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THE EDITOR

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SOCIAL SERVICE AMONG THE INSANE, AND ITS VALUE IN THE PREVENTION OF INSANITY.*

By WILLIAM FRANCIS DREWRY, M. D.,
Petersburg, Va.
Superintendent of the Central State Hospital.

Looking backward over a period of less than quarter of a century one may see great progress in the extent and standard of hospital care and treatment of the insane, and also considerable advancement in the methods of dealing with epileptics and the mentally sub-normal. In most of the forward movements Virginia has participated and acquitted herself creditably. We have enacted modern laws relating to commitment, including voluntary and emergency commitment. We have reduced jail custody materially, patients being only occasionally kept in jail for a day or two (which is that much too long), while awaiting transmission to the hospitals. Female patients are usually brought to the hospitals by trained women attendants, sent by the hospital superintendents. We have complete State care, without expense to any individual. Mechanical restraint has for years been abolished from all hospitals and humane care is thoroughly established. More attention than ever before is given to diversional occupation. There is at each hospital a good system of classification, there being psychopathic buildings, or wards, for acute cases, special provision for the tubercular, separate buildings, or wards, for the sick, etc. Female nurses are employed to more or less extent in caring for male patients. We have departments for the segregation and custody of both the white and the colored criminal insane, and

also modern laws regarding examination by experts appointed by the Courts, and observation at the departments for the criminal insane, of persons charged with crime whose mental condition is questioned. This method of dealing with these classes of people constitutes a long step in putting expert medical testimony regarding insanity on a higher plane. We have established a State colony for epileptics and made special provision for quite a number of feeble-minded women. Our hospitals are under the control of a Commissioner and a State Board which have no other institutions under their supervision. Efficiency and economy are sought. We have also a State Board of Charities whose Secretary and field workers have advisory and visitorial functions. Each of these boards is composed of able and public spirited men, who have at heart the welfare of the unfortunates in the State. The members of these boards serve without compensation. Acting under a bill passed by the Legislature at its recent session, a thorough study is being made by the State Board of Charities regarding mental defectiveness, which will doubtless result in getting more accurate information and lead to some practical plan of dealing with and caring for the feeble-minded, and the adoption of measures looking to the reduction of mental degeneracy in our State. Last year \$667,000 was expended in maintaining our five hospitals, and for sundry additions thereto. Nearly 6,000 patients were humanely cared for therein during that period. None are permanently kept in any other place than special institutions, for insane persons. Indeed, this State has contributed a large share in raising and maintaining a good standard of care for the insane in this country.

Notwithstanding these advances, which have been accomplished mainly in the past few years, we have not reached the highest standard of care and treatment, and much remains

*Read at the Conference of Medical Officers of the Virginia State Hospitals for the Insane and the Colony for Epileptics, held at the Eastern State Hospital, Williamsburg, Va., January 26th, 1915.

For discussion, see page 16.

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undone in the scientific study of insanity and allied conditions, and we have practically an unworked field in preventive psychiatry. There are, indeed, many more perplexing problems to be solved. Each of us doubtless has in mind plans for developing and improving the medical and nursing service, and adopting further advanced methods regarding the study of insanity, and doing research work. These things will be done as soon as we procure sufficient financial means.

What are now-a-days termed social service, field work, after-care, and the like, are activities for the welfare of the insane, feeble-minded, and epileptic, which have received scant attention in this State. Certainly field work has become an indispensable part of psychiatric practice. Therefore, my particular reason for presenting on this occasion a paper on the subject of social service among the insane is to bring out in discussion a general expression of your views, and then together to formulate and put into operation, if it is considered advisable so to do, some practical State-wide plan of giving insane patients the attention many of them so often need prior to coming to, as well as after leaving, the hospitals; and also to put in motion activities looking to the dissemination of knowledge of insanity and allied morbid conditions, and of the prevention and removal of many of their causes.

The first organized after-care work in the world was inaugurated in Germany, in 1829, by Dr. Lindpainter, director of an asylum in the Duchy of Nassau. In 1893 and 1894, the subject was discussed at meetings of the American Medico-Psychological Association and the American Neurological Association. Both of these societies approved the movement and advocated the organization of a private relief system. Soon afterwards, through the efforts mainly of Miss Louise Lee Schuyler, of New York, a practical system of after-care was organized in that State and did much good work, though it was not an extensive movement. Her efforts attracted the attention, and won the approval and support of the State Charities Aid Association and the State Commission of Insanity of New York. The good example of the Empire State was soon followed in a small way by other States. Not much progress though was made in this country in after-care

until 1908, when Mr. Clifford W. Beers, who wrote that interesting book, "A Mind That Found Itself," was instrumental in inaugurating in his State of Connecticut, a systematic movement which developed so rapidly that in the following year the "National Committee of Mental Hygiene" was organized. Mr. Henry Phipps, the philanthropic and public-spirited citizen, gave \$55,000 with which to prosecute the work undertaken by this organization, and later gave an additional amount of \$50,000, so that the good work begun may be continued.* Ten or twelve States (including Maryland and North Carolina) have organizations, the purposes of which are similar to those of the National Society.

Last year there were received into the four Virginia State hospitals for the insane, 1450 patients. The 237 admissions to the Epileptic Colony are not included because they were either sent from other institutions or were simply feeble-minded. Some of these unfortunates were placed in jail for a few days, under the custody of penal officers, pending their transfer to a hospital, and in almost every instance the unlucky patient was made worse by such improper incarceration and neglect. In many instances, through ignorance, choice or necessity, acute cases are kept at home for a while, under most unfavorable conditions, until they are well nigh exhausted; indeed, many of them die at home and others die soon after admission, for the reason that they cannot under the conditions outside of a hospital, get the treatment and care so necessary in the early stages of insanity.

Of the total number brought to the hospitals during the year, two hundred and fifty-nine, or about 18 per cent., had previously been inmates one or more times. Judging from the records of the Central Hospital, probably from two to five per cent. of the patients furlonged during the year returned before the year closed. A number of discharged patients are lost trace of, and some of these may have relapses and die at home, or a few perhaps drift into other States. It is conservative to say that twenty-five per cent. of the patients sent from our institutions have a recurrence of their mental disturbance of sufficient intensity to need special care and

*Since this paper was written, two other benevolent citizens have aided the cause by a contribution of nearly \$100,000.

treatment. There are, of course, various causes that bring about these relapses. In many, such as manic-depressive cases, a recurrence is naturally expected. It is conceded, I am sure, that a good proportion, say 30 per cent. of the patients that return to the hospitals, might have continued well, or practically so, and perhaps at work supporting themselves and even their families, had they had proper care and assistance while out of the hospital. A man in an institution for the insane means a great economic loss to the community through the withdrawal from productive labor, to say nothing of what it costs the State to care for him in the hospital. The United States Commission of Labor states that the average economic value of an adult between eighteen and forty-five is \$700 per year.

A furloughed or discharged patient may return to a home, the surroundings and condition of which are conducive to the development of insanity, especially in one predisposed; consequently, another mental upset is to be anticipated. There may be poverty, unhappy family relations, unwholesome environments, business complications, etc. Or the patient may fall again into improper mode of living, or into habits, such as excessive drinking, drug addiction, etc., with the almost certain result of another mental attack. Sometimes those to whom a paroled patient has been entrusted are not qualified to give suitable care and attention, direct in proper living, or provide employment, and the result is that soon the patient becomes insane again and has to return to the hospital. Another case has no permanent abode, nor settled method of making a living, and probably no dependable friends. Unless conditions happen to be favorable to him, there is a good chance of his again falling into bad luck. People generally look with more or less suspicion, so to speak, on one who has been an inmate of an institution for the insane, for fear that he is not quite restored, or that he may, at some time, have an "out-break," consequently, such an unfortunate individual frequently has difficulty in getting work to do, which may bring about worry, depression, mental trouble, etc.

It has been truly said regarding a patient who has been discharged from a State institution that "The State has put him on the right road and there abandoned him in the

night and storm. It is small wonder that many readmissions are noted annually. There is neither economic sense nor humane consideration in such treatment of our State hospital patients." From the standpoint of public economy alone, there is ample justification for giving our furloughed and discharged patients a good start and suitable follow-up attention so as to aid in prevention of a recurrence of their disease, for often a second or third admission means permanent State care. Under such circumstances the economic loss to the family and the community and the burden on the State for several years perhaps, are important phases of the subject.

Physical and mental health conservation is certainly one of the chief duties an individual owes himself. When one is incapable alone of performing this duty, he should be aided and directed by others who are more capable, both for his own good, and that of the community. This should be well done to the end that human efficiency may be increased and human suffering prevented. In many instances this duty devolves upon the State. It does in case especially of the insane.

A social service department, co-operative in its plan and working, constituting an integral part of our State hospital system, supported by the several institutions, would, I believe, accomplish much good. A tentative outline or a constructive program of things that seem worth while in such service might be as follows: Assist patients suffering from incipient mental disorders, pending their transfer to a hospital, and as far as possible prevent their being sent to a jail or almshouse, or kept in unsuitable homes. Give special attention to borderline cases with the view of averting an attack. Educate the public to a proper conception of insanity—that it is a disease or symptom of disease that is often preventable. Emphasize the fact that the insane are sick people who need medical treatment and nursing, and not penal custody. Direct a furloughed or discharged patient in the care of his health, safeguard him against temptations, stress and worry that caused his affliction. Encourage him and note his progress from time to time; help secure for him congenial employment. Investigate the domestic surroundings of such patients, aid in correcting faulty home conditions; instruct the home people how to deal personally

with their mentally afflicted members. Instruct the families of patients and other people as to the nature, causes and prevention of insanity. Look to their social and industrial betterment, and to improving their physical and mental hygienic condition generally. Aid in arousing public interest in the entire subject of mental disease and its consequences. Help to "dispel the feeling of the public concerning the weird and uncanny nature of insanity." Bring about a closer relation between the hospitals and the public, educating the latter to a proper idea of the true purpose of the former. Procure family histories and give practical study to heredity in mental diseases and allied conditions.

The individual, perhaps a trained nurse or a practical social worker, to whom this special work at each hospital might be entrusted under medical supervision should be familiar through experience with the proper methods of caring for and dealing with the insane. She should have a record of all important facts regarding the personal and clinical histories, the family history, home life, and other essential data, etc., of patients that are sent from the hospital. Of course, in many cases, information regarding the home life and other essential facts would have to be secured by others who should be connected with the proposed service. In the general organization of such service, there should be in each county, city, and town, local committees to do voluntary service. Several of the existing agencies, such as district nurses, health officers, charity workers, etc., would doubtless unite with any movement having for its object aiding so unfortunate individuals as those whose minds have been shipwrecked. The after-care nurse, if you please, should, of course, keep the superintendent of the hospital in touch with the condition of every furloughed, and for a reasonable time, of every discharged patient, thereby enabling him to ascertain at any time the true condition of such patients, and endeavor to adopt means to prevent a relapse. She should also ascertain additional valuable facts about the patient, his antecedents, his family, his environment, etc., and the immediate, as well as the ultimate results of hospital treatment. While in some cases the necessary care and direction may be well done by members of the family, and regular reports of the condition of the patient be

made by them to the superintendent, these things could be much better done in many instances by sending, from time to time, an intelligent and properly trained representative of the hospital to interview the patient, relatives and friends and the family physician, and note and report the condition of the patient, how he is re-adjusting himself to his surroundings, etc. With such a service, well planned and in successful operation, many patients now kept in the hospitals could be sent home, many placed out in suitable families.

In some States there is attached to the staff of the public hospitals such an agent or worker. The Massachusetts Board of Insanity decided, in 1913, to employ a social service worker to organize and systematize the work of after-care and prevention in each of the State institutions. In many instances it would be well for an assistant physician to act as parole officer to visit the homes of patients. The advantages of an occasional visit to a community by such an individual are obvious.

The social service I have in mind, however, should not limit its activities to after-care work. From this small but important initial step, we should expand such proposed service to general prophylactic work, educational endeavor, etc. The prevention of insanity will surely be one of the most important movements of the present century. There has already been an awakening in preventive psychiatry, and the forces to work out a great reform in mental hygiene, prevention of insanity, etc., are being organized for systematic work. One of the chief elements in these forces, as already indicated, should be agencies working under the direction of our State institutions. The official organization, especially the medical officers, of the Virginia hospitals for the insane, has an opportunity and a duty in this great special field of preventive medicine, which it should not shirk. A State-wide work for the prevention of insanity, feeble-mindedness and epilepsy should be well organized and done as comprehensively as that now being carried on by the State Board of Health for the prevention of typhoid fever, tuberculosis, contagious infections and other physical diseases. I have no doubt that a co-operative plan between the State hospital authorities, the State

Boards of Health, Education and Charities and other appropriate agencies could be effected, and accomplish much good in a fertile field where the laborers have been few. We could not expect to procure, certainly in the beginning, a large sum of money to carry out the proposed program of social service for the insane, an educational campaign regarding the prevention of mental diseases, mental deficiency, etc., but I believe that through an organized and earnest effort a good start could be made, and that eventually financial aid would come from the State and perhaps private philanthropic sources. Valuable results would be shown in lessening the number of patients in the hospitals, reducing the number of chronic cases, curtailing the total expense for State care, and above all, in mitigating much human suffering and unhappiness. In some States it is a voluntary service on the part of philanthropic individuals and societies, while in others it is recognized to be of such importance that appropriations of State money are made for the purpose of carrying on the work, employing social service experts, and doing research work regarding the causes and prevention of insanity.

