes lectures and recitations upon the physiology of the blood and circulation, respiration, muscle and nerve, a portion of the central nervous system, and

special senses, and such chemical and physical facts as are necessary for a proper understanding of the physiology taught. Two lectures and a recitation weekly throughout the year. Dr. McGlone.

Second Year. 2. *Didactic instruction.* During this year the remaining topics of physiology are covered by lectures and demonstrations. As in the first year frequent recitations will be held. The subject-matter includes the physiology of digestion and secretion, nutrition, metabolism, internal secretion, and the cranial central nervous system. Lectures, demonstrations, and recitations, three hours per week. Dr. McGlone, assisted by Dr. Conser.

3. *Experimental Physiology.* This is a laboratory course in the dynamics of muscle and nerve, studies in circulation and respiration, and physiology of the special senses. Apart from the acquisition of the facts of physiology, the student is taught to observe accurately, record carefully the results of his observations, and from these results draw an independent conclusion. He is also trained in the use of instruments which are of value to him in his clinical years. Three hours weekly throughout the year. Drs. McGlone, Conser, Nichols and Collenberg.

4. *Special Mammalian Physiology.* This is a Laboratory course intended for advanced Laboratory students (optional) who may wish to do special work in this line of physiology. Hours to be arranged. Dr. McGlone.

5. *Research in Physiology.* Properly qualified students will be admitted to the laboratory, which is well adapted for post-graduate study and special research. Hours will be arranged to suit individuals. Dr. McGlone.

DEPARTMENT OF CHEMISTRY.

Charles E. Simon, A.B., M.D.....Professor of Physiological Chemistry
E. F. Kelly, Phar.D.....Associate Professor of Chemistry
H. Boyd Wylie, M.D.....Associate Professor of Physiological Chemistry

Organic Chemistry and Physiological Chemistry. While the present requirements for entrance to the medical department of the university presuppose that the student has had a year's course in organic chemistry, it has been thought best to briefly review this important subject in an intensive manner during the first semester of the first year's work, in order that he may be the better prepared for his course in physiological chemistry, which is taken up during the second year.

The latter is essentially a laboratory course, extending throughout the year, in which the student studies practically the chemical properties of the various groups of food stuffs, their products of digestion and katabolism, as well as the various organic compounds which enter into the composition of the different tissues and organs of the body.

The practical work is supplemented by a course of lectures in which the student is introduced not only to the chemical aspects of physiological processes, but also to those deviations from the normal which are met with in disease.

DEPARTMENT OF MATERIA MEDICA AND PHARMACOLOGY.

Samuel J. Fort, M.D.....Professor of Materia Medica and Pharmacology
Bartgis McGlone.....Associate Professor of Pharmacology
H. L. Sinskey, M.D.....Associate in Materia Medica

First Year. Two hours per week throughout the session, didactic lectures on Materia Medica. Dr. Fort.

A laboratory course in Pharmacy and prescription writing, two hours per week. Dr. Sinsky.

Second Year. Two hours per week throughout the session on Pharmacology. Dr. Fort.

A laboratory course of two hours per week throughout the session, on the physiological and toxicological action of the more important drugs. Dr. McGlone.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY.

Wm. Royal Stokes, M.D.....Professor of Pathology and Bacteriology
Standish McCleary, M.D.....Professor of Pathology
H. R. Spencer, M.D...Associate Professor of Pathology and Bacteriology
H. J. Maldeis, M.D.....Associate Professor of Pathology
Frank W. Hachtel, M.D.....Associate in Pathology and Bacteriology

Instruction in pathology and in special bacteriology is given in the laboratories to the students of the second year. The course in pathology includes the demonstrations of the gross and microscopic lesions of the various viscera, and the subject of general pathology, including inflammation, degeneration and infiltration and tumors.

In special bacteriology the various methods of sterilization and preparation of culture material, the study of the pathogenic microorganisms of vegetable origin, and the bacteriological study of

milk, water, sewage and other such materials, are given. The bacteriological diagnosis of the infectious diseases is also included in this course. Animal inoculations and autopsies are performed in connection with the bacteria studied, and the diagnoses by means of serum reactions are also given.

In the third year the subject of pathology is continued, special use being made of museum specimens, and the special relationship of gross and microscopic lesions to clinical symptoms and signs of disease is especially emphasized. Autopsy technique is also taught to small groups of students by special instruction at the autopsies performed at the various hospitals, and the specimens obtained at such autopsies are demonstrated to the entire class. The animal parasites are also taught in this year.

In the fourth year the specimens from autopsies are studied with reference to clinical histories and gross and microscopic anatomy. Special emphasis is laid upon the correlation of the anatomical findings with the clinical symptoms and diagnosis. These clinical pathological conferences are also illustrated with sections of fixed material or lantern slides.

Courses in surgical and gynecological pathology are also given to the fourth year students, but these courses are under the direction of the Departments of Surgery and Gynecology.

MEDICAL JURISPRUDENCE.

Second Year. One hour each week for entire session.

Medical Jurisprudence. This course embraces consideration of medical evidence and testimony, confidential communications, malpractice, indications of death, pregnancy, delivery, infanticide and insanity.

CLINICAL INSTRUCTION.

DEPARTMENT OF SURGERY.

Randolph Winslow, A.M., M.D., LL.D.....Professor of Surgery
Arthur M. Shipley, M.D.....Professor of Surgery
Ridgely B. Warfield, M.D.....Professor of Surgery
Archibald C. Harrison, M.D.....Professor of Surgery
Alexius McGlannan, A.M., M.D.
Professor of Clinical Surgery and Surgical Pathology
Frank Martin, B.S., M.D.....Professor of Clinical and Operative Surgery
J. D. Blake, M.D.....Professor of Clinical Surgery

JOSEPH H. BRANHAM, M.D.....Professor of Clinical Surgery
ALBERT T. CHAMBERS, M.D.....Professor of Clinical Surgery
NATHAN WINSLOW, A.M., M.D.....Clinical Professor of Surgery
ALFRED ULLMAN, M.D.....Clinical Professor of Surgery
WALTER D. WISE, M.D.....Clinical Professor of Surgery
JOSEPH W. HOLLAND, M.D.....Clinical Professor of Surgery
WILLIAM W. REQUARDT, M.D.....Associate Professor of Surgery
J. C. LUMPKIN, M.D.....Associate Professor of Clinical Surgery
H. C. BLAKE, M.D.....Associate Professor of Clinical Surgery
ROBERT P. BAY, M.D.....Associate Professor of Clinical Surgery
FRANK S. LYNN, M.D.....Associate Professor of Surgery
ELLIOTT H. HUTCHINS, A.M., M.D.....Associate Professor of Surgery
THOMAS R. CHAMBERS, A.B., M.D.....Associate Professor of Surgery
HARVEY B. STONE, A.B., M.D.....Associate Professor of Surgery
R. W. LOCHER, M.D...Associate Professor of Operative and Clinical Surgery
ARTHUR G. BARRETT, M.D.....Associate in Surgery
B. M. BERNHEIM, A.B., M.D.....Lecturer on Blood Vessel Surgery
F. L. JENNINGS, M.D.....Instructor in Surgery
A. M. EVANS, M. D.....Instructor in Surgery
E. P. SMITH, M.D.....Instructor in Operative Surgery

The course in surgery is progressive, and aims to ground the student firmly in the principles of surgical science in order that later he may be prepared to build upon a firm foundation the superstructure of surgical art.

SECOND YEAR. During this year a practical course of bandaging is given upon the manikin; the student being required to apply personally the various forms of bandages to the different parts of the body.

THIRD YEAR. Surgical Pathology and Principles of Surgery. Lectures, recitations and clinics, three hours weekly. Drs. Shipley and Warfield.

The class is divided in sections and receives instruction in history taking, gross surgical pathology and surgical diagnosis at the bedside and in the dead house in the City Hospitals at Bay View. Drs. Shipley and Lynn.

Operative Surgery. Instruction is given in operative surgery upon the cadaver and on dogs. The class is divided into sections and each section is given practical and individual work under the supervision of the instructors.

This course begins with the study of the general principles of operative surgery; anaesthesia, asepsis, antisepsis, description of instruments and sutures, etc.

The various operations are first described and demonstrated by the instructor, and the student afterward practices them upon the subject.

The entire subject of operative surgery is fully covered. Dr. Martin and assistants.

The class will be divided into small sections for Dispensary service in the University and Mercy Hospitals.

FOURTH YEAR. *Fractures and Dislocations.* Illustrated by charts, drawings, specimens, X-ray demonstrations, lantern slides, and the balopticon, two hours a week for the first semester. Dr. Winslow.

Surgery of the Blood Vascular System, Hernia, Surgery of the Scrotum and its contents, one hour a week for the first semester. Dr. Warfield. At the end of this semester, an examination will be given.

Surgery of the Thorax and Thoracic Wall, the Abdominal Cavity, and of the Head, Neck, and Spinal Cord, two hours a week for the second semester. Dr. Harrison.

Surgical Clinics. Surgical clinics will be given at the University, Mercy, and Maryland General Hospitals, weekly, to one third of the class in each hospital. Drs. Winslow, Warfield, Harrison, and McGlannan.

The class is divided into sections for ward instruction in surgery, for instruction in operative surgery and surgical diagnosis, and the post-operative treatment of surgical conditions, six days a week for two hours each day in each of the three hospitals. Drs. Winslow, Shipley, Warfield, Harrison, Martin and McGlannan.

ANAESTHESIA.

S. GRIFFITH DAVIS, M.D.....Associate Professor of Anaesthesia
FRANK S. LYNN, M.D.....Associate Professor of Anaesthesia
SAMUEL W. MOORE, D.D.S.....Associate in Anaesthesia
A. M. EVANS, M.D.....Instructor in Anaesthesia

The administration of anaesthetics is taught didactically and practically and students are required to administer anaesthetics under the direction of an instructor.

DERMATOLOGY.

T. CASPAR GILCHRIST, M.R.C.S.,L.S.A.,M.D.....Professor of Dermatology
MELVIN ROSENTHAL, M.D.....Associate Professor of Dermatology
JOHN R. ABERCROMBIE, A.B., M.D .....Associate Professor of Dermatology
HARRY M. ROBINSON, M.D.....Demonstrator of Dermatology

Clinical conference one hour each week to entire class. This course will consist of demonstrations of the common diseases of the skin. Dr. Gilchrist.

Dispensary instruction, University Hospital, Mondays, Wednesdays and Fridays in the diagnosis and treatment of the common skin diseases, Dr. Abercrombie. Dispensary instruction, Mercy Hospital, Dr. Rosenthal.

ORTHOPEDIC SURGERY.

R. Tunstall Taylor, A.B., M.D.....Professor of Orthopedic Surgery
Albertus Cotton, A.M., M.D.....Professor of Orthopedic Surgery
Compton Riely, M.D.....Clinical Professor of Orthopedic Surgery
Sydney M. Cone, A.B., M.D.....Clinical Professor of Orthopedic Surgery
Henry J. Walton, M.D..... .Associate Professor of Roentgenology
W. H. Daniels, M.D.....Demonstrator in Orthopedic Surgery
John Evans, M.D.....Demonstrator in Roentgenology
C. Reid Edwards, M.D.....Assistant in Orthopedic Surgery

In this course didactic, clinical, bed-side and out-patient instruction will be given. This instruction is provided in the University Hospital Amphitheater and Dispensary, Maryland General and Mercy Hospitals and Dispensaries, Kernan Hospital and Industrial School for Crippled Children at "Radnor Park," and in the Dispensary of same at 2000 North Charles Street.

The senior class will be divided into three parts, each section spending one trimester in the University, Mercy and Maryland General Hospitals in rotation; and by the avoidance of duplication, the subject will be adequately covered. Lectures, clinics and quizzes will be held at each of the three hospitals once a week. In addition, a weekly bed-side clinic will be held on Saturdays for small sections of the class at "Radnor Park."

The course will cover instruction in special methods and instruments required in this surgical specialty, including X-Ray technique; Wolff's law; tuberculosis of bones and joints; deformities of the feet; non-tuberculous deformities of the feet and joints; the paralyses; the bursal, tendinous and muscular conditions producing orthopedic affections; rickets; scurvy; osteomalacia; chondrodystrophies; wry-neck and the use and application of orthopedic apparatus.

DISEASES OF THE THROAT AND NOSE.

Samuel K. Merrick, M.D.....Professor of Diseases of the Throat and Nose
John R. Winslow, A.B.,M.D..Professor of Diseases of the Throat and Nose
Frank Dyer Sanger, M.D.....Professor of Diseases of the Throat and Nose

GEORGE W. MITCHELL, M.D.
Associate Professor of Diseases of the Throat and Nose
H. C. DAVIS, M.D...Associate Professor of Diseases of the Throat and Nose
GEORGE MURGATROYD, M.D....Associate in Diseases of the Throat and Nose
WILLIAM CASPARI, M.D.....Associate in Diseases of the Throat and Nose

THIRD YEAR. Clinical Lectures. One hour each week throughout the session. Drs. Merrick, John R. Winslow, and Sanger.

FOURTH YEAR. Dispensary instruction daily in small sections at the University, Maryland General, and Mercy Hospitals. Ward classes one hour each week at the University, Maryland General, and Mercy Hospitals.

GENITO-URINARY DISEASES.

GIDEON TIMBERLAKE, M.D....Clinical Professor of Genito-Urinary Diseases
PAGE EDMUNDS, M.D.....Clinical Professor of Genito-Urinary Diseases
A. J. UNDERHILL, A.B., M.D... Clinical Professor of Genito-Urinary Diseases
ANTON G. RYTINA, A.B., M.D.
Clinical Professor of Genito-Urinary Diseases
W. B. WOLF, M.D.....Associate Professor of Genito-Urinary Diseases

The course, which is entirely clinical, is taught chiefly by personal instruction in the dispensaries of the University, Mercy and Maryland General Hospitals, one trimester being spent at each hospital. The student assumes the responsibility of certain cases under the supervision of instructors.

The course includes the diagnosis, pathology and treatment of venereal diseases and syphilis together with a careful study of the less common genito-urinary diseases. The course includes instruction in urinalysis, in endoscopic and cystoscopic examinations and the use of other instruments for the diagnosis and treatment of genito-urinary diseases. Many minor operations are performed in the out-patient department by students under the supervision of the chiefs of clinic.

DISEASES OF THE COLON AND RECTUM.

G. MILTON LINTHICUM, A.M., M.D.
Professor of Diseases of Rectum and Colon
CHARLES F. BLAKE, M.D.....Professor of Diseases of Rectum and Colon
J. DAWSON REEDER, M.D.
Associate Professor of Diseases of Rectum and Colon
ERNEST G. MARR, M.D.....Instructor in Diseases of Rectum and Colon

FOURTH YEAR. This course is for instruction in diseases of the Colon, Sigmoid Flexure, Rectum and Anus.

One lecture a week throughout the year will be given in the Clinical Amphitheater of the Hospitals. The lecture will cover the essential features of the Anatomy and Physiology of the large intestine; as well as the various diseases to which it is subject. The importance of diseased conditions and malpositions of the intestines, n relation to systemic disturbances, will be emphasized by demonstrations.

In small groups, the students will be taken into the wards and dispensaries of the University, Mercy, and Maryland General Hospitals, where different phases of the various diseases will be taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in examination of the rectum and sigmoid will be made familiar to each student.

A course in Proctoscopy will be given in the City Hospitals at Bay View, where abundance of material is always obtainable.

DEPARTMENT OF MEDICINE.

Gordon Wilson, M.D.
Cary B. Gamble, Jr., A.M., M.D.
Julius Friedenwald, A.M., M.D.
John S. Fulton, A.B., M.D.
Chas. G. Hill, A.M., M.D.
Joseph E. Gichner, M.D.
Irving J. Spear, M.D.
Edward N. Brush, M.D.
John Ruhräh, M.D.
Andrew C. Gillis, A.M., M.D.
Edgar B. Friedenwald, M.D.
J. E. Poulton, M.D.
H. D. McCarty, M.D.
John E. O'Neill, M.D.
G. F. Sargent, M.D.
G. S. M. Kieffer, M.D.
J. F. Hawkins, M.D.
D. D. V. Stuart, Jr., M.D.
E. E. Mayer, M.D.
M. H. Todd, A.B., M.D.
John S. Fenby, M.D.
E. Le Compte Cook, M.D.
Frank J. Powers, M.D.
J. W. V. Clift, M.D.
D. C. Streett, AB., M.D.
S. D. Shannon, M.D.
George McLean, M.D.
John C. Hemmeter, M.D., Ph.D., Sc.D., LL.D.
William F. Lockwood, M.D.
Standish McCleary, M.D.
Chas. O'Donovan, A.M., M.D., LL.D.
J. M. Craighill, M.D.
Chas. W. McElfresh, M.D.
C. Hampson Jones, M.B., C.M., M.D
G. Carroll Lockard, M.D.
Harvey G. Beck, M.D., D.Sc.
E. B. Freeman, B.S., M.D.
J. Clement Clark, M.D.
Hubert C. Knapp, M.D.
G. M. Settle, A.B., M.D.
T. Fred Leitz, M.D.
Wm. H. Smith, M.D.
J. Percy Wade, M.D.
R. C. Metzel, M.D.
Wilbur P. Stubbs, M.D.
J. Harry Ullrich, M.D.
Benjamin Pushkin, M.D.
J. E. Brumback, M.D.
J. G. Stiefel, M.D.
Theodore Morrison, M.D.
M. Feldman, M.D.
C. C. Hableston, M.D.

PHYSICAL DIAGNOSIS.

SECOND YEAR. Didactic lectures and practical demonstrations in medical topography and the physical conditions in health, preparatory to the course in physical diagnosis in the third year. Two and one-half hours each week during the second semester.

THIRD YEAR. The class is divided into small groups, and each section receives instruction for the entire session in the medical dispensaries of the hospitals. During the second semester, the students under the supervision of instructors examine and treat patients in the medical dispensaries. During one semester small groups are sent for the afternoon to the city hospitals at Bay View for special instruction in history taking and physical diagnosis. Two hours a week throughout the year are devoted to physical diagnosis. Full class conferences one hour a week throughout the session.

CLINICAL MEDICINE.

THIRD YEAR. Lectures and recitations on the principles of medicine, for three hours a week throughout the session. Clinical conference, one hour each week throughout the session.

FOURTH YEAR. Lectures, recitations and clinics to the entire class two hours a week throughout the session.

A clinical pathological conference is held once a week throughout the session, at which the material obtained through operations or at autopsy is studied in relation to the clinical findings.

The whole class, divided between the three hospitals and again subdivided into small groups, receives bedside instruction twelve hours a week throughout the session and has the care of the hospital patients under the direct supervision of the hospital staff, making all examinations and keeping the clinical histories of the patients.

Dispensary instruction is given nine hours a week in the specialties of medicine.

PEDIATRICS.

THIRD YEAR. Lecture recitation one hour a week throughout the session.

FOURTH YEAR. Clinic recitation one hour a week throughout the year and in addition ward class instruction to small groups one hour a week during one trimester.

Dispensary instruction in pediatrics is given to small groups throughout the year.

THERAPEUTICS.

Physical Therapeutics. This course consists of weekly lectures and demonstrations on hydrotherapy, thermotherapy, massage, rest and exercise, the Weir Mitchell Treatment, radiotherapy and electrotherapeutics. The basic physiologic principles and actions of the above mentioned agencies are given full consideration and study, and the practical application is observed in the hospital and clinic and in visits to various institutions having well equipped departments for treatment by physical means.

THIRD YEAR. This course is supplementary to that on clinical medicine and an effort is made to familiarize the student with the practical treatment of disease. (One hour a week.)

FOURTH YEAR. This subject is covered in conjunction with the teaching of clinical medicine.

GASTRO-ENTEROLOGY.

FOURTH YEAR. Clinic recitation to each third of the class for one hour a week throughout the session. Dispensary instruction to small groups during part of the session. Practical instruction in the wards in the differential diagnosis of diseased conditions of the alimentary tract.

TUBERCULOSIS.

A practical course is given in the tuberculosis dispensary and at the Municipal Tuberculosis Hospital to small groups, the abundance of the material, both of "incipient" and "advanced cases" making this course of value in the practical recognition of the physical signs of the disease.

NEUROLOGY.

THIRD YEAR. Lectures and recitations one hour each week to entire class throughout the year. This course comprises the study of the anatomy and physiology of the nervous system, the method

of neurological examination, and relationship of signs and symptoms to pathological conditions. The material at the University, Maryland General, and Mercy Hospitals is available.

Fourth Year. Clinical lectures and recitations; one hour each week throughout the entire session.

Clinical Conference, one hour each week to the entire class. This subject is taught at the University, Maryland General, and Mercy Hospitals. All cases presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the cases before the class. These cases are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

Ward Class Instruction. In small sections, two hours each week during entire year at the University, Maryland General, and Mercy Hospitals. In these classes the students come in close personal contact with the cases in the wards under the supervision of the instructor.

Dispensary Instruction. Small sections are instructed in the dispensaries of the University, Maryland General, and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their earlier as well as later manifestations.

Electro Therapeutics. Instruction in the uses of the various types of electrical apparatus is given by lectures and demonstrations in the clinics, the ward classes, and the out-patient department.

PSYCHIATRY.

Fourth Year. This subject is taught by means of didactic and clinical lectures. Abundant material is at the command of this department in the various institutions which are presided over by the teachers in psychiatry. The student is brought into contact with the early manifestations of mental disease in the dispensaries of the University, Maryland General, and Mercy Hospitals, and in a series of clinics opportunity is afforded to observe the course and later manifestations of the disease, often in these same patients, at the Sheppard Enoch Pratt Hospital, Springfield State Hospital, Spring Grove State Hospital, Mount Hope Retreat, Maryland Training School for the Feeble Minded, and City Detention Hospital.

STATE MEDICINE.

Fourth Year. Lectures and demonstrations one hour each week to the entire class throughout the session.

The course in state medicine begins with a study of structure and function of the social organism, as revealed by the numerical analysis of population, births, deaths, sickness and migration. Elementary instruction and practice are given in vital statistics; in medical notification, registration and certification; and in the laws and ordinances concerning public health. The specific hygiene of the preventable diseases is next taken up, such choice being made as will familiarize the student with the epidemiology of the more important communicable diseases, and with the main instruments of prevention: notification, inspection, segregation, isolation, immunization and disinfection. The course is planned from the view point of official practice in public hygiene.

One lecture is given each week to the members of the Senior Class.

DEPARTMENT OF OBSTETRICS.

L. E. Neale, A.M., M.D., LL.D.....Professor of Obstetrics
Geo. W. Dobbin, M.D.....Professor of Obstetrics and Gynecology
J. M. H. Rowland, M.D.....Professor of Obstetrics
Bernard Purcell Muse, M.D.....Professor of Clinical Obstetrics
Charles E. Brack, M.D.....Clinical Professor of Obstetrics
J. K. B. E. Seegar, M.D.....Associate Professor of Obstetrics
H. S. Gorsuch, M.D.....Associate in Obstetrics
Maurice Lazenby, M.D.....Associate in Obstetrics
Emil Novak, M.D.....Associate in Obstetrics
J. McF. Bergland.....Associate in Obstetrics
H. N. Freeman, M.D.....Demonstrator of Obstetrics
M. E. Douglass, M.D.....Instructor in Obstetrics
Wm. B. Schapiro, M.D.....Assistant in Obstetrics

Third Year. Lectures and recitations two hours each week by Drs. Neale and Dobbin to entire class. Special obstetric and gynecologic pathology three hours each week by Drs. Brent and Lazenby to class sections in the Pathologic Laboratory. Clinical Obstetrics (bedside and manikin work) three hours each week at the University Hospital by Dr. Neale and his assistants, and at the Mercy Hospital by Drs. Brack, Lazenby and Novak.

Examinations, one at end of first semester and final one at end of the year. The results of these examinations, considered in conjunction with the student's practical work, will determine the grade for the year's work, which grades, if sufficient to give student advanced standing, will count as one-half of the final grade in Obstetrics.

FOURTH YEAR. *Lectures and Clinical Conferences.* Two hours each week to the entire class. Drs. Neale, Dobbin and Rowland.

Ward Classes and Operative Obstetrics (Manikin work). Four hours each week to sections of the class.

Students are required to attend obstetric cases before, during and after confinement in the University Hospital, Maryland Lying-In Hospital and Maryland Lying-In Asylum, as well as in the out-patient department. Each student is required to conduct and make accurate records of at least twelve confinement cases. These out-patient cases are conducted under the supervision of post-graduate instructors, two in number, who devote their whole time to this work.

Mid-year and final examinations will be held, the results of which, considered in conjunction with clinical work and recitations, will make up the remaining half of the final grade.

This School is peculiarly fortunate in the clinical material available for this important branch of medical teaching; more than 2000 cases in the three hospitals and their out-patient departments make a practically inexhaustible clinic.

DEPARTMENT OF GYNECOLOGY.

WILLIAM S. GARDNER, M.D.....Professor of Gynecology
W. B. PERRY, M.D.....Professor of Clinical Gynecology
J. MASON HUNDLEY, M.D.....Professor of Clinical Gynecology
HUGH BRENT, M.D.....Associate Professor of Gynecology
ABRAHAM SAMUELS, M.D.....Associate Professor of Gynecology
E. H. HAYWARD, M.D.....Associate in Gynecology
GEO. A. STRAUSS, M.D.....Associate in Gynecology
R. G. WILLSE, M.D.....Associate in Gynecology
W. K. WHITE, M.D.....Instructor in Gynecology
R. L. MITCHELL, M.D.....Instructor in Gynecology
J. M. FENTON, M.D.....Assistant in Gynecology
MAURICE LAZENBY, A.B., M.D.....Assistant in Gynecology
L. H. DOUGLASS, M.D.....Assistant in Gynecology

THIRD YEAR. *Didactic Work.* Lectures and recitations one hour each week throughout the session.

Laboratory. Special pathology, both gross and microscopical, studied in connection with the clinical history of each specimen, two hours each week for one semester.

FOURTH YEAR. *Didactic Work.* Lectures and recitations one hour each week throughout the session.

Clinical Work. Six hours weekly for one trimester. In this course a student writes the clinical history of each patient in the ward, makes a general physical examination including the blood and urine, before the patient is brought before the class. One student under supervision gives the anesthetic, a pelvic examination is made by six students, and any operation required is then done before a section of the class small enough to see clearly what is being done and how it is done. On a subsequent day the whole group examine microscopically sections prepared from material removed from patients that have been before them.

DEPARTMENT OF OPHTHALMOLOGY AND OTOLOGY.

HARRY FRIEDENWALD, A.B., M.D...Professor of Ophthalmology and Otology
HIRAM WOODS, A.M., M.D.....Professor of Ophthalmology and Otology
WM. TARUN, M.D.....Clinical Professor of Ophthalmology and Otology
J. W. DOWNEY, M.D.....Clinical Professor of Otology
CLYDE A. CLAPP, M.D.....Associate in Ophthalmology and Otology
H. K. FLECKENSTEIN, M.D.....Associate in Ophthalmology and Otology
JOSEPH I. KEMLER, M.D.....Associate in Ophthalmology and Otology
EDWARD A. LOOPER, M.D., D.Oph..Instructor in Ophthalmology and Otology
R. D. WEST, M.D.....Assistant in Ophthalmology and Otology

THIRD YEAR. *Practical Course in the Anatomy*, gross and microscopic, and in the *Physiology of the Eye;* this course consists of dissections, microscopic sections, demonstration on models, etc., once weekly throughout one half the year.—Dr. Clapp.

Course in Anatomy, Physiology and Diseases of the Ear, Dr. Downey.

FOURTH YEAR. *Didactic Course in Diseases of the Eye* once weekly October to February, Dr. Woods; February to close of session, Dr. Harry Friedenwald.

Course in Diseases of the Ear, Dr. Downey, once weekly for half the year.

Clinics in diseases of the eye to sections of the class once weekly, by Drs. Harry Friedenwald, Woods and Clapp.

Dispensary Instruction to small sections.

The courses in Ophthalmology and Otology are designed to familiarize the students with the common diseases of the eye and ear, their recognition and treatment, with a view to meet the needs of the general practitioner. Special emphasis is laid upon the relation between diseases of the eye and the ear and systemic diseases of other organs.

LABORATORIES OF CLINICAL PATHOLOGY.

Charles E. Simon, A.B., M.D.....Professor of Clinical Pathology
H. J. Maldeis, M.D.....Associate Professor of Clinical Pathology
G. Howard White, A.B., M.D....Associate Professor of Clinical Pathology
Charles C. W. Judd, A.B., M.D.....Associate in Clinical Pathology
H. M. Todd, M.D.....Associate in Clinical Pathology

During the *third year* the student is thoroughly drilled in the technique of the usual clinical laboratory work, so that he shall be able to perform all routine examinations which may be called for during his fourth year, in connection with the work in the wards and dispensary. In addition he is trained to do such advanced bacteriological and serological work as will fit him to occupy an assistant's position in a civil or military laboratory where modern public health and epidemiological work is carried on.

The practical work is supplemented by a series of didactic lectures, and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical, chemical, bacteriological and serological study of the blood, of exudates and transudates, of gastric juice and feces and of urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology and advanced bacteriology, both from the standpoint of the infecting agent and the carrier, are given careful consideration, and the military aspects of these phases of the subject duly emphasized.

The entire course is thoroughly practical. Each student is provided with a microscope, blood counters and hemoglobinometer for his exclusive use, and every two students with a special laboratory outfit for all routine purposes.

During the *fourth year* the student applies in the student laboratories of the various affiliated hospitals what he has learned during the preceding year. He is here also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

THE UNIVERSITY HOSPITAL TRAINING SCHOOL FOR NURSES.

Miss Helen V. Wise, R.N., *Superintendent of Training School.*

The University of Maryland School for Nurses, established in the year 1889, for the purpose of instructing women in the art of caring for the sick, is now entering its twenty-eighth year.

The Nurses' Home, while not a new building, has been recently renovated and is comfortable and cheerful.

The Maryland University Hospital is a large general hospital containing about 285 beds. Unusual advantages are offered the pupil nurses because of the varied services and well thought out curriculum taught by paid Instructors and members of the Medical Staff of the University.

Candidates wishing to obtain the course of instruction must apply personally or by letter to the Superintendent of Nurses. Those applying by letter should enclose a statement from a clergyman testifying to good moral character and one from a physician certifying to sound health and unimpaired faculties. No candidate will be considered who is not physically fit. Applicants must not be under 21 or over 30 years of age. They must show that they have graduated from a High School or have had the equivalent of such a degree of education. The Superintendent of Nurses decides as to the fitness of the candidate for the work and the propriety of dismissing or retaining her at the end of her probation term. The Superintendent may also, with the approval of the Committee, dismiss a pupil from the school at any time for misconduct or inefficiency.

Students for the spring term are admitted in February and March, for the autumn term in August and September.

The Course of Instruction covers three years.

Examinations are held after each course of study and lectures, and the standing of the student at the end of the year is based upon the results of these examinations and the general character of the work throughout the year.

The diploma of the school will be awarded to those who have satisfactorily completed the full term of three years and have passed successfully the final examinations.

To the University Hospital belongs the honor of bestowing upon its graduates a cap that possesses a real history—the Florence Nightingale cap, installed by Miss Parsons, a graduate of St. Thomas Hospital, London, and the first superintendent of the University Hospital Training School for Nurses.

Vacations are given between the first of May and the last of September, and at no other time. A period of three weeks is allowed each year.

Sickness. Pupils when ill will be cared for gratuitously. All time lost for sickness or any other cause must be made up. Should the authorities of the school decide that through the time lost the theoretical work has not been sufficiently covered to permit the student to continue in that year, it will be necessary for her to continue her work with the next class.

Allowances. Every student is allowed $5.00 each month, after the first two months, to defray the expenses incidental to her training, text books, uniforms, etc. Students receive lodging, board and a reasonable amount of laundry work from date of entrance.

A deposit of $5.00 for possible breakage and $5.00 for the payment of textbooks necessary during the probation term is required. If there are no charges against the student the fund is returned to her when she leaves the school.

Pupil nurses are required to be on duty not less than eight hours daily. From one to two hours additional must be devoted to class work and study.

GRADUATES, 1918.

MAUDE ALICE KINNEY	*Maryland*
JUDITH SOPHIA VIBERG	*Pennsylvania*
CECILIA MOORE	*Maryland*
JULIA GRAHAM BIRD	*Georgia*
MINNIE CHRISTINE OLDHOUSER	*Maryland*
IVA MAY DOLLY	*West Virginia*
ESTHER LAMM CARR	*Maryland*
EMMA KATE HOOK	*Maryland*
NAOMI CELECTE KIRKLEY	*Maryland*
JESSIE SINGLETON	*North Carolina*
JEANETTE FLOWERS	*North Carolina*
GRACE BLANCHE LEISTER	*Maryland*
CAROLINE ELIZABETH BARWICK	*Maryland*
MARGARET RUTH LAUPER	*Connecticut*
MARTHA GLADYS MCMILLAN	*North Carolina*
MARION GERTRUDE TURNER	*Maryland*
ELLEN PRICE MCCARTY	*Maryland*
BEULAH GERTRUDE BAY	*Maryland*
GAY MISTER LINSTRUM	*Maryland*
ALTHA ELIZABETH ENSOR	*Maryland*
FLORENCE MARGARET RIDGELY	*Maryland*
HELEN LEE RIDGELY	*Maryland*
NELLIE AULT FLAHARTY	*Maryland*
MARY LEE WARD	*North Carolina*
TEMPERANCE ANN SCOUT	*Delaware*
LENA EDNA MCDANIEL	*West Virginia*
MARTHA HARMON BENSON	*Maryland*
RUTH HELENA YINGLING	*Pennsylvania*

THE MERCY HOSPITAL TRAINING SCHOOL FOR NURSES.

The Mercy Hospital Training School for Nurses, conducted by the Sisters of Mercy and connected with the College of Physicians and Surgeons, was organized and incorporated under the general laws of the State of Maryland in 1899. Its first students were graduated in 1901; and on the passage of the bill for registration in 1904, the Sisters of Mercy, connected with the Hospital service, received certificates as registered nurses.

The Training School was affiliated with the Board of Regents of the State of New York in 1906; and, in the same year, the Alumnae Association was incorporated, having been previously connected with the Associated Alumnae of the United States. The graduates, as active members, have been much interested in the movements of the Maryland Association of Graduate Nurses, to whom they have given every encouragement to uplift the profession in its many works of district nursing, tuberculosis campaign, Red Cross movements, etc.

The requirements for entrance are: highest moral standing, health, intelligence, and a High School education or its equivalent. The age limit is twenty to thirty-five years.

After a three months' probation, candidates, if they possess the necessary qualifications, are admitted to the Training School proper, receiving five dollars a month wherewith to secure uniforms, text books, etc., the education they receive being considered their compensation. The right is reserved to dismiss pupils for any cause which may be deemed sufficient by the Sister Superior or Superintendent.

The course of training comprises three years of theory and practice. The clinical advantages are exceptional. The medical, surgical, orthopedic, gynecological, obstetrical, children's and dietetic departments give valuable practical experience. The nurses are taught the theory of nursing by class recitations and demonstrations by efficient Sister instructors. Supplementing this training is a course of lectures from the ablest professors of the University of Maryland School of Medicine and College of Physicians and Surgeons, who are untiring in their efforts to keep the School abreast with modern scientific developments.

GRADUATES, 1918.