The State could not possibly undertake a work that would be more far-reaching in good results than that of preventing insanity. In my judgment, it is not only a proper function of the State to care for her insane and make them comfortable, happy and use every known means to cure them, but it is likewise her duty to take a hand in the prevention and control of some of the causes of mental diseases and degeneracy. The Legislature should be asked to appropriate a sufficient sum to enable the hospital authorities to conduct a thorough survey, regarding the abnormals, as it has done in respect to the subnormals by the State Board of Charities. The efforts of the two Boards would result in tremendous good to the State. Steps taken in this State along lines suggested in this paper would be in keeping with the provision of the bill now before Congress, and which will probably pass, providing for a Division of Mental Hygiene in the United States Public Health Service. The essential object of the bill is, as you know, to carry on systematic studies in mental hygiene. In support of the measure, a high official in the National Government says:

"It is conservatively estimated that there are now in the United States 250,000 insane persons and 300,000 mental defectives. The influence of these abnormal states on the production of pauperism and criminality and on race development require systematic investigation to determine their causes and methods of prevention.

"The social, economic, and public-health problems involved affect not only each State, but the Nation as a whole. Some studies are now being made, but they should be extended, and there is need of correlating all existing data, in order that they may be made available to protect the mental health of the public at large and to ameliorate conditions among those already suffering from mental disorders. This work can well be done through a division such as is contemplated."

We, who are especially concerned about the mental health problems, should then no longer delay in taking the initiative and in setting in motion a general and well organized movement for mental health conservation, etc. I believe that such a movement should be inaugurated now, and developed on a broad plan. It should be to the people's mental health, what the State Health Board is to their physical health. It should deal with things psychiatric in nature, strive to aid in the preservation of mental health and the prevention and cure of mental disorders and defectiveness.

We should, at an opportune time, seek the aid and direction of the National Committee on Mental Hygiene in organizing a general forward movement in this State. I have been assured by its officers that a representative of the Committee would be glad to come to Virginia to explain how such a movement can be successfully launched, and to suggest as to the best methods, gained from much experience, of arousing public interest, of maintaining an active association and of co-ordinating all suitable agencies in the State. Through such a movement, I believe there would result a general awakening and united effort among psychiatrists, physicians, health officers, social workers, educators, men of affairs and influence, and men of thought and action, which would result in great practical value in matters to which I have in a cursory manner called your attention. I would suggest that this conference appoint two or three of its members

to map out a definite plan for your consideration, regarding social service in connection with our hospitals, methods of prevention of mental diseases, and also to act as a "temporary organizing committee" for the purpose of formulating a plan for organizing a "State Society for Mental Hygiene."

THE ACUTE KIDNEY.*

By JULIAN L. RAWLES, M. D., Norfolk, Va.

There is probably nothing in the field of surgery that has made as rapid advances in the last few years as kidney surgery.

The perfecting of the X-ray, the catheterizing cystoscope, and more recently the improvements in kidney function tests have eliminated many of the errors of diagnosis which up to a very few years ago resulted so disastrously to our patients.

I want to discuss briefly tonight some acute kidney conditions. They may be divided into several different heads, depending upon the source of the irritation, and its method of reaching the kidney.

First, let us consider the acute kidney irritation resulting from the toxins of infectious diseases or the ingestion of drugs. As a rule this is a simple irritation of the excreting portion of the kidney, and is detected by a diminution in the amount of urine, and the presence of albumen, casts, epithelial cells, and leucocytes. It generally responds to hydrotherapy, restricted diet and the rest which concomitant conditions require.

Acute kidney infections as a rule are haematogenous or lymphatic in origin. One-fifth of all the blood in the body passes through the kidneys each minute, which is probably more of a protection than otherwise, for, reasoning by analogy, we know that it is Nature's custom to fight infections by increasing the supply of blood to the part. However, given a column of blood carrying living organisms from some distant pus focus, as a furunculosis, a typhoid ulcer, a suppurating appendix, an infected gall-bladder, an empyema, or our old friend, the colon bacillus, passing through a kidney damaged by the constant irritation of a stone, or

an external injury, or even in a person whose resistance has been lowered by some recent disease, or the exhaustion of mental worry, or excessive physical labor, we see how easy it would be for an infection to occur.

The idea that it is possible to have a kidney infected by ascension up a ureter, that is, an undamaged ureter, has been abandoned. Barker and Draper have proven that back pressure from prostatic or urethral obstructions rarely ever infects the kidney by way of the ureter.

They claim that there is a rhythmical contraction of the ureter which corresponds to the peristalsis of the intestines, and that thus the ureter is spasmodically emptied—every nine seconds in the dog—and that as long as this goes on no infection from back pressure up the ureter can occur.

We have known for some time that the uretero-vesical valve was not of much importance in the protection of the kidney; that quite invariably the source of renal infections from the lower urinary tracts came by way of the lymphatics lying in the walls of the ureters themselves.

It is easy to see that a bladder infected by prolonged retention, irritated or ulcerated by a stone, can easily transmit its living cultures into the open mouths of the adjacent lymphatic channels, to be conducted *upwards* towards the kidney, traveling naturally along the channels with the lymph just as infections traveling along the ureter *descend* to the bladder with the current.

Of the types of infection, there are two distinct classes; the pyogenic cocci, and the colon bacillus. In each of these cases we are dealing with a living organism and not a toxin. In an earlier part of this paper it was stated that the toxins produced cellular changes similar to those found in nephritis. Again, we find two types of acute surgical kidney; one, an abscess formation, usually due to the pyogenic cocci; and another, of a diffuse inflammatory nature where there is not an immediate breaking down of tissue, generally the result of colon infection. The first type is ushered in by a rapid rise of temperature and pulse, and a high leucocyte count, pain on the affected side, muscular rigidity, and tenderness. When the right kidney is the seat of this acute infection, it is

*Read before the Surgical Section of the Norfolk County Medical Society, at its meeting, February, 1915.

For discussion, see page 20.

most liable to be mistaken for an appendix, or a gall bladder; and often an operation is necessary to determine the difference. Lumbar tenderness, rigidity, and spasm are the pathognomonic signs. The urine may show a trace of albumen or an occasional blood cell. With a condition of pyelitis rapidly developing in a patient, and signs of kidney involvement obvious, an exploration of the kidney should be made, and almost invariably a nephrectomy done.

Splitting the kidney from pole to pole has been tried, draining the multiple abscesses, but with a higher mortality than follows an immediate nephrectomy. Brewer reported fourteen cases, with the following results: two treated by the expectant plan, with two deaths; four treated by nephrotomy and drainage, with four deaths; eight by nephrectomy, with no deaths.

A word as to the behavior of the other kidney; it is frequently found to be showing cellular changes from the toxins it is attempting to eliminate. Now, if you remove the source of these toxins, that is, the acutely diseased kidney, the undamaged kidney clears up rapidly; but if you leave it there to elaborate toxins continuously, this undamaged kidney becoming overwhelmed, will, of course, cease to functionate.

With the colon infections we may have just as sudden onsets as with the cocci, but the patient is not nearly so ill, and does not progress so rapidly to a fatal termination. The urine, too, is likely to show more abnormal constituents; and a point especially worth noting is, that the urine containing colon bacilli remains cloudy on standing owing to the motility of the colon group.

Urine containing pus from the cocci infections will become clear upon standing, the pus tending to sink to the bottom of the receptacle.

In the colon infections there are remissions, the patient feeling quite well between attacks, with nothing more than a sense of soreness on the affected side. Within a few days, however, the cycle is repeated; chill, fever, increased pulse, high leucocyte count, and the local symptoms.

These cases require exploration in most instances, the remaining steps of the operation depending upon the condition found—a nephrotomy with drainage, or a nephrectomy fol-

lowed by stimulating treatment, and colon bacillus vaccines.

I have said nothing of the infections of the pelvis of the kidney because they are seldom surgical. Symptoms of an acute pyelitis may resemble closely those of a colon infection of the supporting structure of the kidney. With these exceptions, there is more free pus in the urine in the pelvic infections, and less tenderness and rigidity on the affected side.

142 Main Street.

DIURETICS IN RENAL DISEASE.*

By LESLIE BYRON WIGGS, M. D., Richmond, Va.
Consultant in Diseases of the Kidneys to the Johnston-Willis Sanatorium; Associate Professor of Materia Medica, Medical College of Virginia.

It has long been the custom with physicians to begin the use of diuretics just as soon as there was the slightest symptom indicating renal insufficiency, and it is my belief that this practice has done as much to aggravate renal damage as any single factor, with the possible exception of chronic alcoholism. My belief that this custom is still very much in vogue is the excuse for presenting this paper to you tonight.

When patients come to our office and we detect some symptom of kidney disease, I am afraid that most of us have a disquieting feeling—akin to hopelessness—that we really can do nothing for them and we forthwith try to relieve their mental condition by prescribing some diuretic—frequently some “kidney pill.” To some this may seem an easy way out of a difficult position, but they fail to realize that what they are doing in many cases is to convert a quiescent condition into an advancing one by using up some of the natural reserve power of the renal tissues by stimulating them into increased activity at a time when they *need rest*.

Our present day conception of the etiology of chronic renal disease is based on chronic irritation, and whether this irritation is caused by an invading microbe or an auto-toxic agent is immaterial in a discussion of this sort for the end result to the kidney tissues is *irritation*. It, therefore, seems irrational to further irri-

*Read before the Richmond Academy of Medicine and Surgery, February 23, 1915.

tate the renal tissues by the use of diuretics. Exceptions to this rule, I think, are very rare.

In this connection, it should not be argued that if it is rational to stimulate a failing heart, why not stimulate the renal tissues in kidney insufficiency of a chronic nature, for the conditions are very dissimilar. As a matter of fact, I do not believe that a failing heart requires stimulation, for what it most needs is rest, reserving our medicinal agents toward increasing the inherent cardiac *tone* in cases of dilatation.

What do we hope to accomplish by the use of diuretics? We probably cannot cause the kidneys to throw off any damaged tissue; neither is it probable that we will cause an hypertrophy of the sound structure. Suppose, for argument's sake, that we have in our therapeutic armamentarium substances that will simply increase the blood supply to the renal tissues without producing kidney irritation and make use of them in the hope of causing hypertrophy—what then? Are we not in danger of increasing their functional activity beyond the point of tonic influence and thus causing fatigue with its attendant ill effects? And should not this damaging influence overshadow the *meagre possibility* of hastening hypertrophy?

The use of definite *renal irritants*—and these constitute the larger class—could be dispensed with, I believe, without real loss to our therapeutics of renal disease. They act as the whip to the tiring horse which, at his best, *will just fall short* of his goal and the whip simply causes him to use up all of his *reserve energy* with a consequent diminution in the *total amount of work done*.

We are too prone to place confidence in remedies, and often we credit them with relieving our patients when, as a matter of fact, nature has effected the cure *in spite* of our activities.

Many of our cases of beginning uremia show improvement as soon as we start our diuretics. In these instances, we give full credit to the efficacy of the drug or drugs. On the other hand, how many cases fail to show the slightest sign of recovery, although we give every substance known or thought to have a stimulating effect on the kidney structure!

I have observed some of our most prominent clinicians both in this country and abroad use diuretics in the presence of apparent renal

dropsy and I must confess that I have never seen a case in which I was sure that improvement had taken place through the activity of a renal stimulant. I have seen cases improve under such treatment but I am not convinced that they would not have improved had no diuretic been given.

It has been shown experimentally by Walker and Dawson (*Arch. Inter. Med.*, 1913), Christian and O'Hare (*Arch. Inter. Med.*, 1913, xi, 517), and also by the author (see accompanying chart, Fig. 1) that if diuretics be given to animals with acute nephritis, the animal dies

No.	Gramme Weight	Days After Uranium Nitrate	Fig. 1. Days After Tartaric Acid	Treatment	Doses	Grammes per kilo.
1.	1500	15 (Lived)		None		
2.	1400	5 (Died)		Diuretin	3	.235
3.	1750	7 (Died)		None		
4.	1800	6 (Died)		Diuretin	4	.235
5.	1900	10 (Lived)		None		
6.	2000	4 (Died)		Diuretin	3	.235
7.	1500		8 (Died)	None		
8.	1530		5 (Died)	Diuretin	4	.286
9.	1800		7 (Died)	None		
10.	1790		5 (Died)	Diuretin	3	.286
11.	2200		9 (Died)	None		
12.	2100		6 (Died)	Diuretin	4	.286
With Diuretics, average life...				{ Tartaric Acid	5.3 days	
				{ Uranium Nitrate,	5 "	
Without Diuretics, average life				{ Tartaric Acid	8 "	
				{ Uranium Nitrate	10.6 "	
General Average, With Diuretics				5.1 days.		
" " Without				9.3 "		

much quicker than if no renal stimulant is given. If this is true in the acute conditions, there seems to be no good reason for supposing that it is not true in the chronic diseases, certainly when there is an acute suppression of function. Cells that fail to functionate as a result of irritation or stimulation will probably not be permanently benefited by further stimulation or irritation.

In reviewing the monograph by Drs. Christian and O'Hare above referred to, I find the following conclusions made by them from their experiments:

"Diuretics given to rabbits with severe, fatal experimental nephritis shorten the duration of life of the animals. On the other hand, nine out of twelve rabbits which survived the experiment had received diuretin. This work supports the view that in a severe acute nephritis, a diuretic drug, such as diuretin, is contraindicated inasmuch as in the experiments diuretin shortened the lives of the animals. On the other hand, of the survivors, a large proportion ($\frac{3}{4}$) had received diuretin.

"This rather gives support to the view that in less severe cases diuretin may be beneficial, and so justifies the cautious use of the drug in moderately severe cases of acute nephritis.

"In the survivors, it is not certain that acute severe renal lesions were reduced; consequently, deductions from these relatively few survivors are less of value than from the larger number dying during the experiments."

The experiments, however, certainly support the view that diuretin, as a diuretic drug, may be harmful in a case of acute nephritis. Their observation that diuretin may be beneficial in the less severe cases of acute nephritis is very apt. It supports my view that most of us would get better results with our cases of acute nephritis if we interdicted the use of diuretic drugs. I contend that it is too difficult to differentiate between the suitable cases and those in which the drugs would do definite harm. It seems reasonable, therefore, if the case is indefinite enough to raise the question as to the advisability of the use of a diuretic, then the case should be considered unsuitable, for the dangers attending its use in unsuited cases seem to outweigh the beneficial effects when given to the proper class.

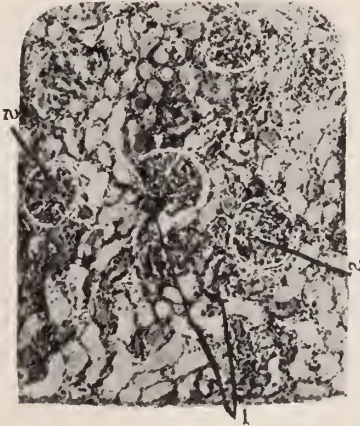


Fig. 2.—Tartrate nephritis (by Underhill, Wells and Goldschmidt).
(1) Cloudy swelling of the epithelium of the tubules;
(2) Glomeruli practically normal.

While it is my opinion that, in the present state of our knowledge of and therapeutic practice in renal diseases, we could dispense with diuretic drugs without increasing the present mortality from kidney diseases, I do not wish to be understood as saying that diuretics are never beneficial. On the contrary they have

their sphere, but the indications for their use are very indefinite and therefore the *end results* of their action *uncertain*. They should be used only after careful functional estimations to determine the total working capacity of the kidneys, and also tests should be made to determine the portions of the kidney tissues most affected. For instance, if we have a case with a rising blood urea, with the urinary urea diminished and the sodium chloride test producing polyurea, diuretics of the vascular class may be cautiously used, for in this case we would probably be dealing with a tubular nephritis and the diuretic conceivably might stimulate the glomeruli and flush out the diseased tubules below.

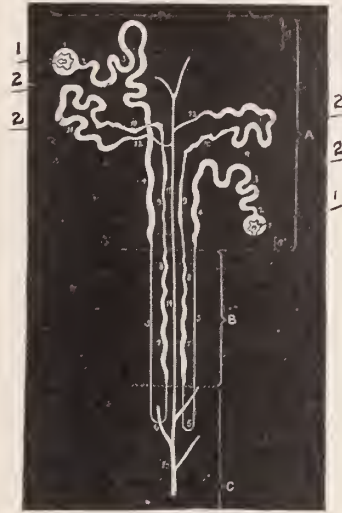


Fig. 3.—Diagram of a uriniferous tubule with tuft. It is conceivable that by stimulating the glomeruli (1) in cases definitely known to be a simple tubular nephritis of subacute or mild type, that we might flush out the tubules below (2).

It must be remembered, however, that we are seldom confronted with a nephritis involving only one portion of the kidney structure. The so-called tubular nephritis is usually associated with a varying degree of damage to the glomeruli. We should, therefore, be extremely cautious in the use of diuretics in any case.

In studying the chart, we find that the six rabbits that received diuretin died on an average of *five and one-tenth days* after the production of an acute nephritis, while those in which no treatment was instituted died in *nine and three-tenths days*. In other words, *the untreated animals lived two and two-tenths*

days longer than the treated ones. Incidentally, two of the untreated animals lived while all of the treated animals died. This may be incidental for, of the twelve animals surviving out of a total of seventy-five used in the experiments of Christian and O'Hare, nine had received diuretin. However, as pointed out by them, the degree of nephritis in the survivors is unknown.

SUMMARY.

1. In the chronic cases of nephritis with a rising blood urea and a normal chloride of watery content in the urine associated with a low urinary urea, diuretics of the vascular type may be used *with caution*.

2. In the severe acute cases diuretics are contraindicated.

3. In the cases definitely known to be mild or subacute in type, the less irritant diuretics may be used guardedly in so much as, experimentally, we did not definitely prove them contraindicated. Since, clinically, these types are difficult to differentiate from the early manifestations of the severe forms, it seems a good rule to interdict the use of diuretics in doubtful cases.

4. Theoretically, there seem to be but few logical reasons for the use of renal irritants or stimulants; therefore, their indications in any case are clothed in extreme doubt.

210 East Franklin Street.

THE PRYOR METHOD OF TREATMENT FOR PUERPERAL SEPTICAEMIA.*

By ARTHUR S. BRINKLEY, M. D., Richmond, Va.
Associate Surgeon, St. Elizabeth's Hospital.

In taking up the treatment of this most important subject, septicaemia, I feel that a discussion of the method in question will not only be beneficial to the surgeon but, from the comparative simplicity of the technique, will be of most useful importance to every practitioner of medicine, save the specialist whose field of endeavor does not include the special part of the human anatomy that falls heir to this infection.

We all know, of course, that puerperal septicaemia is a disease which must be charged

to negligence or faulty technique of some one in attendance, or to the patient herself—very often to the latter, especially in cases developing after self-induced abortion. As a general rule, these patients do not know the first principle of asepsis or sterilization; consequently the instruments they use are always septic. The only reason they occasionally escape infection is that such instruments probably do not contain very virulent bacteria, or else the resistance of the patient is sufficient to overcome the infection. Now we will find, after eliminating all such cases, that in a small percentage of our patients, even after the most rigid asepsis in delivery, septicaemia will develop, and where it comes from we are unable to tell.

There have been many methods, which I will not take time to enumerate, advised for the treatment of this condition, but after a careful study of a number of these cases which came under my observation during nearly two years service in a large hospital in which nearly all of the different varieties of treatment were used, I am convinced that the best treatment is that devised by the late Dr. W. R. Pryor, of New York, and at present so ably practiced by his successor, Dr. J. C. Taylor.

Before describing the technique of this operation, I wish to call your attention to the lymphatic supply of the uterus. This consists of three sets, each of which anastomoses by a network of capillaries. There is a mucous network, a muscular network, and a peritoneal network. The vessels from these three regions of origin empty into the sub-peritoneal tissue, from which area the collecting trunks take origin. From the cervix come five to eight collecting trunks, which pass toward the sides of the body of the uterus, forming on each side, by twisting and dilatation, the juxta cervical lymphatic knot. The cervical connecting trunks are divisible into three groups on each side; one group is composed of two vessels which pass to the middle chain of the external iliac glands. Another group is composed of two vessels which enter the hypo-gastric glands. A third group consists of several vessels, some of which enter the lateral sacral glands, and the remainder terminate in the glands of the sacral promontory. From the body of the uterus come three

*Read before the Junior Medical Society, Richmond, Va., January 14, 1915.

groups on each side. One group of four or five vessels, which emerge below the uterine cornua, pass beneath the ovary, where they receive the ovarian lymphatics, and terminate in the juxta aortic glands of the same side. One so-called accessory lymph pedicle terminates in the external iliac glands, the other in the inguinal glands.

From the above brief review of the lymphatic system, we find that the surface of the uterus has an enormous and widely distributed lymphatic system. This accounts for the quick absorption and the severe toxic symptoms we get early in the disease, due to the rapid entrance of bacteria and their toxins into the systemic circulation. So much for the review of our lymphatic anatomy. We will now take up a brief description of the operation.

The patient should be given a general anaesthetic, and placed in the lithotomy position, with the buttocks protruding over the edge of the table. The vagina should be swabbed out with 50 per cent. tincture of iodine in alcohol, or irrigated with 1 per cent. lysol solution. The anterior lip of the cervix is grasped with blunt tenaculum forceps and the uterine cavity carefully explored with sponge holding forceps for any remaining debris. The cervix in this condition is usually dilated and needs no instrumental dilatation. One should be very careful in using any instrument in the uterus in this condition. A sharp curette should never be employed under any circumstances, as the walls are soft and boggy and there is great danger of puncturing the uterus or of doing permanent injury to uterine mucosa. The cavity of the uterus should be thoroughly swabbed with pure tincture of iodine, the excess being wiped out with plain gauze strips. Then a very narrow strip of iodoform gauze is *loosely* packed in the uterine cavity; for if tightly packed it will interfere with drainage. With the cervix patent, the necessary drainage is secured while the presence of iodine in the gauze assures the best possible antiseptic application. The posterior lip of the cervix is then grasped with blunt tenaculum forceps, making upward traction, and with blunt curved scissors the line of union between the neck of the uterus and the posterior vaginal wall is incised, care

being taken to hug the wall of the uterus to keep from cutting into the rectum. If the precaution is taken to cut transversely about one-half inch in the middle line at the junction of the vaginal wall with the cervix, no danger can be done to any of the structures. The gloved finger is introduced through this small opening into the peritoneal cavity and the opening enlarged by dilatation. If any septic, serous transudate or pus is present, this must be wiped out carefully with gauze sponges. If adhesions have formed between the posterior surface of the uterus and the broad ligaments and the intestines, they should be freely broken up, being careful to find the line of cleavage and also being gentle in making separation to avoid injury to the walls of the bowel. In separating these adhesions the finger is carried well out to the pelvic brim on either side.

With this accomplished, and having removed all of the debris in the pelvis by gentle swabbing, the patient is placed in the extreme Trendelenberg posture. This allows any loops of intestine which may be in the pelvis to gravitate out of the way. This is very important as one of these loops might otherwise become caught in the gauze with which we are about to wall off the pelvis and so cause obstruction. The opening in the cul-de-sac is then retracted anteriorly and posteriorly by Pean-Pryor trowels—instruments that are shaped very much like a mason's trowel, but with a narrow, straight sided blade, slightly bent near the shank. The sides are retracted with long, right-angled retractors. The pelvis is now packed through this opening in the cul-de-sac with the ordinary iodoform gauze folded to make loose rolls about one inch wide and about eight inches long. These rolls, slightly flattened, are introduced through the opening and carried upward laterally to the level of the broad ligament. This is held with forceps until the right-angled retractor is withdrawn and reintroduced with the gauze behind. In this manner you are able to get the dam symmetrical and it can be placed more readily. Usually two rolls are placed behind each broad ligament and one directly behind the uterus, the whole making a dam or compress of gauze which shuts off the pelvic organs from the general peritoneal cavity. The end

of each roll protrudes into the vagina. The loose packing in the uterus is removed in 48 hours. The cul-de-sac packing is removed in seven days and two additional loose pieces inserted at this time to secure further drainage.

The second dressing is changed about the third or fourth day, and one small strip left in the wound to prevent closure. This strip is changed every three or four days until drainage has ceased and the wound is nearly closed, at which time the cervix is pressed backward and held by a transverse packing placed immediately over the anterior fornix. This packing is intended to bring the uterus forward and restore the uterus to its former position.