KATHERINE MARIE ADAMS	*Pennsylvania*
IVY REGINA ARNOLD	*Maryland*
MARY ELLEN CONCANNON	*Maryland*
MARIE ADELE CONROY	*Pennsylvania*
MARIE AGNES DOUGHERTY	*Pennsylvania*
AGNES PLACIDA DOORY	*Maryland*
LUCY ARLENE DUTRA	*Pennsylvania*
MARY MARGARET FITCH	*Pennsylvania*
LULU AGNES FLAIG	*Maryland*
GRACE BRIGHT GRIFFITH	*Pennsylvania*
ELIZABETH JANE HARDING	*Pennsylvania*
SOPHIE VERA HERBERT	*Maryland*
GERALDINE CLINE HOBBS	*Maryland*
MARIE ELIZABETH KINNEY	*Pennsylvania*
MARIE ESTHER KRAMER	*Maryland*
MINNIE MAE LANKFORD	*Virginia*
CLARA JOSEPHINE MCCANN	*Pennsylvania*
MARGARET AGNES NOWICKI	*Maryland*
CATHERINE MARIE O'CONNELL	*Maryland*
GERTRUDE LOUISE SCHREIBER	*Pennsylvania*
MARGARET ELIZABETH SHARPE	*Maryland*
THEDA ORLENE SMEICH	*Pennsylvania*
STELLA MARTINI SMITH	*Maryland*
EMILY ROBERTA VAN WERT	*Maryland*
VIOLETTA RUTH WAGMAN	*Pennsylvania*
BERTHA ROSALIE WAGMAN	*Pennsylvania*
FLORENCE RAY WILSON	*Pennsylvania*
ETHEL AUGUSTA WISE	*Maryland*
ROSE ALMA WHITE	*Pennsylvania*

MARYLAND GENERAL HOSPITAL TRAINING SCHOOL FOR NURSES.

MISS GRACE EDNA HARPER, R.N., *Superintendent of Training School.*

The Maryland General Hospital Training School for Nurses has been in successful operation since 1891.

In 1909 the Training School was registered with the Board of Regents of the State of New York.

Its purpose is to give to young women desiring to understand the science and acquire the art of nursing the sick and injured, the opportunity, through instruction and training, to qualify themselves for efficient and skillful work in their humane and useful mission.

A candidate for admission must be between 19 and 35 years of age.

She must have a High School education or pass an examination in the subjects embraced in, or equivalent to, the four years' curriculum of the High Schools of the State of Maryland, and is required to fill in a "student nurse's application" furnished by the State Board of Examiners, which is passed upon by Mr. Charles R. Ranft, Examiner of Preliminary Education.

She must present a certificate from her family physician testifying as to good health and proper physical condition, and certificates from two other responsible persons.

The first six months will constitute a period of probation, in which the candidate must show her fitness before she will be finally accepted as a pupil. The school reserves the right of suspension or dismissal at any time, for inefficiency, misconduct, or infraction of the rules of discipline.

A vacation of two weeks each year is granted.

Pupils are cared for without expense in case of illness, provided they remain in the hospital and are attended by members of the Medical Staff.

The full course of instruction will extend over a period of three calendar years. During the probationary period practical demonstrations are given in the class room, four hours each week. Nurses in training receive instruction in the nursing of medical, surgical, orthopedic, gynecological patients, in operating room work, and also in obstetrics and the nursing of children; in addition to which, courses of lectures are given by the visiting physicians and surgeons of the Maryland General Hospital.

All examinations must be successfully passed before the pupil will be advanced to the work of the following year.

GRADUATES, 1918.

IVA ESTELLE CURTIS	*Maryland*
ALICE EMMA GLADFELTER	*Maryland*
EMMA BELL ST. CLAIR	*Maryland*
MAY BROOKS CLARKE	*Virginia*
BLANCHE VIVIAN CRIMSTEAD	*West Virginia*
MARY GRACE STREETT	*Maryland*
GOLDIE MAY MILES	*Virginia*
LOIS HELEN HORSTMAN	*Maryland*
LOUISE FRANKLIN HARVEY	*Virginia*
MAY ISOBEL MAUL	*Maryland*
FRANCES LOUISE KLINGSTINE	*Maryland*

ENDOWMENT FUND.

The following, all Alumni of the University, constitute the Board of Trustees of this Fund:

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This Board is incorporated by act of the Legislature of the State, its legal title being "The Trustees of the Endowment Fund of the University of Maryland," and is independent and self-perpetuating, filling itself any vacancies. Its powers are limited *to the expenditure of the interest derived from the fund,* which is to be applied in the discretion of the Board for the benefit of the University. Contributions, donations and bequests are solicited from Alumni and friends. They may be made to the general or University Fund, to the Medical Fund or to any other department of the University. If intended for the School of Medicine, they may be given to the general medical fund or to some special object, as building, research, library, pathology, hospital, publication, laboratories, gymnasium, scholarship, medal, prize, etc., in which case the wishes of the donor will be strictly regarded. Attention is invited to the "Charles Frick Research Fund," already established in memory of that distinguished investigator. Checks should be made payable to B. Merrill Hopkinson, M.D., Treasurer, Professional Building, Baltimore, Md.

FORMS OF DEVISE OR BEQUEST.

To School of Medicine.

I give, devise and bequeath to the Regents of the University of Maryland a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....

(Here state amount or describe property.)

To Endowment Fund.

I give, devise and bequeath to the Trustees of the Endowment Fund of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic .....

(Here state amount or describe property.)

ALUMNI ASSOCIATIONS.

UNIVERSITY OF MARYLAND MEDICAL DEPARTMENT.

All alumni in good standing are eligible to membership.

The membership fee is $1.00 per annum, payable in March.

The annual meetings are held on or about Commencement Day, and an orator will be selected to deliver an address upon these occasions.

The Banquet, which follows the delivery of the oration, is a reunion of old classmates, to which members who have paid their dues in full and candidates who have paid their initiation fee are admitted without extra charge.

The following are the officers for the current year:

President.

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Vice-Presidents.

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DR. ARTHUR M. SHIPLEY.
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DR. EDWARD A. LOOPER.

Recording Secretary.

DR. GEO. M. SETTLE.

Corresponding Secretary.

J. S. FORT.

Necrologist.

DR. JOS. T. SMITH.

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DR. ALBERT H. CARROLL, *Chairman.*

DR. B. MERRILL HOPKINSON
DR. C. W. VOGEL
DR. JOS. HOLLAND
DR. H. M. JONES

COLLEGE OF PHYSICIANS AND SURGEONS.

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1st Vice-President.

HUMPHRY D. WOLFE, M.D.

2nd Vice-President.

W. C. STIFLER, M.D.

Secretary.
H. C. Knapp, M.D.

Treasurer.
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Executive Committee.
Alexius McGlannan, M.D.
H. K. Fleckenstein, M.D. A. C. Gillis, M.D.

THE GENERAL ALUMNI ASSOCIATION OF THE UNIVERSITY OF MARYLAND.

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Dr. Albert H. Carroll, The Walbert Apartments.

Vice-President.
Edward P. Crummer.

Treasurer.
George Maurice Lee.

Corresponding Secretary.
William K. Stichel, Baltimore and Light Streets.

Recording Secretary.
Frank E. Welsh, Jr.

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Dr. Francis J. Valentine

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JUDGE WALTER I. DAWKINS
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MR. E. JOHN W. REVELL
DR. JAMES A. NYDEGGER
DR. JAMES D. IGLEHART
MR. HARRY E. BLAKE

YOUNG MEN'S CHRISTIAN ASSOCIATION OF THE UNIVERSITY OF MARYLAND.

The Y. M. C. A., since its establishment twenty years ago, has had a splendid influence in helping to mould the character of the students at the University.

All students in each department of the University are eligible to active or associate membership. Membership in the University Association entitles the holder to special privileges in the City Association. Bible and Mission Study Classes and Social Service Work are promoted by the Association and every effort is exerted to build morality and strong Christian character.

A committee will be on hand in Davidge Hall at the opening of the session to welcome all new students to the University. This committee will be glad to render assistance in securing comfortable rooms and boarding houses, and will extend every other courtesy possible. Each new student will be handed a copy of the handbook, a publication issued by the Y. M. C. A., containing valuable information.

All young men who intend to enter the University are cordially invited to share in the privileges and work of the Association.

The officers named will be glad to furnish any information desired in regard to the Association, and will be glad to render any assistance. Correspondence should be addressed to Fred C. Sabin, President.

UNIVERSITY OF MARYLAND.

DEPARTMENT OF ARTS AND SCIENCES.

St. John's College, Annapolis, Md.

THE FACULTY.

THOMAS FELL, M.A., Ph.D., LL.D., D.C.L., President, Professor of Moral Science.
JOHN BROCKWAY RIPPERE, M.A., Vice-President (Graduate of Wesleyan University), Professor of Latin.
JOHN B. WHITE, M.A., L.H.D. (Graduate of Geneva College), Professor of Greek and Latin.
BENJAMIN HARRISON WADDELL, M.A., L.H.D. (Graduate of Washington and Lee University) Professor of Mathematics.
ADOLF SCHUMACHER, Ph.D. (Graduate of Gottingen University, and University of Pennsylvania) Professor of Modern Languages.
REGINALD H. RIDGELY, B.S., M.A. (Graduate of St. John's College), Professor of Biology.
SIDNEY S. HANDY, B.A., M.A. (Graduate of Columbia University), Professor of English.
CLARENCE W. STRYKER, B.A., M.A. (Graduate of Union College), Professor of History and Economics.
I. M. GAYMAN, A.B., M.S. (Graduate of Lafayette College), Professor of Chemistry.
HAROLD BRENTON SCARBOROUGH, B.A., M.A. (Graduate of St. John's College), Professor of Drawing and Physics.
DUNCAN ELLIOTT, U.S.A., Captain United States Army, Professor of Military Science and Tactics and Lecturer on International and Constitutional Law.
THOMAS L. GLADDEN, M.A., Instructor in Latin and Mathematics.
ROSCOE E. GROVE, B.A. (Graduate of St. John's College), Instructor in German and English.
ROWLAND HAZARD, Assistant in English.
SARAH BERRY, Registrar and Secretary for the President.

DEPARTMENT OF DENTISTRY.

The Regular Winter Season begins on October 1 of each year, and continues until the following May.

The requirements for admission are the same as in all other reputable dental colleges.

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COLLEGE OF PHYSICIANS AND SURGEONS AND MERCY HOSPITAL

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BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. III OCTOBER, 1918 No. 3

EPILEPSY[1]

BY IRVING J. SPEAR, M.D.

Professor of Nervous Diseases, University of Maryland

Epilepsy, called by the ancients, the sacred disease, was ascribed by the Asclepiadae to the action of evil spirits on the body. Hippocrates in his treatise on disease denies this theory and maintains that there is no such thing as a sacred disease; but that all diseases arise from natural causes and no one can be consistently ascribed to the gods more than another. He argues that the only reason for its having been regarded as divine is that its nature is incomprehensible.

My discussion is concerned with the nature of this illness, and will concern itself with the part of the body that is at fault and the process or processes that produce the manifestations of this disease, its prognosis and treatment.

It is unnecessary before such an audience to call attention to the fact that the disease epilepsy consists of two phases: the interval period characterized in some individuals, by a peculiar make-up, so well described by L. P. Clark in the *New York Medical Journal* of May 4, 1918, as individuals who are eccentric, supersensitive, with

[1] Read before the Baltimore County Medical Society, August, 1918.

marked emotional poverty and rigidity—and the attacks, in all their variations and phases.

The epilepsies, I think you will all agree with me, can be divided into two general groups: the symptomatic epilepsies and the idiopathic or essential epilepsies. The problem for discussion is first, what particular portion of the body is concerned directly with the production of the epileptiform seizure and the characteristics of the interval phase; and secondly what is the direct mechanism, change or abnormal process which brings about an attack in any of its variations.

I believe it is the general consensus of opinion of all epileptiologists that the brain under which term is included the cerebral hemispheres, cerebral peduncles, pons, medulla and cerebellum, is the special portion of the body in which there occur changes which result in the production of an epileptiform seizure and which may be so modified as to give rise to the peculiar mental characteristics of some epileptics.

L. J. Pollock in the *Journal of Nervous and Mental Diseases*, February, 1918, discusses at length the various regions of the brain which may be affected and thus give rise to the diverse symptoms of epilepsy. He comes to the following conclusions: that the clonic movements of a seizure are due to involvement of the cerebral cortex. The tonic movements to subcortical involvement; that loss of consciousness is not due to cortical irritation but to some subsequent factor; and that the aura is dependent upon the area irritated; that the pons and medulla are the only parts of the brain that are essential for the production of experimental convulsions. These conclusions are deduced from the many experiments that have been carried on on animals and in the course of operative procedures, on human beings. These experiments and investigations were carried on by means of electrical and chemical stimulation of the cortex, by the action of drugs on the cortex to prevent cellular activity, by the ablation of cortical areas, by the removal of almost the entire hemispheres or cerebellum, irritation of the subcortical areas and the basilar ganglia, the observation of seizures and subsequent demonstrations of pathological changes in various areas of the brain.

Symptomatic epilepsy, you all know, can and does occur in individuals who have been in every way normal, and who, in the interval between attacks, do not present the mental characteristics

of the interval phase of so many of the idiopathic epilepsies; or if they do show mental anomalies or peculiarities, they are usually associated with the causative condition. These epilepsies can be produced by local cerebral irritation such as depressed fractures, tumors, foci of irritation secondary to meningitis or encephalitis, areas of softening subsequent to vascular disease, more or less general cerebral irritation secondary to infection and toxaemias such as occur in infectious diseases, tetanus, drug and intestinal toxaemias, abnormal functioning of the thyroid or other ductless glands. In many of these cases, the fact that if one absolutely removes the causative agent there is an absolute disappearance of the seizures, no matter what happens to be their particular type, seems to be sufficient evidence that typical epileptic seizures may be occasioned by physical or chemical irritation of the brain. You are also familiar with the fact that in a considerable number of the Jacksonian epileptics, there is no disturbance of consciousness, the manifestations remaining purely local. This fact bears out the statement made by L. J. Pollock that the disturbance of consciousness is not due to cortical irritation but that as the irritation spreads it involves some subcortical area which is responsible for the loss of consciousness.

When one enters into discussion of the changes that take place in the cerebral structures in individuals that are affected with the essential or idiopathic epilepsy, one enters a field in which there exists a great diversity of opinion. According to Binswanger, of Jena, there are two directions in which the discussion of these changes in epilepsy is progressing: the one is the anatomic and the other is the psychologic.

The Nernst theory of the production of an epileptiform seizure is that the ions of a cell becomes surcharged, the semipermeability of the cell membrane is increased and true electrical discharge takes place until polarization is changed and exhaustion occurs; this being the opposite condition to what occurs in the cell membranes during anaesthesia.

Pathological examination of the brains of individuals who have been affected with epilepsy for many years do not show constant changes which might be ascribed as a causative condition; but which may be attributed rather to the existence of the disease, being the effect rather than the cause. There are slight nerve cell changes, dilatation and atrophy of blood vessel walls, perivascular infiltrations, punctiform hemorrhages, sometimes hyaline masses

in the smaller blood vessels and increased in the neuroglia tissue situated in the outer layers of the cortex and cornu ammonis. The meninges generally show slight thickening and infiltration.

A history of the existence of neural defects, either similar or dissimilar, is positively available in 33 per cent of cases and very likely positive in a much larger percentage. A history of tuberculosis, alcoholism, unfavorable physical surroundings, or mental discord can be elicited in certainly 50 per cent of the cases. In other words, in a very large percentage of the idiopathic cases, it would appear as if either an inherited or maternal influence affected the germ cells in some harmful way and thereby produced a deficient inhibiting power.

E. Starkey in the *New York Medical Journal*, February 16, 1918, states that in epilepsy the cerebral cells are hypersensitive to physical, chemical, and psychical stimulation. Russell and Francis Hare assert that the attacks are the result of a circulatory disturbance. C. Tsimimakas has produced epileptiform seizures by sudden compression of the carotids, that differed in no way from the typical major seizure. In support of this theory are the well known convulsions of Stoke-Adams disease, the Kausmaul-Tenner fits provoked by ligature of the internal carotid arteries and spasms consequent upon electrical stimulation of the cut vagus nerve. Russell contends that the fundamental factor underlying the epileptic fit is cerebral anaemia.

Toxaemic theory is supported by Binswanger, and many others. Donath to the presence of cholin in the blood and spinal fluid; disturbance in the rate of the coagulability of the blood; diseases of the ductless glands; Krainsky's theory, the formation of carbonic acid; Reed of Cincinnati, who revives the bacillus epilepticus, etc.

There is one other theory that should be mentioned, that is the Freudian conception that true epilepsy is a psychosis and that a careful analysis of disturbing dreams, etc., will show that the attacks may be due to perverted sexual desire or an effort on the part of the victim to escape the trials and discomforts of life and to return to an intra-uterine existence.

I have given this subject much thought and carefully gone into the histories of one hundred cases whose records I have at my office and whose histories were obtained under my personal supervision. In this group there are all varieties of epilepsy. The symptomatic and the idiopathic: in some the cause was definitely ascer-

tainable and the outcome depended upon the possibility of its removal. In many there was a distinct hereditary history of neural or mental anomalies. In about one-third a history of alcoholism or tuberculosis in one or both parents. In quite a few a history of cerebral trauma, either at birth, or within the first few years of childhood. In extremely few was I unable to discover either an hereditary neural insufficiency, a physical insufficiency in the ancestry, mental or emotional stress in the mother during pregnancy, physical or toxic acquired cerebral trauma, or marked psychic disturbance affecting the individual. It would appear to me from a careful consideration and observation of those cases which I have seen and from a dispassionate consideration of the experience of others, that either as the result of congenital or an acquired anomaly there exists a state of easily disturbed equilibrium of the cerebral cells. That, in some cases, this disturbed equilibrium is accompanied by marked organic changes but in others, if anatomic changes exist, they up to the present time, have defied demonstration; that granting such a state of dis-equilibrium exists a seizure may occur or the first seizure may be produced by any form of irritation whether it is physical, toxic or psychic.

The attack manifests itself in several ways, the major attack in which with or without the occurrence of an aura, the affected individual suddenly with or without warning loses consciousness, falls, becomes rigid, respiration ceases, cyanosis appears, this phase gradually merges into the clonic state when there occur contractions and relaxations of the various parts of the body, breathing stertorous and noisy, from this phase the individual emerges more or less confused and either may resume his previous occupation or may go to sleep for a variable period. The tonic phase lasts from ten to forty seconds, the clonic from one to ten minutes, the mental confusion and sleep either may not occur at all, or last from a short period to several days. In the minor attacks there occurs a momentary loss of consciousness which may or may not be accompanied by a motor involvement, there are all grades of attacks, varying from the severe major attacks to the mildest minor attacks, and in some cases it is difficult to say whether an attack belongs to the minor or major variety.

Then there occurs a third variety, the so-called psychic attacks, in which the individual suddenly ceases to continue with that which he was occupied and without reason pursues a different

line of interest which may last from a few moments to several hours, after which he may sleep or regain his normal consciousness and have no recollection of the events which transpired during the attack. I need only to mention nocturnal and diurnal as being descriptive of the time when attacks occur.

Major, minor or psychic attacks may occur in one person, or the affected individual may have only one type, or for a time one type of attack, and at a later period another type of attack. The prognosis depends largely upon the discovery of a direct cause and the possibility of its complete removal. Unfortunately in many cases no such cause can be discovered and in others the prognosis of the causative condition itself is extremely grave. It is very difficult to even approximately give figures to state the prognosis; in the idiopathic epilepsies 5 to 10 per cent are cured, in the symptomatic epilepsies a larger number yield to treatment.

TREATMENT

The treatment of epilepsy resolves itself into the following four branches:

1. The careful examination to discover the possible cause and its treatment, here one must be careful when the examination reveals an apparent cause not to be misled, for example the presence of a positive Wassermann reaction, or the history of syphilis does not always mean that syphilis is the cause of the condition. W. T. Shannon, J. F. Munson and A. L. Shaw in the *New York Medical Journal* of April 29, 1916 have made a careful study of the relation of syphilis to epilepsy, and they come to the conclusion that an epileptic with syphilis is not necessarily an epilepsy due to syphilis, but that syphilis is one of the agencies which may produce epilepsy.

The occurrence of gastro-intestinal disturbances, kidney disease, etc. does not always mean that they are always responsible for the epilepsy, but of course should be given careful consideration.

2. The patient should lead as physiologic life as possible; to attain this end life in a camp or on a farm, free from physical or mental strain, should be adopted. Under these living conditions the diet should be so modified that as little strain as possible be placed on those organs which have to do with oxidation and metabolism; therefore meats are to be greatly restricted, and the carbohydrates diminished; the diet should consist largely of fruits, milk, light meats, vegetables and water in abundance.

3. The avenues of elimination should be kept freely open, warm baths, salines occasionally and I find small doses of licorice powder given constantly to be very beneficial.

4. The medicinal treatment, here one of course must be guided by the cause of the disease and the type; in many infants and very young children where there is noticed a marked tendency to jerkings, to spasms and tonic states, a condition called spasmophilia, marked benefit is obtained by the administration of small doses of calcium lactate or citrate along with treatment directed toward the general hygienic and dietetic care of the child.

One must be certain before proceeding further that all physical abnormalities, that it is possible to correct, have received the proper attention; this includes attention to the teeth, eyes, ears, nose, throat, genital tract, etc.

In the absence of causative findings and after correction of physical and reflex abnormalities, if they exist, of all the drugs at our disposal the bromides seem to be most effective, the effect of this drug is enhanced and the dosage smaller if one practices the sodium chloride withdraw as introduced by Richet and Toulouse. I am in the habit of limiting to the smallest possible amount the quantity of salt used in the preparation and in the food of the epileptic. I invariably find that when this is practiced smaller doses of the bromides are required. As to the particular preparation or salt of bromide used I find it makes very little difference. When giving the doses at infrequent intervals, such as once or twice a day, I believe the potassium salt to be the better, as it is more slowly eliminated. The sodium salt should be used when the dose is given three or four times a day.

CONCLUSIONS

1. That the brain is the portion of the body directly affected in epilepsy; that cortical disturbance is responsible for the clonic phase and aura, that the subcortical regions are involved in the tonic phase; that consciousness is not lost until the process involves the brain extensively.

2. In symptomatic epilepsy the pathological processes that may occur in the cerebral structures and cause irritation are: secondary to trauma, circulatory disturbances, inflammatory changes, new growth or toxines; toxines may be introduced into the body and be of any variety or may be formed within the body as the result of

gastro-intestinal disturbances, disturbed function of the kidneys, ductless glands, etc., or may be formed as a result of emotional disturbances.

3. In the idiopathic epilepsy either, as the result of an inherited or acquired defect, there exist a deficient inhibitive state in the cerebral cells, and they are consequently more easily set into a state of unrest; and the more frequently the state occurs the greater the ease with which subsequent spells happen.

4. Every individual who is affected with spasmotic seizures is entitled to a most careful and thorough examination to discover, if possible, an underlying cause of the attacks; so that treatment can be directed not only toward the prevention of other attacks, but toward the removal of the cause, and thereby, possibly, bring about a cure of the condition.

NEPHRITIS—FROM BACTERIAL INVASION—AND VACCINE TREATMENT

By J. Walter Layman, M.D., B.M.C. 1910

Hagerstown, Maryland

For the subject of this paper I may group nephritis as follows: Acute: caused by infection and accompanied by acute febrile conditions, like diphtheria, pneumonia, scarlet fever, measles, etc. Toxic: occurring in pregnancy and acute yellow atrophy of the liver. Chemical: due to strong chemical poisons such as lead, mercury, copper and the like. In these acute conditions the kidney usually recovers itself and function when the causative factor is removed and they do not enter into the discussion of this paper.

CHRONIC NEPHRITIS

It is chronic nephritis of which I wish to speak. Upon looking over the etiology of acute nephritis, one is struck with the frequency with which this condition accompanies the acute infectious diseases. For instance, it is well known that nephritis often complicates scarlet fever, diphtheria, measles, lobar pneumonia, influenza and many others. And what is more, there is always to be found in these complications a strain of bacteria common to all, namely, the streptococcus group. This I hold to be responsible for the

accompanying nephritis whether due directly to the bacterial invasion or to the toxins thereof. In chronic nephritis might we not have the same causative factor of longer duration? I think in every recent case of chronic nephritis and hypertension that I have examined I have been able to get a history of infection. They come to you with that wasted expression, that feeling of exhaustion and lack of energy; and in short, these patients feel they are no longer useful members of society.

I know that there is a definite school of thought which holds that toxins are in many cases of nephritis the etiological factor. But from where come the toxins? And what are toxins? A toxin is a poison—any poisonous albumen produced by bacterial action. Then without bacterial invasion we cannot have toxins. Whence come the toxins? Again the answer must be—"From bacterial invasion."

Groups of Bacteria Found and their Habitat

Strepto and Staphylococci	Head and sinuses
Influenza bacillus	Tonsils, throat and mouth
Pneumo coccus	Lungs and bronchi
Colon group	Intestines
	Gall bladder
	Kidney and urinary bladder
	Prostate gland
	Pericardium
	Pleura

It is a well known fact that these bacteria grow well and will live a long time in shut-in places. Take the streptococci, pneumococci and influenza group. Their favorite habitat is found in the mouth, at the roots of old teeth, in and around the tonsils, in the sinuses, the nasal fossae, the middle ear, the larynx, the bronchi, and even the lungs, there setting up their poisonous material to be absorbed by the blood. Likewise the colon group find favorable soil in the intestines, the gall bladder, the kidney themselves, the urinary bladder and prostate gland. Wherever they may be allowed to harbor and grow, they do so at the expense of their host. To use Metchnikoff's words "the microorganisms inhabiting our bodies have set going a poison factory, which cuts short our existence, and by secreting poisons which penetrate our tissues, injure all our most precious organs, our arteries, brains, liver and kidneys.

OCCURRENCE OF CHRONIC NEPHRITIS

By far the vast majority of the cases of chronic nephritis occur in middle life or past, and occurring, I believe, more frequently in men than in women. It is seldom you find a case of chronic nephritis in young persons. But when such a case is found, what do you at once seek for? Some fever! Did you ever have scarlet fever? If the answer is in the negative, then you say did you ever have measles, diphtheria, pneumonia, etc., until you find the history of acute infection. And you will accept it as a fact without any reasonable doubt that this patient's trouble followed his acute infection. But whether it was of the bacteria themselves, or their toxins, it makes no difference. But what about the man coming to you in middle life or past? Do you inquire about his history? Possibly it may seem a long way from this man's active life back to his childhood days and diseases, and you fail to connect his past history with his present disease, or you have not attached much importance to that or subsequent and existing infections. If infection can cause nephritis in the first instance why may it not do the same in the second? In the first case you have the causative factor before you, as something the patient remembers. In the second, you may have the same infection past, or hidden in the present, now slowly at work. The fact that most cases occur in middle life or past, has its bearing. These patients have received their infection early in life and with the vigor of youth they have withstood them. But at the noon-time of life they begin to show signs of wear. Or, if perchance, they have escaped infection early in life, they may have caught it on the way. It may have been a winter's "Grip," or a summer's "cold," a neglected tooth, or a forgotten tonsil. In one or other of these have grown these invading bacteria.

Along with the nephritic condition, preceding or following it, we get the hypertension so common in this condition. If I may be allowed to express my opinion, I would say that the same source of infection which causes the nephritis causes the hypertension or vice versa.

To my mind chronic nephritis and high arterial tension is a picture of a chronic and sustained infection, in which the kidney has been impaired in anatomy and in function. Other organs have suffered to a greater or less extent according to state in which the condition is met.

When a case of this character presents itself to me, I look for infection. I examine his teeth and tonsils, his nasal fossae and sinuses, his gall bladder and appendix. I hunt until I have found, either in his history or in his body, a genuine infection.

What can be done for these sufferers, depends in a large measure of course, as to what time in their degenerative progress they are seen. If seen early, before great damage has been done and a focal infection removed, or properly treated, much improvement can be expected.

TREATMENT

In no other disease is prophylactic treatment of more importance than in chronic nephritis. And if we look at this condition as due to an infection, we are better able to render efficient prophylactic treatment. This means that we must not allow our patient to go about harboring an infection of any sort. We must clean up his cold, see to it that he harbors no bacteria in his nasal passages or sinuses, give proper treatment to his tonsils, render efficient treatment to discharging ears, look after his throat and bronchi, be on the alert for an inflamed appendix, watch for the infected gall bladder, examine his kidneys, prostate, and urinary bladder. In short, it should be the duty of every physician to always satisfy himself that his patient harbors no infection, or if he finds one to use his best effort to remove it. In this connection, we should see that our patients get enough outdoor exercise. I have no doubt that this is a potent factor in bringing on nephritis in middle age. About this time in life a man's burden are generally heavier, and too often he neglects a proper amount of recreation in the open air.

MEDICINAL TREATMENT

There is no known drug that will remove albumen from the urine, and no agent or procedure which will restore the wasted secreting cells of the kidney. The treatment must be directed to the causative factor.

Having decided for myself that some latent or active infection is the exciting cause of chronic nephritis manifested by the presence of albumen in the urine, I decided to treat some of these patients with a vaccine, made as nearly as possible to conform with the invading bacteria which were suspected to be the exciting cause in each case.

The number of cases so treated is rather small, but yet I think the results obtained justify a continuance of their use. I will give here a few representative ones.

Case 1. A Mr. W——, aged fifty-four, locomotive fireman, married, enjoyed good health until eighteen months ago, when he was forced to quit work because of "shortness of breath," and attacks of vertigo. Family history negative. Past personal history negative except he had rather frequent attacks of "rheumatism" lasting from two to three weeks at a time.

Examination. Head: nasal passages normal, several badly decayed teeth and affected tonsils. Heart, somewhat hypertrophied and a distinct systolic murmur. Blood pressure 260 mm. of Hg. systolic, and 180 mm. diastolic. Lung containing many sibilant râles and somewhat emphysematous. Abdomen and lower extremities negative. Urine: gets up about twice at night. Examination shows very large amount of albumen by the nitric acid and boiling test which amounted to about half of the quantity of urine in the form of a precipitate in the test tube, which I shall designate as x x x. In conjunction with the usual remedies to lower blood pressure, I started him on a special vaccine made for me from the bacteria which his rheumatism history would suggest, namely the streptococci, pneumococci, influenza bacilli and colon group, giving him an increased dose every other day, covering fourteen days in all. At the end of this period his urine was examined and showed only traces of albumen. He was again started on a two weeks course of vaccine after a rest of a week, and gradually brought to febrile stage. Urine examination this time showed not even a trace of albumen. His blood pressure was also reduced to 210 mm. systolic and his general health was much improved. Indeed, so well did this man feel, that, against my advice, he went to work. His blood pressure continued high but repeated examination of his urine showed, at times, only traces of albumen. This man went on much improved in health for about six months and died suddenly of hemiplegia.

Case 2. A Mr. E——, age twenty-seven, married, came to me for relief from asthma. Family history had no bearing on his case. Had usual diseases of childhood and suffered much from attacks of "cold in the head." Never had any serious illness except the one from which he sought relief.

Examination showed a large nose, rather high and elevated at the bridge, broad and dilated nostril. It presented a "stuffed-up" appearance and both nares were the site of hypertrophic mucosa. Heart negative, lungs somewhat emphysematous and hyperresonant. Abdomen negative. Urine contained albumen x. He was started on a vaccine containing the influenza bacillus, pneumococcus, streptococcus and colon bacillus. He was given on an average of about 150 million killed bacteria of each strain, on alternate days for a month, when his urine showed no albumen, and his asthmatic seizures were less frequent and less severe. A year later I again had occasion to examine this patient's urine and no albumen was present.

Case 3. Mr. J——, age thirty-five, married, came in because he thought he had kidney trouble, was losing weight and had to get up twice at night to void. About twelve years ago he had a severe attack of "La Grippe,"

which lasted about four weeks. Since that time the patient had not been ill except for some little digestion disturbance.

Examination. Both nostrils somewhat congested and mucosa hypertrophied, teeth and tonsils negative. Heart normal, blood pressure 120 mm. systolic and 70 diastolic. Lungs negative, abdomen negative. Urine showed albumen x x. Patient started on a course of vaccine treatment as suited his exciting factor and kept up for two weeks on alternate days, at which time he had gained 1½ pounds, was feeling better, got up only once at night and his albumen was reduced from x x to x. Treatment was continued for another two weeks in which time the patient had gained in weight, was feeling better, did not need to get up at night and urine contained no albumen. The patient was told to come back at the end of a month, which he did, and was continuing to take on weight and his urine remained free from albumen. I have not seen this man since but I understand that he is now enjoying good health.

I think this last case better illustrates the class of persons in whom we may expect our best results, because their degenerative changes have not progressed far enough to seriously affect their other organs.

From the evidence here presented nephritis is to my mind a result of an infection, generally of the streptococci, pneumococci, influenza and colon bacilli, which condition can be cured or greatly benefited by a suitable course of vaccine therapy. I no longer hold up my hands when a patient presents himself with chronic nephritis, but in the light of past experience I tell him he can be cured or greatly helped.

In this connection I think the public should be taught something about kidney diseases. Nowhere is it more important than in kidney diseases to have frequent examinations. For as we all know, the early cases are the ones that give us our best results. Shall we not then say to the people, "Be examined at least once a year by a competent physician?"

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

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NATHAN WINSLOW, A.M., M.D., *Editor*

THE OPENING OF THE 111TH SESSION OF THE MEDICAL SCHOOL

In 1807 the College of Medicine of Maryland was chartered by the Legislature. Since that time its doors have never been closed. In war time and in peace it has continued to perform its functions. It has survived the stress of financial panics and of domestic and foreign strife. The present session, however, opens under peculiar and ominous conditions. The United States is engaged in the greatest conflict in all history; one not of its own choosing but forced on us by the diabolical acts of the Teutonic races and their unspeakable allies. A country that loved peace has been called to arms, and the red-blooded patriots have responded to the summons with marvellous alacrity. It was to be expected, therefore, that many young men who would have studied medicine have felt the stronger call and have entered the military service. On this account there will be fewer students in the medical schools this year than usual. In addition the two years of college work, as a premedical requirement, went into effect this year and has served also to diminish the number of freshmen. The Government, however, recognizes that it is essential to keep up the supply of physicians and in order to effect that purpose, it has enlisted all medical students who are between eighteen and forty-six years of age, and has sent them back to their colleges. This means, practically, all male medical students. The medical school of the University of Maryland will, therefore, be under the supervision of the Government. The students are United States soldiers, who will live in barracks and be under military discipline. They will receive their uniforms, will be paid $30 a month and their tuition will be paid for them.

They will have to drill a certain number of hours weekly under army instructors; will rise with the reveille and go to bed with taps and must conform to army regulations. Rations will be furnished them at the expense of the Government. For these advantages they will be required to make good in their studies and those who do not or cannot keep up with their classes will be promptly withdrawn and put into the army as privates. They will be housed at the old 5th Regiment armory on Howard street. These arrangements entail a large additional burden on the university but this will be met patriotically and loyally. The medical and dental students will form a battalion of about four hundred men.

Hydroceles Containing Spermatozoa

Spermatocele is said to be a cyst, usually of small size, separate from the testicle and epididymis and not communicating with the tunica vaginalis. It is supposed to be due to a degeneration of some of the fetal remains about the testicle and epididymis, such as the hydatid of Morgagni; the organ of Giralde; the vas aberrans and the vas du rete. From any of these structures a cyst may develop, which usually contains spermatozoa. These cysts do not attain a large size, are not painful and cause but little discomfort. These are doubtless the true spermatoceles, but spermatozoa are also found at times within the tunica vaginalis, in what appear to be ordinary hydroceles. The occurrence at the University Hospital of 5 such cases in a period of about 12 months, has called our attention to this condition, which seems to be more frequent than we had supposed.

I do not know that any special significance is to be attached to the presence of spermatozoa in these hydroceles. It would be interesting to know in what manner they reach the tunica vaginalis. In the cases of which I have notes no mention is made of an injury except in one instance, that of a man fifty-five years of age who was struck on the scrotum when he was a boy. He had had a hydrocele forty years but there is no way of determining whether spermatozoa had been present in the sac for that length of time. The ages of those seen at the University Hospital varied from twenty-seven to eighty-three years. There was nothing in the external appearance of the cysts to differentiate them from ordinary hydroceles. Possibly by transillumination the light would not show as clearly as when the sac contained straw colored fluid. They were all operated

upon on the diagnosis of hydrocele, and it was only after the fluid was seen to be milky in color and turbid that it was thought advisable to have a microscopical examination made. This, in each case, showed spermatozoa in abundance. The presence, therefore, of a milky fluid in a supposed hydrocele should arouse our suspicion that spermatozoa have become mixed with the contents of the hydrocele. The treatment does not differ from that of an ordinary hydrocele.

We have found records of the following cases.

Case 1. A. S., age twenty-four, admitted April 26, 1917 in the service of Dr. R. P. Bay. He has had a swelling in the scrotum for two years. When the sac was opened, watery fluid and gelatinous material escaped, which when it was examined showed spermatozoa. The tunic was sewed back of the testicle,—Jaboulay's operation—and the man made a good recovery.

Case II. W. E., age fifty-five, admitted April 10, 1918 in the service of Dr. Frank Lynn. This man has had a swelling in the left side of the scrotum for forty years. It is now the size of a large orange. He says he was struck on the scrotum when a boy. Dr. Lynn on making an incision into the hydrocele found another sac connecting with the tunica vaginalis and extending up to near the external abdominal ring. The fluid was turbid and contained many spermatozoa.

Case III. M. S., age eighty-three, admitted May 3, 1918 in the service of Dr. R. Winslow. He is a very weak white man, somewhat jaundiced, with tenderness and muscle spasm over the gall bladder. He has a very large hydrocele on the right side, which has been present for thirty years. The hydrocele was tapped and 900 cc. of a whitish fluid was withdrawn. This fluid contained numerous actively motile spermatozoa. The patient's age and physical condition did not justify any radical procedure. This case is somewhat remarkable on account of the numerous spermatozoa found in a man of his advanced age.

Case IV. J. P., age fifty-six, admitted May 19, 1918 in the service of Dr. J. W. Holland. He has a right sided scrotal enlargement of two years duration. There is considerable pain. The pre-operative diagnosis was hydrocele. On incising the sac, 400 cc., of turbid fluid escaped, which contained spermatozoa as was shown by a microscopical examination. The condition was cured by an excision of the sac.

Case V. Probably occurred in the service of Dr. Page Edmunds and was operated on by Dr. Reifschneider, but the records of the case are not available at this time.

The Southern Medical Association

We are requested to announce that the twelfth annual meeting of the Southern Medical Association will be held at Asheville, N. C., November 11–14; and to invite our readers, whether members or not,

to attend. This association is the most important medical society in the South, and ranks next to the American Medical Association in members and in influence. Asheville is an ideal place for a medical gathering and the date is also propitious, as it affords an opportunity to get away, for a time, from arduous work, and to enjoy rest and recreation in the invigorating atmosphere and amidst the beautiful scenery of the "Land of the Sky."

The Influenza Epidemic

Baltimore, in common with the rest of the country, has been visited by an epidemic of influenza of enormous proportions. It is popularly called "Spanish flu," but there does not seem to be any real difference between this epidemic and that of 1889–90, which was known as "Grippe." This outbreak, however, is more widely extended and more virulent than any of its predecessors and it is much more fatal. Pneumonia is the chief and most serious complication and the mortality is very high. It is probable that many of these cases are due to the streptococcus hemolyticus or to mixed infections. The disease affects chiefly young adults, while the middle aged and elderly people escape. This is probably due to the fact that the older people have acquired immunity through previous attacks. Whether this epidemic is the result of war conditions abroad and in this country the writer does not know, but it seems that almost every war is attended with epidemic outbreaks of one kind or another. The situation in Baltimore has been so serious that the health authorities have been obliged to apply drastic measures to limit the spread of the disease. All schools, colleges, theatres, moving picture parlors, concerts, public meetings and churches have been closed. Hospitals have been closed to visitors and their activities have been materially diminished, as most of the nurses and of the resident staffs have been affected with the disease. In the city, and also in the counties, the physicians have been overwhelmed with work and people have been unable to obtain the services of doctors and nurses in not a few instances. In common with other institutions the University of Maryland was obliged to discontinue its classes. There has been considerable sickness among the students but fortunately with but slight mortality. At this writing the epidemic seems to have reached its zenith and we hope for a speedy return to normal conditions.

Death of Professor Albert T. Chambers, M.D.

Dr. Albert T. Chambers, professor of clinical surgery in the University of Maryland, succumbed to pneumonia on October 14, 1918. Five days previously while operating at the Franklin Square Hospital he was taken with a chill, and at once became desperately ill and his condition became progressively worse until the end. He was born in Virginia forty-three years ago. He graduated at the University of Maryland in 1898 and was the first honor man of his class. Subsequent to his graduation he taught osteology in his Alma Mater; later he became professor of operative and clinical surgery in the Maryland Medical College and for several years he had been again connected with the University of Maryland as professor of clinical surgery. For the last six years he had been a member of the Board of School Commissioners of Baltimore City. He was an able man and an estimable gentleman and his death will cause a distinct loss to the school and the community.

GOVERNMENT NOTICES

Treasury Department
Bureau of
the Public Health Service
Washington

Office of the Surgeon General

September 24, 1918.

To the Editor:

The ultimate withdrawal of more than 30,000 physicians from communities throughout the country imposes an additional obligation upon the people to avoid unnecessary illness, to correct physical deficiencies that may lead to illness, and to so order their living habits, their activities, their indulgences, that they may not only avoid illness but increase their physical capacity to the utmost.

Although the demands upon your space are very great, the U. S. Public Health Service will deem it a valuable contribution on your part to the health conservation of our country if you will give the following bulletin as extended and prominent a space as the exigencies permit.

Very truly yours,

Rupert Blue,
Surgeon General.

Health Instructions through Draft Boards.

Washington, D. C., September 23.—Provost Marshal General Crowder to-day called attention to a circular of instructions prepared by the United States

Public Health Service for registrants declined in the draft because of physical disability. The circular, copies of which have been placed in all the local draft boards throughout the country is the result of a recommendation made to General Crowder by Surgeon General Rupert Blue of the U. S. Public Health Service. The Surgeon General points out that in the first draft about one-third of the men examined were rejected for physical disabilities and that hundreds of thousands will be added as a result of the examinations to be made of the new registrants.

"It is highly desirable," said Surgeon General Blue, "that the men found to be disqualified for military service by the examining physicians of the local draft boards should receive definite instructions as to the meaning of their disabilities and that a strong appeal be made to them to correct these disabilities as far as possible. But the object of this measure is not, only to reclaim men for military service or for such service as they can perform, but to lessen the burden of illness and disability among those engaged in essential industrial work. It is hoped that the instruction in this circular, which is really a primer of the physical defects of the nation, will reach far beyond the draft board and be utilized by all agencies interested in improving the public health to instruct the people with regard to their physical deficiencies and the ways and means by which they can be remedied."

According to the U. S. Public Health Service experience everywhere shows that the proportion of persons with physical impairments is considerably greater in persons between 30 and 40 than in those between 20 and 30 years of age. This waning vitality at ages over 30, so commonly accepted as inevitable, can be postponed to a large extent. In this connection, it is pointed out that 60 per cent of the physical defects found in the last draft were of a preventable or curable nature.

In addition to furnishing all the local draft boards throughout the country with a sufficient number of the circulars to supply one to each registrant rejected because of physical disability, arrangements have been made to furnish specimens of the circular to life insurance companies, fraternal organizations, labor unions, employers of labor and others who desire to reprint the circular in its present official form for wider distribution.

"The U. S. Public Health Service will be glad to furnish specimens of this circular on application and urges all organizations that can reach large groups of people to reprint and distribute the circular and thus contribute materially to the public welfare and the national defense."

The circular issued by the U. S. Public Health Service is entitled "Information for Guidance and Assistance of Registrants Disqualified for Active Military Service Because of Physical Defects." It is a four-page leaflet, containing specific information relating to the commoner causes of rejection or deferred classification, e.g., Defective Eyesight, Teeth and Diseased Feet, Underweight, Overweight, Hernia, Hemorrhoids, Varicocele, Varicose Vein, Bladder, Kidney and Urinary Disorders, Ear Trouble, Heart Affections, High Blood Pressure, Lung Trouble, Rheumatism, Venereal Disease, Alcohol, Nervous and Mental Diseases, and Miscellaneous Conditions. The information is presented in simple form and has been approved by the highest medical authorities. At the end is a striking quotation from President Wilson, "It is not an

Army we must shape and train for war; it is a Nation." This is followed by the following personal appeals:

"Do not go through life with handicaps that may be easily removed. Do not shorten your life, reduce your earning capacity and capacity for enjoying life, by neglecting your bodily condition."

"While other men are cheerfully facing death for the cause of democracy, do not shrink from facing a little trouble and expense to make yourself strong, healthy and fit."

Over a million copies of the leaflet have been sent out to the draft boards. Requests for specimen copies should be addressed to the U. S. Public Health Service, Washington, D. C.

War Industries Board
WASHINGTON

From: Lieut. Colonel F. F. Simpson, M.C., N.A., Chief of Section of Medical Industry.

To: The Doctors and Dentists of the Country.

Subject: Utilization of Platinum in Unused Instruments.

1. In view of the limited supply of platinum in the country and of the urgent demand for war purposes, it is requested that every doctor and dentist in the country go carefully over his instruments and pick out EVERY SCRAP OF PLATINUM that is not absolutely essential to his work. These scraps, however small and in whatever condition, should reach Governmental sources without delay, through one of two channels:

(a) They can be given to proper accredited representatives of the Red Cross who will shortly make a canvas for that purpose.

(b) They may be sold to the Government through any bank under the supervision of the Federal Reserve Board. Such banks will receive and pay current prices for platinum.

By giving this immediate attention you will definitely aid in the war program.

2. It is recognized that certain dental and surgical instruments requiring platinum are necessary, and from time to time platinum is released for that purpose. It is hoped, however, that every physician and every dentist will use substitutes for platinum for such purposes wherever possible.

3. YOU ARE WARNED against giving your scrap platinum to any one who calls at your office without full assurance that that individual is authorized to represent the Red Cross in the matter.

Council of National Defense
Medical Section
WASHINGTON

The Volunteer Medical Service Corps

The Central Governing Board of the Volunteer Medical Service Corps of the Council of National Defense announces that the Maryland State Executive Committee of the Volunteer Medical Service Corps is comprised of the following doctors:

Dr. John Whitridge Williams, Chairman, 1128 Cathedral St., Baltimore.
Dr. Frederic V. Beitler, State Health Department, Baltimore.
Dr. Victor Cullen, Sabillasville.
Dr. J. Mason Hundley, 1009 Cathedral Street, Baltimore.
Dr. Ridgely B. Warfield, 845 Park Avenue, Baltimore.

The purpose of this Committee is to coöperate with the Central Governing Board in prosecuting all activities pertaining to the mobilization and enrollment of members of the Volunteer Medical Service Corps throughout the state.

The Central Governing Board of the Volunteer Medical Service Corps also authorizes the appointment of one county representative in each county in every state of the Union. The county representatives for Maryland are as follows:

Alleghany: Charles B. Gardner, M.D., Cumberland
Anne Arundel: Thomas H. Brayshaw, M.D., Glenburnie
Baltimore: G. H. Hocking, M.D., Govans
Calvert: Philip Briscoe, M.D., Mutual
Caroline: H. W. B. Rowe, M.D., Hillsboro
Carroll: J. C. Clark, M.D., Sykesville
Cecil: Howard Bratton, M.D., Elkton
Charles: L. C. Carrico, M.D., Bryantown
Dorchester: Guy Steele, M.D., Cambridge
Frederick: T. B. Johnson, M.D., Frederick
Harford: W. S. Archer, M.D., Belair
Howard: W. R. Eareckson, M.D., Elkridge
Kent: H. G. Simpers, M.D., Chestertown
Montgomery: J. E. Deets, M.D., Clarksburg
Prince George: Thomas E. Latimer, M.D., Hyattsville
Queen Anne: J. M. Cockran, M.D., Centreville
Somerset: W. F. Hall, M.D., Crisfield
Talbot: J. A. Stevens, M.D., Easton
Washington: J. McP. Scott, M.D., Hagerstown
Wicomico: J. McFadden Dick, M.D., Salisbury
Worcester: Paul Jones, M.D., Snow Hill

ITEMS

Dr. John R. Winslow has recently returned from Atlantic City, where he read a paper before the Fortieth Jubilee Meeting of the American Laryngological Association, entitled "Some Cases, Mostly Traumatic, of Serious Damage to the Nose and Accessory Sinuses, Operated upon Externally with Excellent Cosmetic Results. Illustrated by Photographs." At this meeting Dr. Winslow was elected vice-president and a member of the Council of the Association.

Alumni in the military services are requested to notify the Bulletin of appointments, promotions, injuries, illnesses or any other facts of general interest.

Capt. Chas. W. Rauschenbach, M.C., passed successfully the examination of the National Board of Medical Examiners held last June. He is the first graduate of the University of Maryland to take the examination of this board. He is a Baltimorean and was formerly an interne at the University Hospital.

Word was received recently at the University of Maryland that Lieut. Charles W. Myers, a graduate of the 1915 medical class, has been given the United States distinguished service medal for heroic work at the front.

Lieutenant Myers, whose home is at Marysville, Pa., was a member of the resident staff of Maryland General Hospital for about a year after he was graduated. Later he took up private practice in his home town and when the war broke out he joined the Medical Corps.

The citation accompanying the award of the medal said that on July 1 last Lieutenant Myers established under heavy shell fire an advanced medical station for the treatment of men wounded in the first waves of the assault.

Lieut. Austin H. Wood, '14 arrived safely in France and had "a wonderful trip."

Dr. G. Lawrence White, a captain in the Sixth Marine Regiment, has written to his parents, Mr. and Mrs. George L. White, of Reisterstown, Md., for the first time since he was wounded in the famous battle near Chateau Thierry. Part of the letter, written July 20, follows:

"I guess you have been all worked up over this little affair of mine, but I want to assure you that it is nothing worth talking about at all. We were in the Allied offensive about which you have read so much, and a piece of shell happened to hit me in the leg. It made my leg entirely too sore to walk around on, and then, too, it did not go clear through, so I had to go to the hospital to have it removed. At present writing, I am tucked safely way in one of the Red Cross Hospitals, where I had the little piece of shell

cut out. Am feeling perfectly fine, and I will be knocking around as chirpy as ever just as soon as the stiffness gets out of my leg."

Dr. White graduated from the University of Maryland in 1917, and has been in France about 10 months.

The nurses of the University of Maryland Base Hospital, Unit No. 42, have arrived safely overseas, according to a cablegram received from Miss Ellen Israel, who is a Baltimorean and a member of the unit. It is believed the members of the unit sailed from New York on July 13. The message did not state where they had arrived.

Mrs. Page Edmunds, of Roland Park, has received a cablegram from her husband, Major Page Edmunds, telling of his safe arrival in France. He is serving with Evacuation Hospital No. 16.

Word has been received of the safe arrival overseas of Major Charles Bagley, Jr. For more than a year Major Bagley has been attached to the advisory staff of the surgeon-general of the army, at Washington. He is considered one of the authorities on brain surgery in this country, having been first assistant to Dr. Harvey Cushing at the Peter Bent Brigham Hospital. He was an interne at the University Hospital from 1904 to 1906.

Capt. James G. Matthews, U. S. A., who has been ill for several weeks at Camp Meade, is now convalescing.

Before entering the service he was a well-known surgeon of Spokane, where his brother, Dr. Aldridge Matthews, has been living for a number of years.

To the Editor of The Evening Sun:

Sir—The following letter has been received from my brother, who is with the Maryland University Hospital Unit in France.

J. E. Dill.

Baltimore, Sept. 25.

As I sit on this bale of hay "somewhere in France," I take my pencil in hand to write you a few lines. For the past month I've been on detached service with another unit doing certain special work. I am now in a village that only a few weeks ago was occupied by the Germans. Since my arrival in France,

I've been very much "on the go," but I've enjoyed every moment of it. Experiences and thrills have been many, I assure you. Little did I think I would leave the States so soon after the last time we saw each other, but such is war. However, if the Americans and the rest of the Allies continue to drive the Germans the way they have been doing, it won't be long before we all will be back home again. The Americans are doing some wonderful fighting, believe me. The trip across the ocean was very pleasant, with the exception of two or three days and nights that I spent leaning over the rail "feeding the fish." I never realized there was so much water between America and Europe. Among my travels here I've met quite a number of my boy friends from home. Can you imagine walking through a village about 4000 miles from home and meeting some one you know? So far it's been like a family reunion to me. France is a very beautiful country. Wine flows freely. Champagne that sells for $10 a bottle in the States can be bought here for about 10 francs ($1.75). Can you imagine that? Vine Rouge (red wine) is rationed to the French soldiers daily. They drink it instead of coffee. The weather in this section of France is very peculiar. The days are warm and the nights are cold. This is the middle of August and three or four blankets to sleep under at night are none too many. However, I am feeling fine. We get plenty to eat and drink. The Young Men's Christian Association sells candy and cake and every now and then we get a free lunch from the Red Cross. No one but a soldier knows what good work the Red Cross really does—and everything is free. The Knights of Columbus also have a place near here. Excuse me for writing this letter with a pencil. Ink is scarce.

Remember me to every one and let me hear from you real soon. Best wishes. Your loving brother,

MAURICE E. DILL.

Base Hospital No. 42,
France, Aug. 16.

Capt. L. Wardlaw Miles, class of 1897, son of the late Professor Francis T. Miles, of this University, has been so severely wounded in battle in France that it was necessary to amputate his left leg above the knee; besides which he sustained fractures of the right leg and arm. Captain Miles, who in civil life was an assistant professor in Princeton University, was in command of a machine gun company and had been cited for gallantry in action.

Capt. Duncan McCalman has been commissioned Major in the Medical Corps of the Army. He was at one time superintendent of the Maryland General Hospital, and saw service in Texas and Mexico under Pershing two years ago.

Lieutenant Henry A. Naylor, of Pikesville, class of 1901, has been

promoted to the rank of captain in the Medical Corps of the Army. He is the son of Dr. H. Louis Naylor, of Pikesville.

Dr. Irving J. Spear, class of 1900, professor of neurology in this school, has received his commission as captain and has been assigned to Camp Sevier, Greenville, S. C. His duties in the University will be assumed by Dr. Geo. M. Settle, associate professor of neurology.

DEATHS

Dr. Silas Baldwin, class of 1867, for many years a prominent physician in Baltimore, died recently of apoplexy, aged seventy-three years.

Dr. Clifton Norwood DeVilbiss, class of 1910, formerly an interne at the University Hospital, died at his home at Laytonsville, Md., of double pneumonia, on October 13, 1918.

Miss Charlotte A. Cox, assistant superintendent of Nurses of the University of Maryland Base Hospital unit now in France, died recently. No details of her death have been announced yet.

Miss Cornelia L. Price, a graduate of Mercy Hospital, and head nurse at the Base Hospital at Anniston, Alabama, died at Camp McClellan of broncho-pneumonia.

MARRIAGES

At the quarters of Major and Mrs. Norman T. Kirk, M.C., Fort Oglethorpe, Georgia, were married on June 18, Major John Burr Piggott, M.R.C., to Miss Alice Frances Bell, of New York City.

Mrs. Piggott was Assistant Superintendent of Nurses at the Presbyterian Hospital, New York City, and instructor at Columbia University, Woman's College, New York City. She was born in Hamilton, Ontario, Canada, and her entire family, who were eligible, have been in the service of the Canadian forces since the outbreak of the war, her brother being an officer in one of the famous Canadian Scotch regiments and has seen incessant service in France.

Mrs. Piggott is a graduate of the University Hospital Training School and was at one time superintendent of Nurses at the Hospital.

Major Piggott before coming into the army was a successful practitioner of surgery in Washington, D. C. Since coming into the service he has served continuously at Recruit Battalion, Camp Greenleaf, Chickamauga Park. He is a graduate of the University of Maryland, Class of 1907, and served one year as Medical Superintendent of the University Hospital.

Mrs. Charles E. Gregory announces the marriage of her daughter Mary E. to 1st Lieut. M. Benjamin Levin, M.R.C., Tuesday, June 18, 1918, at Baltimore, Maryland.

Mr. and Mrs. L. A. J. Herring announce the marriage of their daughter Sallie Rebekah to Dr. Grover C. Beard on Tuesday, July 2, 1918, at Wallace, North Carolina.

Mrs. Ruby E. Mitchell and Dr. Howard James Maldeis, associate professor at the University of Maryland and pathologist at the University Hospital, were married at the bride's home, September 2, 1918. Rev. Ellis C. Primm, pastor of Druid Park Baptist Church, officated. After the ceremony Dr. and Mrs. Maldeis left for the North. Upon their return they will reside in West Forest Park.

CORRESPONDENCE

United States Army Post Office No. 752.

July 15, 1918.

Dr. J. M. H. Rowland,
Dean of the University of Maryland,
Baltimore, Md.

My Dear Dr. Rowland,—Today I received the April Bulletin of the University of Maryland School of Medicine and the College of Physicians and Surgeons, the second copy since my arrival in this country, one year ago, in August.

It was with regret that I read of the death of Dr. Jose L. Hirsh, who at the time I was a student held the chair of Pathology, who after the death of Dr. Mitchell succeeded him, in Pediatrics.

I also was disappointed to see that my name was not amongst those of the honor-roll, as I have been in active service since the sixth day of June,

1917. I also notice that the name of Dr. Jenkins a fellow classmate of mine; class of 1915, is missing, and the poor fellow is now a prisoner of war in Germany.

Since my arrival in France, being a casual I have had the opportunity of seeing a great deal of the country, I was first stationed with an aeroplane school, later on at a special school for officers, and finally given the job of organizing a hospital. The hospital turned out rather a big success, and after it was completed, it was turned over to the Vanderbilt Unit, known as Unit "S" and then I was transferred to a port.

Today's paper has the big headline, "L'Offensive a commencé sur un Front de 80 Kilométres de Chateau-Thierry a La Champagne Orientale." Being the American Front you can readily see that we are more or less anxious to see how it shall end, though I feel confident that the Hun will know who he is trying to get thru now.

Trusting that present coming school term shall be a greater success than before, I am with kindest regards to all, especially Dr. Winslow, and Dr. Neale,

Very sincerely yours,
O. O. Linhardt,
1st Lieut. M. R. C.

P.S.—I might add that Dr. C. E. Sima of the same class is now in the Regular Army Medical Corps, married and a daddy.

Major A. M. Shipley describes hospital work in France.

Dear Doctor Rowland:

The University of Maryland unit is located. I was at that station a few days before coming here. It is a very good station, except that the climate in winter is very bad.

One of my team heads—a major—was going across France a week ago and rode a half day with Hugh Brent on his way from England to his proper station. Brent was very well.

During a push here a few weeks ago several teams came in to help out. One of them was Baer and his assistants were Kelly and Jennings from Base 42.

Have heard with a great deal of sorrow that Wilson is sick. Williams, one of Wilson's men from Bay View, has been decorated.

The work is not constant. Sometimes we are rushed to the limit of endurance, and then we have periods of comparative quiet. Recenly we admitted 800 wounded men in this hospital in 30 hours. We have anæsthetized and operated on 250 in 24 hours. I have operated on a stretch 42 hours out of 48. Some time ago I did four consecutive thigh amputations, all from the shock ward where they had been under treatment. Quiet right now. Have not operated in 24 hours.

You might be interested in the personnel of an evacuation hospital near the front. We have 850 beds. We often evacuate to the rear 500 a day, usually by train; the trains are very fine. The number of operating teams varies, according to the need. Have had as many as 11. A team contains a head,

one or two assistants, an anæsthetist, two nurses, and two orderlies. Then we have two internists, a bacteriologist, three X-ray men, a dental surgeon, an ophthalmologist, a throat and nose man.

This is the professional side. Then we have our commanding officer, Lieutenant-Colonel Hall, M.C., an adjutant and a quartermaster, 225 enlisted men and 70 nurses. These numbers are constantly changing. In addition to this, new arrivals are sent up as observers to learn the game. We have 10 operating tables.

From a medical standpoint the great outstanding accomplishment of the whole thing is the work of the American Red Cross. One must be here in the very thick of it to appreciate what a stupendous task they have performed in gathering and forwarding hospital material of every sort. Our Red Cross dressings come in 25,000 lots, already cut and folded and ready for the sterilizer. God bless every American woman who has done this work. The need is great.

MILITARY DETACHMENT,
GEORGIA STATE INDUSTRIAL COLLEGE,
Savannah, Ga.
July 15, 1918.

Dr. J. M. H. Rowland,
Madison Avenue,
Baltimore, Md.

My Dear Rowland:—I enclose a brief account of the Maryland University Alumni Banquet (of Camp Greenleaf and Fort Oglethorpe)—at the Reade House, Chattanooga, Tenn., Friday, June 28, 1918, 8 p.m. I shall ask Dr. E. W. Ayers to send you a complete list of those present.

Our guests of honor were Col. Gregory and Col. Munson, the commanding officers at Camp Greenleaf.

I came down here from Greenleaf July 2. Have nearly 200 colored troops in this Training Detachment. It is a beautiful spot with only the mosquitoes to detract from the quiet restful environment.

Were I a novelist, I would embrace the opportunity afforded to write a new one, and thus help out the exchequer.

Shall be glad to hear from you and Baltimore.

Hope the Banquet did some good for the old school.

Oh I must tell you that I saw our Dr. E. Dorsey Ellis over at Fort Stevens. the other day. He seems fat and fair (and not much more than 40).

Was delighted to meet him. He tells me that Prof. R. H. P. is still living over in N. Y.

Very sincerely yours,
GREGG.

B. M. C. U. M. P. and S.

A very enjoyable banquet of the alumni of the three schools now included in the University of Maryland Medical School, stationed at

Camp Greenleaf, Fort Oglethorpe, Ga., was held on June 28, 1918, at the Read House, Chattanooga, Tenn.

The following was the program:

I.

MENU

Cream of Chicken
Queen Olives Radishes Ripe Olives
Fresh Shrimp a la Newburg
Broiled Spring Chicken on Toast
Mashed Potatoes Asparagus Tips
Tomato en Surprise
Ice Cream Wheatless Cake
Roqueford Cheese Toasted Crackers
Cafe Noir
Loganberry Juice White Rock
Cigars Cigarettes

Committees Capt. E. W. Ayars, *President*; Lieut. A. L. Wilkinson, *Secretary*; Maj. M. L. Todd, Capt. H. G. Steele, Capt. E. L. Scott, Capt. L. H. Mulligan, Lieut. Geo. W. Rice.

II.

TOASTS

Toastmaster: Major Gideon Timberlake

Camp Greenleaf.....Colonel Munson
The Cadets.....Colonel Gregory
The B. M. C. Alumni.....Colonel Brook
The P. &. S. Alumni.....Captain Ayars
Maryland University Alumni.....Lieutenant A. L. Wilkinson
The Greater School.....Colonel Abbott

Telegram

(Please give my kindest regards to all the boys.)

Rowland.

Impromptu Remarks and Miscellaneous Business:

NOTES ON THE TOASTS

Lieut. Moses Lichtenburg who had been chosen as toastmaster, in a few well chosen words commandeered Major Timberlake to take the toastmaster's place. The Major was at his best in this rôle and presided with true grace and wit.

Colonel Munson who recently succeeded Colonel Birmingham responded to the toast Camp Greenleaf

He said in part:—"We have now about 24,000 medical men in the army. In order to keep these soldiers (1,000,000 of them) efficient, these medical men must bury their own individualism without hope of reward, and become simply cogs in the machine."

He said we learned our lesson here at Chickamauga Park 20 years ago—only one man in 3,000 has natural ability as a leader in military medical work. Hence the need of a school like Greenleaf.

Colonel Gregory in speaking on the subject "The Cadets" said: The men must lay aside the little things. (He had just asked all men in camp to write him a personal letter on the advantages and disadvantages of Camp Greenleaf). Judging from some of the letters, he judged that some of the men seemed to think that Greenleaf was a terrible place. He expressed his great desire to make the stay in camp pleasant and agreeable, and his determination to do all he could to give such a course as would enable the medical officers to properly handle enlisted men and to know something about the military game.

"My aim," he said, "has always been to control men through love and respect. Never ask a man to do what you are not willing to do yourself."

Colonel Brooke spoke for the B. M. C. Alumni. He stated that last fall we had comparatively few men from Baltimore. At the present time we are running pretty well and hope to be strong at the finish. He recommended that Field Sanitation and Hygiene be taught in medical courses and also something of the military end. His suggestion that medical schools take up the motto of "Military Courses," is well worth considering.

Captain Ayars spoke for the P. and S. alumni. He has a son in the army and is thoroughly imbued with the spirit of true patriotism. Lieutenant Wilkinson in speaking for the Maryland University Alumni gave much interesting historical data concerning the medical school and also St. John's College. Somehow we all felt proud of what our Alma Mater has done in making America.

Colonel Abbott in speaking on "The Larger School," said that the wording of the subject suggested that there was something wrong with the "lesser-school." In his own inimitable charming vein he told of the delightful care free spirit which marked his student days in Baltimore. But the time came when the old school had to stir its stumps or die of "dry rot."

While the university was now greatly in need of funds he believed it was never in better shape than today.

Consolidation has accomplished the result long hoped for.

The following resolution was presented by Lieut. Milton E. Gregg and unanimously adopted.

WHEREAS, The unconscious trend of a university's teaching is finding expression in the attitude of her Alumni in their response to the very urgent demand for doctors in the Medical Reserve Corps,

Be it Resolved: That we, Alumni of the Maryland University School of Medicine urge our Alma Mater to persuade every one of her available sons to be true to our motto: "A worthy son of a worthy parent," in order that the great profession of medicine shall not be found wanting in this hour of supreme need, and be it further resolved,

That a military history of the Alumni of the Maryland University School of Medicine serving in this (and other wars) be compiled and preserved for future use.

It was voted that the Greetings of the Assembled Alumni accompany these resolutions.

E. W. Ayars,
President.
A. L. Wilkinson,
Secretary.

The following officers were present:

E. L. Munson, Col. M. C.
J. C. Guyon, Col. M. C.
G. P. Ross, Lieut. M. C.
T. E. Brown, Lieut. M. R. C.
L. H. Milligan, Capt. M. R. C.
L. P. Howell, Capt. M. R. C.
L. W. Grossman, Lieut. M. R. C.
E. L. Cook, 1st Lieut. M. C.
G. W. Rice, 1st Lieut. M. C.
M. J. Egan, Jr., 1st Lieut. M. R. C.
Joseph J. Waff, 1st Lieut. M. R. C.
Leroy H. Smith, 1st Lieut. M. R. C.
Fred J. Pate, Capt. M. R. C.
Harvey W. Hartman, Lieut. M. R. C.
Joseph E. Norris, 1st Lieut. M. R. C.
Maurice C. Wentz, 1st Lieut. M. R. C.
Benj. M. Jaffe, 1st Lieut. M. R. C.
Milton E. Gregg, 1st Lieut. M. R. C.
Thomas E. Brown, 1st Lieut. M. R. C.
H. G. Steele, Capt. M. R. C.
C. P. Sellers, Capt. M. R. C.
J. F. Spearman, 1st Lieut. M. R. C.
A. L. Williamson, 1st Lieut. M.R.C.
E. Lawrence Scott, Capt. M. R. C.
R. R. Norris, Capt. M. R. C.
French S. Cary, Capt. M. R. C.
Roger Brooke, Col. U. S.
Gideon Timberlake, Major M. R. C., Toastmaster.
Alexander C. Abbot, Lieut. Col. M. C., N. A.
Martillus L. Todd, Major M. R. C.
Charles Brewer, Capt. M. R. C.
Moses L. Lichtenberg, 1st Lieut. M. R. C.
Emerson W. Ayars, Capt. M. R. C.
Taylor E. Darby, Major M. C.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Bulletin of University of Maryland School of Medicine and College of Physicians and Surgeons, published six times a year, at Baltimore, Md., for October 1, 1918.

Name of Editor, Nathan Winslow, M.D. (In the military service at present.)

Managing Editor, Randolph Winslow, M.D., Greene and Lombard Streets, Baltimore, Md.

Business Managers, Randolph Winslow, J. M. H. Rowland, and W. S. Gardner.

Publisher, University of Maryland, School of Medicine and College of Physicians and Surgeons, Lombard and Greene Streets, Baltimore, Md.

Owners, University of Maryland School of Medicine and College of Physicians and Surgeons, Lombard and Greene Streets, Baltimore, Md.

Known bondholders, mortgagees, and other security holders, owning or holding 1 per cent or more of total amounts of bonds, mortgages, or other securities. (If there are none, so state.) None.

RANDOLPH WINSLOW,
Acting Editor.

Sworn to and subscribed before me this 9th day of September, 1918.

WALTER E. SMITH,
[SEAL] *Notary Public.*
(My Commission expires May 7, 1920.)

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. III DECEMBER, 1918 No. 4

SOME NOTES ON ACUTE APPENDICITIS

BY ALEXIUS MCGLANNAN, A.M., M.D.

Professor of Clinical Surgery and Surgical Pathology, University of Maryland

Surgeons and internalists agree that the proper treatment of appendicitis is by the removal of the appendix. Surgeons have long agreed that the best time to operate for appendicitis is as early as possible in the first twenty-four hours of the attack. For years this teaching has gone out from many clinics and has not been contradicted. In spite of this unanimity of opinion, however, we are still called upon to operate for abscess and peritonitis, the results of neglected appendicitis, and the reports of large hospitals throughout the United States show an average mortality rate of 10 per cent for appendicitis.

The lesson, therefore, has not been learned, and although the subject is hackneyed I am endeavoring to contribute another argument in favor of early operation, by reporting my personal experience in 200 cases of acute appendicitis operated on between October, 1907 and December, 1916.

In this series 6 cases occurred in children under seven years of age, and 15 between the ages of seven and fourteen years. Twelve of the patients were negroes. Of these 200 patients 8 died. In the

series there were 22 cases of diffuse peritonitis with 6 deaths. Of the remaining fatalities, one was due to pneumonia, the other to a peritonitis caused by ulceration of the cecum eight days after the original operation for acute diffuse appendicitis.

All patients were operated upon as soon as they could be brought to the hospital. The method of waiting for subsidence of an acute diffuse peritonitis was not used. We feel it is better to shut off the source of the infection as soon as possible, and as a method of post-operative management to carry out the postural treatment with abstinence from food, supplying fluid by proctoclysis. Opium, judiciously administered, is a valuable adjunct in the post-operative care; and the addition of glucose to the water given by rectum seems of value.

This practice of immediate operation in cases of diffuse peritonitis, while it is opposed by many, has the sanction of good surgeons, for example, Stimpson (*Annals of Surgery*, 1907, vol. 46, p. 122), and Murphy (*Clinics*, 1913, vol. 2, p. 770). In the present series there were 2 fatal cases of peritonitis in which the expectant-abstinence treament had been carried out for four and seven days before the patients were referred to the surgeons. In neither case was there any evidence of walling off when the abdomen was opened.

The symptoms of appendicitis are well known. The course in most cases runs close to the typical form. In the 200 reported, there were but 20 deviations, and of these 20, only 2 in which the symptoms suggested a lesion that did not require an immediate laparotomy. In both of these atypical cases, kidney disease rather than appendicitis was suspected. In one a diagnosis of essential hematuria had been made in two clinics. The patient's attack, however, came on while he was in the hospital and was carefully observed. The onset of colic was followed by right iliac pain, fever and muscle spasm; rigidity of the right rectus, with a leucocytosis which advanced from 9000 to 11,000 in six hours. At operation there was free fluid in the peritoneum. An acute suppurative appendix was removed from its bed in the region of the right ureter.

Hematuria in appendicitis has been attributed to direct contact of the inflamed appendix with the ureter, (Hunner), to an acute congestion of the kidney (Nove, *Jour. d'Urolog.*, 1914, vol. 5, p. 121), and to either sterile or infected emboli which are assumed to reach the kidney by way of the retroperitoneal veins (Carlier and Leroy, *Prov. Med.*, 1914, vol. 27, p. 102).

With a pelvic appendicitis low abdominal tenderness was noted in 3 cases; an onset with left sided pain in 2 cases; and bladder tenesmus twice. In one of these cases the diagnosis was made by feeling a tender right sided mass through the rectum.

Errors in diagnosis were very few. Once pyosalpinx was operated on for an eighteen-hour appendicitis; 1 six day acute gangrenous appendicitis with local abscess was diagnosed acute intestinal obstruction. Cheever (*Boston Med. and Surg. Jour.*, 1913, vol. 168, p. 719), discusses acute angulation of the terminal ileum, the result of the plastic peritonitis of appendicitis, as a cause of intestinal obstruction. Such an angulation may have complicated this case, although it was not noted at the time of operation.