The general treatment should be carried out along the lines of any acute infection. The head of the bed should be elevated, high up, or in very bad cases the extreme Fowler's position; saline solution per rectum should be given every four hours; if very septic, hypodermoclysis, 50 c.c. an hour, should be administered until some contra-indication presents itself, such as edema of lungs, overcrowding of heart, etc.; sparteine sulphate, grains one to two, hypodermically every 4 hours should be used, and morphine, grains 1-6 to 1-4, every four hours hypodermically s. o. s. Nothing is given by mouth for 48 hours except water; then liquids, except milk, are given every 2 hours in full quantities. After the fifth or sixth day, fractional doses of calomel, followed by a saline are ordered unless contra-indicated. After this soft diet may be started.

The points of advantage in this method of procedure are these: First, all the debris is removed from cavity of the uterus and the walls of the uterus are sterilized with tincture of iodine which prevents further absorption from uterine cavity. Second, the septic transudate or pus which has already formed in the pelvis is evacuated and further trouble from this is prevented. Third, the dam of iodoform gauze walls off the general peritoneal cavity, thereby greatly retarding the possibility of general peritonitis by continuity. Fourth, the gauze from the pelvis through the opening in the cul-de-sac into the vagina forms a natural drainage. Fifth, the presence of iodoform in the gauze sets up a reaction in the imme-

diately field, causing plastic exudate to be thrown out which seals up the mouths of the lymphatics and prevents further absorption into the general circulation.

617 West Grace Street.

DISCOVERY OF SURGICAL ANAESTHESIA.*

By E. M. MAGRUDER, M. D., Charlottesville, Va.

(Concluded from page 614).

In determining the merits of the work done by the several claimants of the honor of giving surgical anaesthesia to the world, it seems that the following questions arise for consideration:

1. Who discovered Surgical Anaesthesia?
2. Who was the *first* to discover and employ surgical anaesthesia?
3. Foundation upon which claims rest?

There is no doubt that this discovery was made by three men, Crawford W. Long, Horace W. Wells, and William Thomas Green Morton, independently of each other.

2. There can also be no doubt that to Crawford Williamson Long belongs the honor of being the first to discover and use Surgical Anaesthesia, and acknowledgment is now made to him the world over, in Great Britain and Ireland, France, Germany, Russia, Australia, Mexico, and the United States. New England, however, is divided in sentiment between the claims of Wells and Morton respectively, as the true discoverer, and celebrated the fiftieth anniversary of Morton's discovery in Boston in 1896.

But Long deserves more than credit for priority of discovery and application; for his freedom from mercenary motives, his fairness to his rivals, his modest, dignified, demeanor throughout the trying ordeal of "The Ether Controversy", and his refusal to engage in unmannerly squabble even at the risk of his glory, showed his clear title to "The grand old name of Gentleman."

But while Long was undoubtedly the first to use an anaesthetic in surgery we must not refuse credit to Wells and Morton for earnest effort and independent discovery along this line; and it is probable that, if any two of this

*Read before the Association of Surgeons of the C. & O. Railway, at White Sulphur Springs, W. Va., September 5, 1914.

trio had failed to make the discovery or to publish it, the other undoubtedly would have conferred the boon, for the thought and ambition of all three independently reached the goal within a period of four and a half years, each through the needs of his profession.

3. *The claims of Jackson* were founded only upon theory and *suggestion* to others, not upon practical demonstration. He did no experimental work in this line and, being a physician and knowing the needs of the profession, he deserves less credit than Sir Humphrey Davy who, though not a medical man, yet in 1799 *suggested* the use of nitrous oxide in surgery, but he never claimed that he had discovered surgical anaesthesia. Jackson discovered nothing and his claims may be thrown out, though it seems that he gave at least *some* assistance to Morton in the choice of ether and the apparatus for administering it.

The claims of Wells were founded upon practical demonstration both upon himself and others. He certainly discovered *something* without the aid of anyone and at a voluntary risk to his life and deserves great credit for courage and originality and independence of thought and action. He also made an effort, without concealment or reservation of any kind, to publish his discovery to the world by practical public demonstration in the greatest seat of learning (Boston) and in the greatest hospital at that time in America (Massachusetts General Hospital). But he let his discovery slip away from him through lack of perseverance in pushing his highly promising work to the goal and allowed two public failures to draw him back from the brink of success. If success had not come to others we know not what effect his earlier successful experiments would have had, nor how long the blessing would have been delayed by his discouragement and surrender; but his work would certainly have been a long step towards discovery and "his name deserves honored remembrance" for his intelligent effort and near success. Wells's discovery and demonstrations were made December 11, 1844.

The claims of Morton rest upon practical demonstration by himself; but while the anaesthetic possibilities of ether came to him from the same source as to Wells and Long—a nitrous oxide or ether frolic—it seems, according to Welch and others, that he did not act

entirely upon his own initiative in the final stage, but was influenced partially at least by suggestion and information obtained from Jackson; and the fact that he let Jackson in on the patent would indicate that he was not sure of exclusive right. He deserves very high credit though for intelligence and independent research and perseverance in pushing his work to complete success undaunted by the failure of Wells. He made a grand discovery "that resulted in immediate universal publication and adoption," which was his claim, but his glory is dimmed by his commercialization of a discovery upon whose quick dissemination depended the prevention of untold suffering. When the Boston surgeons first used anaesthesia they knew not what the agent was and had not the disclosure been *forced* by them, who can measure the suffering caused by the inconvenience, expense, and delay, attending the world-wide introduction of a patented article? Morton's discovery and demonstration were made, in dentistry, September 30, 1846, and in surgery, October 16, 1846.

The claims of Long rest upon practical demonstration by himself, the result of his own unaided thought and research, almost in the wilderness, far from the centers of science and learning, in a country furnishing but few surgical opportunities and no hospital or publication facilities, and abounding in professional opposition and public prejudice.

Yet under these adverse circumstances this man made the grandest discovery of the universe and practiced surgical anaesthesia persistently from the time of his discovery, several years before that of any one else, until his death, undaunted by opposition and superstition. Long's discovery and demonstration were made March 30, 1842.

CRITICISM OF LONG BY HIS OPPONENTS.

1. It has been charged that "Long did not himself administer the anaesthetic, but that the patient administered it to himself, that the anaesthesia was not carried beyond the stage of exhilaration, and that he did not carry his experiments far enough to reach a decided result."

Dr. Long, in his paper read before the Medical Association of Georgia, says; "The ether *was given* to Venable (his first patient) on a towel and *when fully under its influence* I ex-

tirpated the tumor; the patient *continued to inhale ether during the time of the operation; he gave no evidence of suffering during the operation and assured me after it was over that he did not experience the least degree of pain.*"

E. S. Rawls, who witnessed Long's first operation on Venable states; "Said Venable *was fully under the effects of the vapor of sulphuric ether inhaled from a towel and without his exhibiting the least symptoms of suffering pain from the operation.*" Rawls was familiar with the odor of ether at "frolics."

Dr. J. F. Groves, who entered Long's office in May, 1844, as his first medical student and who assisted him in some of his work, in a letter to one of Dr. Long's daughters says: "Not satisfied that there was not more to learn about this great discovery he (Long) proposed that we test it further personally, which we did in his office, when we administered it to each other to prove its perfect anaesthetic effect and also to discover any bad effect to the subject etherized." And in a letter to Dr. Young the same writer says: "The patient was placed in a recumbent position on a bed; *Dr. Long* poured ether on a towel and held it to the patient's nose and mouth; *Dr. Long* determined when the patient was sufficiently etherized to begin the operation by pinching or pricking him with a pin. *He (Long) profoundly anaesthetized the patient,* then gave me the towel, and I kept up the influence. The patient *was entirely unconscious*—no struggling—patient passive in the hands of the operator."

A study of Long's affidavits shows that in every operation but one the patient was so profoundly anaesthetized that absolutely no pain was experienced. The only exception was in the second operation on Venable with regard to which Venable says:—"In this operation I did not feel the least pain until the last cut was made when I felt a little pain." This is all the foundation for the charge that "Long's anaesthesia was not carried beyond the stage of exhilaration." Long himself appreciated the importance of pushing the anaesthesia, for, in his first paper in the *Southern Medical and Surgical Journal*, he says, "The result of my second experiment (on Venable) was such as led me to believe that the anaesthetic state was of such short duration that ether would only be applicable in cases in which its effects could be *kept up by constant inhalation during the*

time of the performance of the operation."

These affidavits show that *Long did administer the ether himself.* But even if Long had not given the ether himself but had it given by someone else or even by the patient, he would have been equally responsible and would have deserved the same credit as if he had administered it himself. Dr. Gorgas did not himself actually banish yellow fever and malaria from the Panama Canal Zone, but he showed how it should be done and had the work done by others. The above statements likewise prove that the anaesthesia *was profound and was carried beyond the stage of exhilaration* and that *decided results were reached* as there was absolutely no pain in all but one. The anaesthesia in Long's case was far more profound than in Morton's first surgical case, for Warren, who performed the operation for Morton, says: "Then followed the insulation of the veins during which he (the patient) began to move his limbs, cry out, and utter extraordinary expressions." I do not, however, consider this of sufficient importance to split hairs over, as both cases were sufficiently anaesthetized for practical purposes.

2. It is also asserted that "Long did not seem to appreciate the great value of the discovery and that he admitted he abandoned it."

Long's numerous affidavits abundantly and convincingly prove that he *did* show appreciation of the discovery by freely speaking of and discussing it with other physicians, medical students, and the laity; by urging other physicians to employ it; by experimenting with it upon himself; and by continuing to employ it whenever opportunity offered until his death. The idea that Long ever abandoned his discovery will probably be news to his friends; there is absolutely no evidence that he did and every thing points to the fact that he continued to use it all the rest of his life, as positively stated by his own children now living.

3. The claim is made that "Long made no publication of his experiments nor of their results until December, 1849, after the universal adoption of surgical anaesthesia."

The truth of this depends upon the meaning of the word "publication." Webster says "publication" means "notification to the people at large, either by *words*, writing, or printing." Long's affidavits prove conclusively that

he did make verbal publication of his experiments from the very first and continually afterwards to the public and profession without discrimination. He never ceased to urge its employment by the medical profession. His operations were as public as they could be, when his environment is considered, as there were always others present to witness them; but he had none of the facilities of a hospital nor the aid of world famous surgeons to furnish clinical material for rapid verification, demonstration, and publication; there were convenient no news-papers, medical journals, railroad, telegraph, nor steamboat, to disseminate the news in centers of population and in distant parts of the earth; he made no secret of the agent used nor enjoined secrecy upon others; his discovery was known and discussed in medical and lay circles over a large extent of territory, and if the great scientific centers and the world at large were ignorant of his work, it was through no act or desire of his. His own incontrovertible evidence is sufficient to prove that he was the first to achieve the goal of surgical anaesthesia and to present this priceless blessing to a land that too long failed to appreciate the gift. Neither Jackson, Wells, nor Morton, ever printed anything concerning their discovery; though Wells, in 1847, did publish "A History of the Discovery and Application of Nitrous Oxide Gas, etc."

Dr. W. H. Welch says: "Especially are they (the surgeons of the Massachusetts General Hospital) to be commended for their insistence upon disclosure of the nature of the secret 'Letheon'," which Morton did not disclose even to physicians until forced to do so. Thus it will be seen that while Long freely and voluntarily gave his discovery to the public, Morton was forced to disclose his.

The nearest hospital, medical journal, and railroad to Long's home town were at Augusta, Ga., 140 miles distant, with only a country dirt road between the two places; the nearest newspaper was a weekly at Athens 20 miles away.

4. It is charged that "Long presented his claims to Congress, but that his evidence failed to convince the House that he was entitled to the credit of the discovery of surgical anaesthesia."

Long was very ethical in all his professional conduct; he did not *desire* political recognition nor pecuniary reward for his achievement, nor would he have accepted any. His appearance in the congressional arena was simply to defeat plans which, if successful, would have tended to deprive him of what he considered his own inalienable rights and, having accomplished his purpose, he abstained from urging his claims further before Congress, as he did not consider *that* the proper body to decide the question of the discovery, and allowed the matter to go by default. His only desire was the recognition of the medical profession which, though delayed, came to him finally.

5. It has likewise been alleged that P. A. Wilhite was a medical student in Long's office in 1842; that he told Long of his having thoroughly anaesthetized a negro boy in an "ether frolic" in 1839, and had thus encouraged Long to use ether in surgery; and that he had witnessed his first operation in 1842.

It is proved by Dr. Groves, Long's first medical student, and by Dr. Long himself that Wilhite was not a student in Long's office till 1845; Long himself also stated that he had never heard of Wilhite's having anaesthetized the negro boy; and Wilhite afterwards, in a letter to Long, confessed that he had not witnessed Long's first or second operation. So much for the Wilhite claims!

CONCLUSION.

An impartial consideration of the facts brought out in this paper will show that the two principal actors in the great Discovery of Surgical Anaesthesia were Long and Morton: and that while both made the discovery and demonstrated its complete success, their claims in the matter need not really conflict.

Long can justly claim *priority of discovery* with immediate practical demonstration and verbal publication of the *real* agent and its effects, and that *unfavorable* environment prevented immediate and universal adoption of his discovery.

Morton can rightfully claim *later* discovery with immediate practical demonstration and verbal publication of a *secret* agent and its effects, and that through most *favorable* environment his discovery was followed by immediate universal adoption.

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CONFERENCE OF MEDICAL OFFICERS OF THE VIRGINIA STATE HOSPITALS FOR THE INSANE.

At the first meeting of this Conference, organized at Williamsburg, Va., January 26-27, 1915, Dr. Wm. F. Drewry read a paper entitled:

Social Service Among the Insane, and Its Value in the Prevention of Insanity.*

DISCUSSION.

Dr. H. C. Henry, First Assistant Physician, Central State Hospital, said: It has indeed been a pleasure to hear Dr. Drewry's able paper. In many of the problems connected with the State care of the insane, the commitment laws governing the same, etc., our State has been among the first to put into effect modern and humane methods, a few of which some of the larger and richer States have only recently adopted. It is a matter for congratulation that those at the head of our institutions have so willingly and ably looked after these matters and brought to the attention of the law makers of our Commonwealth whatever of good their experience and study have enabled them to.

Many advantages to be derived from a good field worker are apparent and have been covered by the paper. One which has suggested itself to me is that the field worker in the discharge of his other duties might be commissioned to visit the homes of patients recently committed and gain valuable information bearing on their cases, such as a detailed personal and family history, ascertaining frequently the true exciting and predisposing cause of the insanity. He could make notes of the home conditions and other pertinent matters. This report could then be filed as a part of the patient's clinical record and fill a long felt need, as the history as gleaned from the commitment papers is often so meagre as to be practically worthless as a record.

The family could be informed as to the methods of hospital treatment, correcting often erroneous notions as to how the patient is looked upon and treated. He might visit the

*For Dr. Drewry's paper, see page 1.

homes of those patients not entirely well, but whose discharge is contemplated, and ascertain the surroundings, whether conducive to the continued recovery or the reverse, and if the former, give valuable suggestions as to care.

Many other duties in connection with this service would shortly be suggested and, in this connection, I think before anything very definite is done, it would be well for a committee to outline a plan of work in order that the field should be properly covered and the information gained become of value for statistical studies.

I note that all who have tried this work in connection with their institutions sound a note of warning against the volunteer worker. It is exceptional that he or she is possessed of sufficient acquaintance with the insane to make the work what it should be.

At first the position of social worker, field worker, eugenics worker, etc., would probably have to be combined into one. He should spend part of his time in the hospital, and know the patients, in order that his work outside may reach the highest degree of efficiency. In the present state of our finances, we would probably have to select a capable person from our staff of nurses (as was done by Dr. Drewry at Central, in order to make a beginning). She should have a good working knowledge of insanity, and the proper spirit, and be trained for this special work and its requirements, by the medical officers of the hospitals, or by some one who has had previous experience in other States. I do not see any reason why a start may not be made in this direction without great delay, certainly in our largest cities, from which we draw proportionately our largest number of patients.

Dr. A. S. Priddy, Superintendent of the Virginia State Epileptic Colony: I heartily congratulate Dr. Drewry on the excellence of his paper and feel that this organization is greatly indebted to him for having placed before us who are charged by the State with the care of her insane and defectives, in such an exhaustive and comprehensive manner, matters which are of vital importance to humanity and the State from the stand-points of health and economy. The duty of those connected with the medical departments of the respective State institutions for the insane, epileptic and men-

tally defective is only in a degree properly discharged by economical and proper care and treatment of those in the institutions. But with the experience and acquaintance with the large number of patients treated and records of the institutions for generations back, they have an intimate and accurate knowledge, not only of those who have been legally placed under their professional care, which constitute only a small per cent. of those who should be, but of their parents, brothers, sisters, children and ancestors, which is possessed by no other class of people, and they, whether by recognition and appreciation of the State and the public, which they have not yet received in a degree commensurate with their deserts, or by their sense of duty to humanity which they consider duty to themselves, feel that they are the unselfish and natural advisers of the State on matters relating to mental hygiene, eugenics, the baneful influences of heredity, syphilis, narcotic and alcohol habits and improper home life, which are conducive to the increase of insanity, epilepsy and mental and neurotic defectiveness.

We should, therefore, take the lead in organizing for the education of the public and the promotion of sentiment which will in due time assume such potential form as to bring to pass the measures of relief advocated in Dr. Drewry's paper. These are medical matters and their solution should be left to medical men, until the lay public is sufficiently educated to properly co-operate with them. We should not attempt too much at first, as we now have our hands full of institutional work and in rendering innumerable services of a collateral nature. In a paper before the Conference of Charities and Corrections, in May, 1909, I called attention to the value of the work done by organizations for the after-care of the insane in New York under the leadership of that able woman, Miss Schuyler, and advocated the undertaking of such work in Virginia. Acting on this suggestion the Conference appointed a committee to consider and report on the matter, but no report was made. Therefore, I was greatly interested in what Dr. Drewry had to say on that subject in his paper, and desire to impress on you the force and importance of his recommendation that we effect such an organization, first in the cities of Virginia where the local medical men could

be interested, and under them the details of after-care could be carried out by philanthropic and intelligent women who are well fitted for the work, and who would gladly give the necessary time to it. The proper care and employment of patients who have left institutions discharged or furloughed means even more than the usual care and treatment while in the institutions. I believe that such good results will follow this work that they will be a convincing demonstration that many of the exciting causes of the recurrence of insanity are preventable; that preventive mental medicine should have a place in general preventive medicine; and that the most favorable and economical treatment of insanity is in its prodrome or acute stage. A building apart and separate from the buildings for the committed insane should be provided at each State hospital to which any person showing symptoms of mental disease could go on a certificate from his physician and receive prompt treatment. Anyone interested in ascertaining the large per cent. of cases recovering from such treatment without having to be committed as insane with the popular odium which attends it and which deters many persons from sending their friends to institutions until the disease has assumed a chronic form, has only to read the reports of the N. Y. Psychopathic Pavilion at Albany.

Again, I wish to record my disapproval of committing the solution of problems which are essentially medical to laymen and magazine writers. We all honor and admire the spirit which actuates many good men and women in attempting to solve these problems, but without a proper understanding of them they, in their enthusiasm, do much harm and in many cases cause a public distrust that they are popular hobbies or fads which will prove short-lived instead of being grave conditions, and not theories, which will last and grow worse unless corrected by proper treatment.

Dr. M. S. Brent, Second Assistant Physician, Central State Hospital: Undoubtedly there is a good many patients who, while they seem per- and I think a society for the study of mental hygiene should be organized in this State, as has been done in some of the other States.

In our Hospital (Central State), there are a good many patients who, while they are perfectly well, yet almost as soon as they are sent

home, have to be returned. Now, if there was some one to instruct the relatives and friends of these patients as to how to care for them, doubtless they could remain at home. A start in this direction might be made, particularly in the cities, by getting the district nurses to give these instructions. This seems to be the most practical way in which to start. Though a nurse or someone from the hospital could visit those who live near, at small cost. This has been done to advantage in our hospital.

Dr. J. S. DeJarnette, Superintendent of the Western State Hospital: Dr. Drewry's paper is well along the recognized lines of dealing with the prevention and treatment of insanity. Our General Board of State Hospitals has already directed the superintendents of the State Hospitals to write papers on the prevention of insanity, and request they be printed and distributed by the Board of Health in its Health Bulletin which has a circulation of 18,000. This is to save postage. The Commissioner of Health already has one article ready for the printer. The idea of the Board is to have a brief article illustrated with pictures of the various forms of insanity. The pictures will insure the article to be read if it is short. Also, at a General Board meeting two years ago, it was ordered that superintendent of each hospital send his annual report to the correspondent of every patient in the hospital. The idea is to have a short article in each report as to the prevention of insanity, and as these persons are vitally interested in the question of insanity on account of a member of their family being insane, and there is a tendency to insanity in the family, the information will go straight where it should do the most good. When we think that so much insanity is preventable, we should use every effort to distribute the knowledge. If the prevention of reproduction by the unfit, the prevention of syphilis, the control of alcoholic drinks and drugs, can be preached and published, and the people made to realize these things are preventable, I prophesy we will stop building additions to our charitable institutions which are now steadily growing larger and larger. While I believe the prevention of insanity is by far our most important duty, the furloughed and discharged patients should be looked after, and everything done to lighten the load, and smooth their pathway when they return to their homes. I

do not think it practicable to send a social worker into the country districts, but in cities where there is an organization much good can be done by a tactful person. Holding a furlough over a patient is oftentimes good, as it makes him restrain himself when he would not otherwise.

In regard to the liquor and drug cases, advice does about as much good as pouring water into a rat hole. In cases of poverty and want, advice alone is useless, but if substantial help can be given at the psychological moment the mental break may be averted.

Insanity is prone to recur, as we often see in cases kept in the hospital under the eye of skilled physicians.

We have a good many cases at the Western State Hospital who would be self-supporting if they had friends who would take them and direct their activities, but left to their own initiative would utterly fail. These patients have no friends who will take them, so they remain there and join the hospital drift wood. I am able occasionally to get employment for some of these in the neighborhood of the hospital, and gradually they become self-supporting. I have not done this as much as I should. This meeting has stimulated me to work this field more actively.

We should thank Dr. Drewry for his paper, which is full of up-to-date suggestions, and each of us should go away with our minds made up to do our best to carry them out.

Dr. G. W. Brown, Superintendent Eastern State Hospital: Dr. Drewry's paper is pregnant with useful suggestions for the betterment of the insane, especially those who are outside of the institutions. I believe that the after-care field worker should be an assistant physician or a competent nurse sent out by the respective hospitals. Inexperienced and untrained workers would handicap the effectiveness of the cause and instead of winning the confidence of the public would have the opposite effect. In the present financial condition of the hospitals, it will be necessary to ask the General Assembly for an appropriation for this work. We should also ask for sufficient funds to build and equip industrial buildings at our hospitals. If Virginia is to keep abreast of the most progressive States, she will have to increase her expenditures for her unfortunate wards.

Dr. J. C. King, Superintendent Southwestern State Hospital: It is with the greatest interest that I have listened to Dr. Drewry's paper, and I congratulate him on having presented so many points of interest in a concise form for our consideration.

As he has told us, the methods of treating and handling of the insane in the State of Virginia have been practically revolutionized within the past 20 or 25 years; this is also true of many States in the Union, as well as Canada.

Speaking especially of the Virginia institutions, when we consider the many difficulties under which we have to labor,—for instance, insufficient medical staff, lack of trained professional nurses, crowded conditions under which we have to exist and many obstacles in other directions—I do not think we should be considered egotistical when we say that this work in Virginia has been placed on a very much better basis within recent years, and compares favorably with many States in the union.

I have a very vivid recollection of my first impressions when I entered hospital work some 14 years ago. At that time probably 10 per cent of the insane cases in the State Hospitals were kept in mechanical restraint both day and night; many were secluded in individual rooms, and a spirit of force predominated rather than a spirit of reason and kindness. Since that time all these methods have been abolished. No mechanical restraints are used in any State institution in Virginia. There are very few, if any, who require constant seclusion. The old idea of necessary force has been supplanted by a spirit of kindness and consideration, the patients have been given more liberty and everything done to make the institution life as home-like and comfortable as it is possible to do. I frankly admit that we have not attained the standard so much desired, and there remains much more to be done.

However, I find that I am simply reiterating what Dr. Drewry has told us, and getting away from one or two points to which I wish to call your attention, looking to the organization and development of an efficient after-care society in the State of Virginia. I believe that all of us will agree that the best method of organization would be to employ trained and skilled field-workers to keep track of those who have been dismissed from our care and from

our institutions, with a view of assisting them in readjusting themselves to business life, to restore them to their former social position and to assist them in regaining the necessary confidence in themselves.

It is a lamentable fact that the financial situation of the institutions at this time will not justify such a procedure; therefore, it is incumbent upon us to look about for some ways and means by which this work may be organized without much expense. I believe that it should be begun under the direction of the hospital staff, and it seems to me that it would be a splendid idea for us to solicit the co-operation and help of benevolent societies, church organizations and women's clubs in the various towns in the State. They would, no doubt, willingly take up the work and would be glad to receive instructions as to how it should be done, etc. I feel sure that all of us have personal friends who could be of inestimable value to us in this direction. We could appeal to them personally for their assistance in such an organization. This, in my opinion, would be a nucleus around which the work would grow and develop, and as Dr. Drewry has suggested, other social workers and societies could be induced to join with us in this undertaking. There are many other interesting points brought out by Dr. Drewry in his paper, but I feel that I could not add anything to them by further discussion.

Dr. Drewry in closing said it was gratifying that his paper had brought out such general discussion and the expression of the views of his colleagues. He was especially pleased that there seemed to be such unanimity of opinion that an organized, systematic effort should be made in matters mentioned in his paper, particularly as to the after-care and prevention of insanity.