In one patient a diagnosis of acute appendicitis was made on the following symptoms: Onset, lumbar and inguinal colic, followed by nausea and vomiting, right lower quadrant tenderness, muscle spasm and rigidity. Leucocytosis of 18,000 with 86 per cent polynuclear cells was present three and one-half hours after the onset. The diagnosis was made by a well trained and experienced internalist, and I was certain we were dealing with an acute attack in a postcecal appendix. At operation, four hours after the onset, the appendix was found normal, while the right kidney was felt behind the peritoneum much larger than normal. The next day there was blood in the urine. The patient recovered, but has had another attack of acute hydronephrosis. Careful study of kidney and ureter failed to show a stone or other stricture. This may have been a case of ureteritis.

In one case the appendix was removed from a patient at the onset of a central pneumonia.

The leucocyte count and the polynuclear percentage was determined in 92 cases. Great variations were noted, from 7,900 with 91 per cent polynuclears in a case with diffuse peritonitis to 44,000 with 82 per cent in a case of acute diffuse appendicitis. The variations in the number of leucocytes and in their proportion did not throw any light on the character of the pathological process, or on its course.

Rise in temperature proved very much like the leucocyte count. As a rule there was fever, but in some of the worst cases the temperature was normal at the time of the operation.

There are no symptoms by means of which we can predict the character and course of an appendicitis during the early hours of the attack.

"The time to decide whether a case of appendicitis is catarrhal, perforative or gangrenous is after the surgeon has removed the specimen." (Moore, *Jour. Amer. Med. Assn.*, 1914.) It is easy to make a diagnosis of appendicitis in the early stages of the disease, but anyone who attempts to decide the nature of the pathological process from external symptoms will suffer many humiliations. "No man, no matter how large his experience may be, is able to judge from the early symptoms whether the case is going toward a favorable or unfavorable result. In the first twenty-four or thirty-six hours you can not tell whether the case is going to terminate favorably or unfavorably." (Murphy, *Clinics*, vol. 2, p. 770, 1913.)

There is no medicinal treatment for appendicitis. Rest will allow those appendices which are slightly damaged to recover from the attack, but neither internal medicine nor external application have any direct influence on the course of the pathological process. At the present time opium is seldom given in acute appendicitis. The lesson of its masking influence on the symptoms has been well learned. It would be life saving if the warning against the indiscriminative use of purgatives were as well heeded. Of the two, the purgative is the more deadly. In my series there is but one case in which operation was delayed because of the use of morphia, but there are 4 cases in which the onset of a diffuse peritonitis can be traced directly to the administration of a purgative. Suppression of food and a well given enema will relieve a simple colic, and will not do harm to an inflamed appendix.

In grouping the specimens the classification of Aschoff (*Jour. Amer. Med. Assn.*, 1909, vol. 53, p. 120) has been used and the following varieties distinguished: Acute diffuse, acute suppurative, acute gangrenous. The statistics of the series arranged in this manner are as follows:

	Cases
Acute diffuse	53
Acute suppurative	29
Acute gangrenous	81
Acute, with localized abscess	37
Acute, with local peritonitis	15
Acute, with diffuse peritonitis	22

Group I. Duration less than six hours. Eight cases. All these patients recovered without any complications. In one case an acute hydronephrosis was mistaken for appendicitis. The average dura-

tion of the stay in the hospital was fourteen days, the extremes twenty-three and eight days. It is interesting to note that this group includes one medical student, one trained nurse and two hospital orderlies.

Group II. Duration six to twelve hours. Fourteen cases. In one of these cases the acute appendicitis came as a complication of a tuberculosis of the peritoneum in a negro child of seven years. In one case, where there was cloudy fluid in the peritoneum, the wound in the abdominal wall suppurated. The average stay in the hospital was fifteen days, the extremes being thirty and ten days. All the patients recovered without complications.

Group III. Duration twelve to twenty-four hours. Thirty-nine cases. Two patients who had pulmonary tuberculosis were operated on under nitrous-oxide anaesthesia and made good recoveries. There were 3 cases of post-operative bronchitis and one post-operative pneumonia. All of these patients recovered. In one case the acute suppurative appendix was removed on the fifth day of an attack of broncho-pneumonia in a child of nine years. The average stay in the hospital was seventeen days, the extremes forty and nine days. In one case an abscess developed in the abdominal wall. All the patients in this group recovered.

Group IV. Duration twenty-four to thirty-six hours. Thirty-five cases. One patient died. This man, age 37, had mild symptoms for twenty hours, and then suddenly, very severe symptoms with evident peritonitis. He was operated on four hours later, the acute gangrenous appendix removed and the peritoneum drained. He died on the seventeenth day of septicaemia.

There were 2 other cases of diffuse peritonitis in this group. Ten patients required drainage after appendectomy. There were 2 fecal fistulas as complications, and one patient had a large drainage hernia. During convalescence from an acute suppurative appendicitis with local abscess, one patient developed an arthritis with purpura which persisted for eight days. The average stay in the hospital was twenty-one days, the extremes one hundred and eight and nine.

Group V. Duration thirty-six to forty-eight hours. Twenty-five cases. There was no mortality in this group of cases. There were 2 cases of diffuse peritonitis; 4 of localized abscess. It was necessary to drain in 10 cases and there were 2 post-operative hernias. The average stay in the hospital was twenty-one days, the extremes forty-one and ten. In one case the perforation of the appendix

came in the fourth week of typhoid fever. What wa sconsidered a typhoid ulcer was found in the appendix, at the site of the perforation. Homer Gage (*Annals of Surgery*, 1915, vol. 62, p. 146) gives a very complete study of this complication.

Group VI. Duration two to three days. Thirty-four cases. One patient died. A child, operated on for acute diffuse appendicitis of two days duration developed definite symptoms of pneumonia on the third day after operation, and died two days later. The diagnosis of appendicitis was concurred in by a specialist in diseases of children. At operation the appendix did not show gross pathological change. The specimen was lost in transit to the laboratory, therefore this case is put down as one in which the pneumonia was not recognized before operation.

There were 6 cases of diffuse peritonitis and 9 abscesses. All these patients recovered. In 2 cases the abdominal wall suppurated; and there were 2 cases of acute intestinal obstruction, coming on eight and twenty-six days after appendectomy with drainage of a localized abscess. In both cases the obstruction was relieved by operation. There were 2 fecal fistulae; one case of thrombophlebitis of the left leg; and one post-operative hernia. The average stay in the hospital was twenty-eight days, the extremes fifty and twelve days.

Group VII. Duration of four days. Sixteen cases. Two patients died; one of general peritonitis, the other as a result of the perforation of an ulcer of the cecum as already described. There were 3 cases of diffuse peritonitis and 7 localized abscesses. In one case with abscess the appendix could not be removed. This patient developed a fecal fistula which healed spontaneously. The average disability in this group was thirty-two days, the extremes seventy-three and twenty-two days.

Group VIII. Duration five days. Six cases. One patient died of intestinal obstruction on the fifth day after appendectomy and drainage of a diffuse peritonitis. There were 3 localized abscesses and one diffuse peritonitis in this group of cases. Five of the six patients required drainage. The average duration of total disability was forty-six days, the extremes being fifty-six and twenty days.

Group IX. Duration six days. Nine cases. There was one case of diffuse peritonitis and 3 localized abscesses in this group. In the case of diffuse peritonitis, the patient died on the forty-eight day of

septicaemia with liver abscess. Secondary abscesses in the peritoneum were opened and drained on the fifteenth and fortieth days. Babler (*Annals of Surgery*, 1915, lxi, 589), states that these abscesses are not always due to continuous spread, but may be due to embolism. Five patients were drained. There was one post-operative hernia. The average duration of total disability was thirty-seven days, the extremes fifty and twenty days.

Group X. Duration seven days and over. Fifteen cases. There were 7 cases of diffuse peritonitis and 5 localized abscesses in this group. Two of the patients having diffuse peritonitis died. Although the symptoms of peritonitis had been present five days in one of these fatal cases, and the patient had not received any food or purgatives, there was no evidence of any attempt at walling off the exudate. In two of the cases of localized abscess the appendix was not removed. There were two fecal fistulae; one abscess of the abdominal wall requiring a second operation; and one post-operative hernia.

115 West Franklin Street.

THE MODERN TREATMENT OF GALLSTONE DISEASE AS AFFECTED AND CONTROLLED BY DUODENAL INTUBATION[1]

By John C. Hemmeter, M.D., Ph.D., Sc.D., LL.D.

From the Medical Department, University of Maryland, Baltimore, Md.

Relative fre uency of gallstones.—There must be great variations in the relative frequency of the occurrence of gallstones among different nations, and these variations depend upon the method used in ascertaining their existence, whether by simple clinical investigation, by operation, or by autopsy. One need only look over the alphabetical index of the *Journal of the American Medical Association* or that of the *Medical Record* to be astonished at the large number of contributions to this subject, and also at the varying figures given concerning the frequent occurrence of this disease. Barker, in his splendid new work on the "Clinical Diagnosis of Internal Diseases," states that the percentage of human beings found to have gallstones at autopsy is five to ten. This may serve as an American estimate.

[1] Reprinted from *Medical Record*, October 5, 1918.

Scheel, in *Ugeskrift for Laeger*, November 30, 1911, gives 15 per cent, based on 2,753 autopsies. Pel, in his *Krankheiten der Leber und der Gallenwege*, page 312, quotes Halk as finding gallstones in 29 per cent of all autopsies, and he himself, in his observations on the autopsies on old women performed in Amsterdam, found 20 per cent of cases of gallstones in cases which had given no symptoms during lifetime. It should be added that Halk's material was composed of individuals over fifty years of age. In the article by Quincke and Hopper-Seyler in Nothnagel's *Specielle Pathologie u. Therapie* the relative frequency of the finding of gallstones by twelve European pathologists varies from 2.4 per cent to 29 per cent. The largest autopsy material is that of Poulsen, in Copenhagen, who gives 91,722 sections with 347 findings of gallstones, making 3.7[2] per cent, but Poulson states that only 9 per cent of this material showed any symptoms during life.

Three things influence the figures obtained at autopsy. First, the experience, punctilliousness and carefulness of the pathologist; secondly, the age of the patient; and thirdly, the sex. Peters, at Kiel, found that in persons under thirty years of age the percentage of cases of gallstones was 0.62 per cent; between thirty and forty years, 3.24 per cent; between forty and fifty years, 4.44 per cent; between fifty and sixty years, 6.98 per cent; between sixty and seventy years, 9.53 per cent; between seventy and eighty years, 13.02 per cent; and over eighty years, 16.36 per cent. The figures given by Rother of Munich are one to thirty years, 3 per cent; thirty-one to sixty years, 6.9 per cent; sixty-one and over, 19.2 per cent. Schroder of Strassburg gives the following figures: Under twenty years of age, 2.4 per cent; twenty-one to thirty years, 3.2 per cent; thirty-one to forty years, 11.5 per cent; forty-one to fifty years, 11.1 per cent; fifty-one to sixty years, 9.9 per cent; sixty and over, 25.2 per cent.

Etiology.[3]—A perusal of the American publications evidences a unanimity of opinion that in the United States women are affected

[2] In the above statistics[5] by Poulson an arithmetical error must have sneaked in, for 347 does not constitute 3.7 per cent of 91,722. I calculate that to obtain this per cent he must have had 3,393 cases of gallstones at autopsy.

[3] For the History of the Clinical Recognition of Cholelithiasis, see J. C. Hemmeter in Sajous' *Analytic Cyclopedia of Practical Medicine*, Seventh Edition, Vol. III, p. 275–276. Also Die Krankheiten der Leber, by Quincke and G. Hoppe-Seyler, in Nothnagel's *Specielle Pathologie und Therapie*, Band 18, p. 180–188.

between three and four times as often as men, and this proportion between males and females appertains at all ages. The same is true of French and German statistics. Reinelt found in subjects between the ages of fifteen and thirty years gallstones in 1.3 per cent of the men and 3.8 per cent of the women. From thirty-one to sixty years the figures were 6.4 per cent for men and 14 per cent for women, while for over sixty-one years the figures were 17.9 per cent for men and 25.4 per cent for women. For the years from 1901 to 1906, 386 operations were performed for gallstones at the Heidelberg clinic; of these, 46 were men and 340 were women; in other words, there were seven times more women than men. This difference is attributed to the sedentary habits of women, influence of tight lacing, repeated pregnancies, and puerperal infection. These etiological factors must have consideration in the treatment.

In speaking of the direct etiology we must consider everything which could produce stagnation of the bile flow. Among these we must consider compressing clothing, insufficient bodily exercise, dislocation or compression of the bile ducts by tumors or cicatrices. Among the causes which are little recognized I wish to call attention to one of which I have convinced myself repeatedly at autopsies; that is, enteroptosis, and gastroptosis especially. The displacement of the stomach may cause traction upon the hepatoduodenal ligament. This I have frequently seen at abdominal sections undertaken for gallstone. Another cause is dislocated or floating kidney. Then there seems to me to be a form of atony of the musculature of the gall bladder, which in some way is produced by the traction caused by dislocated abdominal viscera in enteroptosis. The tugging upon the splanchnic and abdominal branches of the vagus interferes with the reciprocal innervation that exists between the sphincter at the papilla of Vater and the musculature of the gall-bladder. A close relationship seems also to exist between gallstone disease and pancreatitis.

As the successful treatment must be based on a knowledge of eitology, we must repeat the statement of Naunyn that two conditions are necessary for the formation of gallstones: First, stagnation of the bile flow; and secondly, bacterial infection. Up to the present time this is still acknowledged to be a clinical axiom, and was first pointed out by Naunyn in 1892 in the "Klinik der Cholethiasis," a brilliant classic on this subject. Throughout the many volumes of *Mitteilungen aus den Grenzgebieten der Medizin und*

Chirurgie this eminent clinical philosopher has given us the benefit of his broad experience and conservative critical judgment. According to him, the modern era of cholelithiasis begins in 1892. The significant progress of surgical technique in this period is especially noticeable in the American literature on the subject, and this is so great, and comes from so many able operators and surgical writers in the United States, that I deem it inexpedient to cite their experiences in an article that is to be limited to the purely medical treatment of this condition. But I cannot pass over stating one impression that I gain from American surgical literature, namely, that the so-called early operations have in general been given up, and that the special field for the surgeon is the chronically recurring cholelithiasis. Especial indications for operation are: First, the infectious cholecystitis; and secondly, chronic obstructions of the biliary ducts.

In my articles already quoted I have dwelt on the chemistry of cholelithiasis. The stones consist of cholesterin, calcium, and pigment. The calcium occurs in the form of bulirubin-calcium, calcium carbonate, and calcium phosphate. Bulirubin calcium and the inorganic calcium salts are insoluble in the bile, but as normal bile never contains so much cholesterin that it could not dissolve still larger amounts it is probable that cholesterin stones can be dissolved to a considerable extent in human bile. Cholesterin is kept in solution by the bile salts and the precipitation of cholesterin from bile may be produced by withdrawal of these salts.

A remarkable difference of opinion exists between clinicians and physiologists concerning the derivation of cholesterin. Naunyn is of the opinion that the mucosa of the gall-bladder furnished the cholesterin as well as the calcium of the gallstones, and thereby furnishes an explanation of the local origin of the gallstones in the gall-bladder. Physiologists, however, know that cholesterin is not formed by the gall-bladder or the liver, but is very widely distributed throughout the body, and that it is only eliminated by the liver cells from the blood, which collects it from the various tissues of the body. Cholesterin is a constant constituent of the blood. That it is an excretion is illustrated by the fact that it is eliminated in the feces, but the contrary view has been suggested, also, namely, that the cholesterin is in part reabsorbed and used again in the formation of new tissues. It is insoluble in water and dilute saline liquids. In the bile it is held in solution by salts of the bile acids. I wish to add in explana-

tion of Naunyn's view that the cholesterin is formed by the mucosa of the gall-bladder, that this has reference only to the inflamed gall-bladder. It is, therefore, a pathological production of cholesterin that he has reference to.

Numerous other American as well as foreign authors have investigated the production of gallstones by the intermediation of bacteria. Most of them show conclusively that the presence of bacteria increases and accelerates the precipitation of cholesterin. Heyrovesky and Exner succeeded in producing a decomposition of the bile salts by the addition of the typhoid bacillus and the colon bacillus. By this the cholesterin was also precipitated, because it is held in solution by the bile salts. Kramer succeeded in producing precipitation of cholesterin by inoculating animals with the typhoid and the colon bacillus, contained in tubes of bile bouillon cultures. Heyrovesky had arranged a scale of bacteria, graded according to the intensity and quickness of their effects. The organism which acts most promptly and most intensely, according to this investigator, is the typhoid bacillus. The next in order is the colon bacillus and the weakest in their effects are the pyogenic cocci, streptococci, and staphylococci. His conclusion that the latter cocci could not be the primary and immediate infective agents in the formation of gallstones, but are by him supposed to be causative of the secondary or hematogenous infection of the gall-bladder, is not confirmed by American investigation, particularly by those of Rosenow.

About one-fourth to one-third of the total dry mass of the feces consists of bacteria. That amounts to 4.5 to 5.3 grams in twenty-four hours. The character of food, though it may influence the variety of bacteria, has no influence on the quantity. According to Weinert, sour milk is capable of reducing the amount of the bacteria to about one-half that above quoted.

Meconium of new-born infants is sterile. After the first breast milk is swallowed we find *Bacillus bifidus* of Tissier and *B. acidophilus*. A diet of cow's milk gives rise to *B. coli communis* and *B. lactoaerogenes* (a few streptococci); on a meat diet there are *B. coli gracilis*, *B. lacto communis*, yeast, *Sarcinæ*, and *B. acidi butyric*, *B. subtilis*. According to Metchnikoff, the principal putrefactive bacteria are *B. putrefaciens sporogenes*, *B. welchii*, Oppler-Boas bacilli, and the bacillus of Hauser-Bienstock.

In considering the relative importance of the factors of stagnation and bacterial infection in the pathogenesis of gallstones, two per-

spectives must be held in mind: First, the factor productive of the precipitation either of cholesterin or of bilirubin calcium; secondly, the particular species of micro-organism and its derivation. Among the normal bacterial inhabitants of the intestines above mentioned only the streptococci, *B. coli*, and the *B. welchii* come into consideration. Among the abnormal microbic invaders of the digestive canal we must consider the typhoid bacillus, staphylococci, pneumococci, and the tubercle bacillus, Mieczkowski found in twenty-three cases of cholelithiasis *B. coli* eighteen times, either in pure culture or mixed with staphylococci and streptococci. Chiari, in twenty-two cases of typhoid fever, found the typhoid bacillus in the gall-bladder nineteen times. The injection of a culture of typhoid bacilli without ligating the common gall duct, produced no infection. These experiments therefore demonstrate the necessary coöperation of the stagnation of the bile. In thirty-two cases of cholelithiasis, Létienne found the following bacterial infections: *B. coli communis* eleven times, staphylococci seventeen times, streptococci twice, pneumococci once, tubercle bacillus once.

That a progressive, infectious inflammation of the wall of the gall-bladder and of the bile ducts is necessary for the development of stones has been demonstrated by the experiments of Mignot ("L'Origine Microbienne Des Calculs Biliare," *Archives Générales de Médecine*, Aôut, 1898). The same experiments emphasize the factor of stagnation. Mignot filled the gall-bladder of rabbits and guinea pigs with sterilized cotton or gauze into which he brought a drop of attenuated culture of a virulent colon bacillus or staphylococcus. He then sewed the bladders shut with catgut. Three weeks later the bladders were again opened. They had now become thick-walled and rigid. A thread 2 cm. long was passed through the wall of the larger end of the gall-bladder so that it remained freely suspended in the lumen. The wound was sewed up a second time. Six months later hard stratified stones, consisting exclusively of cholesterin, were found in more than one-third of the cases in the biliary passages of these animals.

If these special bacteria were introduced simply on silk threads or sand grains, and thereby a more or less intense cholecystitis was created, a precipitation of the bile was produced, but the process did not lead to stone formation.

Next to bacterial infection, therefore, the most essential causative agent is a paresis of the musculature of the gall-bladder and bile passages, or some form of obstruction.

In the various surgical procedures that have been employed for the cure of this disease surgeons have had in view almost exclusively the question of infection and the bacterial causes. When a cholecystectomy is performed this is the exclusive view that the operator has in mind, but another and equally important element demands consideration, if the views of Naunyn and Frerichs are correct. The former held that the cholesterin was derived from the epithelial cells of the gall-bladder and Frerichs assumed that the calcium to which the bilirubin and the fatty acids are generally bound is not derived originally from the bile but is a product of the mucosa of the bladder. If these statements were correct, the removal of the gall-bladder would not only be urgently necessary to remove the bacterial etiology and prevent the source of infection but at the same time to obviate the recurrence of deposition of calcium salts and cholesterin.

The percentage contents of human bile in calcium phosphate is 1.7 (Jacobsen) and in fresh dog bile Hoppe found 0.04 per cent of phosphate of calcium and 0.03 per cent of carbonate of calcium. Therefore, the percentage contents in calcium salts found in normal bile would be sufficient for the formation of stones without drawing in a hypothetical calcium and gall-stone secretion by the gall-bladder. Cholesterin and bilirubin calcium are both soluble in sodium glycocholate and also in alkaline liquids. Whenever the bile becomes acid in consequence of long stagnation, or abnormal secretion of gall-bladder mucus, then the sodium glycocholate is split up into its constituents, namely glycocol, cholalic acid, water and a sodium salt. The consequence is that bilirubin is precipitated as a calcium salt and then cholesterin, and eventually also sodium taurocholate. These processes can occur under the abnormal condition of stagnation.

A. Dochmann (Theorie der Gallenstein Bildung, 1889, *Vratch*, No. 3. Abstracted from Maly, Jahresbericht, Band 20, p. 271) analyzed the liver bile and the gall-bladder bile separately. The bile in the bladder was drawn after ligation of the cystic duct. In these separate analytic determinations he found considerable difference between the two samples. In the bladder bile, the sodium was reduced and the potassium increased, as compared to the bile drawn from the hepatic bile duct. Now, the increased content of calcium reduces the solubility of the bilirubin and thereby leads to the precipitation of bilirubin calcium and of cholesterin.

In this controversy between those who hold that precipitation of bilirubin calcium and cholesterin from the bile as it comes from the

hepatic duct is possible and those that hold that the epithelium of the gall-bladder secretes these substances, a more recent pathological and chemical study is of interest. I refer to the work of Aschoff and Bacmeister (*Die Cholelithiasis*, Jena, 1909). These investigators believe that in most cases of inflammatory cholelithiasis there has been a non-inflammatory stage which preceded. They also set up the principle of different chemical origin of the different varieties of gallstones. They claim that the radiated cholesterin stone is formed singly and exclusively as a consequence of bile stagnation and without the coöperation of bacteria, but the cholesterin-pigment-calcium stone, and the stratified cholesterin-calcium stone, as well as the pigment-calcium stone, are of inflammatory origin. These conclusions are based upon the following consideration:

The structure of the radiated stone is purely crystalline. From a center of crystallization rods of unequal length radiate in all directions toward the periphery. These cause the uneven surface of the stone, which is very porous, contains an albuminous skeleton structure and very little calcium. This stone is found only in gall-bladders that are not inflamed, simply in a state of stagnation. The morphology of this stone is indicative of a very slow process of deposition of its contents by crystallization from the bile. Its chemical composition corresponds to the composition of the normal bile, not of the bile changed by inflammatory processes. It is this type of gallstone that can be produced from the normal bile without infection by simple chemical decomposition. The radiated cholesterin stone occurs almost exclusively as a solitary stone.

Bacmeister experimentally proved that precipitation of crystalline cholesterin from stagnated bile could take place in the entire absence of bacteria or albumin. It is true this precipitation could be augmented by the addition of sterile epithelial cells. In these observations he found the proof that the cholesterin does precipitate from simply stagnated bile, not by infection but by sterile autochthonous decomposition of the bile itself, in which, of course, the protoplasmic elements participate.

The material for the formation of the solitary cholesterin stone crystallizes out of the sterile bile. The process is augmented by the scaling off of the epithelial cells of the gall-bladder. By accurate investigations of gall-bladders extirpated by operations or found at autopsy, they came to the same conclusion, namely, that when a single cholesterin stone was present, every sign of inflammation of

the gall-bladder was missing and only the evidence of gall-bladder stagnation was found. In order to arrive at this conclusion, it was necessary to study minutely the anatomy and histology of the gall-bladder, of which they give an admirable description. The distribution of the blood and lymph capillaries in the gall-bladder and bile-ducts is minutely described. They assign to the epithelium of the gall-bladder a two-fold function: First, secretion of a pseudo-mucous substance (nucleo-albumin (?)). The beaker cells secrete pure mucin. Secondly, the absorption of fat and pigment.

Naunyn and Fink had claimed that gallstones could be formed from myelin, secreted by the epithelium of the gall-bladder. This Achoff and Bacmeister deny.

In connection with the possibility of the recurrence of gallstones, after so-called cures, Aschoff and Bacmeister call attention to the fact that the mucous glands, while they occur normally only in the neck of the gall-bladder and in the cystic duct, proliferate and extend throughout the entire gall-bladder and into the walls of Luschka's duct after inflammatory irritation. These ducts of Luschka extend into the musculature and fibrous tunic. The normal structure of the gall-bladder undergoes certain changes in chronic cases of bile-stagnation. The normal folds are effaced. The muscularis is hypertrophied. A diffuse small-celled infiltration takes place, as a consequence of the increased resorptive processes. Especially the fat absorption is increased in a stagnated gall-bladder. This leads to a dilatation of the subepithelial lymph capillaries. In consequence of this stagnation and the increased internal pressure Luschka's ducts are dilated and often filled with a detritus of a bile-stained mass. On the base of this altered and stagnating gall-bladder the solitary radiated cholesterin stone is formed.

The formation of inflammatory gallstones is entirely different from this. The gallstones which are due to inflammatory conditions of the gall-bladder are the following: (1) Combination stones, showing interiorly the primary radiation of the cholesterin stone and exteriorly a stratified mantle rich in calcium. (2) The stratified cholesterin-calcium stones. (3) The cholesterin-pigment-calcium stones. (4) The larger oval barrel, or cylinder-shaped stones. (5) The common multiple facetted or mulberry-shaped stone. (6) The bilirubin-calcium stones.

Sometimes one can distinguish several cholelithic generations. It is sometimes also possible to trace different clinical pictures in the

precedent history of gallstone disease in connection with these differently shaped stones. The markedly crystalline and relatively calcium-poor stones grow slowly and occur as solitary stones. Those stones that are rich in calcium grow rapidly and are generally found in larger numbers. Aschoff and Bacmeister assert that in the majority of all cases of cholelithiasis a non-inflammatory process precedes, and that definite relations exist between the different stone formations and the various diseased conditions of the gall-bladder.

As long ago as April, 1895, when I gave a demonstration of the first method for duodenal intubation practicable upon the human subject (Johns Hopkins Hospital Bulletin, April, 1895), I expressed the hope that the method might be available for the diagnosis of gallstones from the chemical and physical conditions found in the duodenal contents. (See also Hemmeter, Diseases of the Intestines, Vol. I, pp. 263–272; also Versuche uber Intubation des Duodenums, *Archiv für Verdauungs-Krankheiten*, Band 2, S. 98, 1896, and Band 17, S. 136, 1911.)

This was long before any one else had ever conceived of the possibility of duodenal intubation.

When one considers, however, the widely different chemical composition of these various gallstones and the different clinical history of each as above alluded to, one must be at once impressed with the difficulty of this kind of clinical research. If we are to determine from the bile aspirated from the duodenum not only whether there are gallstones present, but their kind and the condition of the biliary apparatus, we should have reason to expect a different composition of the bile for each chemical type of gallstone. If in one case the stone is built up from the cholesterin of the bile, and in another case from the calcium, and in a third case from the bilirubin and calcium, it must be evident that we can expect no uniform and constant change in the bile that flows out into the duodenum under these conditions. This conclusion has been confirmed by my investigations, for all of my efforts to establish a constant chemical factor in the duodenal contents, and these efforts extend off and on throughout the last twenty years, have led to no definite chemical diagnostic factor discoverable in the bile as aspirated from the duodenum in cholelithiasis.

In an article entitled "Direct Examination of the Duodenal Contents (also Bile) as an Aid in the Diagnosis of Gall-Bladder and Pancreatic Affections" (*Amer. Jour. of the Medical Sciences*, cxlviii pp.

490–495, 1914), Einhorn states that the macroscopic appearance of the bile is of great diagnostic importance. If it is golden-yellow and clear, it usually indicates a normal gall-bladder. When it is greenish-yellow and turbid, it portends a diseased gall-bladder, which frequently contains gallstones. He states that golden-yellow bile containing mucus is observed in catarrhal jaundice, but he admits that golden-yellow clear bile may occasionally exist, notwithstanding the presence of gallstones, so his first conclusion is vitiated by the latter statement. But I would also add that sometimes greenish-yellow bile which is turbid can be drawn from the duodenum when the gall-bladder is not diseased, because the color may be due to a duodenitis, and occurs also in duodenal ulcer. The remaining conclusions of this article refer to pancreatic disease and not to cholelithiasis. In only two instances do I notice a reference to the degree of alkalinity. In Case No. 9, p. 492, the alkalinity is stated as equal to 20, and in Case 16 as equal to 25. I presume this is expressed in terms of the titration method ascertained by 1/10 normal solution of NaOH. Now, the chemical reaction of the duodenal contents, when the hydrochloric acid of the stomach can be excluded, is due more to the alkalinity of the pancreatic juice than to that of the bile. I will later point out that this alkalinity of the duodenal contents is an important factor, in the diagnosis, if it can be traced as due to the bile, which, of course, is exceedingly difficult. In the article in the *Archiv für Verdauungs-Krankheiten*, Band 17, p. 147, I described a case of varying gastric secretion to which I have given the term "heterochylia." This patient had periods during which no gastric juice was secreted, and other periods during which the gastric juice was either normal or excessively acid. When the total acidity of the gastric juice was normal I found that it required 3.5 to 5 cc. of $\frac{N}{10}$ H_2SO_4 to neutralize 10 cc. of pancreatic juice. This patient had a small drainage tube inserted in a dilatation of the pancreatic duct after an operation for pancreatic cyst, performed by Dr. L. McLane Tiffany. The case is described fully by Dr. Harry Adler and myself in the *Medical Record* for August 6, 1898. The case is cited here as a rare instance where the human pancreatic juice was studied during life and its alkalinity ascertained; but it was found that the alkalinity varied with the character of the diet. For complete data reference must be had to the original article, and also the articles on duodenal intubation published in the *Archiv für Verdauungs-Kr.* 1911.

So much must be evident: The alkalinity of the duodenal contents does not inform us concerning the alkalinity of the bile. If Einhorn finds an alkalinity of 25 this may be entirely due to the pancreatic juice. The bile itself, it is true, is alkaline, but only feebly so. Expressed by the above method, the bile that flows from the common bile duct during health has been found by me to be equal to 5; that is, 100 cc. bile were neutralized completely by 5 cc. $\frac{N}{10}$ NaOH. This is an average of 12 titrations. Nevertheless, a marked diminution in the alkalinity of the duodenal contents is a significant sign of the presence of disease of the gall-bladder. Should the alkalinity fall below 5 we can assume that both the pancreatic juice and the bile are prevented from entering the duodenum. I have had two cases in which a persistent low alkalinity of this type was followed in from three to six weeks by jaundice.

In estimating the alkalinity of the bile the hydrochloric acid of the gastric juice must as far as possible be excluded and the duodenal juice drawn at a time when the stomach is empty.

The most complete chemical study of the bile—from which most of my figures are obtained, is found in Bottazzi's *Chimica Fisiologica*, Vol. II, p. 401, "Il fegato e la bile." The tables Nos. 79 and 80 give the complete results of eight brilliant chemists on their analyses of the mineral contents and the organic contents of the bile.

Liver bile is much less concentrated than gall-bladder bile. Determinations made on gall-bladder fistulæ in man gave a total solid residue of about 0.11, but this bile is not normal. The findings are due to the great loss of bile from the body, for normally bile makes an intermediary circulation, being reabsorbed from the intestine and excreted again from the liver. If it is lost through a gall-bladder fistula this must lead to an impoverishment in solid substances. The liver bile contains 3.21 to 4.66 per cent of solid residue, according to Hammarsten (*Ergebnisse der Physiologie*, 4 Jahrg., *Chemie der Galle*, p. 4).

The gall-bladder bile contains 15 to 17.03 per cent of solid substances. There is a reabsorption of salts of the bile which takes place in the gall-bladder and bile duct, and simultaneously with this reabsorption of salts, organic bile constituents are secreted into the gall-bladder. The bile, if drawn at all from the duodenum, must be gall-bladder bile, and, even normally, greatly different in its solid constituents and salts from the liver bile.

The gall-bladder also secretes mucus, which can be precipitated from human bile by alcohol. It seems to be a mixture of nucleo-albumin and mucin. The genuine mucin in human bile is derived from the bile passages, and if there is a marked presence of mucus in the duodenal contents it either speaks for duodenitis or for inflammation of the gall-bladder and bile ducts. A marked diminution in the total solids of the bile, apart from the organic constituents, means that the calcium or the cholesterin or the bilirubin and pigments are being retained for the formation of gallstones. There is a stage of the cholelithogenic process where the stones, after being completely formed, may undergo partial solution, provided the human subject still retains a fairly normal bile secretion. It is known that gallstones formed in man undergo complete dissolution when sewed into the gall-bladder of a dog. In this stage the total solids of the duodenal contents may exceed that of normal bile from 3 to 15 per cent. This is the cholelitholytic stage or phase of gallstone disintegration.

There are, therefore, four diagnostic factors to be obtained from the chemical composition of the duodenal contents. (1) Diminution of the alkalinity. (2) Increase of the mucin. (3) Diminution of the total solid residue below the normal. (4) There may be a stage in the liltholytic process where the bile as it issues from the common gall duct. (*i.e.* in cases where the pericholangitis has not progressed far enough to prevent the issuance of the bile, partly or completely) contains more total solids than normal bile, the excess of solids being then mainly made up of Ca, Cholestrin, Bilirubin, or a mixture of these according to the composition of the calculi. It is conceivable that there are *cholelitholytic* bacteria, *i.e.* microorganisms that disintegrate already existing gallstones.

It has been observed by Naunyn that gallstones which were already partially disintegrated and dissolved when not expelled were reconstructed into new stones by the secretion of the inflamed gall-bladder mucosa, which is rich in calcium and bilirubin.

As regards the color, I should say that normal bile is always yellow, due to urobilin. A green bile is pathological.

If we have in view the factor of infection in a diagnostic study of cholelithiasis, the bacteriology of the contents of the duodenum can afford us very little aid, for even if the bile is excreted into the duodenum the bacterial flora which we succeed in obtaining (if we obtain any) will be that of the contents of the gall-bladder and not

of the gall-bladder tissues. E. C. Rosenow has perfected newer methods for the study of the bacteriology of various infections (*Jour. A. M. A.*, September 12, 1914, p. 903), and in the article, which I shall quote more fully, he pointed out that streptococci of a certain grade of virulence and from different sources are capable of producing cholecystitis and gallstones after intravenous injection, and that large numbers of the cholecystitis-producing organisms constitute the nuclei of the stones.

Rosenow described an interesting case in which cholecystitis developed in the sequence of an acute tonsilitis. The symptoms began ten days after the tonsilitis, and continued three weeks without jaundice. Then the pain shifted, and jaundice began, which deepened for a week. Five weeks after the beginning of the attack Dr. A. D. Bevan performed an operation. There was found a healing area of necrosis at the fundus of the gall-bladder, which was moderately distended with bile containing mucus, and three mulberry cholesterin stones. Cultures made from the bile were sterile, but cultures made from the center of the stones developed streptococci, colon bacilli, and the gas bacillus. An emulsion of the excised piece of tissue of the gall-bladder developed only streptococci. The culture and tinctorial properties of those special streptococci are described by Rosenow.