He agreed with the views of some of the speakers that the proposed movement should be directed by those who are experienced in dealing with the insane, yet, as others have said, to attain general success we should have the active support and co-operation of various agencies interested in the health of the people.

There needs to be a more wide-spread, properly directed publicity regarding insanity and the work and the objects of the hospitals. He believed that the best method of beginning a campaign of education would be by means of a

Quarterly Bulletin, published under the auspices of the State Hospitals.

At the close of Dr. Drewry's remarks, the following resolution was adopted:

RESOLVED: That a Committee composed of Doctors Drewry and King is hereby designated to formulate and report to the next Conference of Medical Officers of The Virginia State Hospitals, a feasible plan for organizing and making effective a general movement for mental hygiene, prevention of insanity, after-care, etc., in this State.

NORFOLK COUNTY MEDICAL SOCIETY— SURGICAL SECTION.*

Reported by FRANK H. HANCOCK, M. D.

The February, 1915, meeting of this section was presided over by Dr. B. M. Baker, Chairman. Dr. Julian L. Rawles read a paper entitled:

The Acute Kidney.

DISCUSSION.

Dr. R. L. Payne, Jr.: Dr. Rawles takes the position that nephrectomy is the proper remedy in acute surgical kidney and quotes Brewer's experience to prove the contention. My own impression is that Brewer's latest statement is less radical—that he does use nephrotomy and drainage to better purpose than was indicated in his earlier publications. However that may be, the removal of a pyelo-nephritic kidney on the assumption that the other may become involved is hardly a warrantable procedure, because that may be equally assumed of any other furunculosis, occurring elsewhere in the body. The mere passing of bacteria from the blood stream through the uriniferous tubules into the calices, does not necessarily mean involvement of the kidney; it is only when the kidney resistance is lowered that infection occurs. The kidneys are constantly filtering bacteria, the only prerequisite being their presence in the blood.

Avalanches of bacteria, or lethal doses of toxins, may overwhelm the kidney, with the development of abscesses or other lesions that correspond to the particular poison. Dr. Rawles

*For paper, see page 6.

mentioned the cocci and colon bacilli as typical, respectively, of the acute and chronic phases of pyonephroses. It is well to remember that the infection may be multiple; that a colon infection may supplant a streptococcus or staphylococcus infection, as often happens in the transition from acute to chronic pyelitis.

Dr. Payne said that evidences of uraemia meant of course bilateral involvement, a fact that should have been established before these final symptoms came on; as it might have been through urological examinations. Old prostates often develop bilateral pyelitis and ureteritis through ascending infections. The pyelitis cases present so many varieties, anomalies, arrhythmias, that it is difficult—in fact, it is impossible to hazard their course, or to run at their heels. For instance, there is often a normal blood count, when there is a very heavy pyuria, and no fever; or, again, there may be a high fever, with relative increase of polymorphonuclears, decrease of eosinophiles, and still no pus in the urine—a closed pyonephrosis.

Cases without local symptoms are naturally confused with malaria, tuberculosis and typhoid fever.

We have pyuria of kidney origin with serum albumen present; pyuria of vesical origin with no albumen; and pyuria with these conditions reversed.

To the careless, inefficient and feeble, kidney affections will remain a polyglot jargon; but to the *studious*, to those who *work*; and to those who *know*, will come the solution of many mysteries.

Dr. Lomax Gwathmey: I do not believe that multiple infarcts or carbuncles of the kidney ever get well; single ones do. Pyelitis frequently occurs in children, the speaker said, and is often due to the following condition: Uric acid infarcts form at birth in the highly concentrated urine of the new-born, sometimes of sufficient size to obstruct straight uriniferous tubules, giving rise, when the tissues become subaqueous, to hydronephrosis. Infection occurring later through the blood, we have pyelitis. Pyelitis is seen, therefore, in infancy as well as in childhood, and should be looked for in any case of continued fever.

The speaker thought it strange that there was such a preponderance of females in these kidney affections of children.

We are taught, he said, that most kidney cases in children come through the blood stream and that the short, straight urethra of the female has nothing to do with it; yet pyelitis develops in the infant that has the short, straight urethra, opening immediately into the bladder upon the one hand, and the vulval orifice upon the other, where it comes in contact with offal, deposited and held there for hours by retaining napkins that often wedge their way between the labial folds. The fact is significant and worthy of further consideration.

Dr. Gwathmey said that he had seen reports of cases of persistent bacteriuria in children, which were relieved by removal of the appendix, due apparently to an intestinal condition that permitted bacterial absorption.

The treatment of pyelitis in children was the same as in adults, even large doses of urotropin being given to very young infants—as much as forty grains a day to infants a year old, in some cases without toxic results, the speaker had heard.

Dr. B. M. Baker said he was recently called to see a woman at Oceana, Va., with the following history: six months ago a baby came in the usual manner, after a normal gestation, delivery being accomplished without forceps. She was about thirty years old, and had been healthy since her childhood and up to a few days before Dr. Baker saw her, when she began having irregular chills and fever and distinct pain in the ileo-cecal region. A provisional diagnosis of appendicitis had been made, which Dr. Baker was disposed to favor, but having been deluded several times by appearances, he proceeded with the investigation of the case.

At the Protestant Hospital later, it was demonstrated to be a bilateral pyonephrosis, the right kidney doing nothing, and the left kidney but a very little.

She died of uraemia in a few days. On post-mortem, the right kidney was just a huge pus sac, or carbuncle, as Dr. Gwathmey called it, and the left kidney scarcely more than a shell.

The question in the case is whether the abscesses developed during pregnancy, or followed some infection incurred during labor, absorption taking place through a sub-involuting uterus or other atrium.

Right pyonephrosis, with pain in the ureter, and tenderness, is dangerous for the surgeon as well as for the patient; it is a siren call that one must guard one's ears against or suffer bereavement.

Section adjourned.

Editorial.

The Harrison Narcotic Law.

If enforced judiciously and in accord with the evident intent of those responsible for its enactment, will, we believe, receive hearty support and encouragement from all right-minded and law-abiding physicians. It is legislation that has been needed for years in order to control a pernicious trade in habit-forming drugs. The interpretation of the law has been left, however, to the Commissioner of Revenue, who, with the approval of the Secretary of the Treasury, is directed to make all needful rules and regulations for carrying out the provisions of the act. And right here, it seems, have cropped out some of the greatest objections to an otherwise excellent law. Since becoming effective on March 1st, numerous questions have been raised as to the meaning of various sections of the bill, and the Commissioner has issued additional regulations, some of which are regarded as being both contrary to the purpose of the law, as well also as being unreasonable, impracticable, and difficult to carry out in practice.

A correspondent in the *Boston Medical & Surgical Journal* asks: "If a physician 'personally attends' a patient with severe gall-stone colic and administers a dose of morphia hypodermatically and feels the patient may need more morphia before morning or before he can visit him again, would the contingent dose or doses be included under the clause 'personally attends'?" In its reply, our Boston contemporary states that, while the length of time covered by a personal visit is not defined, it "may be reasonably interpreted to mean such medication as is needed to carry the patient along until the next visit of the physician, or for a period of 24 hours." This view strikes us as reasonable and as not in conflict with the purposes of the law, which originated with a

desire to control the evil of mis-use of habit-forming drugs. However, Dr. C. F. Taylor, of the *Medical World*, received the following from David A. Gates, Acting Commissioner in answer to an inquiry on the subject: " * * * this office deems it necessary for a record to be kept of all such drugs so dispensed or distributed in the office of the physician, dentist, or veterinary surgeon. A record must be kept also of these drugs left with a patient to be taken in the absence of a physician." Further in another communication, he says: "These drugs and preparations are so infrequently administered by reputable physicians in their office practice that the requirement that they keep a record of such administration does not seem unreasonable or one that will cause any inconvenience to this class of physicians." The comments of the Acting Commissioner are, we believe, unjust, and his requirements as to record are viewed by many as unwarranted and not in accord with existing law. He apparently disregards the convenience of the larger portion of the medical profession—the general practitioner, especially the country doctor.

Occasionally the general practitioner is called upon for treatment by the confirmed, and probably indigent, drug habitue. Neither the State nor Federal governments make provision for the care of this class, and but few localities have thus far awakened to their obligations in this direction. What must the physician do with reference to these afflicted patients? Must they be kicked into the gutter and given no relief when they have not the means to secure sanatorium treatment and there is no public provision made for their treatment and reformation?

As indicated in an editorial in the *Semi-Monthly* for January 22nd, these laws are aimed at the prevention of the degrading drug habit. We cannot conceive that there is a desire to impose unnecessary hardship and punishment upon those already so unfortunately afflicted by denying them the right to obtain relief from the tortures of resulting mental and physical conditions. Reynold Webb Wilcox, one of the most eminent medical men in this country, in his text-book on the Treatment of Disease, says: "The morphine must not be withdrawn suddenly, since this is likely to be attended by collapse and aggravated mental disturbances." Authorities generally support

this view. The cocaine habit is similarly regarded.

Patients able to pay should be required to take treatment at a sanatorium or be denied their drug. Similarly, indigent patients should be forced to resort to public institutions when their communities make provision for such cases. Fortunately, Richmond is now caring for its drug addicts in a special ward at the City Hospital, while Norfolk, realizing the great suffering of these people, treats them at the Free Clinic at the City Dispensary.

We believe the individual physician should have as much right as a corporation to be humane and prevent suffering, where this is made necessary by absence of public provision, and we are confident the Harrison Narcotic Law was not intended properly to conflict with either.

The Virginia Health Department

Has sent two of its inspectors, Drs. J. Thompson Booth and W. S. Keister, to the southside and tidewater counties of the State to begin a campaign for the prevention of malaria. These inspectors will go from one community to another instructing the people by lectures, demonstrations and literature as to the means of prevention of the spread of malaria.

Prior to entering upon the above work, Drs. Booth and Keister were engaged with Dr. W. A. Brumfield in a medical inspection of the schools of Washington County. More than 6,000 children were examined for physical defects and communicable diseases.

The State Boards of Health and Education are engaged in the preparation of an illustrated first-aid manual, to be published this month, which will contain in addition to information on the treatment of injuries, etc., a large number of suggestions for the prevention of accidents. This manual is to be used in the public schools.

Faculty of Medical College of Virginia Elected For 1915-6,

At a special meeting of the board of visitors of the Medical College of Virginia, held at Memorial Hospital, this city, March 23, Dr. Frederic M. Hanes was elected to succeed Dr. Francis Upshur, resigned, as professor of pharmacology and therapeutics; Dr. Roshier

W. Miller was elected to succeed Dr. Leslie B. Wiggs, resigned, as associate professor of materia medica, and Dr. Greer Baughman was elected to succeed Dr. John F. Winn, deceased, as professor of obstetrics. All other professors and associates in the school of medicine were re-elected.

Dr. J. Russell Perkins,

Formerly of Spencer, Va., who went to New York last October to take up eye, ear, nose and throat work, is now a resident physician at the Baltimore Eye, Ear and Throat Hospital. He expects to return to the South to practice these specialties upon the expiration of his term of service the latter part of the present year.

Dr. W. B. Dudley, of Martinsville, Va., a graduate of the Medical College of Virginia last June, succeeded Dr. Perkins at Spencer.

The American Medico-Psychological Association

Will hold its annual meeting at Hotel Chamberlin, Old Point Comfort, Va., May 11-14, under the presidency of Dr. Samuel E. Smith, of Richmond, Ind. Dr. Charles G. Wagner, of Binghamton, N. Y., is secretary. Two Virginians have had the honor of being president of this Association—Dr. Robert J. Preston, in 1902, and Dr. William F. Drewry, in 1910.

Effort being made to Erect Sanatorium for Colored Consumptives.

Owing to the high death rate from consumption among the colored race and the fact that no provision is made for the care of colored consumptives outside of the penitentiary and insane asylum, an effort is being made by the colored people of this State to co-operate with the Virginia Anti-Tuberculosis Society to raise money to build a sanatorium for colored consumptives. There is a most pressing need for the establishment of such a sanatorium, there not being a bed provided for 1,875 colored consumptives who died in this State in 1913. Because of a lack of knowledge in handling the disease and, in many cases, crowded quarters, frequently a whole family is infected from one consumptive who is compelled to live with the healthy members of the family.

Married—

Dr. George Clifton Hall and Mrs. Alice Tinsley Dickinson, both of Richmond, April 6.

Dr. A. A. Marsteller and Miss Anita Cussen, both of Richmond, April 8.

Dr. Oscar Dowling, Shreveport, La., who was elected president of the Southern Medical Association at the Richmond meeting last November, and Mrs. Lula Tindall George, of Monroe, La., March 16.

Surgeon G. B. Young.

Of the U. S. Public Health Service, is directed upon expiration of his leave of absence, April 14, 1915, to proceed to Norfolk, Va., and assume charge of the service at that port.