A dog was injected on January 22, 1914, with the growth of streptococcus from the wall of the gall-bladder, in 90 cc. of ascites-dextrose broth, suspended in 7 cc. of sodium chloride solution. On January 24 the dog was lame in the left hind leg, fluid from knee joint was turbid. Cultures were made. January 26, cultures from knee joints showed four green-producing but no hemolysing streptococci. January 30 the animal was found dead. Examination showed acute cholecystitis, enteritis, pancreatitis, nephritis. The wall of the gall-bladder was edematous 3 to 6 mm. thick, the cavity distended with brownish fluid. A plug of muco-pus closed the diverticulum of Vater. Pressure on the gall-bladder failed to discharge bile until this plug was removed by passing a probe and making firm pressure. A number of dark concretions of the consistency of putty were found in the muco-pus of the gall-bladder and in the plug. The liver was normal. The kidney showed nephritis. The lower end of the small intestine was hyperemic and covered with an exudate containing many streptococci. The stomach, large intestine, adrenals, heart, and thyroid were normal. The bile, the

plug of mucus, and the walls of the gall-bladder yielded large numbers of streptococci. The blood remained sterile. Sections of the wall of the gall-bladder showed marked thickening and degeneration.

This extremely thoroughly worked out case demonstrates, first, that a streptococcus tonsilitis may induce a cholecystitis and gall-stones in the same patient within three weeks; second, that a culture of streptococci gained from this patient and injected into a dog may produce acute cholecystitis, puttylike masses in the gall-bladder, a plug in the diverticulum of Vater causing complete obstruction, and the death of the animal after eight days.

This contribution of Rosenow's is of such importance that I venture to abstract it in the following:

In five cases, the cultures from the wall were negative and in these the microscopic evidence of any changes was slight. In the remaining twenty-four cases, in all of which increase of thickness and other changes were more marked, streptococci were isolated in all but three and in pure culture in ten. In sixteen cases streptococci were found in the wall when the contents were sterile or contained only colon bacilli. The colon bacillus was found with the streptococcus in only ten cases, once in pure form, once in association with the *Bacillus welchii*, and once with staphylococcus. *Bacillus mucosus* was found in two cases of very acute cholecystitis. In two, diphtheroid bacilli were found and in one the fusiform bacillus was found. The fluid contents, usually bile, were examined in twenty-six cases: In twelve it was sterile; streptococci were found six times, colon bacilli nine times; straphylococcus three times; the *B. mucosus* twice, and the fusiform bacillus once. The center of gallstones were examined in thirty cases. Only two proved sterile; from the rest streptococci were isolated in all but three, fourteen times in pure form and five times in association with the colon bacillus; the center of the stone, in one case, showed the typhoid bacillus in pure form while the center of two stones and the wall of the gall-bladder in a case with a clinical diagnosis of typhoid cholecystitis showed streptococcus in pure culture; in two cases the center of stones contained colon bacillus and the *B. welchii*, and one of the latter organism only; in some instances, streptococci were demonstrable in smear preparations from the center. Cultures from other portions of stones were usually sterile. The adjacent lymph-glands were examined in five cases. Streptococci were found in four, pure in three cases and in association with *B. welchii* in one case. In the cases in which a pure culture of the streptococcus was obtained from the tissue of the gall-bladder there seemed to be a definite relation between the number of colonies which developed and the degree of change, especially if relatively recent inflammation was present.

A comparison of the results obtained from the bile, the stones, and the wall of the bladder, in the individual cases, shows that a bacteriological examination of the fluid contents gives trustworthy results only in the acute

stage of the disease; during convalescence and in chronic cholecystitis the results are of little value and may be misleading. In chronic cholecystitis the bacteriology of the center of the stones is similar to that of the wall of the bladder.

The effect of the various organisms on intravenous injection has been tested in dogs and rabbits. All of the five strains of streptococci isolated from the wall of the bladder, one strain from an adjacent lymph-gland, and two out of the five strains from the center of stones exhibited marked affinity for the gall-bladder soon after isolation, and frequently produced no lesion elsewhere. Varying doses produced cholecystitis in nearly every animal injected. The severity of the lesions in the animals often corresponds to that found in the cases from which the strains are isolated. This affinity is soon lost, however, on cultivation as well as on animal passage. Five strains of colon bacilli, the one strain of typhoid bacillus, and one strain of the bacillus mucosus in no instance showed any tendency to localize in the gall-bladder. It was not possible to produce cholecystitis with the streptococci by injecting them into the portal system, even with strains which produced cholecystitis practically every time when injected into the vein of the leg, and only localized cholecystitis developed at the point of puncture when the injection was made directly into the gall-bladder. In the animals which lived for a time, there was not infrequently observed the beginning formation of gallstones containing numerous streptococci similar to the conditions found in several of the patients.

The strains of streptococci from the different cases show a striking similarity and resemble closely those from ulcers of the stomach. They produce either small, moist, grayish-brown or grayish-green, non-adherent, non-hemolyzing colonies on blood agar; they ferment mannite, lactose and salicin; they produce short chains in liquid mediums with clumps of cocci somewhat resembling staphylococci; they are of a rather low virulence, yet somewhat more virulent than strains from gastric ulcers, as manifested by their resistance to phagocytosis, by the smaller dose necessary to kill, and by the fact that, when cultivated for a time, they acquire affinity for the stomach and duodenum while the strains from ulcers, when passed through one or two animals, acquire affinity for the gall-bladder at the same time as they lose affinity for the stomach.

On animal passage, two of the strains produced both cholecystitis and pancreatitis, the lesions in the latter being most marked in the head of the pancreas.

The lesions most commonly observed other than cholecystitis, when these strains are injected especially in rabbits, are: ulcer of the stomach, hepatitis about the gall-bladder, myositis and myocarditis, arthritis, appendicitis and colitis. The common presence of streptococci in the wall of the infected gall-bladder and in the center of gall-stones, often in pure culture, while absent from the bile and their affinity for the gall-bladder in animals are strong evidence that streptococci are the cause of cholecystitis in man far more frequently than believed and serves to explain the good results reported by some as following cholecystectomy in cases of myocarditis, arthritis and other conditions.

So far as the diagnosis of the bacterial cause of cholecystitis from the contents of the duodenum is concerned, these studies of Rosenow are discouraging for the efficacy of duodenal intubation in this direction, inasmuch as the bacteria which have caused the cholecystitis are not present in the bile as issuing from the common gall duct. They cannot even be detected in the blood, but were found only in the wall of the gall-bladder itself. The problem is more promising of solution when we are dealing with the Eberth bacillus of enteric fever. If this is the cause of the cholecystitis, it is as a rule present in the bile coming from the common gall duct, and it is this class of patient that constitute the so-called typhoid fever carriers.

The bacterium which is the cause of the gall-bladder infection cannot always be isolated from the liquid contents (the bile), although it may be from the wall of the bladder and the center of the stone.

It is not necessary to undertake puncture of the gall-bladder through the intact abdominal wall, as Levy and Naunyn have done, in order to endeavor to ascertain the specific microorganism. This can be obtained by duodenal intubation, often gentle massage of the gall-bladder through the abdominal walls, by setting up of the bile evacuating mechanism by injecting HCl and albumoses into the duodenum.

In case there is an obstruction of the cystic or of the common gall duct, this procedure cannot prove successful. It is therefore necessary first to find out whether these ducts are permeable. The most practical method to ascertain this is the examination of the stools. If there is fecal acholia, then duodenal intubation can bring no bile. I must add, however, that there have been two cases in my experience where I obtained bile in quantities of one-half to one and one-half cc. even when the chemic test and appearance of the stool gave no evidence of it. It is possible that the small amount of bile that reached the duodenum was reabsorbed before it reached the colon.

But if any bile reaches the duodenum at all it can be aspirated by the method of duodenal intubation which was first practised by me in 1897, in the University of Maryland Hospital. Physiologically, the sphincter at the papilla of Vater opens only when the gastric chyme spurts into the duodenum; when the stomach is empty there is no evacuation of bile, but I will show later that this sphincter

can be made to open by injecting a solution of hydrochloric acid and pepsin into the duodenum. It has been said that hydrochloric acid by itself will effect this, but it is more efficient if pepsin is added. The most efficient substance to effect the relaxation of the sphincter at the common bile duct is a filtrate of human gastric contents obtained from a normal individual.

All of these substances have a certain degree of acidity which has to be ascertained beforehand, to deduct the amount of 1/10 norm. KOH necessary to neutralize their acidity in calculating the alkalinity of the duodenal contents after they are drawn. One cubic centimeter of normal gastric filtrate from a human individual may cause the evacuation of between 10 and 12 cc. of bile. A few drops of the HCl pepsin solution suffice; these can be aspirated and the subsequent bile expulsion used, which is, as a rule, free from the injected HCl.

The hydrochloric acid or the filtrate of human gastric contents thus injected causes the formation of secretin from prosecretin, which in turn evokes the secretion of pancreatic juice, and is supposed also to cause a secretion of bile, though not all investigators are agreed on this latter point. (See Falloise, quoted in Maly's *Jahresberichte der Thier-Chemie*, 33, 611, 1904.)

Treatment.—The course to pursue in aiming at a treatment of cholelithiasis that is based upon the cause would be to first ascertain the specific bacterium which is causing the infection, and thereafter to obtain a serum by inoculating animals with this special strain of organisms. In one of my cases of chronic cholecystitis with occasional attacks of high fever that followed three months after a severe streptococcic tonsillitis, anti-streptococcus serum apparently cured the patient, for she has remained without symptoms for two years and two months.

There is a justified doubt in this case, for there are periods of two years quiescence in many gallstone cases, after which the cholelithiasis may again give rise to symptoms. Moreover, according to Rosenow, only the particular strain of streptococci that had been derived form a case of gallstone disease should be used to produce the serum. It is conceivable that the specific strain of streptococci might be cultivated in these cases from the tonsil.

The difficulty will be to secure the proper strain of bacterium which is doing the mischief, but I believe that with patient research by the method of duodenal intubation, and making use of the neuro-

chemical mechanism which controls the sphincter of the common gall duct, marked advances in the diagnosis and therapy of this condition will be made.

The treatment of cholelithiasis has different aspects in view, and varies according to the diagnosis of the conditions present. It will also vary according to the causes of the conditions.

It is necessary to plan a special treatment for the following four conditions: (1) The gallstone colic with the acute occlusion of the common gall duct and the recurrent cholelithiasis. (2) Inflammation of the biliary vessel and reservoir system (gall-bladder, cystic duct), the acute cholelithic cholecystitis, with its consequences: (*a*) perforation peritonitis, (*b*) diffuse cholangitis, (*c*) chronic cholecystitis, with empyema and dilatation of the gall-bladder. (3) The invasion of the deeper bile passages by the stones, chronic occlusion of the gall duct. The differential diagnosis and management of the various types of icterus. (4) The consequences and complications of cholelithiasis and malignant neoplasm of the gall-bladder.

The principle of non-surgical treatment of cholelithiasis is to bring about a period of quiescent latency in the disease. Complicated infections, and all factors that tend to stagnation of the bile, may have stirred up a dormant disease. Of course, this can be treated by operative removal of the gallstones and draining the gall-bladder. From what we have seen in the preceding, however, only 5 per cent of all gallstone carriers ever have symptoms. This makes it clear that there must be a great majority of the subjects of cholelithiasis who harbor their stones throughout life with a comparative degree of comfort, or are not aware that they have gallstones.

I am not at all opposed to the operative treatment of gallstones. On the contrary, I favor it. (See article on "Cholelithiasis" in the *Analytical Cyclopedia of Practical Medicine*, Volume 3, page 295.) I also there call attention to the technique and value of duodenal lavage in the treatment of cholelithiasis. But there are plenty of patients who refuse to be operated upon, or who never have a second attack, or who have been operated upon already and in whom the cholelithiasis returned; such cases, in short, that demand non-operative treatment.

For the present I shall pass over one of the most effective therapeutic methods of the internists, namely, the treatment by hot mineral waters and diet.

I wish to emphasize what I have repeatedly condemned, namely, the employment of so-called cholagogues, especially a number that appear to be proprietary articles. Any agent that causes a hemolysis of red blood cells will increase the flow of bile, and the same effect is produced if a solution of hemoglobin is injected directly into the blood. The bile pigments are excretory products of hemoglobin. Most all so-called cholagogues are hemolytic and also protoplasmic poisons to the hepatic cells.

The use of olive oil, either by mouth or rectum, in large doses, has in my experience not been followed by gratifying results. It has been claimed that concretions can be found in the stools after the oil treatment, and that they are the result of broken down gallstones. I have convinced myself that these concretions are nothing but fat conglomerations, and that the large doses of olive oil, as given by Stewart and Mays, derange the digestion. It would be pardonable if a slight improvement followed the treatment with the substances which I have just mentioned, if we were sure that they did not do harm. Cholelithiasis is such a complicated and variable disease that improvement frequently follows rest in bed, hot Carlsbad or Bedford magnesia water, and hot applications over the liver.

It is entirely irrational to speak of a solution of gallstones by medical means. What the cholagogues are supposed to do is to increase the flow of bile. If it were really possible to increase the *secretion* of bile in order to wash out the biliary passages, it is not at all proved that an *increased* flow of bile through the gall-bladder, common gall duct, and into the duodenum would follow. We must distinguish between increased secretion and increased flow of bile, because an increased secretion may be stored in the gall-bladder and not necessarily cause an increased flow. It is not sufficient to increase the amount of bile secreted; what is needed is an increased flow of bile through the biliary vessels. This is, in the normal individual, prevented by the sphincter of the common gall duct. In 1887 Oddi showed this sphincter anatomically, and he also demonstrated that it is controlled by a group of ganglion cells which regulate the constriction and relaxation of the sphincter. See illustration in Luciani's *Physiologia del Uomo*, Vol. 2, pages 187 and 188). The same sphincter was studied by Hendrickson (*Johns Hopkins Hospital Bulletin*, September, 1898). Oddi found that the force with which the sphincter closes can only be overcome with a column of water of 700 mm.

Freese (*Johns Hopkins Hospital Bulletin*, June, 1905) found the force of the maximal contraction of the muscle of the gall-bladder to be 220 mm. of water; almost the same pressure was found by Haidenhain. This pressure varies according to the animal experimented upon, and Naunyn assumes that the force with which the sphincter of the common gall duct is kept closed is equal to a pressure of 700 mm. of water. This is Oddi's estimation. Such a pressure is far greater than could be overcome by an augmentation of bile secretion, for the secretory pressure of the human bile apparatus doesn't go beyond 250 to 300 mm. of water. Whenever the pressure in the bile ducts exceeds this the hepatic cells no longer secrete into the gall ducts, but any bile that is formed is received into the lymph vessels which surround the hepatic cells, and eventually reaches the thoracic duct.

The reciprocal neuromuscular control between the sphincter of the papilla of Vater and the muscle of the gall-bladder can only be set up normally by the products of gastric digestion, and in such a manner that the sphincter at the orifice of the common gall duct is inhibited when the gall-bladder contracts, and *vice versa*.[4] To produce an increased flushing of the gall ducts and gall-bladder with bile, the sphincter of the common gall duct must be opened. Physiologically this occurs during gastric digestion and evacuation through the pylorus. Assuming that cholagogues could augment the formation of bile, as yet there is no evidence that they can open the sphincter of the common gall duct, the tonus of which will remain 400 mm. of water pressure higher than the pressure of bile secretion.

739 University Parkway

[4] The reciprocal innervation of the gall-bladder and biliary ducts has been studied by Doyon (*Archives de Physiol.*, 1894, p. 19).

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

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PEACE

The eleventh day of November, 1918, will be memorable in the history of the human race, for generations to come, as the day on which right finally prevailed over might, and democracy over autocracy. On this day at 11 o'clock in the morning the deep voiced cannons ceased to roar and the nerve racking tumult gave place to a great calm. The foe, vanquished on the field of battle, signed humiliating articles of capitulation and the world war ceased. The long agony was over and joy and thanksgiving filled the hearts of every one. The news of the signing of the armistice by the Germans was received in Baltimore about 2.30 a.m. on November 11, and it was soon announced to the sleeping population by the ringing of bells and the blowing of sirens. The newsboys were soon astir calling in strident tones the "extras" containing the official notification of the great event. Later in the morning the city was given over to joy and merrymaking; schools were dismissed and the workmen in the shops threw aside their tools, bands and processions paraded through the streets and the houses were bedecked with our own and Allied bunting. For more than four years the thoughts of a large portion of the world have been engrossed with war, now they will naturally turn to the ways of peace. Our own country has been on a war basis for a year and a half, and in that time we have raised and equipped a military force of 3,700,000 men. The University of Maryland in its various departments has contributed most liberally to the belligerent forces. The medical school has been stripped of its teachers and the hospitals under our care have been scraped almost bare of internes, assistants and of members of the visiting staffs. The question of demobilization, therefore, is an

important one for our school as well as for the whole country. We want our teachers returned to us at the earliest possible moment; and we need our hospital attendants, urgently. Our students have been inducted into the S. A. T. C. and we do not see why they should undergo a military training at the expense of their professional work. The sooner, therefore, the medical schools are permitted to return to a peace footing, the more efficient and useful they will become. Notwithstanding the claim of some so-called medical reformers that too many physicians were being turned out by the schools it is perfectly evident that at this time there are not enough to meet the needs of the country, and if the contraction in the output continues, there will be an absolute shortage of doctors in many parts of the country. We do not need fewer physicians but better educated ones. Since our advent into the world war it has been impossible to give medical students as good training as hitherto, and we acclaim again the advent of peace from the standpoint of the medical schools as well from that of humanity.

WAR ITEMS

Dr. A. C. Gillis, Professor of Neurology and Clinical Psychiatry in this university has been commissioned a major in the medical corps and assigned to Camp Meade, Md.

Captain George L. Stickney, '10, who was severely injured in the foot at the battle of Soissons on July 18, 1918, has recovered and has been assigned to U. S. Military Hospital No. 47.

Major Robert P. Bay, associate professor of clinical surgery, who was the chief medical officer of the old Maryland National Guard, and the sole remaining officer of the Guard on inactive duty, has been called into the service of the army and is now stationed at Fort Oglethorpe, Ga.

Captain Daniel C. Hutton, '16, now serving with the American Expeditionary Forces in France, has been commissioned a major in the Medical Corps. He served with the 4th Maryland Infantry on the Mexican Border in 1916 and went to Anniston, Ala., with that regiment in 1917.

Major Ejnar Hansen, '04, has been stationed in Texas, since September, 1917. He regrets that he was unable to see service in France and hopes he may be able soon to return to his work in New York. Major Hansen was formerly an interne at the University Hospital.

Captain A. Aldridge Matthews, '00, Spokane, Washington, stopped at the University Hospital recently *en route* to Fort Oglethorpe, Ga. Captain Matthews was at one time medical superintendent of the University Hospital. He is now one of the best known surgeons in the Northwest.

Dr. Geo. Cullen Battle, '02, of Asheville, N. C., has been commissioned first lieutenant in the Medical Corps, and is now stationed at Camp Wheeler, Ga.

CORRESPONDENCE

Camp Hospital 26,
A. P. O. No. 727,
American Expeditionary Forces,
France, September 21, 1918.

Dear Professor Winslow:

It gives me great pleasure to address you a few lines and inquire as to your health and the conditions in our University. I am getting along splendidly and having all the work desirable; it gives me but very little time to think of unpleasant thoughts. Once in a while, of course, home and my good friends there come to my mind and produce a desire to see them.

I have met already Pruitt and Callahan, both from our old school and whom you undoubtedly remember. We are in the same hospital but working in different branches. As already I have stated, there is plenty to do and of all varieties. At present we do not have many wounded for they are sent somewhere else.

I do not know what the spirit of the people over there is now. We know less about the war in France than you all in the States. There is, however, an indication that we and the British and the French are making good headways and that the Kaiser and his followers are *somewhat* disappointed with their expectations of future victory. I hope that this war is over so that I may have the privilege of being with you before I depart for home in Porto Rico.

I like France and the French people. They are sincere and hospitable. All the American soldiers get along splendidly with them. I have not seen much of this country, but hope to see the most important places before my return. Then I might be able to give a better description of it.

Well Prof., permit me to salute all the friends at the University and my good teachers, and with the best wishes for you,

I remain sincerely,
Julio R. Rolenson.

Evacuation Hospital, No. 8
September 16, 1918.

Dear Dr. Winslow:

Since last writing you I have been transferred from Base Hospital No. 15 to Evacuation Hospital No. 8 as head of a surgical team, and after reporting to the C. O. and being assigned to quarters, I was informed that Major

Shipley was the chief operating surgeon of this hospital which was quite a surprise to me, and the first thing I knew he called to see me and was most cordial and took a great deal of interest in me in general and assigned my team to day duty which I thought was very nice of him, as there is always more doing in the day time than at night, and then nights were made to sleep through any way, but so far I have found that both night and day are the same here, as there has not been a thing doing since my team arrived, but of course there may be a big rush here most any time.

While at Base No. 15 I ran into a fellow by the name of Myers, Class 15, and here I find Pete Toulson and Reier, the last assistant Shipley had from Bay View. Hutton has been transferred from the 29th Division and is now an assistant on a surgical team at a hospital about six miles from here, and Egan is at the same hospital, then on the train, I ran into another one of our graduates by the name of Wentz, he was going to a unit about four miles from here to do x-ray work, so there are a few of us right close to each other. This team work seems to be the real thing in the army at the present time, and some of the biggest men in the States are heading them I understand. Of course that does not include me, but there are a number of big men here, and I hope I will be able to hold up my end with them in this line of work.

I am back to the old tent life again after being sheltered in a beautiful chateau and being up in the mountains. The first night was pretty cool, but I am one of those tough nuts and can stand most anything. This is a beautiful section of the country, and there is plenty of noise around, more especially at night. The hospital is the largest I have seen over here and is very well equipped, but this resting stage does not agree with me in the least and I will certainly welcome something to do.

No doubt you are all looking forward to the opening of school and you will then be busy with your routine work again. I often wonder just how many of our alumni are in the service. Guess in proportion we have as many as any other school. Kindly remember me to any of my friends you may see.

With every good wish, I remain,

Your friend,
W. J. Coleman,
Evacuation Hospital No. 8,
American E. F., France.

DEATHS

Dr. Herman W. Krantz, of Union Bridge, Md., died recently. He had just been commissioned a 1st lieutenant in Army Medical Corps. He graduated from the University of Maryland in 1915 and was 27 years of age.

Dr. Playford L. Rush died at Camp Merritt Hospital, N. J., recently of pneumonia. He graduated from the University of Maryland in 1914. He was 29 years old.

Dr. Howard Kerns, of Granite Falls, Minn., died on October 17, 1918. He graduated from the University of Maryland in 1909, and was 42 years of age.

Dr. Joseph F. Doyle, of Manchester, N. H., died suddenly on March 18, 1918, at St. Francis Hospital, Hartford, Conn., following an operation for hernia, to fit him for military service. He was a member of the class of 1917.

First Lieutenant Lee H. Knapp, of Danbury, N. H., died in France on May 22, 1918, of acute nephritis, due to gas poisoning and exposure in the trenches, in the 27th year of his age. He was attached to General Hospital No. 24, A. E. F., and continued on duty several days when he was unfit for service. He was a member of the class of 1916.

Dr. Samuel Gavronsky, died in October, of pneumonia, at the Harrisburg Hospital, Harrisburg, Pa. He was an interne at the hospital in which he died. He graduated from the University of Maryland in 1918.

At University Hospital in October, of pneumonia and heart disease, following influenza, Miss Lilly Seaton Hedges, a graduate of the class of 1917.

At Camp Lee, Va., in October, of pneumonia following influenza, Miss Judith S. Viborg, a graduate of the class of 1918.

At University Hospital, in October, of pneumonia following influenza, Miss Mayme E. Setzer, of Newton, N. C., a member of the senior class of the Nurses Training School.

At University Hospital, in October, of pneumonia following influenza, Miss Mary Baker, of Big Stone Gap, Va., a member of the junior class of the Nurses Training School.

MARRIAGES

Mr. and Mrs. Waitman McDaniel announce the marriage of their daughter, Lena Edna, to Captain Charles Wm. Rauschenbach, M. C. U. S. A., on Sunday, April 1, 1917. Mrs. Rauschenbach was until recently a pupil in the University Hospital Training School for Nurses, and Dr. Rauschenbach served three years as a resident physician and surgeon in the same hospital. He is now stationed at Fort Riley, Kansas.

On Saturday, October 19th, at "Willow Heights," Sandy Spring, Md., Dr. William Elisha Ellicott Tyson was married to Miss Virginia McPherson Stabler, of Sandy Spring. Dr. Tyson is a prominent physician of Detroit, Michigan, and was formerly resident obstetrician at the University Hospital.

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Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. III FEBRUARY, 1919 No. 5

SOME POINTS OF CONTACT BETWEEN ENDOCRINOLOGY AND GYNECOLOGY

BY EMIL NOVAK, A.B., M.D., F.A.C.S.

Baltimore, Maryland

Many gynecological patients present, as incidental points of interest, endocrine disturbances of one form or another. In some, however, the endocrinopathy dominates the picture, both etiologically and symtomatically. This is particularly true of certain types of menstrual disorder which are mere manifestations of internal secretory disturbances. It is with this group of cases, in which gynecology and endocrinology seem to come into closest contact, that we shall deal in this brief paper.

The two great functions of the female generative organs, reproduction and menstruation, are both profoundly influenced by disorders of the ductless glands. This is especially true of the menstrual function. It is now definitely known that the cause of menstruation is an internal secretion of the ovary, and that the element of the ovary which is concerned in the process is almost certainly the corpus luteum. The menstrual function is thus brought into the most direct relationship with the ductless gland apparatus. Although the ovary is commonly spoken of as the cause of menstruation, it would seem to be important to emphasize the fact that it

is merely the portal—the point of contact—through which the entire endocrine system exerts its influence upon the generative organs.

AMENORRHEA

The majority of menstrual disorders are, of course due to one form or another of anatomical lesion in the uterus or adnexa. A certain group, however, is undoubtedly the result of internal secretory disturbance. The most clearly defined type of menstrual disorder which is undoubtedly of endocrine origin is that observed in connection with the well known adiposo-genital dystrophy, or Froehlich's syndrome. The principal characteristics of this syndrome are adiposity and sexual hypoplasia, the latter characterized in women by the occurrence of amenorrhea. This association of symptoms is encountered with great frequency by every gynecologist. Even in the early days of gynecology, the fact was well recognized that scanty menstruation or amenorrhea is often noted in patients who have been taking on a great deal of weight. Instead of explaining the amenorrhea as being caused by the adiposity, or vice versa, we now know thanks to the researches of Cushing and others, that both are manifestations of the same underlying cause—hypopituitarism.[1]

The adiposo-genital syndrome furnishes a striking example of the intimate relationship existing between the various links of the endocrine chain. At first thought, one does not associate the pituitary body with the menstrual function, or look upon hypopituitarism as a cause of amenorrhea. Since the immediate cause of menstruation is the ovarian hormone, it is obvious that the effect of hypopituitarism must be exerted through the medium of the ovary. To be more explicit, if perhaps somewhat theoretical, it would seem that hypopituitarism entails a deficient activity of the corpus luteum—in other words, that under normal conditions the two hormones are synergistic. If this conception were correct, one might be justified in assuming that the pituitary is the activator of the ovarian secretion, and in this indirect way influences menstruation. And yet there is evidence that the mechanism of the amenorrhea observed in this group of cases is quite different.

A recent case of my own, unique in my own experience, offers evidence that even during the amenorrhea of Froehlich's syndrome, ovulation still takes place, and that corpora lutea are therefore being formed. A young white woman of nineteen, married, was referred

to me by Dr. B. S. Hanna, because of amenorrhea of five months duration. She had gained thirty-seven pounds in weight during the past year. Examination of the pelvic organs showed the uterus to be small in size and normal in position, there being no evidence of pregnancy. The amenorrhea having persisted in spite of treatment by thyroid and ovarian extracts, the patient returned for examination three months later. At this time, eight months after the last menstrual period, the uterus was found to be enlarged to the size of a two and a half months pregnancy. In other words, the patient had become pregnant during the continuity of the amenorrhea associated with her adiposo-genital-dystrophy. The occurrence of the pregnancy is, of course, absolute proof that ovulation had taken place—in other words, that corpora lutea had been formed in the ovary. In spite of the presence of the latter, however, menstruation had not occurred. It would seem that the corpus luteum hormone in this condition was either neutralized or antagonized by some other endocrine element, probably of pituitary origin. This phenomenon is analagous to the occurrence of amenorrhea in the lactating woman. It is a well known fact that pregnancy, and therefore, ovulation and corpus luteum formation, frequently occurs in nursing women. In these cases, the corpus luteum hormone is either inhibited or neutralized by the internal secretion of the lactating breast.

UTERINE BLEEDING

Excessive uterine bleeding, in the form of either menorrhagia or metrorrhagia, is almost always due to one or another of the numerous pathologic conditions which may occur in the uterus or adnexa—retained products of conception, cancer, myoma, polypi, salpingitis, ovarian neoplasms, etc. In a certain proportion of cases, much more frequently than was formerly believed, such bleeding may be observed in the entire absence of any demonstrable pelvic disease. It is suggestive that such functional uterine hemorrhage, as it is called, is noted, most frequently at puberty or at the menopause, when endocrine equilibrium is most unstable. The awakening of ovarian activity at the pubertal epoch, and its cessation at the climacterium, may well be expected to disturb the delicate endocrine balance which spells normality.

Menstrual disorders, including uterine bleeding, are often observed in connection with derangements in the function of the

thyroid. There has been some discussion as to whether excessive menstruation is more likely to be associated with hyper- or hypothyroidism. My own experience leads me to believe that, while either association is possible, it is with deficient thyroid function that we are more likely to encounter uterine hemorrhage. Hertoghe and Sehrt both hold to this view, the latter reporting that in a series of fifty-five cases of functional hemorrhage he found thirty-eight with definite indications of hypothyroidism. As a matter of fact it is probable that excessive menstrual hemorrhage may be observed with either type of quantitative disorder of thyroid function. There can be little doubt that other elements in the endocrine chain—the pituitary, thymus, supra-renal, etc.—may at times be responsible for uterine bleeding and other menstrual disorders, but our knowledge on these points is so imperfect that it is scarcely profitable to do more than allude to them.

From a theoretical point of view the form of endocrine disorder which would naturally think of as most likely to cause uterine hemorrhage would be over-function of the ovary, or hyper-oöphorism. Although such a condition may undoubtedly exist, its study presents many difficulties. In the first place, it is open to question whether we can produce hyper-oöphorism experimentally, although this possibility has been claimed by Adler. The latter, by feeding ovarian extract to a girl of twenty-one, whose menstruation had always been normal and very regular, claims to have brought on the menstrual period, for the first time in the girl's life, four days before the expected date, the amount and duration being also much greater than normal. The same observer has studied the problem from an altogether different angle, by means of the reactions of the sympathetic nerve system to various drugs, according to the method first worked out by Eppinger and Hess. His conclusions are that over-function of the ovary is the cause of functional uterine bleeding. As I pointed out in a previous paper, however, Adler's results are open to serious question, inasmuch as his methods of study seem to take no account of the fact that the ovary is only one of the endocrine organs contributing to the menstrual impulse.

Although the ovary is no doubt the immediate cause of menstruation, we must not overlook the fact that it is, after all, only one element in the rather complex menstrual machinery. It is commonly conceded that the ovary is responsible for the marked pelvic and uterine hyperemia which is so striking a feature of menstruation.

No matter how extreme such a hyperemia might be, it would not in itself explain such a wholesale exodus of blood elements from the endometrial vessels as is observed during menstruation. Inflammatory hyperemia may be far more marked than the physiological congestion of menstruation, but it is rarely associated with any great degree of hemorrhage. In other words, we must assume that during menstruation there is some local factor in the endometrium which increases the permeability of the blood vessels, upon which it appears to exert a more or less selective action. The work of Schickele and others indicates that this local factor, whether it be a hormone or enzyme, is formed as a result of ovarian activity, being apparently a by-effect of the ovarian hormone. Here, then, is another point of contact between the endocrine apparatus and the reproductive apparatus.

DYSMENORRHEA

The occurrence of dysmenorrhea as a result of endocrine disorders is certainly much less frequent and much more difficult of demonstration than that of either amenorrhea or excessive menstruation. As a matter of fact, only one example suggests itself, and in that the relationship is somewhat indirect. Spasmodic dysmenorrhea is extremely common in young multiparous women, and is the cause of much suffering and invalidism. The underlying condition in these cases is a greater or less degree of uterine hypoplasia of the foetal, infantile or subpubescent type, according to the classification which I suggested in a recent paper on the subject. It is far more frequent to observe dysmenorrhea in the mild degrees of uterine hypoplasia—the subpubescent group, than in the more extreme forms, such as the uterus foetalis or rudimentarius. In the latter variety, amenorrhea is the predominating gynecological symptoms. When dysmenorrhea is observed in young unmarried women with under-developed uteri, the symptom is brought into relationship with the endocrine apparatus by virtue of the fact that disorders of the latter are unquestionably to blame for the uterine hypoplasia, and indirectly, for the dysmenorrhea.

Knowledge of this fact should point the way to future efforts to find a satisfactory treatment for this condition. Certainly no one can deny that the results of present day treatment of this syndrome—whether by drugs, simple dilatation, the use of stem pessaries, or the

performance of plastic operations on the cervix—are such as to provoke little enthusiasm among gynecologists. It is true that the same statement applies even more forcefully to organotherapy in such cases; but the fault lies not so much with the general logic of such treatment, as with the still nebular nature of our knowledge concerning endocrine relationships, as well as the methods of preparation of gland extracts.

STERILITY

Much of what has just been said concerning dysmenorrhea applies also to the discussion of at least one type of sterility—that associated with uterine hypoplasia. It is quite possible that our helplessness in this, one of the big problems of gynecology, is due to the fact that we have paid too much attention to the study of mere anatomic defects in the reproductive organs, and too little to the possibilities of a perverted physiology of the generative apparatus. Although I shall not enter into the discussion of this subject, there is much reason to believe that sterility in this group of cases is due to a physiological defect in the endometrium—the absence of some factor, whether hormone or enzyme, which is essential to the implantation of the fecundated ovum. Organotherapy offers nothing as yet in the treatment of such cases, but I firmly believe that the time will soon come when those cases of sterility which are of endocrine origin will be successfully treated by appropriate organotherapeutic measures.

In this little review, I have indicated, in a superficial way, only a few of the more important points at which endocrinology and gynecology come into more or less intimate contact. The field of endocrinology is the whole living body—that of gynecology, as of other specialized branches of medical or surgical science, is often confined to a special region. And that is just the point upon which I would like to put a final emphasis—that the gynecologist whose range of vision is so limited as not to extend beyond the ileo-pectineal line will not only miss much of the fascination he might otherwise find in his work, but that, from the standpoint of the patient, he will often, by encircling himself with such a narrow horizon, misinterpret or perhaps overlook clinical manifestations which are at times veritable signboards as to therapeutics.

GOITER: ITS EARLY DIAGNOSIS AND TREATMENT[1]

By Joseph W. Holland, M.D., F.A.C.S.

Baltimore, Maryland.

Any enlargement of the thyroid gland must be termed a goiter. Not all enlargements, however, present the symptoms which are commonly associated with goiter.

Since the days of Graves and Basedow, whose memorable work first become known about 1840, much experimental work has been carried on to determine the physiology of the thyroid gland. Out of a chaos of theories and discussions and a vast amount of published literature, the light of truth is just beginning to be recognized. As a result of the work of Dubois, Kendall, Halsted, and others it is a recognized fact that the thyroid gland elaborates a secretion, the function of which is to preside over tissue metabolism in general. Bauman, in 1895, isolated an iodine compound which he called iodothyrin. Boswald later isolated a compound which he called Thyroglobulin. Other iodine bearing compounds have been discovered by others. A substance elaborated in the gland of the nature of a hormone has been known for some time. The latest and most convincing work in this line has been done by Kendall at the Mayo Clinic. He has succeeded in isolating the thyroid hormone and at least two iodine compounds. He has endeavored experimentally to associate the hormone elements and the iodine compounds and establish a relation between the two. He has demonstrated that the thyroid hormone administered through a certain period of time will produce many of the symptoms of hyperthyroidism. Of the two iodine compounds, one he calls "alpha" iodine he has demonstrated experimentally to be toxic and when administered in sufficient doses will produce many of the symptoms of hyperthyroidism. The other iodine compound, which he calls the "beta" group, he found to be non-toxic. He also found that the amount of iodine contained in glands removed by operation varied considerably: e.g., in toxic goiters he found less iodine than in goiters non-toxic, and advanced the theory that the symptoms of toxaemia associated with the former were due to the amount of iodine and possibly thyroid hormone in the circulation, and not to the amount of these agents retained in the gland.

[1] Read before the Baltimore County Medical Society, September 19, 1917.

We may say then that the thyroid gland elaborates substances which, when normal in quantity, serve to maintain the equilibrium of metabolism, but when these substances are thrown into the circulation in excess, either because of ineffective storing in the gland or because of a hyperproduction of the substances, a toxic condition develops.

This toxaemia is first manifested by activation of cellular elements. This is clinically demonstrated in mental excitement, loss of weight, followed in the course of time by cell degeneration as a result of over-stimulation. The toxic agent or agents appear to exercise a particularly selective action upon the tissues of the circulatory and nervous systems. In these organs the earliest evidence of degenerative changes are observed.

CLASSIFICATION

The classification of goiters is still irregular. Different workers and observers have effected classifications which bear out their own ideas. The pure laboratory or hystopathological classification can not be conveniently applied clinically, nor can a classification based upon clinical phenomena be made to entirely harmonize with the laboratory classification.

The work of Wilson and Plummer has more nearly approached the ideal classification than any other authorities with whom I am familiar. They have established a most remarkable parallel between the clinical picture and the hystopathological picture. In 1300 goiters examined by them, including all classes except those removed from patients suffering clinically diagnosed exophthalmic goiter, only one showed parenchymatous hyperplasia or hypertrophy, and in 800 goiters clinically diagnosed as exophthalmic, all except ten demonstrated hyperplasia or hypertrophy or a combination of the two.

For clinical purposes the most convenient classification is to divide all goiters into three groups, viz: Non-toxic, toxic and malignant. The first group would include simple goiters, e.g. such thyroid enlargements as occur at puberty, during menstruation and pregnancy; colloid and adenomatous goiters. I do not wish to convey the impression, however, that any goiter however innocent it may appear at first, or how benign it may appear for an indefinite period may not suddenly become toxic and produce the clinical

syndrome which is ordinarily associated with thyrotoxaemia. The toxic goiters may be included under two heads: exophthalmic and non-exophthalmic toxic—that is goiters producing toxaemia without exophthalmos. Any goiter belonging to the second class mentioned, may at any time develop the characteristics of the first class. The exophthalmic goiter is the more typical of the toxic goiters. It is incident to a later period of life than the non-exophthalmic group and runs a much more acute course. The tissue changes are much more rapid and well marked degeneration supervenes in a much shorter period. The average age of the onset of exophthalmic goiter is 32, while in non-exophthalmic toxic goiter the enlargement is first noticed at the average age of 22. In the true exophthalmic goiters toxic symptoms develop on the average in nine months after the appearance of the thyroid enlargement, and in the non-exophthalmic toxic goiter the toxic symptoms appear on the average fourteen and one-half years after the first appearance of the goiter. These figures are taken from the statistics of the Mayo Clinic.

Acute inflammation of the thyroid gland and tuberculous disease are very uncommon. About the only other disease to which the gland is subject is malignancy, and only about 1 per cent of thyroid disease is malignant.

CAUSE

The cause of goiter is still shrouded in mystery. Numerous theories have been advanced and some definite observations have been made. Enlargement of the thyroid gland, with or without toxic symptoms, has so frequently followed acute infections that in a certain number of cases we are forced to believe that the goiter was secondary to the infection. Drinking water, because of bacteria contained in the water or because of mineral elements in solution, has also been blamed. In certain sections of the country where goiter is prevalent and sometimes endemic, there seems to be an intimate relation between ingesta and the goitrous condition. Geographic incidence of goiter is well known and in some instances striking. Inactive goiters have been frequently observed to become suddenly toxic following profound shock, or periods of great anxiety or distress, or prolonged physical exertion.

SYMPTOMS

There is always an enlargement of the thyroid gland. The size of the gland, however, bears no uniform relation to the symptoms presented. Goiter appearing at the age of puberty may present temporarily the mild symptoms of hyperthyroidism. All symptoms may disappear in a short time, even the gland itself may apparently resume its normal size. Again, a goiter appearing at the adolescent period may react at each menstrual period or may remain quiescent until pregnancy supervenes; or more frequently, according to Plummer, show no signs of activity beyond the normal until after the average period of $4\frac{1}{2}$ years. On the other hand an adolescent goiter may continue to increase in size, the enlargement being due to accumulation of colloid or to the development of adenomata. The enlargement may be the only symptom; but this variety may at any time assume the toxic phase and eventually develop a complete clinical picture characteristic of thyrotoxaemia. Many cases continue to enlarge with little or no symptoms of toxaemia. Only for cosmetic reasons or because of pressure upon the trachea or esophagus or cervical vessels and nerves is operation indicated.

The clinical picture of well developed toxic goiters, whether exophthalmic or non-exophthalmic, presents many features which are very similar. The most striking difference between the exophthalmic type and the other toxic varieties is in the nature and time of the onset and the rapidity of development. The symptoms in exophthalmic goiter develop much more acutely. The goiter either comes to operation or results in the death of the patient in a shorter period, while in the non-exophthalmic the course is less acute and circulatory disturbances are generally the most conspicuous. The sequence of symptoms in a true toxic goiter, especially of the exophthalmic type, may according to Plummer be manifested as follows:

1. *Mental excitement.* Manifested in an inclination to unusual mental and physical activity. In this early stage there may be an increase of appetite and sometimes a brief period of increase in weight. Very soon, however, there is decrease in weight because the nutrition intake is not sufficient to compensate for the tissue destruction.

2. *Vasomotor disturbances.* The most conspicuous of these: flushing of the face and neck, sweating and vertigo.

3. Tremor. Tremor is nearly always present and differs from the tremor of hysteria, alcoholism, and neurasthenia in as much as it is finer and is constant.

4. Mental irritability. This phase is the direct sequel to the stage of excitement. The patient becomes irritable, quick to anger and is inclined to sudden out-bursts of crying. These symptoms are often conspicuous in individuals who naturally are of a composed, amiable disposition.

5. Tachycardia. This is a constant symptom. The pusle rate varies from 90 to 150 or more. Irregularities soon develop. Myocardial changes develop sooner or later and the picture presented varies from mild valvular insufficiency to complete decompensation.

6. Muscular weakness. This is another conspicuous and most important symptom. The patient first becomes conscious of loss of strength by noticing that usual exercise produces unusual fatigue. The quadriceps extensor muscles are usually found to be the first to weaken. The patient has difficulty in ascending the stairs or stepping upon a stool or chair. Loss of strength is progressive, and in the more advanced stages even slight resistance movements occasion a feeling of marked fatigue.

7. Cardiac insufficiency. This supervenes as a natural result of the overaction of the heart and myocardial degeneration.

8. Exophthalmos. All cases of true Graves' disease sooner or later develop exophthalmos with Graefe's and Stellwag's signs.

9. Loss of weight. Loss of weight may come on early or after a brief period of increase in weight; it may follow a period without change of weight. Loss of weight, however, is a constant symptom and one of the most reliable.

10. Gastro-intestinal. Nausea, vomiting and diarrhea. These symptoms may be demonstrated early in the course of the disease but most frequently are later symptoms. They should always be regarded as serious.

11. Mental depression. This is the third phase of the nervous syndrome: first, excitation; second, irritability and third, degeneration manifested in mental depression—sometimes insanity in the form of melancholia. Of course, there are many variations from this clinical picture. In no disease probably are the clinical symptoms so variable both in degree, time of incidence and sequence. These, however, are the most important symptoms and when any two or three of them are demonstrated in combination with a goiter,

thyro-toxaemia should be suspected. All these symptoms may develop in the non-exophthalmic toxic goiter except the exophthalmos, but in this form the sequence is not so regular as in the exophthalmic goiter.

The blood picture is very important, and in many instances is strikingly characteristic. There is usually a moderate anaemia. There is no increase in white cells but in a typical case of hyperthyroidism the polynuclear cells are diminished and the lymphocytes are greatly increased. The average lymphocytes is about 40 per cent, whereas the normal is about 20 to 30 per cent. In many case the lymphocytes outnumber the polynuclear.

The blood pressure changes are often striking. In a great majority of cases of hyperthyroidism there is an increase in systolic pressure and in a large proportion a low diastolic. Figures bearing upon blood pressure are somewhat different in the exopthalmic goiter from those prevailing in the non-exophthalmic but toxic goiters. In exophthalmic goiters, 37 per cent have a systolic blood pressure of over 160, while in the non-exophthalmic goiters 27 per cent have systolic pressure over 160. Comparing the blood pressure in goitrous patients with that of healthy individuals of the same age, it has been found that the average blood pressure in the healthy person at 25 years to be 123 systolic, diastolic 80. At the age of 55, the systolic blood pressure was 152 and the diastolic 88. In exophthalmic goiter cases the systolic pressure on the average at the age of 25 is 140 systolic, 78 diastolic. At the age of 55 systolic 160 and diastolic 80. Discrepancy between systolic and diastolic pressure is often remarkable and much greater than is shown in these averages. The average pulse rate in exophthalmic goiter is about 130. In all well developed cases of hyperthyroidism pulsation of the carotids is conspicuous. The patient complains of conscious pulsation often times throughout the entire body. A bruit is audible over the superior thyroid vessels in 75 per cent of the cases. A distinct thrill in the carotids can also be demonstrated in advanced cases.

While on a visit at the Mayo clinic about two years ago I was astonished at the great number of goiter operations performed. It was not unusual to witness from four to six operations in one morning. In reply to a query by me of one of the staff of surgeons as to where all of the goiters came from, he replied: "Most of them from the Middle West, but from all over the country, from the Atlantic

to the Pacific." I remarked that we saw comparatively few in Baltimore. His quick retort was: "You don't look for them. We have goitrous patients here from your part of the country." Which I know to be a fact. I was struck by this assertion and my interest being greatly stimulated by the visit to this clinic, I have since been acutely observant and on the lookout for this class of patients, and have reached the conclusion that the surgeon was about right. In this part of the country where active goiters are comparatively much less numerous than in some other sections of the country we are apt to overlook them. A physician sees a swelling in a patient's neck for instance: sees it again and again while the patient apparently is in perfectly good health. Then sometime later she consults him about her run down nervous condition with loss of weight, palpitation, rapid heart action and weakness. I fear that too often he fails to recognize the connection between the condition as manifested by these symptoms and the swelling in the neck, and prescribes tonics or makes a diagnosis of heart disease or maybe melancholia or neurasthenia—the latter is the most common diagnosis.

TREATMENT

Treatment may be divided into two varieties. The first embraces all therapeutic means except surgery. Naturally, I am inclined to the latter treatment, but I do not admit that I am partial to surgical treatment of thyroid disease to the neglect of other forms of treatment. There is no specific and no one line of treatment either medicinal, climatic, electrotherapeutic, dietetic or what not which can be considered at all reliable or efficient. The first requisites are absolute rest and carefully selected diet. Diet should be well balanced and highly nutritious to supply the necessary increment for the rapid metabolic tissue changes.

No one drug has proved of distinct value. The best one can do is to treat the symptoms. Bromides have a value. To steady a lagging heart, particularly one which is suffering degenerative changes, digitalis and strophanthus are indicated. In an acute stage ice applied over the neck and over the cardiac region constantly is particularly gratifying to the patient, and in a measure has a quieting effect upon the heart and to some extent reduces the circulatory activity in the gland. Iodine either locally or internally except in the adolescent goiters is positively contraindicated. In

an acute phase, especially of the non-exophthalmic toxic goiters, the administration of iodine is especially hazardous. It is apt to cause a sudden "dumping" of an overwhelming dose, as it were, of thyrotoxin into the general system. In some cases, in the early stage of true exophthalmic goiters, the administration of iodine or some of its compounds appear to be beneficial. It is always dangerous, however, in the active phases of hyperthyroidism.

The X-ray has been used extensively. Fisher, in 23 cases, reports 6 cured and 5 improved. Pfahler and McDonald, after an extensive review of the literature of X-ray treatment and the study of many case records, stated that "in the main results were good but temporary." In the words of Berkman:

> Results from the use of X-ray are delayed and require many repetitions of the treatment. Our experience has been that practically no dependable beneficial results are obtained in less than a month, moreover in cases comprising greater surgical risk, excitement and mobilization incident to the X-ray treatment usually offsets whatever early benefits the patient may receive.

SURGICAL TREATMENT

Under the leadership of C. H. Mayo, Crile, Ochsner, Halsted and others in this country, the surgical treatment of thyroid disease has in the last few years received a new impetus. Development and improvement in operative technique places it on a foundation far more secure than any other line of treatment. Statistics from the best clinics in this country and abroad now show cures or great improvement in about 75 per cent of cases operated upon, and in a large per cent of the remaining cases operated upon there is some amelioration in the toxic symptoms. The operative mortality is about 3 or 4 per cent in exophthalmic goiter. Where there is marked myocardial degeneration associated in all probability with renal changes and a wrecked nervous system, no treatment can be expected to restore the patient to anything like normal health. The most that can be expected from any treatment in such cases is a shutting off of the source of supply of the poison. The time to institute surgical interference is as soon as it is demonstrated that the patient is not improving under the ordinary therapeutic measures including those which I have mentioned. It is a woeful loss of time and an assumption of unwarranted risk to postpone surgical operation under such circumstances. On the other hand, no class

of patients require keener judgment or greater patience on the part of the surgeon in determining just when and in what phase of the disease it is best to operate. Very often the most favorable and advantageous time to resort to the knife is just when other therapeutic measures appear to be most successful, because in a large number of cases relapses occur after a brief period of improvement following a long period of careful and most efficient non-surgical treatment.

Large adenomatous goiters and colloid goiters which present no toxic symptoms require operation only for cosmetic effect and to relieve the pressure symptoms. It must not be forgotten, however, that these old large goiters are often like volcanoes in the inactive stage and are liable at any time to burst forth into activity and present a most dangerous and distressing toxaemia with all of its resulting destructive changes.

PALLIATIVE SURGICAL TREATMENT

Ligation of two or more vessels, either at one operation, or done in more than one stage, is of great value as a preparatory step to thyroidectomy in cases whose condition forbids the more radical procedure. While never so reliable as resection of the gland, ligation in early mild cases may effect a cure. Sympathetectomy, inaugurated by Jaboulay in 1896, has proven very unreliable and is dangerous. The method has been used by but few and is now about abandoned.

Injections of various fluids: ether, chloroform, etc., has likewise been discontinued because of the danger attending the procedure. Later the injection into the gland of boiling water (Porter's method) has been used with more success. This method in therapeutic value should be classed with ligation as a preliminary measure to thyroidectomy.

I will now present, from my own series, four cases each typifying a variety of goiter. They were all treated surgically except case 3, I will present these in order to focus attention on four of the most common types:

Case 1. White male, age thirty-nine, clothing salesman, operated upon June 23, 1916. Patient had noticed a swelling in the neck for several years. The last few months had suffered choking sensation and hoarseness, no loss of weight, no nervousness no weakness, nor tremor; pulse rate normal, blood-

pressure normal. He sought relief merely because of pressure symptoms and for cosmetic reasons. Laboratory diagnosis—cystic adenoma of thyroid.

Case 2. White female, married, no children, age thirty-six. Patient had noticed a swelling in the neck for a long time. She always enjoyed good health until about six months before entering the hospital, January 24, 1917. About six months previously she had noticed that the growth was increasing in size. Two months previous to entering hospital she suffered a sudden pain in the neck which lasted for several days. The growth became very sore and tender, and increased in size. It was followed by a feeling of oppression and difficulty in swallowing. She found it necessary to sit up in bed at night. For several months she had suffered nervousness and felt irritable and noticed that she became short of breath on exercising and became fatigued easily. The pulse rate on entering the hospital was between 95 and 100; blood pressure systolic 126, diastolic 90. Urine negative; hemaglobin 75 per cent, W. B. C. 6,000. No exophthalmos. Operation January 25, 1917. Pathological diagnosis—cystic adenoma with haematoma of the right lobe. The occurrence of the haematoma accounted for the sudden pain and the increase in size of the right lobe about two months before operation. There was also evidence of degenerative changes in the gland but no hyperplasia nor hypertrophy. This should be grouped as a cystic adenoma demonstrating mild symptoms of toxaemia resulting from the degenerative processes going on in the gland. Such a case if allowed to go untreated will slowly but surely develop the symptoms of toxaemia with degenerative cardio-renal changes and probably also serious nervous phenomena and may be exophthalmos.

Case 3. White female, age thirty-three, married, five children. She entered the hospital February 3, 1917. She had noticed the swelling in the neck for eight years. It had grown steadily. On entering the hospital it is of moderate size and symmetrical. For the last three years the patient has suffered from nervousness; periods of marked weakness and headache which forced her to remain in bed for several days at a time. In fact, it had been up and down with her during that period. Exacerbations of nervousness and weakness recurred at intervals. These attacks have been worse during the last six months. Six months ago she gave birth to her youngest child, from which time the symptoms have been greatly exaggerated. Appetite has been good; no gastro-intestinal symptoms. She has suffered greatly from a dry hacking cough, which at times is very distressing. Shortness of breath and great fatigue supervenes upon slight exertion. She has lost weight during the last six months. On entering the hospital she was in a condition of marked nervousness and mental irritability. Exophthalmos fairly well developed. Stellwag and Von Graefe present. Bruit over superior thyroid marked. There is great throbbing of the carotids and distinct thrill. Cardiac impulse conspicuous. Area of cardiac dullness increased. There is both a systolic and presystolic murmur. Pulse rate varies from 120 to 160. Urine negative. Hemoglobin 80 per cent, W. B. C. 6,400. Polys 63 per cent, lymphocytes 36 per cent. Blood pressure systolic 146, diastolic 84. This patient remained in the hospital until February 13, 1917, when her pulse rate had declined to about 100. She left the hospital because of pressure of

household affairs without being operated upon, intending to return later. This case presents a typical picture of exophthalmic goiter in an advanced stage. The nervous system and circulatory system had suffered greatly. Cardiac decompensation fairly well developed as result of advanced myocardial changes. A slight febrile reaction was noted in this case. Maximum 100. This is not unusual during active stage of hyperthyroidism.

Case 4. White female, age twenty-seven, single, student of nursing in a southern city. Entered the hospital June 10, 1917. Menstruation began at the age of fourteen. Slight enlargement of the neck was noticed at this time, which, however, disappeared. About one year ago the patient suffered a severe attack of influenza. She entered training in April, 1916. In February, 1917, she became conscious of palpitation and unusual fatigue. Mental excitation and loss of weight quickly followed. There was no loss of appetite. She frequently suffered spasmodic muscular movements. Vicarious sweating was noticed. There was marked inability to concentrate attention. Had noticed muscular tremor for several months. It was first brought to her attention because of inability to pick up things. Pulse rapid and palpitation constant. At times she was conscious of pulsation all "over." Bulging and staring of the eyes noticed for about four months. Vasomotor disturbances, flushing of the face and neck and vertigo occasioned by slight excitement caused much distress. Loss of weight—15 pounds in three months. On entering the hospital June, 1917, pulse rate varied from 90 to 140. There was no enlargement of the heart but well marked pulse shock and pulsation of the carotids. A transient murmur, systolic, could be heard. First and second sounds accentuated and at times a triple sound was audible. There is an audible bruit over the superior thyroids—no thrill. Blood pressure systolic 154, diastolic 44—right; left—systolic 150, diastolic 50. At times, diastolic could be made out under 40. Reflexes generally exaggerated. Muscular weakness very marked. Slight resistance movements cause conscious fatigue. There is a distinct tremor, fibrillary and fine. Urine negative. There is slight exophthalos moderately well developed Von Graefe and Stellwag's. The blood picture is striking. Hemoglobin 95 per cent; leucocytes 7,200; polys 46 per cent; lymphocytes 53 per cent. No gastro-intestinal symptoms. To appreciate the picture presented by this case it would be necessary to observe the patient herself. Operation—resection of larger part of both lobes and the isthmus, July 2, 1917. She left the hospital July 26, 1917. At that time pulse rate had become quite regular, on the average of about between 80 and 90. Nervous equilibrium greatly improved, in cheerful spirits, appetite good, sleeps well, bruit disappeared, no pulsation of the carotids, heart sounds normal. The patient is not conscious of cardiac pulsation. Blood pressure July 18, 1917, sixteen days after operation, systolic 132, diastolic 85. The patient was able to take the trip to Charleston, South Carolina, without suffering any great fatigue. Pathological report of the removed thyroid by Dr. H. J. Maldeis was as follows: "Acini lined with multiple layers of cells; some being completely filled with cells. Some of the acini are dilated and lined with a single layer of low columnar cells. Very little change in colloid material. Stroma is slightly increased. Vessels are congested and there is some free blood."

This case presents a beautiful parallel between the clinical features and the histopathological condition of the gland. The gland is distinctly hyperplastic and the clinical picture is that of a fairly well developed hyperthyroidism associated with a true exophthalmic goiter. This case represents but one curve, whereas in Case 3, the fluctuations marked several curves. The course is typical of a moderately acute case. This case was treated for three months before entering the hospital in the usual way with rest in bed, concentrated nutritious diet and such medicinal agents as seemed indicated. The same therapeusis was continued for over three weeks after the patient entered the hospital. Except for increase in weight there had been little improvement. The improvement following the operation, however, was remarkable. This case beautifully illustrates the superiority of surgical treatment of exophthalmic goiter over the ordinary nonsurgical methods.

FRACTIONAL ANALYSES OF THE GASTRIC SECRETION IN ULCER OF THE STOMACH AND DUODENUM[1]

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Since Rehfuss and his associates first demonstrated the importance of fractional analysis of the gastric contents much interest has been manifested in this form of examination.

According to this method the gastric function is studied by the examination of small portions of gastric contents removed at frequent intervals after a test-meal. This method has so materially altered our views regarding the variations in gastric acidity, both in health as well as in disease, that it has become necessary to revise the results of our former analyses in most gastric disorders; for, as Rehfuss has demonstrated, as soon as food enters the stomach a complicated cycle begins, constantly changes and "weaves the highly characteristic cycle of gastric digestion."

While it is quite true that under normal conditions with the Ewald test-meal, the height of digestion is usually observed in one hour, this is not true in pathological states, and many variations take place in this respect. With the object therefore of investigating the entire period of digestion, Rehfuss instituted his fractional method of analysis. While experimenting with the Einhorn duodenal tube he

[1] From *Medicine and Surgery*, July, 1918.

became convinced that if the tip were modified, small quantities of gastric contents could be obtained at varying intervals. He therefore slotted the tip instead of having it perforated, and so cut the slots that their diameter became as great as the calibre of the rubber tubing—thus assuring the more perfect aspiration of material. The tip is made of steel, and is bulbous in shape, so that it can be easily swallowed; it is connected with the tube and is sufficiently heavy to seek by gravity the lowest portion of the stomach. The tube is given the patient at the time of taking the test-meal, and portions of the contents are aspirated at intervals of fifteen to twenty minutes, until the stomach is found completely empty, thus enabling one to make a fractional study of the gastric secretion over the entire period of digestion as well as to obtain complete information regarding the motor activity of the stomach. One soon learns from this method of investigation that an analysis of the gastric contents at the end of an hour is by no means sufficient to allow us to draw conclusions as to the degree of acidity which may exist in any particular gastric disorder; for, whether there be either a hyperchlorhydria or a hypochlorhydria at hand, the gastric secretion may not have risen to its height at the end of an hour or may have done so before this time, and thus many phases of the hyperacidity or hypoacidity may be entirely overlooked.

Inasmuch as this method of examination must necessarily alter the results of our former gastric analyses obtained in the various disorders of the stomach, it was deemed advisable to make fractional analyses of a number of cases of peptic ulcer with a view of determining whether by means of this method new facts might be obtained, which may further aid us in the diagnosis of this affection. It is well known that the gastric acidity is usually high in peptic ulcer, and that the symptom of hyperacidity is usually noted as an important evidence in corroboration of the diagnosis of this affection. Yet it is not unusual to observe that in the ordinary analysis a normal or even lessened acidity is obtained even though the patient complains definitely of symptoms of hyperacidity. These findings have been frequently noted in the former method of examination, and were most difficult to explain; the statement being frequently made that in many of these cases gastric hyperesthesia existed in which the mucosa becomes hypersensitive even to normal or even lessened gastric secretion.

In an analysis of the gastric secretion in 810 of our cases of peptic ulcer published in 1912:—

	CASES	PER CENT
Normal acidity was observed in	376	46.4
Hyperchlorhydria was observed	246	30.3
Hypochlorhydria and anacidity	188	23.2
	810	

In our series of cases fractional analyses were made of 18 cases of peptic ulcer.

The cases were so definite that there could be no question as to the correctness of the diagnosis. Of these, 6 were operated on, and the diagnosis was thus confirmed: the others presented all of the characteristic signs, together with occult blood in the stools, and positive roentgen-ray findings.

Of the 18 cases, 10 were duodenal ulcers; 6 gastric and 2 gastro-duodenal ulcers. In our cases the extractions were obtained at the end of twenty, forty, sixty, eighty, one hundred, one hundred and twenty, and at times one hundred and forty minutes. In 7 of these cases the highest acidity was observed in one hour; in 2 instances in forty minutes and 2 in eighty minutes; in 2 in one hundred minutes and in 5 in two hours. In duodenal ulcer the acidity usually rises higher than in any other condition; it reaches its height rapidly, and the rise is sustained to within a short time of the end of digestion. This rapid prolonged rise is rarely observed except in ulcer. In our cases hyperacidity was present in 8 cases, and normal acidity in 2, and the highest acidity appeared after one hour in 6 instances, and on the hour in 4; it is therefore evident that in the 6 cases the highest acidity would have been entirely overlooked had one depended upon the hour examination alone. At times blood is found in the contents after the end of an hour. This finding lends additional evidence as to the presence of an ulcer, and in doubtful cases may clear up the diagnosis. Inasmuch as the Rehfuss tube does not pass through the stomach into the duodenum there can be no question of trauma in these cases. Blood appeared in 5 of our duodenal cases, in 4 after an hour, and in one on the hour. Rapid evacuation of the stomach contents, that is within one and a half to two hours, is also very characteristic of uncomplicated cases of duodenal ulcer; however, in those conditions associated with pyloric

spasm there is usually a delayed motility. Hypermotility appeared in 8 of our duodenal cases.

In gastric ulcer there is no typical curve; in some cases the acidity is quite low; in some normal, but in the largest proportion of cases there is hyperacidity. In our series there were 3 cases presenting a hyperacidity, and 3 a normal acidity. In our gastric cases, the highest acidity appeared after an hour in 4 cases, and on the hour in 2. The highest acidity would have been entirely overlooked in the latter instances had the one hour examination been depended on. Blood is at times found in the gastric contents; occasionally only as occult blood, but frequently it is visible. Blood appeared in 6 of our gastric cases; in 4 after an hour, and in 2 on the hour.

Attention has been called by Andreson to the study of post-operative cases, especially gastro-enterostomies with recurrence of ulcer after operation by this method. The roentgen ray does not always reveal the defect in these cases, as the stomach evacuates itself of the bismuth too rapidly through the new stoma and the defect is therefore not revealed. The presence of blood in these cases lends some evidence in favor of ulcer. There is usually a delayed motility in gastric ulcer of from two and a quarter to two and a half hours; this was present in all of our cases.

CONCLUSIONS

1. By means of fractional analysis with the Rehfuss tube we can study the entire cycle of digestion both as to the secretory and motor activity of the stomach.

2. By complete aspiration at any period of digestion we can obtain definite information regarding the amount of secretion.

3. In duodenal ulcer the acidity is usually higher than in any other condition. There is a rapid prolonged rise; the highest acidity appearing after an hour in most instances. Blood is frequently found in the contents, which presents additional evidence as to the presence of an ulcer. Rapid evacuation is rather characteristic of uncomplicated forms of duodenal ulcer.

4. In gastric ulcer there is no typical curve of acidity; there may be a low acidity, normal acidity or hyperacidity. Hyperacidity is usually present. Blood is obtained at times in the gastric contents, which presents further evidence in favor of ulcer. There is usually delayed motility in gastric ulcer.

The following tables present the fractional analyses of our 18 cases of peptic ulcer:—

MINUTES	TOTAL ACIDITY	FREE HCl	MUCUS	BLOOD	MINUTES	TOTAL ACIDITY	FREE HCl	MUCUS	BLOOD
Case I. Duodenal Ulcer									
20	40	8	+	0	80	76	24	0	+
40	70	20	0	0	100	68	14	0	+
60	74	20	0	0	120	50	10	+	+
Case II. Gastroduodenal Ulcer									
20	6	4	0	0	80	45	12	0	0
40	40	22	0	0	100	40	10	+	+
60	65	25	0	+	120	24	10	+	+
Case III. Gastric Ulcer									
20	0	0	+	0	100	20	16	0	+
40	0	12	+	0	120	54	14	0	+
60	4	20	0	0	140	42	9	0	+
80	12	21	0	0					
Case IV. Gastric Ulcer									
20	14	2	0	0	100	37	26	0	+
40	18	4	0	0	120	44	18	0	+
60	20	10	0	0	140	Empty			
80	24	12	0	0					
Case V. Duodenal Ulcer									
20	14	4	0	0	80	44	23	0	+
40	26	18	0	0	100	58	34	0	+
60	28	26	0	0	120	62	36	0	0
Case VI. Duodenal Ulcer									
20	8	5	0	0	80	16	10	0	0
40	12	8	0	0	100	34	6	0	0
60	14	12	0	0	120	60	36	0	0
Case VII. Duodenal Ulcer									
20	32	14	+	0	100	70	12	0	0
40	40	15	+	0	120	70	6	0	0
60	52	28	0	0	140	Empty			
80	80	20	0	+					
Case VIII. Duodenal Ulcer									
20	40	0	0	0	80	50	40	0	0
40	48	40	0	0	100	60	35	0	0
60	40	48	0	0	120	65	28	0	0
Case IX. Gastric Ulcer									
20	12	6	0	0	80	46	24	0	+
40	24	16	0	0	100	32	16	0	+
60	44	41	0	0	120	24	20	0	+

MINUTES	TOTAL ACIDITY	FREE HCl	MUCUS	BLOOD	MINUTES	TOTAL ACIDITY	FREE HCl	MUCUS	BLOOD
Case X Duodenal Ulcer									
20	22	12	+	0	100	84	58	0	+
40	52	46	+	0	120	98	82	0	+
60	64	42	0	0	140				
80	80	60	0	0					
Case XI. Duodenal Ulcer									
20	36	28	0	0	80	84	64	0	0
40	84	72	0	0	100	60	42	0	0
60	98	84	0	0	120	52	38	0	0
Case XII. Duodenal Ulcer									
20	50	32	0	0	80	84	32	0	+
40	52	30	0	0	100	56	34	0	0
60	80	68	0	+	120	48	22	0	0
Case XIII. Duodenal Ulcer									
20	50	38	0	0	100	70	54	0	0
40	72	68	0	0	120	52	38	0	0
60	92	84	0	0	140				
80	84	72	0	0					
Case XIV. Gastric Ulcer									
20	28	12	+	0	80	44	32	0	+
40	52	28	+	0	100	46	28	0	+
60	76	38	0	0	120	38	20	+	0
Case XV. Gastroduodenal Ulcer									
20	40	22	0	0	80	66	44	0	0
40	72	44	0	0	100	54	32	0	0
60	68	42	0	0	120	56	34	0	0
Case XVI. Duodenal Ulcer									
20	38	18	0	0	80	84	52	0	0
40	82	68	0	0	100	48	28	0	0
60	96	74	0	0	120	52	34	0	0
Case XVII. Gastric Ulcer									
20	42	22	0	0	80	68	38	0	+
40	56	28	0	0	100	84	52	0	+
60	54	34	0	0	120	74	48	0	+
Case XVIII. Gastric Ulcer									
20	52	24	+	0	80	72	58	0	0
40	74	46	+	0	100	54	42	0	0
60	80	74	0	0	120	56	22	0	0

5. By means of fractional analysis the acidity in any period of the cycle of digestion in ulcer may be noted. This frequently occurs after an hour and occasionally before, so that the appearance of the highest acidity would be entirely overlooked if we were to rely entirely upon the hour extraction.

6. Fractional analysis is of great importance in the study of peptic ulcer, and may present additional aid in diagnosis.

REPORT OF THE LIBRARIAN OF THE UNIVERSITY OF MARYLAND

October 1918.

To the Board of Regents and the Library Committee of the University of Maryland,

Gentlemen.—I beg to submit herewith some account of the work done in the Library of the University of Maryland for the fiscal year ending September 30, 1918:

During the year 1917–18 there was an appreciable falling off in the attendance of all the departments—especially in the department of law. This is explained by men being called to the colors through enlistment and the operation of the selective draft. A number of soldiers and sailors who were interested in subjects taught in our University visited the library on Saturday afternoons. Among the librarians who called for inspection purposes were those of the Rockefeller Foundation, the Peking Union Medical College, and the Boston Medical Library. The most outstanding event of general interest was the presentation of the General LaFayette Memorial Flag to the library by the Maryland Society, Daughters of the American Revolution on December 14, 1917. The exercises which were most impressive in character, were held in the library in the presence of members of the French Army, the regents, professors and students of the University of Maryland, and a company of distinguished citizens. The event was intended to commemorate the conferring of the LL.D. degree upon General LaFayette by the University of Maryland, on his third visit to America in 1824.

The first year's work in connection with the Library Exchange was encouraging: we received thirty-four (34) volumes of wanted material besides many numbers of medical journals, and sent out

two hundred and eighty-five (285) volumes from our duplicate stock. In addition, we presented to the Maryland Historical Society bound vols. 1–33 Maryland Medical Journal and sold three (3) collection of duplicates to: Rockefeller Foundation for $30.00, to the Peking Union Medical College $25.00, and to B. Login and Sons, New York for $75.00, total $130.00. Number of duplicates—sold and donated: 462 volumes.

From the appropriation of fifty dollars ($50.00) from the Medical Department for subscriptions to scientific journals we expended:

Journal of Bacteriology	$5.00
Journal of Immunology	5.00
Journal of Biological Chemistry	12.00
Journal of Experimental Medicine	5.00
American Journal of Physiology	15.00
Total	$42.00
Balance to the credit of this appropriation	$8.00

The annual appropriation of one hundred dollars ($100.00) from the Medical Department, together with seven dollars and eighty cents ($7.80) derived from the sale of scrap paper was expended in the binding of sixty-one (61) medical journals for eighty-eight dollars and five cents ($88.05), the subscriptions to the Index Medicus, eight dollars ($8.00) and to the Medical Library Exchange ten dollars ($10.00).

Our file of current medical journals, with the exception of those whose subscriptions are quoted, is a complimentary one from our professors, editors, publishers, etc. We formerly received many from the Maryland Medical Journal exchanges but these have ceased. Our current file at present numbers fifty-five (55) journals. We received seventy (70) volumes of journals by gift, completed ten (10) broken volumes and added fifty (50) from our files.

The balance of the Library of the College of Physicians and Surgeons, consisting of one hundred sixty-seven (167) volumes was added to our library during the year.

Accessions (Medical Department)

Books	333	
Journals	130	
Total	463	volumes

LIST OF DONORS

Professors	J. M. H. Rowland Randolph Winslow John R. Winslow J. Holmes Smith Joseph W. Holland
Doctors	Thomas A. Cullen Howard A. Kelly William J. Mayo Charles E. Sadtler Isaac S. Stone

Estate of Dr. John R. Uhler
Harvard University
New York Public Library
British Foreign Office through Dr. W. MacNeile Dixon
Library of Congress
Carnegie Foundation for International Peace
Rockefeller Foundation
Bureau of the Census, Washington, D. C.
College of Physicians, Philadelphia.

Considerable medical reference work for doctors and students was done and the circulation of books among the students was good.