Dr. Ennion G. Williams,

State Health Commissioner, was among the speakers at the Seventh District Convention of the State Teachers' Association, which met in Harrisonburg, Va., March 26 and 27.

Dr. Archibald M. Fauntleroy,

Surgeon in the U. S. Navy, who has recently been attached to the Naval Hospital, in Washington, has been designated by Secretary of the Navy, Daniels, to make an observation tour of the war hospitals in France, Belgium and England. Dr. Fauntleroy was a graduate of the University of Virginia in 1901.

Epidemics in Serbia.

The most appalling accounts have been received of the prevalence of typhus and spotted fever and dysentery in Serbia, and the deaths, which from typhus fever alone are said to number more than 50,000, include those of many doctors and nurses connected with the Foreign Red Cross units. The Serbians assert that typhus was introduced by Austrian prisoners of war, who have been allowed to roam about the country, and spread vermin which conveys the germs. Unless speedily brought under control, it is feared the epidemics may spread throughout Europe. The Red Cross has furnished \$50,000 for the fight to suppress typhus fever, and a commission composed of Dr. Richard P. Strong, professor of tropical medicine at Harvard University, and several other well-known doctors, has been sent to the stricken country.

Dr. E. H. Miller,

Danville, Va., was the guest of friends in Richmond, for a few days the last of March.

Dr. Peter Winston,

Farmville, Va., attended the meeting of the State Board of Charities and Corrections, at Williamsburg, the last of March.

Dr. Charles C. Christian,

Urbanna, Va., who was confined to his bed by sickness for several weeks, has much improved and is able to be out again.

Dr. and Mrs. Geo. T. Divers,

Buena Vista, Va., were recent visitors in this city.

Dr. and Mrs. S. S. Simpson,

Clarendon, Va., recently visited friends at their former home, Manassas, Va.

The Retreat for the Sick, Richmond,

In its annual report to March 1915, stated that a total of 679 patients had been cared for during the year, of whom 157 charity patients had received 2,929 days of free hospital treatment. Seventy-five physicians and surgeons had practised at the hospital in the time covered by the report.

Dr. and Mrs. William D. Prince,

Have returned to their home at Stony Creek, Va., after a visit to Forest Hill, this city.

Dr. James A. Hayne,

Of Columbia, has been reappointed by the Governor of South Carolina, as State Health Officer.

The Hospital At The Panama-Pacific Exposition,

San Francisco, is so complete in detail, that it is attracting much attention and will be of more than passing interest to all physicians and nurses visiting the Exposition. It is supplied with the most up-to-date apparatus, which has been donated or loaned by the manufacturers, and has on hand much medical literature. The hospital was opened a little more than a year ago so as to care for injured employees but will now also care for any visitor needing medical aid.

This hospital, which is in charge of Surgeon R. M. Woodward, of the U. S. Public Health Service, is located in the Service Building and can accommodate fifteen patients at one time.

Dr. Charles H. Moncure and Family

Orange, Va., visited Washington, D. C., the latter part of March.

The Southern Sociological Congress

Will hold its fourth annual convention in Houston, Texas, May 8-11, 1915 with headquarters at the Rice Hotel. Ex-Governor Mann, of Virginia, will preside, and it is expected that there will be about seventy-five speakers.

The State Epileptic Colony of Virginia

Has let a contract for the erection of a cottage to cost about \$9,000, which will accommodate 40 residents of the colony. Plans are also being prepared for an infirmary which is to cost about \$11,000.

Commissioner of State Hospitals.

Mr. J. M. Bauserman, of Woodstock, has been reappointed by Governor Stuart as commissioner of the Virginia State Hospitals, for a term of four years, beginning March 1, 1915.

Dr. C. E. C. Peyton,

Pulaski, Va., recently visited his daughter in Richmond.

The Medical Association of Georgia

Will hold its annual meeting in Macon, April 21-23, under the presidency of Dr. W. B. Hardman, of Commerce.

Dr. Orlando Ducker

Has returned to his home in Washington, D. C., after a brief visit to relatives near Culpeper, Va.

Dr. John William Ebert.

Who was for a time located at Winchester, Va., has moved to Lutherville, Md.

Refusal of Application for Chiropractic Exemption Sustained by Court.

A chiropractor of Bristol, Tenn., had his application to practice his profession in Virginia refused by the Virginia State Board of Medical Examiners on the ground of attempted fraud in examination held December 1909. This chiropractor on March 4, 1915 instituted mandamus proceedings against the Board in the Corporation Court of Bristol, Va., to compel it to grant him a chiropractor exemption.

In handing down a decision in the case, Judge Roberts, of the Bristol Court, said that the Board "is more capable of judging his qualifications to practice medicine than the Court. They are sworn officers, and are presumed to have done their duty, and the Court ought not to interfere in a case of this character, unless it is absolutely clear that the Board has made a palpable mistake, or has acted so arbitrarily as to amount to a fraud upon the petitioner's rights." The Board brought out that, in the examination of December 1909, the petitioner and another party had examination papers which were exactly alike, word for word, for six pages. The opinion of the Court was that "it was impossible for both of them to have written papers exactly alike without one of them in some way receiving help from the other, by his permission or consent."

In rendering his decision, the Judge summed up that he was of the opinion that the action of the Board in refusing this certificate was not arbitrarily unfair or unjust. The petition was therefore dismissed at the cost of the petitioner.

Dr. S. B. Perry,

Formerly of Williamston, N. C., but who has been making his home in this city since his graduation from the Medical College of Virginia, last year, has just returned from a brief visit to Europe, having crossed on a vessel carrying horses to the war zone.

Foot and Mouth Disease

Among cattle had been virtually wiped out in this country, by April 1, according to reports issued by the U. S. Department of Agriculture. It was estimated that over 124,000 cattle were killed from the beginning of the outbreak in October to March 25, in an effort to prevent spread of the contagion, the financial cost to State and Federal authorities of which was estimated at between \$5,000,000 and \$6,000,000.

Dr. W. H. Ribble,

Wytheville, Va., had the misfortune to have his residence so badly damaged by fire, on March 31, as to be practically a total loss.

Dr. Sherwood Dix

Has moved from Expo to South Norfolk, Norfolk, Va.

The National Conference of Charities and Correction

Will hold its forty-second annual session in Baltimore, Md., May 12-19 inclusive. A large number of delegates, lay and medical, have been appointed to represent this State at the Conference.

Dr. Samuel L. Hannon,

Formerly of Washington, D. C., is now located at the Hospital, National Soldiers Home, Tenn.

The Interstate Medical Journal,

St. Louis, beginning with March 1915, has a Supplement on Roentgenology which is to be issued quarterly. Its editorial staff is composed of twelve well-known Roentgenologists from different sections of the country and the Supplement promises to add much of interest to this already excellent journal.

Dr. John Lawrence Yates,

Of Milwaukee, Wis., has been awarded the Samuel D. Gross prize of the Philadelphia Academy of Surgery for 1915 for his essay on "Surgery in the Treatment of Bright's Disease." The value of the prize is \$1,500.

The Rockefeller Foundation, International Health Commission,

Announces a change in address April 1st, from Washington, D. C., to 61 Broadway, New York City. The Rockefeller Sanitary Commission was succeeded January 1, 1915, by the above named Commission.

Dr. Everett W. Gee,

Of this city, spent a few days in Blackstone, Va., the latter part of March.

Dr. Beverley R. Tucker,

Of this city, has been appointed to succeed Mr. John P. Branch, deceased, as a member of the board of directors of the Virginia Home and Industrial School for Girls in Chesterfield County. His term of office will expire August 1, 1920.

Dr. Frank P. Brammer

Has moved from Pizarro to Callaway, Va.

The Medical and Chirurgical Faculty of Maryland

Is to hold its annual meeting at Baltimore. April 27-29, Dr. Randolph Winslow, of that

city, presiding. Dr. John Ruhrah, also of Baltimore, is secretary.

Dr. Graham E. Henson,

Editor of the Journal of the Florida Medical Association, has been elected city physician of Jacksonville.

The West Virginia State Medical Association

Will have its annual meeting in Huntington, May 12-14, under the presidency of Dr. H. P. Linsz, of Wheeling. The secretary is Dr. J. H. Anderson, of Marytown.

The Atlanta Neurological Society

Was organized in Atlanta, Ga., in February, Dr. E. B. Block being elected president, Dr. Hansell Crenshaw is vice-president, and Dr. Lewis M. Gaines, secretary. The meetings will be held monthly.

Dr. George C. Callaway,

Of Norwood, Va., was a recent visitor in Lynchburg, Va.

The American Urological Association

Meets in Baltimore, April 13th and 14th. Drs. W. E. Lower and H. L. Sanford, both of Cleveland, O., are president and secretary, respectively, of this Association.

Vermont Adopts Eugenic Marriage Law.

The legislature of Vermont has passed an act aiming to prevent the marriage of those pronounced physically or mentally unfit. A fine of \$500, will be imposed on those marrying without filling the requirements of the law.

For Sale—Moores Brook Sanitarium.

Owing to the death of the former superintendent, Dr. D. M. Trice, this splendid sanitarium is for sale. For particulars, see advertising page 15. (*Adv.*)

Obituary Record.

Dr. Mason Graham Ellzey,

Formerly of Cumberland, Md., died in Richmond, March 18, after a brief illness, aged seventy-six. The interment was made at West River, Md. Dr. Ellzey was a graduate from the Medical College of Virginia in 1861.

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Original Communications.

ANAESTHESIA AND AMNESIA IN CHILD-BIRTH.*

By C. J. ANDREWS, M. D., Norfolk, Va.

Ever since the time when the race developed from a strictly animal or physical existence to that of a mental existence as well as physical, the question of pain in childbirth has been more and more a factor in obstetrics. This factor increases in importance in the same ratio as the mental life predominates over the physical.

If it were simply a question of the woman's pain at the time, it would certainly be worthy of the gravest consideration, but it is more than that. Severe suffering interferes with the expulsive power of the muscles. The entire force of the woman becomes more or less exhausted in prolonged painful labor. The mechanism of labor is interfered with and she is more likely to fail to deliver the child than if the suffering were not there. In addition to this the after-effects are to be considered. After a long painful labor the patient is prostrated. It is frequently days before she recovers her vitality. This conduces to sub-involution and infection.

Of course, one may say that all patients do not have prolonged painful labors. This is true, but it is an undeniable fact that these untoward effects, mainly results of shock, are increased by the suffering of labor.

These principles have long been recognized and various methods employed to eliminate the difficulties. The first use of chloroform was to alleviate the pains of childbirth. It is said that Simpson developed so great a degree of skill in using it that he practically secured painless childbirth by using it throughout la-

bor. Chloroform and ether are in general use today, but the usefulness of these drugs is practically limited to the latter part of the second stage. Skillfully used, chloroform or ether is decidedly helpful, but there are decided limits to its use in labor. If given to the point of removing consciousness of pain for any length of time, it will interfere with the power of the muscular contraction. During the last few years nitrous oxide has been used in labor. Webster of Chicago reports using it in the maternity service of the Presbyterian Hospital during the last year. The gas is used throughout the second stage of labor and he states that it may be used during the first stage without disadvantage. The gas bag is kept at low pressure, a small nasal inhaler inserted, the mouth being closed, the patient is instructed to breath gently at the beginning of the pain. He claims to get analgesic effect and not to interfere with the contractions of the uterus. My own experience with nitrous oxide in obstetrics is limited to one case of incomplete abortion. There was a very violent post-partum hemorrhage before the anaesthetic was stopped. I know this is not conclusive evidence that nitrous oxide is unsuitable for use in obstetrics, but it would lead me to suspect that it causes relaxation of the uterus.

I have used morphine during the first and sometimes the second stage of labor in cases of excessive suffering, with slow progress, since I was interne in the Lying-In Hospital. I have had great help from it and believe that I have delivered patients by its use, which would have required forceps without it.

Steinbuechel, 1902, in Gratz, began the use of scopolamine and morphine to produce analgesia in labor. He reported the series of cases and was pleased with its use. Various other men in Germany used it in the few years following with varying success. Gauss, at Freiburg, found that by giving slightly larger

*Read before the Norfolk County Medical Society, Section on Obstetrics, March 22, 1915.

doses the condition known as "twilight sleep" was obtained. He and his associate, Kronig, worked on this method for several years. During this time they were in charge of the Department of Gynecology and Obstetrics of the University of Freiburg. There were resources at their command to employ in research work which resources they were expected to profitably employ. This part of the Department was conducted, I am told, somewhat on the plan of the Rockefeller Institute in this country. The first work was to standardize the drug. This drug is derived from the scopolia plant and while it is chemically similar to hyoscine, it is not the same thing. Hyoscine is from the hyoscyamus plant. As a result of their work they developed a definite technique which I will describe later. They first reported 600 cases, 1906, and other series from time to time. In 1909, they were invited guests at a meeting of the American Association of Obstetricians and Gynecologists, which met that year at Washington, D. C., and read a report of 3,000 cases. Some of the members were impressed by it and used it, but failed to follow his exact technique, or at least Dr. Harrar, of the Lying-In Hospital, told me that this was his experience, and he believed it to have been the experience of others. He did not get good results and dropped it. Soon after this a number of prominent obstetricians in Germany gave unfavorable reports of it. Examination of their literature shows that not one who made such a report followed exactly the technique of Gauss and Kronig.