The Law Department had sixty-five (65) accessions and one hundred thirty-two (132) books were rebound costing one hundred fifty dollars and fifty cents ($150.00). Mr. George O. Blome served throughout the year as assistant librarian and student advisor for the Law Department.

A special table is devoted to the journals of the department of pharmacy and dentistry. A bequest of fifty-two (52) books from the estate of the late Dr. John R. Uhler was added to the collection of the latter department which now consists of about three hundred (300) volumes.

Our reading tables were supplied with current (miscellaneous) literature and a file of the daily papers by subscriptions from the Y. M. C. A. and from private donations. The British Foreign Office through Professor W. MacNeile Dixon and various publishing houses has supplied us generously with war books and pamphlets. The non-professional side of the library work has seemed profitable to the students, keeping them in touch with the war and

current events and stimulating their reading tastes. Our surplus magazines were distributed to the free wards of the University Hospital, the Nurses' Home, and the Soldiers' and Sailors' Club.

During the summer the library was cleaned and some painting and repairing done to the building.

Respectfully submitted,

RUTH LEE BRISCOE,
Librarian.

ARRIVALS FROM OVER-SEAS

We are pleased to announce the arrival in this country from over-sea service of a number of our men.

Lieut.-Colonel Arthur M. Shipley, late of Evacuation Hospital No. 8, has reached home and has been assigned to duty at Camp Meade, Md.

Major Carey S. Gamble, late of Base Hospital No. 42, University of Maryland unit, has also returned and has resumed practice in this city.

Captain Hugh W. Brent, Base Hospital No. 42, has now been assigned to duty at Fort McHenry, Baltimore.

Capt. Wm. H. Smith, also of Base Hospital 42, has returned and has resumed practice in Baltimore.

Captain John E. Evans, who served a year with the British army at the front in France, and six months with the A. E. F. returned recently and has gone to his home in Abbeville, S. C

Lieut. J. F. Daves also has returned and has been released from the army.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

RANDOLPH WINSLOW, A.M., M.D., LL.D. WM. S. GARDNER, M.D.

J. M. H. ROWLAND, M.D.

NATHAN WINSLOW, A.M., M.D., *Editor*

ENDOWMENT

The many demands upon the public for contributions to Liberty Loans, Red Cross Funds, and to the various agencies for the relief of suffering in this country and abroad have made such appeals to every one that it has seemed inopportune to attempt to raise money for our endowment funds, during the period of the war. Now, however, that fighting has ceased and we are gradually returning to the pursuits of peace, the question of endowment of the Medical School has again become an imperative issue. For some years fitful efforts have been made to raise money and a considerable sum has been collected, but it is necessary now that a strenuous appeal shall be made to the alumni and friends of the institution and to the public at large. Other schools with facilities not to be compared with ours have succeeded in raising money sufficient to place them on a firm basis, and it seems remarkable that an institution which has had an honorable career for 111 years and which has furnished Maryland with its doctors for more than a century should be allowed to drag along for lack of sufficient means to meet the requirements of the times. A fund of not less than $500,000 is needed to pay full time teachers and to equip laboratories, and double that amount would not be more than enough to enable us to get along with a reasonable degree of comfort. Another effort is about to be made to secure funds for the immediate needs of the school. In the meanwhile we desire to call attention to some of the funds that are accumulating and to which contributions are solicited, viz., the pathological endowment fund, which now amounts to over $29,000, and which, it is hoped, will eventually reach at least $100,-

000. The other fund in which we are especially interested is the memorial scholarship in honor of the late Professor David Streett, for 25 years Dean of the Baltimore Medical College. This should appeal strongly to the Alumni of the Baltimore Medical College and we hope that graduates of that school will contribute liberally to this fund. Anyone desiring to establish a scholarship for worthy students is encouraged to do so, as the demand for such scholarships is much greater than we can satisfy. Funds for the library or for research are greatly needed and contributions for these purposes would be much appreciated.

Demobilization of the S. A. T. C.

On December 14, 1918, the Students Army Training Corps was disbanded and its members became again private citizens. The whole project was unfortunate and entailed hardships on both the students and the medical school, as it was impossible to make a man into a physician and a soldier at the same time. The students now have resumed their normal status and, though two months of valuable time have been more or less wasted, it is hoped that there will be no further interruption to their academic work. The men are still allowed to wear their uniforms, which in some instances were only furnished them on the day they were demobilized. The signing of the armistice has not resulted in the release of any of our teachers from the service, as yet; some of whom are urgently needed by us. Owing to war conditions it has been very difficult to conduct the school, but those of us who remained, by doing extra work, have been able to keep up the courses without interruption and with efficiency. We shall, however, welcome the return of our absent teachers.

Greetings.

We have received Christmas greetings from a number of our men who are overseas to whom we desire to make due acknowledgment and to wish them all good health and a speedy return to their homes and loved ones. Among these are:

Lt. Col. A. M. Shipley, who says, "The more I see of other methods, the better satisfied I am with U. of M. men and methods." Evacuation Hospital 8.

Major Wm. J. Coleman, Base Hospital 15.
Capt. Wm. Kelso White, 304 Ammunition Train 79 Div.
Lieut. C. A. Reifschneider, Evacuation Hospital 16.
Lieut. Michael J. Egan, Evacuation Hospital, A. E. F.
Lieut. Harry M. Stein, Base Hospital 42.
Lieut. John D. Robinson, 166 Aero Squadron.
Lieut. Herbert W. Knight, I. M. S. 17th British General Hospital, Egyptian Expeditionary Force.

WAR ITEMS

Captain Richard Shea, U. S. M. C., on duty with the marines in France was awarded the American Distinguished Service Medal, and the French Croix de Guerre for conspicuous bravery at Chateau Thierry. He was formerly a surgical assistant at Mercy Hospital.

Lieut. Alexander J. Gillis, M.C., U. S. A., formerly assistant physician at Sydenham Hospital, Baltimore, was wounded in the spine, while serving with the British Army in France, on October 14, 1918. He was partially paralyzed but at last accounts was recovering.

Captain Charles W. Maxon, M. C., U. S. A. who was a prisoner at Rastatt, Germany, for nearly 6 months, was released after the signing of the armistice. He says he was well treated by the Germans, who utilized his services as a physician.

Major Lewis J. Rosenthal, M. C., U. S. A., has been cited by General Kuhn, commander of the 79th Division, for extremely meritorious services under shell fire during the drive on Montfaucon and Nantillois, September 26–30 inclusive, 1918. In civil life Dr. Rosenthal is a rectal specialist and assistant professor of proctology in this University.

Capt. Louis Diener, M. C. U. S. A. Sanitary Detachment, 112 Machine Gun Battalion, was awarded the distinguished service cross for extraordinary heroism in the Ravine de la Veux Mechieux, France, on October 26–27, 1918. He was a member of the class of 1915.

DEATHS

In France, on October 27, 1918, of pneumonia, Lieut. E. Franklin Syrop, M. C., U. S. A., formerly a surgical assistant at Mercy Hospital. He graduated in the class of 1916, University of Maryland.

In London, on November 5, 1918, of pneumonia, following influenza, Lieut. Samuel D. Shannon, M. C., U. S. A., formerly medical superintendent of the Maryland General Hospital. He graduated in the class of 1915, University of Maryland.

At Mountain Lake, N. J., in January, 1919, Dr. Horace M. Simmons, formerly editor of the *Maryland Medical Journal*, aged sixty-four years. He graduated in the class of 1881, University of Maryland.

At his home in Greelyville, S. C., on October 23, 1918, Dr. Emmett O'Brien Taylor, a graduate of the class of 1911, University of Maryland.

At the United States Naval Hospital, Washington, D. C., on December 27, 1918, Howard E. Ames, Medical Director and Captain U. S. N. aged 68. Dr. Ames graduated from the University of Maryland in 1874. He was a member of the Greely Relief Expedition which rescued the survivors of that illfated enterprise.

At his residence in Baltimore, Md., on January 23, 1919, of enphritis, Dr. Charles H. Riley, class of 1880, University of Maryland. He was a founder of the Hospital for the Women of Maryland, and surgeon to same, and was president of the Board of Trustees of the Sheppard and Enoch Pratt Hospital.

CORRESPONDENCE

Headquarters 104th Sanitary Train,
American E. F. France A. P. O. 765
7th October, 1918.

Prof. John C. Hemmeter,
University Parkway,
Baltimore, Maryland.

Dear Dr. Hemmeter:—Since my last letter I have traveled hundreds of miles and have been over much territory in France. The experience that I am obtaining is wonderful, and I am honest in saying that some of it I have

no desire to duplicate. While on a certain sector I had four hospitals in operation, two surgical, one medical and one gas. The surgery done is not classical but very radical. Say we receive a case inside of eight hours, all the devitalized tissue, irrespective of the amount, is cut away and the wound sutured, which results in the majority of cases, in primary union. Those received after eight hours, the same debrevement takes place but the wound left open and a Carrel-Dakin treatment instituted. In a hospital where we have laboratory facilities every wound is cultured immediately before closing and if streptococcus is absent the wound is again re-cultured in six hours and if still negative is left closed, but if present the wound is opened and a Carrel-Dakin instituted. Every wounded soldier is given anti-tetanic serum immediately and if the wound is serious it is repeated in seven days. Some of the surgery accomplished has been wonderful in its results.

Of all the hospitals there is none quite so interesting from a professional point of view and so distressing from a point of sympathy, as the gas cases. We are capable of handling 100 cases an hour, the treatment being immediate removal of all clothing, clipping of hair, green soap bath (shower) and powdering the body with an alkaline powder; mucous membrane of the nose and throat flushed out with an alkaline solution and a cocaine solution used in the eyes, put promptly to bed and given frequent inhalations of Aromatic Spirits of Ammonia. This is for the so called Mustard Gas. Some of the burns are very severe, patients die from large burns, pneumonia, pulmonary edema and pericarditis. The most frequent places of burning are the eyes and genitals. Shells may be exploded during the night when the atmosphere is low and troops passing the next day, after the sun is up, are burned just as severely as if they had been present during the actual shelling.

The next important gas is Phosgene, there are however, four or five others, but this particular gas is the next infrequency, more dangerous in that there is no external warning, such as burns or pungent odor, the result is that one feels peculiar, realizing that they are gassed by nausea and much distastefulness for cigarette smoking, if a cigarette smoker. The treatment is entirely different, one of absolute rest, and unless patient is immediately put in a recumbent position, severe shock and death ensues by pulmonary edema and pericarditis.

So much for some of my hospital work and now for a few words as to my present situation. Actively engaged in front line work in an area that is soon to become worlds history, such as we have never read of heretofore. I am sorry that I cannot go more into detail as to the above, but it is forbidden, suffice to say that I am leading one of the best sanitary trains there is in the army, and I am proud of it.

Very truly yours,

J. Harry Ulrich

Lieut. Colonel M. C., U. S. A.

BULLETIN

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UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Successor to THE HOSPITAL BULLETIN, of the University of Maryland, BALTIMORE MEDICAL COLLEGE NEWS, and the JOURNAL of the Alumni Association of the College of Physicians and Surgeons.

VOL. III APRIL, 1919 No. 6

EVACUATION HOSPITAL NO. 8

BY LIEUT.-COLONEL ARTHUR M. SHIPLEY, M. C., U. S. A.

On January 7, I was ordered from the Base Hospital, Camp Meade, where I had been on duty since August, 1917, to Fort Oglethorpe, Georgia, where I was to join Evacuation Hospital No. 8.

Very little was known on this side at that time regarding the organization and equipment of an evacuation hospital. The Medical Department of the United States Army had no experience with them antedating the war. There were a few lines in the manual of the Medical Department but the personnel and equipment as slated there were that of two field hospitals.

We were mobilized and when we were organized there were 18 medical officers, an adjutant, a quartermaster and 179 enlisted men. Oglethorpe in January and February of last year was very cold and very uncomfortable. Officers and men were in tents and in the afternoons the mud was worse than anything we saw in France. In the mornings it was frozen and one could stay on the surface of the earth.

Our enlisted personnel were green, both as to the duties of the soldiers and the duties of the Medical Department of the Army. Many of our officers had some training in other camps, and practically all were trained hospital men. We settled down to the rou-

tine of training, and a day's work was divided between physical exercise of some kind and class work. The officers were almost constantly with the men and a great deal of patient personal teaching was done by all. Many of the men had training in the different departments of the Base Hospital.

We remained at Oglethorpe until May 1 and were ordered to New York for embarkation for overseas. By this time we were quite fit. Officers and men in fine physical shape, lean and hard. We had been busy with anatomy, war surgery and the duties of the soldier. We had been devoting two hours a day to French. In addition to this some of us had been riding several hours a day. The spring was very beautiful at Chickamauga Park and we were beginning to forget the mud and cold. We rode from Chattanooga to New York on a troop train and were cheered all along the line. From Philadelphia to New York was one long ovation. We passed through Baltimore about 3 a.m. Most of us were asleep.

We went to Camp Merritt and a few days later entrained again, this time for the port. We were quite anxious to get started.

We drew a small Italian steamship that had been used since the beginning of the war as a cattle ship, and this was her first trip with troops. Uncle Sam was grabbing ships where he could, as the need was very great. We were very crowded and the ship was not very comfortable, but we were trying to be soldiers and there was little complaint. There were fourteen ships in our convoy carrying 45,000 troops. Our flag ship was the *President Lincoln,* sunk on her return voyage by submarines.

Fortunately the weather was very fine except for three days. Everyone was anxious about submarines, but the surprising thing was that this submarine menace, grim and continuous as it was, interfered very little with routine. Men ate and slept and went about their duties apparently unconcerned. That one could undress and go to bed and to sleep astonished me very much. After ten days we were met by a fleet of destroyers, and very glad we were to see them. They were very fast and very active and were all over the place, for all the world like fox terriers when there is a cry of "rats." On the thirteenth day land was sighted and not even Columbus could have been more relieved than we.

We landed at Brest on May 23 and went into a rest camp where we remained several days. One must remember just what was happening about this time. In March the Boche had made his

famous and very successful drive against the British in the Peronne sector driving them back toward the channel and capturing 80,000 men and 1200 cannon. This blow was well-nigh overwhelming. On May 28, while we were at Brest the Germans started their drive from the Chemin des Dames toward Paris and were sweeping everything before them. While this was going on we were ordered across France to Bazoilles, a hospital center in the Vosges, where the Hopkins Base was and where the University of Maryland Base was later stationed. We were three days and nights on a troop train and all the time the Germans were advancing on Paris. We were buying papers in every town. At this time the French morale was probably at its lowest point. It was rather freely conceded that Paris would fall and many were saying that if Paris fell France would quit. Altogether conditions were most acute and the gloom could be cut with a knife. Just about this time, that is on June 2, the Second American Division, made up of the Fifth and Sixth Marines and the Ninth and Twenty-third Infantry, went into the line at Belleau Woods and began the defensive fight that was to be the turning point of the war. It seems all very clear now, but at that time no one except the General Staff knew what was going on outside his immediate environment. We left the train at Bazoilles and everyone was looking for a bath, but before we could get our baggage unloaded we were ordered to Juilly, a small place north of Paris and behind the Second Division; we were two days and nights making a trip that we later made in eight hours in an automobile.

The train service was badly disorganized for several reasons: First, the advancing Germans had cut all the lines north of Paris and trains were being shifted to the south; second, there was a big troop movement on because of the battle that was then eight days old, and finally roads and railroads were congested by refugees coming out of the Marne country. This trail of refugees was a sad and pathetic sight. Old people and women and children tired and worn and loaded down with what they could carry away: often pulling small carts, sometimes with packs on their backs, sometimes empty handed fleeing before the Hun; without hope and with only the courage of despair, and all this in a part of France that is world famous for the fertility of its soil and the beauty of its country side, in early June when the French climate is at its very best and when it is still daylight at 10 p.m. During these days the sun was shining brightly and all the Marne country was planted with growing wheat

and above the green wheat there were millions of brilliant red poppies blowing with the wind, and up ahead the constant noise of cannon. Troops and guns and supplies going in and long lines of refugees coming out, a combination of beauty and sadness and fearful anxiety hard to parallel.

As we went forward French graves were seen, hundreds of them scattered over the land, just where the soldier happened to fall, each grave with a cross and the tricolor of France. It was just some such scene farther north in the British lines that inspired the beautiful lyric of Colonel McCrae: "In Flanders Fields."

On June 6, early in the morning we arrived at our station, and found a 250-bed American Red Cross hospital that had been maintained for the French since the early days of the war. This was four days after the Second Division had gone in at Belleau Woods. A number of surgical teams had arrived ahead of us among which was a team from Base 18, headed by Captain, later Major Bernheim. Major Bernheim had been in France nearly a year, and was therefore an upper classman while I, a new arrival, was a freshman. I was very glad indeed to see him and had my first lessons in real war surgery from him. The hospital was rapidly expanded until we had 750 beds. For many days thereafter we were the only Evacuation Hospital behind the Second Division until No. 7, with Don Peters as surgical chief, went in at Colomniers. During June the weather was especially clear and nearly every night the German bombing planes went over us toward Paris and in about two hours over us again on their way back. Their approach was heralded by the racket raised by the French "archies"—anti-air craft guns. A battery of them was in a field very near our station and the shell fragments falling to earth made it advisable to stay under cover.

The first week in June was a most critical one for the allied cause; everyone was asking, will the line hold? and the answer to this question was fraught with the most serious import for France and the world, and especially for us who were just behind it. At this time the fighting and holding ability of American troops was an unknown quantity. On their morale everything seemed to depend. Later we felt little anxiety when American divisions were ahead of us, but during this period the uncertainty, dread, and suspense of war was felt by everyone.

But the line held at Chateau-Thierry and the Germans did not get across the Marne. The fighting continued bitter and stubborn

until late in June when things began to quiet down. On the third of July the Second Division was returned, having been in the line for a month. Its record is now history.

From this date until the beginning of the Second Battle of the Marne we had a chance to get some rest and to arrange the hospital to better advantage. We were partly in the buildings of a famous old college and partly in tents. During this time and later we were acting as a training center for surgical teams. This was a new kind of medical school to say the least.

The Marne valley is a beautiful farming country, the landscape is rolling and well wooded and the soil wonderfully fertile. The days were very long and the nights short. The weather was exceptionally fine. There was much movement of troops, and French or American soldiers were always billeted in the town. Dammartin near us was nearly always a division headquarters. We were well to the north of the Marne and west of Chateau-Thierry.

By the Fourth of July things were quiet and everyone was wondering where Fritz would attack next. The advantage and initiative was still with the Germans. On the Fourth, the twentieth French Division was billeted in our neighborhood and a joint ceremony was held in honor of the French and American dead. High mass was said in the college chapel and an address made by the Bishop of Mieux. There was also an impressive service at the cemetery where there were many French and American graves. A French military band played and many of the Division officers messed with us at noon. Captain Mixter, of Boston, distinguished himself by making an address in French. All very quiet and peaceful, but everybody wondering in the back of his head where the Boche would jump off next time and just what would happen when he did. Cannon fire had practically ceased along the front near us, and both sides were getting ready for the next big move. We had not long to wait. July 14 was Bastille Day—the greatest of the French holidays—and the Hun apparently thought that the following morning would find the French not so alert as usual. At any rate under cover of a fog at about daylight on the morning of the 15th of July, the Germans threw pontoon bridges across the Marne and crossed the river on a considerable front just east of Chateau-Thierry, and began the Second Battle of the Marne which was to be for them a far reaching defeat. It just happened that the Third American Division was there waiting for them. This Division is made up of the Thirtieth,

Thirty-eighth, Fourth and Seventh Infantries and has been known since as the Marne Division. At the end of three days' fearful fighting the Hun recrossed the Marne and began a retreat that continued until the armistice. It was the beginning of the end, but we did not know it then. What we did know to our immense relief was that Fritz had stopped coming toward us and was going back. That elemental fact makes a lot of difference in warfare, and one does not need to be an expert in tactics to appreciate it, and the nearer one is to the line the better is one's understanding. On July 18, three days after the battle began, the First American Division struck the Germans on their flank just below Soissons. Nothing more dramatic, bloody or successful was put across by any troops during the war. In six days they had advanced 22 kilometers and every third man was on the casualty list. One of the regiments of the Division came out in command of a junior captain.

From the beginning of the battle we were crowded with wounded. In the first thirty hours we had 800 admissions. Some of our operators worked continuously for forty-two hours. Surgical teams were now arriving and a day and night shift were organized. Dr. Baer came up to help, with Kelly and Jennings from Base 42 as assistants.

A few days later I had to go to La Ferté after some sterilizers and ran across Fred Rankin who had just arrived on a surgical team. There was a field hospital there doing emergency surgery. La Ferté had been bombed the night before and Mieux was being bombed and shelled, so that everyone was just a bit jumpy.

Other evacuation hospitals were now being rushed up into the Marne country. Nos. 3, 4, 5 and 6 and Mobiles Nos. 1 and 2, and other American divisions were along the front engaged in heavy fighting, among which were the Fourth, regulars and three Divisions of National Guards, the Twenty-sixth, the "Yankee," the Twenty-eighth, "The Keystone" and the Forty-second, the "Rainbow." These divisions together with the first, second and third formed the nucleus of the "First Army."

A very striking thing were the many rumors, both good and bad that constantly went the rounds. "Dope" they were called and most of them were not true. Men were always asking each other when they met as to the latest "dope," and some of it was most disconcerting. During the St. Mihiel show I was told by a wounded sergeant that he had received his injury in the outskirts of Mulhouse. Now Mulhouse is in the Rhine Valley beyond Metz, and this was

told me about September 12, just two weeks before the beginning of the Argonne offensive.

Toward the end of the Second Battle of the Marne I had occasion to go up as far as Fere-en-Tardenois, near which is the grave of Quentin Roosevelt.

All this country from Chateau-Thierry north to the Vesle had been recently fought over, and the country side was in indescribable confusion. Everywhere were abandoned dugouts, equipment of all sorts, tons of shells, empty trenches, ruined villages and partially destroyed woods all scarred and ruined by shell fire.

We spent a night at Coincy where Evacuation No. 4 and Mobile No. 2 were stationed. The artillery fire was so loud all that night that I could not sleep, but the Hun was retreating and everybody was happy, including the wounded. All during this campaign the myriads of flies were a very great bother in all the hospitals of the zone of advance. I had not thought there could possibly be so many flies in the world. Prevention was impossible. These hospitals were set up where there had been thousands of horses, and a recent battle field is not sanitary and cannot be made so. There was no typhoid because of inoculation against it, but practically everyone had diarrhea. It was the chief cause of unfitness among the hospital personnel. We lost a number of good team heads, who could be poorly spared, because they had to be sent back to recuperate.

It was now August and the line was stabilized along Vesle. Soissons was recaptured and Rheims was free from artillery fire. Paris was safe and the Second Battle of the Marne had been accomplished. We were relieved by Base Hospital No. 57 and were ordered up in the Meuse country near Verdun. The first American Army was being mobilized along this front and every one was busy getting ready for the offensive that became famous in a few days as the St. Mihiel Drive. We did not then realize that we were playing a part in events that were to loom large in contemporary history.

(To be continued)

A CASE OF BILATERAL EMPYEMA TREATED SUCCESSFULLY BY OPERATION

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The following case is reported not only on account of the rarity of the condition but also on account of the serious consequences and fatal results which oftentimes insue from radical operations. This case about to be reported presents the usual history preceding the accumulation of pus in the pleural cavity.

Family History. Of no importance.

Past History. Of no importance.

Present illness. Patient gave a very indefinite history. He says he was taken ill about five weeks ago with a slight cold. One week later he developed general pains, fever, and his cough became more aggravated. A doctor was consulted who made a diagnosis of grippe. One week later the doctor was again called and he informed the parents that the boy had developed pneumonia. About two weeks later the doctor suspected pus in the pleural cavity and upon aspirating it, a gray colored fluid, creamy in consistency was withdrawn and he advised the parents to have the boy sent to the hospital for immediate operation.

Entrance note. The patient was a thin, pale, emaciated and under developed white boy. He was admitted to the hospital under the care of Prof. Randolph Winslow, October 25, 1918, complaining of pains on the left side of chest, a dry, hard cough and general weakness with a marked dyspnoea. At the time of admission temperature was 101.4, pulse 128, respiration 40 and white blood cell count of 25,800.

Physical examination. The patient was lying on his left side apparently suffering with marked dyspnoea and general discomfort. His face was flushed particularly the cheeks; his breathing hurried, and accompanied by an expiratory grunt; the alae nasi dilated with each inspiration.

Heart. The sounds are audible but distant; no murmurs or thrills; apex displaced somewhat to the right.

Left lung. Inspection shows a slight mobility. The intercostal spaces are obliterated. Palpation reveals very little movement; and tactile fremitus is greatly diminished. Percussion shows a dulness over the entire lung extending as high as the clavicle anteriorly. Auscultation shows the breath sounds to be distant and almost absent. Vocal resonance diminished.

Right lung. Normal except for a few moist râles at the base.

Operation. The patient was operated on the day of admission by Professor Winslow. Local anaesthesia was used (0.5 per cent cocaine). An incision about 2 inches long was made at the eighth interspace parallel with the ribs. A piece of the rib about 1 inch long was resected and then the pleural cavity was opened and a considerable amount of seropurulent fluid was evacu-

ated. One rubber tube and several gauze drains were introduced into the pleural cavity. Incision was sutured with catgut and silkworm.

Result. Following the operation the patient showed signs of improvement for a period of ten days. The cavity drained freely and daily irrigations of sterile water or potassium permanganate (1–10,000) were administered. Up to this time his temperature varied from 98.4 to 102, never becoming subnormal. Pulse rate 120 and respirations 40. After this period all the indications of a general toxemia became apparent. The skin was covered with cold clammy perspiration, chills two or three per day; temperature varied from 96 to 103.6, and was septic in character; pulse varied from 120 to 160, and the respirations from 20 to 50. He would sleep very little, being restless and irritable the greater portion of the day; had coughing spells, unproductive, which caused him intense pain in the chest and abdomen, and which aggravated and weakened him more than any other symptom. About 1.30 a.m. on November 17, I was called by the nurse to see the patient, and upon my arrival I found him covered with cold clammy sweat, both extremities cold, marked dyspnoea, and a pulse hardly perceptible. On thorough examination of the right side of the chest the signs indicated the presence of fluid, and upon inserting a specially made hypodermic needle in the pleural cavity, I obtained a hypodermic full of gray colored pus. I immediately attempted to withdraw the pus by using a large aspirator but apparently the needle became clogged after obtaining about 5 cc. of pus. Realizing that the abscess cavity contained a greater quantity than was withdrawn from the symptoms present, I performed a thoracotomy at the bedside of the patient.

Second operation. Performed under local anaesthesia as before. Incision about 1 inch long was made in the eighth interspace, the pleural cavity opened (the rib not being resected) and a small rubber drain inserted. The cavity drained freely, pus being discharged simultaneously from both sides. Following this operation the patient showed marked improvement and in two weeks time made an uneventful recovery.

REMARKS

A few words as to the operative interference. Three available methods were used in this case: (a) Aspiration: (b) simple incision and (c) resection. As to the first, it gives in most cases only a temporary relief, and cannot replace either of the other two as a radical operation. It is useful, where as in this case, relief is urgently needed, but where, at the same time, the patient's condition deters one from disturbing him more than is absolutely necessary. At times the pus is thick and flaky, and by using the ordinary aspirating needle, the desired results are not obtained, as happened in this case. As to the second, incision is undoubtedly the operation which should be done in cases where the general condition is bad. A rubber drain tube inserted into the abscess affords very good means

of drainage and nothing further need be done. Since this case occurred, I have treated other cases of unilateral empyema by inserting a trocar between the two ribs and using a rubber tube as a drain. This method has proven very satisfactory. As to the third, resection is essential where the ribs are close together and afford very little space between them. It is better to allow a few days to elapse between two operations, and when this delay is for any reason impossible, the two epmyemata should be carefully aspirated a few hours before the operation. By this means the shock produced by the sudden removal of pressure from the lung is avoided and the simultaneous drainage of the two pleurae is robbed of its chief danger. Treves in his *System of Surgery*, vol. ii, pp. 441, writes: "double empyemata is a very grave condition, and happily not common. The two sides should not be opened at the same operation, but an interval of a few days or a week should elapse between the two operations." He concludes thus: "It is a striking and apparently a paradoxical fact that an operation (opening both pleurae) which if performed on the healthy would be invariably fatal in its effects, is a valuable means of saving life when employed in conditions of disease." That this patient should have recovered in the way in which he did was a great surprise to me, for his condition was so critical that at one time his life was despaired of.

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF BLOOD UREA IN UROLOGY[1]

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In partially reviewing the literature on urology of the past three decades, one's attention is immediately attracted to the advances made on the surgical and diagnostic sides, though the advances of the former depend almost entirely on the latter. That is, as the

[1] Read before the Section on Genito-Urlnary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

Investigations carried out in the Urological Departments of the Mercy and Hebrew Hospitals.

Reprinted from The Journal of the American Medical Association December 14, 1918.

newer methods in diagnosis of urologic conditions have developed, the urologist has become more competent as a prognostician and therefore was enabled to perform operations that otherwise would not seem feasible. Furthermore, the advances in diagnosis have been principally aided by the more modern laboratory methods of the blood and urine, and one finds himself dependent on the various chemical tests of the blood and urine, together with the action of various dyes on certain organs before a urologic operation is performed.

The work of Koranyi[2] on cryoscopy, of Heidenhain[3] on indigocarmin, of Von Mering[4] with the phlorizin test, of Geraghty and Rountree[5] on phenolsulphonephthalein, and the various contributions to science on the methylene blue test, rosaline test, indigocarmin urine urea and other examinations of urine, etc., are doubtless familiar to all the members of this Association.

The literature up to date is teeming with endless variations of these tests, each having its own followers, each one in itself being applied best to certain classes of cases only, and each one an excretory test. In most institutions, three, four or all the tests were employed, and from the data collected from the combination, conclusions were drawn. In view of the misleading interpretations that followed the use of some of the foregoing methods at various times and in various classes of cases, the importance of retention test was soon recognized, and in the past few years less stress has been laid on excretory tests and much more stress on some of the retention tests, particularly blood urea, nonprotein nitrogen, creatin and uric acid.

The work by Marshall and Davis[6] on "The Distribution of Urea and its Elimination from the Body," the work by McClean and Sellig[7] on "Urea and Total Nonprotein Nitrogen in Normal Individuals," and that by Folin and Denis[8] on "The Diagnostic Value of Uric Acid Determinations in Blood," have encouraged investigators to seek methods from which more conclusive data could be obtained

[2] Koranyi: *Ztschr. f. klin. med.*, 1897, **33**, 1.

[3] Heidenhain: *Handbuch. der Physiologie.*

[4] Von Mering: *Centralbl. f. d. med. Wissensch.*, 1885, p. 531.

[5] Geraghty and Rountree, *Tr. Am. Assn. Genito-Urin. Surg.*, 1910, **5**, 59.

[6] Marshall, E. K., and Davis, D. M.: *Jour. Biol. Chem.*, 1914, **18**, 53–80.

[7] McClean, F. C., and Sellig, L.: *Jour. Biol. Chem.*, 1914, **19**, 31.

[8] Folin, Otto, and Denis, W.: The Diagnostic Value of Uric Acid Determinations in Blood, *Arch. Int. Med.*, July, 1915, p. 33.

than by the excretory methods which at all times and in all classes of cases did not correspond. Schwartz and McGill[9] in their series of 211 cases, have shown conclusively the importance of blood urea, and Tileston and Comfort[10] have demonstrated the relationship of it in health and disease. Gillard[11] employs it with great satisfaction in the diagnosis of surgical diseases of the urinary tract and Scherck and Gradwohl[12] have shown conclusively that no urologic case is completely examined for diagnosis or operation without the employment of a retention test.

My investigations for the past three years have been carried out practically along the same lines as those of Scherck and Gradwohl, the principal retention test employed being that of blood urea. The cases selected for the work were all urologic cases, in the services of Dr. Rytina and myself.

The method employed for determining the blood urea at first was Marshall's[13] (that of using serum), and later Van Slyke's[14] (that of using whole blood) and calculating on the per liter of blood basis with a normal consideration of from 0.3 to 0.6 gram per liter of blood. The number of cases in my investigations up to the time of writing was 104, on which 280 blood urea determinations were completed.

For purposes of comparison and to demonstrate partially some of the surpassing qualities of blood urea in relation to diagnosis and prognosis in genito-urinary surgery, I have employed the three following tests, which are the most uniformly used and the simplest of application: (1) the urine urea test; (2) the phenolsulphonephthalein test, and (3) the ordinary chemical and microscopic examinations of urine (albumin, casts, etc.).

METHOD OF PROCEDURE

The method of procedure was as follows: When a urologic case was admitted to the hospital, some urine was taken for microscopic and chemical examination. An intravenous injection of phenolsul-

[9] Schwartz, Harold, and McGill, Caroline: Blood Urea Determinations in 211 Cases, *Arch. Int. Med.*, January, 1916, p. 42.

[10] Tileston and Comfort: *Tr. Assn. Am. Phys.*, 1914, **29**, 260.

[11] Gillard, A. T.: *Ann. Surg.*, 1914, **59**, 267.

[12] Scherck, H. J., and Gradwohl, R. B. H.: *Ann. Surg.*, 1917, **65**, 648.

[13] Marshall, E. K.: *Jour. Biol. Chem.*, 1913–1914, **15**, 487.

[14] Van Slyke, D. D.: *Jour. Biol. Chem.*, 1914, **19**, 211.

phonephthalein was given, some blood was taken for a blood urea and whenever possible, a twenty-four hour specimen of urine collected for urine urea determination, either the Hüfner[15] or Marshall[16] method being employed. The patient was not placed on any special diet, except in cases in which possibly there were some constitutional disturbances present. Therefore the intake of proteins was practically constant and did not interfere materially with the relative comparisons of the blood urea, although the patient was advised to drink water copiously. In from three to five days, the same procedure was carried out to determine the course of the case, that is, whether conditions were becoming more or less favorable for the patient and for the surgeon. If the various tests, particularly the blood urea, were within normal limits on the first examination, and the second examination demonstrated an improvement or lack of improvement, I could at this time begin to consider the prognosis of the case, should operation be contemplated. If the blood urea increased in amount, which of course indicated a higher degree of toxicity, operation was delayed and the blood was taken again in from three to five days. This procedure continued until the blood urea reached within the normal limits of from 0.3 to 0.6 gram urea per liter of blood. In most cases a phenolsulphonephthalein was given at the same time that the blood was taken for urea determination. Should the blood urea, after a number of determinations, not reach the upper normal limits, then when a stationary point was reached and the operation was imperative, it was performed, providing the stationary point was not too far above the upper normal limits. In this manner, I was able from my series of cases to standardize approximately (as one might call it) the minimum and maximum retention of urea that might be present in the blood before operation was performed with impunity. This will become apparent from the study of the accompanying tables. Here it is obviously seen that only rarely did a patient recover from an operation with a blood urea of more than 1 gram per liter of blood (the prognosis being considered grave here at all times) and at no time was the prognosis grave, urologically speaking, with a blood urea of less than 0.75 gram. As will become apparent from the study of the accompanying tables, in the few cases in which the patients with blood higher than 1 gram were operated on, it will be readily observed that the patients de-

[15] Hüfner, G.: *Ztschr. f. physiol. Chem.*, 1877, **1**, 350.

[16] Marshall, E. K.: *Jour. Biol. Chem.*, 1912–1913, **14**, 283.

veloped uremia, the prognosis having been made before operation. This development took place in all cases with the exception of certain types, such as some prostatic hypertrophies and strictures of the urethra, in which a cystostomy was imperative for retention, irrespective of the condition of the patient. Then the operation was subsequently completed if conditions permitted, as in cases 24, 31, and 55, all of which were stricture cases with recoveries following operation. Peculiar as it may seem, patients with a blood urea of more than 1 gram who were operated on and recovered, appeared not to have as stormy a recovery if the obstruction were a urethral, rather than a renal or prostatic obstruction. Whether this is a mere coincidence or the resisting powers are greater, I am unable to state.

In cases with a blood urea between 0.75 and 1 gram, in which operation was necessary, only a fair prognosis was made, depending on whether the stationary point reached was a progressive decrease or a progressive increase in the amount of blood urea. This point was determined only by a series of blood urea determinations, best demonstrated in case 86. This patient is at present in the hospital and has been there for the past three months under the preoperative regimen. His blood urea on admission was 0.55 gram urea with a phenolsulphonephthalein of 55 per cent and 10 grams urine daily urea. Blood urea tests were completed in from five to seven days, with a result that there was a constant variation rising to 0.81 and dropping back to 0.6 and then rising again. In view of other conditions present, this patient would be a surgical risk, unless his blood urea would remain stationary, somewhere below 0.75 gram or between 0.75 and 1 gram. A point of great interest here is that the blood urea and phenolsulphonephthalein were within normal limits on admission and, should dependence have been placed entirely on the one determination, this patient would unquestionably have developed uremia and died. Hence the importance of a series of blood urea determinations before operation. In only one case in which the patient was operated on and in which a very favorable urologic prognosis was given before the operation, the patient died fom a renal insufficiency, that is to say, of a uremia following an acute renal suppression probably due to the administration of ether or some other unknown cause, as no necropsy was obtained.

Case 1. The case is worthy of mention. The patient was H. A., a man, aged 60, with a diagnosis of papilloma of the bladder and a moderate benign hypertrophied prostate. His blood urea on admission and previous to opera-

tion was 0.33 gram per liter of blood, the phenolsulphonephthalein test was 45 per cent for two half hours. The urine examination showed many red and white blood cells. Cystoscopic examination revealed a small papilloma of the bladder and slight intravesical bulging of the prostate. The systolic blood pressure was 145, the diastolic 95, and the heart and lungs normal. In view of the excellent condition of the patient, he was operated on three days after admission. The papilloma with the normal surrounding tissue was excised and a sphincterotomy performed at vesical neck. Two days after operation the patient had the appearance of being toxic, drained only about 250 cc. in more than twenty-four hours, in spite of forced liquids, infusions, etc., and before blood was taken for a blood urea test the patient died, three days after operation. We were unable to obtain necropsy, but with a preoperative normal blood urea and a suppression following operation, the cause of death seemed obvious. I regret very much that I did not have a blood urea test in this case, previous to the patient's death.

Seven other patients that were operated on died after a favorable prognosis was given based on the blood urea determination, but here in all the cases the cause of death was not a renal insufficiency, as will be apparent from the study of the accompanying cases. One died of a pulmonary edema following a perineal prostatectomy, a second of a streptococcus infection following a cystostomy for drainage, a third of a septicemia following a suprapubic prostatectomy, and a fourth of starvation, in which case the patient was of the demented type and, following operation, refused nourishment. A fifth died of pneumonia following a suprapubic cystostomy, a sixth died of pneumonic tuberculosis following a nephrectomy, and a seventh died of pulmonary embolism following a nephrectomy. Certainly a urologist cannot be blamed for the deaths of the foregoing seven patients, as these deaths could have occurred in any other operative cases.

ADVANTAGES OF BLOOD UREA OVER URINE UREA TEST

The advantages of blood urea over urine urea will become apparent from the study of table 1, the principal advantages being as follows:

1. The great variation, which exists in the normal and leads to inaccurate interpretations, on which account it is difficult to determine when one is dealing with a borderline case.

2. The disappointing results produced by the quantitative estimate of this normal urinary constituent, because of the fact that the amount of these substances excreted depends not only on the

functional activity of the kidney, but on the amount of these substances carried to the kidney for excretion.

3. The inability to obtain a correct and fairly accurate twenty-four hour specimen of urine.

From a study of a series of tables I have completed, of which only three have been included in this paper for lack of space, it was observed that from the urine urea determinations certain patients would have been considered favorable surgical risks and others unfavorable surgical risks, best demonstrated in some of the cases of the accompanying tables.

Case 2. The patient whose case was of particular interest from this standpoint was B. C., a young man, aged 24, who developed a lobar pneumonia. During his convalescence, a partial suppression of urine set in, and the first four days after I saw him, he voided between 175 cc. and 300 cc. of urine in twenty-four hours. His blood urea during these four days remained stationary, that is, from 1.44 to 1.45 grams per liter of blood. A very grave prognosis was given. An intravenous phenolsulphonephthalein in this case showed only a trace of phenolsulphonephthalein for two, one-half hour collections. His urine urea remained fairly constant during these days, varying from 1.05 to 1.36 grams per diem. There were albumin, casts, and red blood cells constantly in the urine with a specific gravity ranging from 1.008 to 1.014. Under forced fluid intake, on the fifth day, he excreted 1250 cc. of urine with a specific gravity of 1.010, a urine urea of 12.4 grams, and a blood urea of 2 grams. In spite of his increased urine urea, his blood urea increased. I gave a very unfavorable prognosis. On the sixth day, his output increased to 3,500 cc. with a specific gravity of 1.012, a urine urea of 35 grams, a phenolsulphonephthalein of 3 per cent, but a blood urea of 2.7 grams. On the seventh day, the urine urea increased to 38 grams and the blood urea to 3.2 grams. In spite of the increase in the output of urine and the increase in urine urea, after his blood urea left the stationary point of 1.45 grams, the outcome of the case to me was obvious, and on the eighth day, with an output of 4,000 cc. of urine with a specific gravity of 1.012, a urine urea of 40 grams and a blood urea of 3.2 grams, the patient died of a toxic uremia and pyemia. During the last three days, his temperature ran very high with a high leukocyte count, and he had areas of tenderness in several parts of the body.

The discussion of this case is simple. Under the forced intake of fluids, the kidneys began excreting hypernormally, conveying with the excretion only a small quantity of solids; hence the low specific gravity. The liver in this case was unquestionably manufacturing an extra quantity of urea (Van Slyke[17]), which was being partially taken up by the kidney and excreted in the urine; hence the high urine urea. But with the increase in the manufacture of urea by the

[17] Van Slyke, D. D.: *Proc. Soc. Exper. Biol. and Med.*, 1913–1914, **15**, 487.

TABLE 1

Comparison of results of blood urea, phenolsulphonephthalein and urine urea tests

CASE NUMBER	NAME	DIAGNOSIS	BLOOD UREA GRAM PER LITER OF BLOOD				INTRAVENOUS PHENOLSULPHONEPHTHALEIN FOR TWO HALF-HOUR COLLECTIONS			URINE UREA GRAM PER DIEM, DOREMUS			URINE EXAMINATION	PROGNOSIS		OPERATION	RESULTS	REMARKS
			Admission	Preoperative 1st	Preoperative 2d	Postoperative	Admission	Preoperative	Postoperative	Admission	Preoperative	Postoperative		Admission	Preoperative 2d			
							per cent	*per cent*	*per cent*									
24	G. C.	Stricture of bulbo-membranous urethra, calculus in prostatic urethra	1.04	1.04	0.75	0.6	2	1	35	3	3	14	Albumin +++; pus cells ++; staphylococci	Fair	Good	Cystostomy and external urethrotomy	Improvement	Operation imperative
25	G. K.	Stricture of bulbo-membranous urethra	0.96	0.94		0.6	10		40	10		16	Albumin ++; few pus cells; colon bacilli	Good	Good	Dilatation	Improvement	
30	H. K.	Stricture of bulbo-membranous urethra, uremia	4.1	4.1	*	*	*	*	*	8	8		Albumin ++	Grave	Grave	Dilatation	Died	Patient died soon after admission
31	T. Y.	Stricture of bulbo-membranous urethra	1.2	1.1	0.4	0.3	5	5	40	2	5		Albumin ++; few pus cells; casts; staphylococci	Poor	Good	Cystostomy and external urethrotomy	Cured of stricture	Operation was imperative
55	J. L.	Stricture of bulbo-membranous urethra, perforating fistula	1.0	0.9		0.7	†	†	†	†	†	†	Albumin +++; casts and few pus cells and organisms	Fair	Fair	External urethrotomy; excision of fistulous tract	Cured	Operation was imperative
71	J. W.	Vesical calculus	0.5	0.5			5	5		3	3.5		Albumin +++; pus cells ++; and organisms	Good	Good	Perineal section and cystostomy	Died	Demented. Refused nourishment

* None obtained.

† Unable to obtain on account of perforating fistula.

liver, the kidneys were excreting only part of it and the remainder of it was being stored up in the circulation; hence the increase in the blood urea and toxic condition of the patient. This is one of the types of uremia cases that I believe Foster[18] classifies.

DIFFICULTIES OF PHENOLSULPHONEPHTHALEIN TEST

Every urologist, I am certain, has met with certain types of urologic conditions in which, on account of mechanical impossibilities, it was difficult for phenolsulphonephthalein to give a true status of conditions. This will become apparent from the study of table 1. Here it is again observed that cases 24, 25 and 31, from a standpoint of the phenolsulphonephthalein test, would have been poor operative risks, but from the blood urea determinations, operation was deemed advisable and the patients made uneventful recoveries. Vice versa, some cases had high or apparently normal phenolsulphonephthalein, but high blood ureas, and in each case the patient died before operation was undertaken. Fortunately, this has not occurred many times. In this manner many cases have been diagnosed as good operative risks and others diagnosed as poor operative risks, according to the blood urea examinations. When renal surgery is necessary, blood urea in itself is not sufficient. Here it may be employed only as a prognostic agent. For diagnosis, it is absolutely essential to obtain relative renal function, and it is here that I believe the excretory tests, such as phenolsulphonephthalein, indigocarmin and urine urea, are indispensable.

The presence or absence of albumin, pus and casts today does not play as important a rôle as it has in the past excepting where a renal or vesical lesion is suspected, and here it is ruled out by cystoscopy and catheterization of ureters, which is very essential. But for the presence of abnormal constituents in patients to be operated on for the prostate, urethra, or bladder, I am certain that if other conditions are within normal limits, operation need not necessarily be delayed.

Other tables were completed, but are not to be presented in this paper for lack of space in which the blood urea, phenolsulphonephthalein and urine urea practically all agreed, and from which sufficient data could be collected from the combination, enabling the urologist to proceed with the necessary operation with safety. This last class I may say, though, did not include more than 60 per cent of the cases.

[18] Foster, N. B.: Uremia, *The Journal A. M. A.*, Sept. 23, 1916, p. 927.

In the other 40 per cent of the cases there were disagreements in results of the tests, so that if phenolsulphonephthalein and urine urea had been depended on entirely, operation would have been performed, and our mortality rate would have been increased, as in most instances the patients developed uremia and died.

As a prognostic agent in genito-urinary surgery, I consider blood urea to be almost infallible, and from my results deduced in my many investigations, I can readily say that a favorable or unfavorable prognosis may be made, according to the amount of blood urea present at various times, only to be determined by the studying of a series of urea tests of the blood in each case.

TYPES OF OBSTRUCTION

In the series of 104 cases, there were eighty patients operated on and twenty-four not operated on. This included all the genito-urinary conditions, but the variations that existed were principally in the following classes of cases: (1) certain types of hypertrophied prostate; (2) large vesical calculi; (3) impassable strictures of the urethra; (4) stones in the ureter; (5) pyelitis; (6) suppression of urine; (7) large vesical neoplasms; (8) strictures of the vesical neck; (9) diverticula of the bladder, and (10) uremia.

A brief survey of the surgical pathology of each of the foregoing conditions will convince the reader that he is dealing with a mechanical obstruction in most cases. Therefore, there should exist a difference between the excretory and the retention tests, accuracy being detailed to the retention test, principally for the reason that the entire excretory function, be it phenolsulphonephthalein or urine, cannot be collected entirely through the medium of voiding or catheterization. In some cases, this is true of hypertrophied prostates, when some urine is retained in the bladder that the catheter does not remove, principally when there is a large median lobe, therefore the calculation is inaccurate; hence the reason for the wide discrepancy between this and the retention test. In large vesical calculi, large vesical neoplasms, and in some cases of diverticula of the bladder, the same condition exists; not all the urine can be collected, therefore, all the phenolsulphonephthalein is not collected. Here is a case of particular interest:

Case 3. H. W., aged 54, was admitted to the Mercy Hospital from a neurologic sanatorium to have a perineal prostatectomy done. The urethra of the patient was very sensitive, and in addition to his being demented, he refused

TABLE 2

Relation of blood urea to urine analysis in operative cases

CASE NUMBER	NAME	DIAGNOSIS	BLOOD UREA GRAM PER LITER OF BLOOD				INTRAVENOUS PHENOLSULPHONEPHTHALEIN FOR TWO HALF-HOUR COLLECTIONS			URINE UREA GRAMS PER DIEM, DOREMUS			URINE EXAMINATION	PROGNOSIS ON ADMISSION	OPERATION
			Admission	Preoperative 1st	Preoperative 2d	Postoperative	Admission	Preoperative	Postoperative	Admission	Preoperative	Postoperative			
							per cent	*per cent*	*per cent*						
12	D. B.	Benign prostatic hypertrophy	1.7				Trace						Albumin −, red blood cells −, white blood cells −, organisms +	Grave	None
16	T. L.	Benign prostatic hypertrophy	0.78	0.45	0.45	0.41	35	55		20			Albumin +, few pus cells	Good	Perineal prostatectomy
18	W. O.	Benign prostatic hypertrophy	0.28	0.3			75			25			Negative	Good	Suprapubic prostatectomy
5	A. E.	Malignant prostatic hypertrophy	2.6	3.4			None	None					Albumin +, white blood cells or red blood cells, specific gravity 1.002	Grave	No operation
37	M. M.	Benign prostatic hypertrophy	0.68	0.64		0.5	57	58	60				Albumin +, few white blood cells	Good	Suprapubic prostatectomy
40	B. R.	Benign prostatic hypertrophy	0.6	0.6			55	54		18			Few white blood cells	Good	Suprapubic prostatectomy

a complete examination, allowing only a rectal examination. A large hard mass was felt which at the time was considered to be prostatic tissue. The urine examination revealed a normal specific gravity, a low twenty-four hour urine urea, a phenolsulphonephthalein test of only 5 per cent for two half-hour collections and a blood urea of 0.5 gram. In spite of the low phenolsulphonephthalein, a perineal prostatectomy was decided on. In fact the patient insisted on an operation through the perineal route. After the patient was anesthetized and a sound passed into the bladder, a definite click of a calculus was obtained. The urethra was opened through the perineum, the finger was inserted into the bladder, and a very large calculus was felt. On account of its large size, it could not be delivered through the urethra, and a suprapubic cystotomy was necessary. A stone weighing 9 ounces was removed. The patient did nicely for several days after the operation, but beginning on the fifth day following the operation he refused to take nourishment. We forced feeding through tubes both rectally and by mouth, but in spite of all this, he died on the twelfth day following operation. His blood urea before death was 0.5 gram, the same as before the operation. There is practically no discussion to this case, excepting that the phenolsulphonephthalein was low, due to the inability to collect all the urine which contained the phenolsulphonephthalein and not because it was not excreted.

In the cases of impassable strictures of the urethra and strictures of the vesical neck, here again all the urine is not voided or collected through a catheter, and again the phenolsulphonephthalein reading becomes inaccurate from the standpoint of dependability. In all the foregoing types of cases that I have mentioned, the phenolsulphonephthalein, probably in a large number of cases, was excreted, but not collected, the fault lying not in the excretion of the drug, but in the collection of it on account of the obstruction. Likewise, in the case of stones in the ureter, the kidney on the involved side is excreting the phenolsulphonephthalein, but on account of the obstruction all the urine is not passing by the calculus; hence inaccurate results again. In the cases of pyelitis, a different picture presents itself. Invariably, if not in all cases of pyelitis, we have an accompanying dilated pelvis which may have a capacity of from 10 to 200 cc. Here again, if there has not been total destruction of the kidney, the urine or dyes, whatever they may be, are being excreted, but unless a ureteral catheter is inserted to withdraw the retained urine in the pelvis, accuracy cannot be obtained. This is best conveyed to the mind of the reader by the following case:

Case 4 (No. 63). B. C., aged 24, was admitted to Mercy Hospital with a complaint of urinary frequency. The urine examination revealed a very large quantity of albumin, pus cells, a few red blood cells, colon bacilli and staphylococci; a combined phenolsulphonephthalein of 26 per cent was obtained for

TABLE 3

Blood ureas in two-stage prostatectomies

CASE NUMBER	NAME	DIAGNOSIS	BLOOD UREA GRAMS PER LITER OF BLOOD				INTRAVENOUS PHENOLSULPHONEPHTHALEIN FOR TWO HALF-HOUR COLLECTIONS			URINE UREA GRAMS PER DIEM, DOREMUS			URINE EXAMINATION	PROGNOSIS		OPERATION	RESULTS	REMARKS
			Admission	Preoperative 1st	Preoperative 2d	Postoperative	Admission	Preoperative	Postoperative	Admission	Preoperative	Postoperative		Admission	Preoperative 2d			
							per cent	*per cent*	*per cent*									
23	L. M.	Benign prostatic hypertrophy	0.74	0.74	0.41		10	*	*	21	25		Albumin +++, few pus cells and organisms	Good	Good	Cystostomy	Died	Developed streptococcus infection
7	J. N.	Benign prostatic hypertrophy	0.9	0.9	0.46	0.4	40	42	50	25	28	30	Albumin ++, few pus cells, red blood cells and organisms	Fair	Good	Cystostomy and suprapubic prostatectomy	Cured	
6	J. C.	Benign prostatic hypertrophy	1.2	0.76	0.6		32	20		20			Albumin +, few pus cells, casts	Grave	Fair	Cystostomy and suprapubic prostatectomy	Died	
2	C. M.	Benign prostatic hypertrophy	0.45	0.34			Trace	32					Albumin +, red blood cells +, white blood cells +, casts +			Cystostomy and suprapubic prostatectomy	Cured	
38	G. N.	Benign prostatic hypertrophy	3.5	0.8	3.5		None	10			10		Albumin +, white blood cells +	Grave	Grave	Cystostomy	Died uremia	Drainage improved condition, but gradually developed uremia
41	A. W.	Benigh prostatic hypertrophy Median Bar.	0.61	0.6			18						Albumin ++, white blood cells +			Punch	Cured	

* Unable to obtain.

two half-hour collections. The patient was cystoscoped, her ureters were catheterized, and many pus cells, colon bacilli and staphylococci were obtained from both sides. The pelvic capacity of each kidney was between 75 and 80 cc. Both kidneys functioned with a continuous drop suggesting a hydronephrosis. The blood urea at this time was 0.6 gram per liter of blood. The diagnosis of bilateral pyelitis of pregnancy was made. The pelvis of each kidney was irrigated with a 1 per cent solution of silver nitrate. This procedure was carried out once a week for six treatments, and at the end of this time, the patient felt very much improved. A relative phenolsulphonephthalein test was obtained giving 35 per cent output from the right kidney and 11 per cent output from the left kidney, a total of 46 per cent. The blood urea at this time was 0.37 gram showing a marked improvement. She left the hospital, returning for treatments. Two months later the patient was admitted to the hospital to be delivered. A combined phenolsulphonephthalein test gave only 21 per cent output. A blood urea at this time was 0.48 gram per liter. One week later the patient was delivered and made an uneventful recovery.

In discussing this case, it is obvious that with existing bilateral hydronephrosis, some of the urine was retained in the pelvis of each kidney, this being demonstrated at the time of each pelvic lavage. Keeping this point in mind together with the fact that when a relative phenolsulphonephthalein was given and collected by catheterization of the ureters, we find that an output of 46 per cent was obtained. At the time of the patient's delivery her blood urea as stated was 0.48 gram, which is within normal limits, while her phenolsulphonephthalein was only 21 per cent, which is below the normal. This is undoubtedly due to the retention of phenolsulphonephthalein in the pelvis of each kidney, as a previous phenolsulphonephthalein of 46 per cent was obtained after its injection and collection by catheterization of the ureters. On both occasions, the blood urea was well within the normal limits.

The blood picture in all cases of pyelitis varies from the information obtained from phenolsulphonephthalein. The dye or urine for the hour or two of calculation is being excreted by the kidneys according to the extent of the lesion, but is partly retained in the pelvis of the kidney. The decrease of the output of phenolsulphonephthalein in these cases always exceeds in proportion the increase in the retention of urea. The only explanation that can be offered here is the theory of retention in the pelvis. In suppression of urine and its subsequent condition of uremia, we have two conditions which may be recognized sooner by a series of blood urea determinations than by any other test, simply on account of its being a retention test. On several occasions, an oncoming uremia was diagnosed in this way long before the information was obtained by the excretory tests.

As the cause of death in a large percentage of patients operated on for urologic condition is uremia, it is of utmost importance to the urologist and surgeon to diagnose this condition before the operation, thereby lowering materially his percentage of mortality; and it is here that blood urea excels all other tests as diagnostic and prognostic agents if the method that I have employed is carried out and one remains within the boundary line of maximum retention of blood urea.

It has not been my intention in this paper to lead one to believe that I have discarded the use of other tests for diagnosis and prognosis, because I have clearly demonstrated in the paper that there are certain conditions that befall the genito-urinary tract, under which the other tests must be employed in addition to blood urea, to determine the true status of conditions. From the foregoing information I have been able to draw the following conclusions:

CONCLUSIONS

1. In blood urea we have a valuable retention test to be used in the diagnosis and prognosis of urologic cases.
2. It may be employed in all urologic cases without any special limits.
3. Blood urea as a prognostic agent in urology is practically infallible, if employed by the method I have described.
4. It is a simple procedure and may be used to advantage when the excretory tests such as phenolsulphonephthalein, urine urea, etc., cannot give the desired information.
5. When relative kidney function is desired, it should be used in conjunction with the excretory tests.
6. In a case with a blood urea of more than 1 gram per liter of blood, the prognosis should be considered grave, and less than 0.75 gram as good.
7. An oncoming uremia may be diagnosed long before the clinical signs make their appearance, and before the excretory tests can give the information.
8. Its employment will materially decrease the percentage of mortality held against the urologist or general surgeon.

I am deeply indebted to Dr. Rytina for the use of his material, and it is due to his coöperation in this work that the above results were obtained.

ENDOWMENT FUNDS

REPORT OF B. MERRILL HOPKINSON, M.D., TREASURER

Covering Period from February 28, 1918, to January 13, 1919

GENERAL ENDOWMENT FUND

February 28, 1918.	Balance, Central Savings Bank	$1,465.22
January 1, 1919.	Interest Central Savings Bank	29.54
January 2, 1919.	Interest on Bonds to date	426.15
		$1,920.91

Deduct:

May 2, 1918.	1	$1,000 Third Liberty Bond	$1,000.00		
October 9, 1918.	1	500 Fourth Liberty Bond	500.00		1,500.00
January 13, 1919.		Balance Central Savings Bank			$420.91

This Fund consists of:

1	$500 University of Maryland Regents 5% Bond	$500.00
1	1,000 Georgia & Alabama 5% Bond	1,000.00
1	1,000 Georgia, Carolina & Northern 5% Bond	1,000.00
1	1,000 Omaha & Council Bluffs R. & B. Co. 5% Bond	1,000.00
1	1,000 Consolidation Coal Co. 6% Bond	1,000.00
2	500 Consolidation Coal Co. 6% Bond	1,000.00
2	1,000 St. Joseph Ry. Light Heat & Power 5% Bond	2,000.00
1	1,000 Edison Electric Light Co. 5% Bond	1,000.00
1	500 Liberty Loan 3½% First	500.00
1	1,000 Third Liberty Loan 4¼%	1,000.00
1	500 Fourth Liberty Loan 4¼%	500.00
		$10,500.00
January 13, 1919.	Balance Central Savings Bank	420.91
		$10,920.91

FACULTY OF PHYSIC FUND

February 28, 1918.	Balance Central Savings Bank	$7,804.33
January 2, 1919.	Interest Central Savings Bank	128.54
January 2, 1919.	Interest Bonds to date	1,137.89
March 28, 1918.	Minneapolis G. L. 5%	1,025.00
		$10,095.76

Deduct:					
April	1, 1918.	4	$500 Newburgh L. H. & P. Co.	$1,940.00	
			Int. 2 mos.	16.67	
April	1, 1918.	2	1,000 La Port Serial 1, 5%.	2,000.00	
			Int. 3 mos.	25.56	
May	2, 1918.	3	1,000 Third Liberty Loan 4¼%	3,000.00	
May	27, 1918.		Colonial Trust Co. Box	5.00	
October	8, 1918.		Fourth Liberty Loan 4¼% (2)	2,000.00	
October	8, 1918.		Fourth Liberty Loan 4¼% (1)	500.00	
December	6, 1918.		Premium on Bond	12.50	9,499.73
January 13, 1919.			Balance Central Savings Bank		$596.03

This Fund consists of:

3	$500	Newburgh L. H. & P. Co. 5% Bonds	$1,500.00
1	1,000	Ga. Carolina & Northern 5% Bond	1,000.00
5	500	University of Maryland Regents 5% Bonds	2,500.00
1	1,000	Public Service Corp. of N. J. 5% Bond	1,000.00
1	1,000	Minneapolis G. L. 1st Genl. Mtg. 5% Bond	1,000.00
1	1,000	Edison Electric Co. of Los Angeles 5% Bond	1,000.00
1	1,000	Fairmount & Clarksburg Traction 5% Bond	1,000.00
1	1,000	Consolidated Gas Co. 4¼% Bond	980.00
1	1,000	Louisville Gas & Elec. 7% Gold Note	1,000.00
2	1,000	Omaha & Council Bluffs St. Ry. 5% Bond	1,940.00
2	1,000	Cincinnati Gas Trans. Co. 5% Bonds	1,960.00
2	1,000	West Penn Power Co. 5% Bond	1,940.00
2	1,000	Cumberland Co. P. & L. Co. 5% Bond	1,940.00
1	500	First Liberty Loan 3½% Bond	500.00
4	500	Newburgh L. H. & P. Co	1,940.00
2	1,000	La Port Serial Com	2,000.00
3	1,000	Third Liberty Loan 4¼% Bonds	3,000.00
2	1,000	Fourth Liberty Loan 4¼%	2,000.00
1	500	Fourth Liberty Loan 4¼%	500.00
			$28,700.00
January 13, 1919.		Balance Central Savings Bank	596.03
			$29,296.03

J. C. HEMMETER FUND

February 28, 1918.		Balance Central Savings Bank	$2,382.79
January	2, 1918.	Interest on bonds to date	129.80
January	2, 1919.	Interest Central Savings Bank	42.66
			$2,555.25

Deduct:		
May 2, 1918. 2 $1,000 Third Liberty Loan 4¼%.....		$2,000.00
		$555.25
This Fund consists of:		
1 $1,000 Chicago Ry. 5% Bond.....		$1,000.00
1 1,000 Chicago City Bond 5%.....		1,000.00
1 1,000 Minneapolis St. Ry. & S. P. R. R. 5% Bond.....		1,000.00
2 1,000 Third Liberty Loan 4¼% Bonds.....		2,000.00
January 13, 1919. Balance, Central Savings Bank.....		555.25
		$5,555.25

LEON FRANK FUND

February 28, 1918. Balance Central Savings Bank.....		$121.34
January 2, 1919. Interest, Central Savings Bank.....		2.40
January 2, 1919. Interest on Bonds to date.....		112.50
		$236.24
Deduct:		
June 19, 1918. Scholarship, A. C. Thiemeyer.....		125.00
		$111.24
January 2, 1919. Balance Central Savings Bank.....		$111.24
This Fund consists of:		
1 $500 Newburgh Heat L. & P. Co. 5% Bond.....		$500.00
1 1,000 St. Joseph H. L. & P. 5% Bond.....		1,000.00
1 1,000 Omaha & Council Bluffs T. & B. 5% Bond.....		1,000.00
		$2,611.24

CHARLES M. HITCHCOCK FUND

February 28, 1918. Bal. Credit Central Savings Bank.....		$195.62
January 1, 1919. Interest on Bonds to date.....		250.00
January 2, 1919. Interest Central Savings Bank.....		4.46
		$450.08
Deduct:		
January 19, 1918. Scholarship, J. C. Joyner.....	$125.00	
June 19, 1918. Scholarship, C. C. Medairy.....	125.00	250.00
January 13, 1919. Balance Central Savings Bank.....		$200.08
This Fund consists of		
10 $500 University of Maryland Regents 5% Bonds.....		$5,000.00
		$5,200.08

KATHERINE GIBSON FUND

February 28, 1918.	Balance Central Savings Bank	$857.46
January 1, 1919.	Interest on bonds to date	50.00
January 2, 1919.	Interest Central Savings Bank	29.70
		$937.16
Deduct:		
October 2, 1918. 1	$500 Fourth Liberty Loan 4¼% Bond	$500.00
January 13, 1917.	Balance Central Savings Bank	$437.16
This Fund consists of:		
2	$500 University of Maryland Regents 5% Bonds	$1,000.00
1	500 Fourth Liberty Loan 4¼% Bonds	500.00
		$1,937.16

RANDOLPH WINSLOW FUND

February 28, 1918.	Balance Central Savings Bank	$66.65
January 1, 1919.	Interest on bonds to date	125.00
January 2, 1919.	Interest Central Savings Bank	.86
		$192.51
Deduct:		
June 19, 1918.	Scholarship to L. D. Debihal	125.00
	Balance Central Savings Bank	$67.51
This Fund consists of:		
5	$500 University of Maryland Regents 5% Bonds	$2,500.00
		$2,567.51

DENTAL FUND

February 28, 1918.	Balance Central Savings Bank	$20.70
March 25, 1918.	H. V. Murray, David Smith	2.00
		$22.70
January 2, 1919.	Interest Central Savings Bank	.70
		$23.40

LAW FUND

February 28, 1918.	Balance Central Savings Bank	$149.43
January 2, 1919.	Interest, Central Savings Bank	5.80
		$155.23

CHARLES FRICK RESEARCH FUND

February 28, 1918.	Balance Central Savings Bank	$805.04
January 1919.	Interest Central Savings Bank	27.20
		$832.24
Deduct:		
October 8, 1918.	1 $500 Fourth Liberty Loan 4¼% Bond	500.00
January 13, 1919.	Balance Central Savings Bank	$332.24

This Fund consists of:

1 $500 Fourth Liberty 4¼% Bond	$500.00
Balance Central Savings Bank	332.24
	$832.24

PHARMACY FUND

February 28, 1918.	Balance Central Savings Bank	$18.85
January 2, 1918.	Interest Central Savings Bank	.60
January 13, 1919.	Balance, Central Savings Bank	$19.45

TOTAL PAR ON BOOK VALUE OF ALL FUNDS

General Endowment Fund	$10,920.91
Faculty of Physic Fund	29,296.03
Leon Frank Fund	2,611.24
John C. Hemmeter Fund	5,555.25
Charles Frick Research Fund	832.24
Law Fund	155.23
Charles M. Hitchcock Fund	5,200.08
Katherine Gibson Fund	1,937.16
Randolph Winslow Fund	2,567.67
Pharmacy Fund	19.45
Dental Fund	23.40
	$59,118.66

B. Merrill Hopkinson, M.D.
Secretary-Treasurer.

January 13, 1919.

BULLETIN

OF THE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

AND

COLLEGE OF PHYSICIANS AND SURGEONS

Publication Committee

RANDOLPH WINSLOW, A.M., M.D., LL.D. WM. S. GARDNER, M.D.

J. M. H. ROWLAND, M.D.

NATHAN WINSLOW, A.M., M.D., *Editor*

BASE HOSPITAL NO. 42, UNIVERSITY OF MARYLAND UNIT

The following letter from an enlisted man in Base Hospital No. 42 is both appreciative and interesting. The communication was addressed

To the Editor of The Evening Sun:

SIR—I was just sitting here reading over your Overseas Edition of THE SUN and the thought came to me, that our city (Baltimore) should feel proud of its boys, and the hospitals which represent it, the Hopkins Unit and the University of Maryland, the Hopkins Unit being known as Base Hospital No. 18 and the University of Maryland as No. 42. These two units are doing excellent work over here.

The University of Maryland has a fine gentleman, Lieut.-Col. A. C. Harrison, in charge. This man is with the boys and looks after their interests. I personally cannot speak too highly of him because, since he has been appointed commander of this unit, he has given the boys a beautiful clubroom for us to write home, and spend the quiet evenings along these lines, by playing the piano, graphophone, games and so forth, a good way, isn't it? I just write these few lines mostly for the interest of the dear folks, to know, that their loved ones here in this unit are and will be taken care of as well as in other units which are in France.

A MEMBER OF B. H. No. 42,
American Expeditionary Forces.

November 13, 1918

This hospital was formed under the auspices of the University of Maryland and its staff was, for the most part, obtained from the three hospitals connected with the medical school: University, Mercy, and Maryland General Hospitals. It was organized under

the direction of Major, now Lt. Col. A. C. Harrison, and received its training at Camp Meade, Md. The unit was thoroughly outfitted for its work by generous gifts from the Baltimore Chapter of the American Red Cross; from Pike's Peak chapter American Red Cross; and from the Baltimore chapter of the National Surgical Dressing Committee. As it was necessary to raise an emergency fund to meet unexpected expenses, an appeal to the public met with a liberal response and $11,000 was quickly subscribed. The hospital unit reached France safely and was stationed at Bazoilles, where it did a great work in caring for the wounded and gassed from the great drives in the American offensive. With the signing of the armistice the casualty service naturally diminished and about January the hospital was discontinued and the personnel ordered to a port of debarkation. More than half of the nurses have already reached home and are awaiting discharge. The other half are still in France. Several of the medical staff have returned but the rest have not yet reached this country, though they may arrive at any time. From various sources we hear the work of Base Hospital 42 spoken of in terms of high praise and it is a great satisfaction to us to know that our own unit was able to measure up to the highest efficiency.

ARMY NOTICES

Col. L. Mervin Maus, M. C., U. S. A., University of Maryland 1874, has been promoted to the rank of Brigadier-General on the retired list.

Capt. Milton E. Jones, M. C., U. S. A., of Baltimore, a graduate of the University of Maryland in 1915, has been promoted to a majority.

Capt. L. Wardlaw Miles, son of the late Prof. Francis T. Miles, and a graduate of the University of Maryland in 1896, though now a professor in Princeton University, was awarded the congressional medal for bravery in action. Captain Miles lead his company in a very dangerous assault on the Aisne Canal, and though wounded five times, both legs and one arm being fractured, he ordered himself placed on a stretcher and carried forward toward the enemy trench in order that he might encourage his company. The enemy position was taken and held. Subsequently Captain Miles is said to have had one of his legs amputated.

Lieut. John Galen Skilling, M. C., U. S. A. University of Maryland, 1917, who was reported missing in action, is now known to have been killed during the battle of Mouzon, France, on November 7, 1918. He was a member of the Medical Corps of the 26th Infantry, 1st Division. A memorial service was held at the First Presbyterian Church, Lonaconing, Md., at which a letter was read from Lt.-Col. Theodore Roosevelt, Jr. which we reproduce in part, as follows.

I was constantly associated with Lieutenant Skilling during the larger part of the fighting and became very fond of him as a friend and admired him intensely. I am afraid there is no question but that he was killed. It was in the advance of the Mouzon. Toward the late afternoon the fighting became very severe. Lieutent Skilling went back to Battalion Headquarters and called me on the telephone, to tell me that they were in great need of stretcher bearers and stretchers at that time. He then left to return to the wounded where his duty was and in crossing over the exposed ground was hit. So far as I can determine I am the last man to speak with him. He was loved by his men and respected by the officers. His work was fine and conscientious, and your loss will be tempered by the same pride which we, who have had like losses, feel.

The University of Maryland also feels deeply the loss of this fine young man and will cherish, with pride, his memory.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of Bulletin University of Maryland published 6 times yearly at Baltimore, Maryland for April 1, 1919.

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: University of Maryland, Baltimore, Md.

Editor: Nathan Winslow, now in military service.

Managing Editor: Randolph Winslow, Greene and Lombard Sts., Baltimore, Md.

Business Managers: Randolph Winslow, J. M. H. Rowland, and W. S. Gardner.

2. Owners are: University of Maryland, Medical School.

3. Known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state). There are none.

Randolph Winslow, *Acting Editor.*

Sworn to and subscribed before me this 28th day of March, 1919.

[seal.] Walter E. Smith, *Notary Public.*

(My commission expires May 7, 1920.)