However, there was one indisputable fact, namely, that whether any one else could do it or not, Gauss and Kronig at Freiburg were delivering women without pain, and these women and their babies were not only no worse off, but the mothers escaped considerable morbidity. Their authentic records show this. These women told other women and so the attention of the profession was called to it by the lay press. Today a majority of the obstetric institutions in this country are using it in an investigative spirit. Some of these hospitals, the Lying-In Hospital, for instance, undertook the work to show that it was not good. So far, the evidence certainly does not make a case against it. Recently, the committee on public health and hospitals of the New York Academy of Medicine requested the

obstetric section to give an expression of opinion as to the merits of the Gauss method of painless childbirth. As a result of this request, a meeting was held for a discussion. Some five or six hundred cases were reported by the representatives of the various hospitals, including Harrar and McPherson of the Lying-In, Knipe from the Post-Graduate, Polak from the Long Island Hospital and Druskin from the Sloan Maternity. They reported satisfactory amnesias in about sixty to ninety per cent. of cases and analgesia in about 10 per cent. There was no effect in some. It was the experience of all that as their experience and skill in its use increased, the results were more satisfactory and difficulties diminished. The Lying-In used it in one hundred cases, all primiparae. There were two stillbirths, both due to obstetric conditions which would have given such results without scopolamine. Several men, including Bandler, believed it to be not worth while, possibly dangerous, and requiring too much time for the doctor. One member, near the close of the discussion, said that the thing he had learned from the discussion was that those who had had experience with the method and learned to use it were enthusiastic about it, and that those who had not used it, condemned it.

Papers on this subject are now appearing in the various obstetric journals almost every week, and they are becoming distinctly more favorable. In the March number of the *American Journal of Obstetrics* is a paper by Dr. Wakefield of San Francisco. He reports having used it in forty cases in his private hospital and says that he would just as soon do a major operation without anaesthetic as to deliver an obstetric case without scopolamine. It seems to be the opinion of the majority of men who have used it most, that its exact status cannot be fixed until it has been used longer.

Technique.—When the pains come on every five minutes and last thirty seconds, place the patient in a quiet room. Eliminate every possible source of excitement or anxiety, particularly anxious relatives. Give scopolamine, grains 1-150, morphine sulphate grains 1-6, or narcophine, grains 1-2, hypodermically in hip or buttocks, using separate syringes for the two solutions. After 45 minutes give scopolamine, grains 1-200. The morphine is not to be

repeated at any time unless there is extreme restlessness, when grains 1-6 may be given. Test memory every 30 minutes by asking questions to see if the patient remembers some object which has been shown to her before the injections or ask her how many injections she has had. Test co-ordination. If memory is still present an hour after the second injection, give scopolamine grains 1-200. Test memory every thirty minutes and give just enough scopolamine to keep the patient under its influence,—just as an anaesthetist would give ether or chloroform to keep the patient under an anaesthetic. The patient sleeps between the pains, rouses up during the pains, which are usually strong and regular. It is not desired to entirely remove evidences of pain. Gauss attaches much importance to this as it would mean that the patient was being overdosed, which would involve danger to the child. It is necessary to watch the patient very closely, as it is more difficult to estimate the stage of labor by the character of pains and conduct of the patient than when scopolamine is not used. In fact, the child may be born without any warning unless you watch the perineum. The pulse of the mother is increased in rapidity while under the drug and is recorded every fifteen minutes. The heart sounds of the child are also recorded every fifteen minutes. If there is undue delay when the head reaches the perineum, pituitrin is given and, if necessary, low forceps are used. This, however, is not required oftener than in other cases. The ears of the patient are stopped with cotton and eyes covered. When the head distends the perineum there is sometimes considerable excitement and restlessness and a little chloroform or ether at this time is helpful.

Of course, scopolamine is not expected to correct all obstetric abnormalities and the same obstetric knowledge is required as without scopolamine. There is some difference of opinion as to its effect upon the duration of labor. Some say that the first stage is shortened and the second stage slightly prolonged. In the hundred cases, all primiparae, observed at the Lying-In Hospital, the average duration of labor was two hours shorter than in one hundred cases of primiparae delivered without scopolamine. The patient usually sleeps for several hours after delivery. If the amnesia has been entirely satisfactory, she will have no

knowledge whatever of what has happened after perhaps the second injection. Usually the first request she makes is for food. It is surprising to see that the patient feels just as well as before. She wants to get out of bed and cannot see any reason why she should stay there. The perineal tears are decidedly decreased, owing no doubt, to the relaxation of the outlet and the gradual delivery. In other words, the mental factor being eliminated altogether, the labor resembles more closely that of the lower animals.

Much has been said about asphyxia of the infants. It certainly is a fact that there is a danger zone in using this as in other drugs and, if given in excess, will give bad results. The same may be said of chloroform, ether or morphine. Practically the difficulties on account of asphyxia have not so far been an obstacle. Gauss reports a lower percentage of still-births than without scopolamine. He attributes this to the fact that the child, being sleepy, does not breathe in the uterus or the parturient canal, thereby eliminating this source of asphyxia. All the cases I have seen have cried immediately after delivery.

The quality of the drug used, seems to be most important, as it decomposes rather easily. The drug in ampoules imported by Hoffman La Roque from Germany, seems to be the most stable. It is very expensive and difficult to get. Parke Davis and Co. are now making tablets from Merck's scopolamine, which are being used and found to be satisfactory.

After-Treatment.—Gauss allows passive motion on the first day after labor and the patient gets up on the second. In this country this has not been strictly followed. It certainly is true that involution progresses more rapidly and the patient is in a condition to sit up earlier than with the usual method.

Since studying this method in the Lying-in-Hospital, I have used it on two cases. In one case the labor was too far advanced before starting it to expect to get a satisfactory result. However, the analgesic effect was satisfactory, as this patient was suffering very intensely and she was delivered with very slight recollection of what had happened. The other case was a primipara, 18 years old, in whom the measurements of the pelvis were all less than normal. This patient started labor pains about 2 o'clock in the afternoon; the first in-

jection was given at 3; she was delivered about 7:30, and memory returned about nine o'clock. She had no recollection whatever of what had occurred and believed at first that her pains had simply stopped. The presence of the baby and the change in her shape showed her what the situation was. She wanted to get out of bed at once. In other words, there was no shock and she had really had a normal labor.

511 *Taylor Building.*

ACUTE HEMATOGENOUS INFECTION OF THE KIDNEY.*

By FRANCIS R. HAGNER, M. D., Washington, D. C.
Professor of Genito-Urinary Surgery and Venereal Diseases, George Washington University, Department of Medicine.

Consideration of this type of infection of the kidney was strikingly presented to the profession by Brewer in 1906, in a report of extensive clinical experience and experimental work.

It was made a subject of exhaustive work by Cobb in 1908, and has recently been further emphasized in reports by Cotton, Dickinson, Mason, Rinkenberger and Cunningham.

Certain forms of hematogenous infection of the kidney are such a serious lesion, and so promptly cause the death of the patient, that I feel it must be of interest not alone to genito-urinary surgeons, but to those engaged in internal medicine,—as these are the gentlemen who usually see these cases in the beginning. Many of the cases are diagnosed appendicitis, duodenal ulcer, gastric or duodenal perforation, infection of the gall bladder, and liver abscess. So it will be seen that the diagnosis of this condition is oft-times far from easy.

The kidneys, which in health remove certain waste materials from the body resulting from metabolism, during the course of acute and chronic diseases are called upon to eliminate bacteria and toxic materials. This work a healthy kidney will as a rule perform without detriment to itself. If, on the other hand, the kidney's resistance has been lowered by previous injury or disease, it is liable to become the seat of severe surgical disturbance, in the presence of even the slightest infection in other parts of the body, such as tonsillitis, furunculosis, etc. This is borne out by animal experimentation, as Brewer, in his experiments,

showed that in inoculation of his control animals, where a moderate dose of a pathogenic bacteria were injected into the circulation, none of these animals developed any surgical disease of the kidney. Of eighteen animals which, in addition to the inoculation, received an injury of one kidney, five showed no lesion or only hyperemia and parenchymatous degeneration, and two died within twenty-four hours of acute septic intoxication; all of the other eleven developed distinct surgical lesions of the kidney. In eight the lesions were unilateral, being limited to the injured kidney; in three, bilateral. In one of the bilateral cases, the lesions were practically equal in extent and severity; in the other two, the lesions of the uninjured kidneys were mild in character and would unquestionably have recovered under favorable circumstances. Further experiments in the ligation of the renal vein in some animals, and the artery in others, illustrate the fact that anemia and passive hyperemia so lowered the resistance of the organ to blood infections as to result in definite surgical lesions.

The vast majority of the cases of acute hematogenous infection of the kidney are unilateral. This is possibly explained, as these experiments would show, by the fact that the resistance of the affected kidney is lowered by injury from the elimination of some toxic material, or is possibly the seat of some circulatory disturbance that is more marked on one side than on the other. To quote from Cunningham:

"The pathology of acute unilateral haematogenous infections of the kidney is quite different from the acute bilateral kidney affections. The latter is an expression of a general septicaemia or pyaemia in which the kidneys may participate. The former, the acute unilateral kidney infection of haematogenous origin, is not a part of general pyaemia, but finds its origin in the lodging of a minute embolus, carrying one or several organisms alone in the terminal vessels of the kidney. It is probable that as a rule the process is started by a single micro-organism. The condition starts not by multiple simultaneous infections throughout the kidney, as the lesions observed in the kidneys removed at operation might suggest, but as a single focus in the cortex of the organ. When the organisms settle in the minute cap-

*Read before the forty-fifth annual meeting of the Medical Society of Virginia, at Washington, D. C., October 27-30, 1914.

illary vessels of the glomerulus, an inflammatory reaction is set up around the glomerulus, and the surrounding tissue is infiltrated with the products of inflammation. From the primary focus of infection, other areas are secondarily involved by the infectious material gaining access to other tubules, to the lymph-spaces, and through the vessels in the connective-tissue stroma. The infection thus is more or less rapidly spread through these channels to other parts of the organ.

"The pathological process originating as above described is of two distinct types: 1. Abscess formation. 2. A diffuse inflammatory process without breaking down of tissue."

In the abscess formation the kidney is somewhat enlarged from congestion, and disseminated through its substance are miliary abscesses surrounded by areas of congestion. In the early stages, these little abscesses are often observed in the cortex just beneath the capsule. If the process continues, the foci may enlarge, coalesce, and form abscesses of sufficient size to rupture the capsule and cause an invasion of the perinephritic fat, resulting in a perinephritic abscess. For this outcome of the disease to occur, the resistance of the patient must be great, and the virulence of the infective organism comparatively slight, as the toxemia from this disease is rapid, and death usually occurs before the process develops to this stage. The organisms producing this form of kidney inflammation are the staphylococcus pyogenes albus and aureus and the streptococcus pyogenes.

The second type of the disease, according to Cunningham, is a diffuse inflammatory process, which spreads through the kidney substance, but not resulting in focal abscesses or solution of kidney tissue. Cunningham feels that this type of the disease is not produced by the pyogenic cocci but by the colon bacillus. The organ is found enlarged and congested. There may be subcapsular areas, of more or less acute reddening, and on section the organ is found to present, irregular, circumscribed, acutely reddened, or pale yellowish areas, involving the cortex and pyramids, or involving nearly the whole organ but without solution of tissue. Difference in the severity of the process depends upon the virulence of the infecting organism.

In exposure of a kidney the seat of acute

hematogenous infection, there is more or less œdema of the perinephritic tissues.

As does the pathology of the two infective processes differ, so do the clinical symptoms which the patients have differ, the symptoms suggesting the pathological lesion. So, too, on exposure of the kidney for operative treatment, the surgeon should and must recognize the form of lesion, because the one, having the numerous abscesses, demands the most radical measure—that of nephrectomy, whereas, the non-suppurative form requires less radical treatment.

Mason, in his paper, has covered very accurately the symptoms in this group of cases.

Symptoms: In most reported cases there have been some urinary changes; albumin and a small amount of blood at first, with pus later on if abscesses are so located as to drain into the pelvis of the kidney. Usually there is high fever, frequently there are chills, there is a high leukocyte count, marked prostration in the severer forms, and always costo-vertebral tenderness of the affected side.

Pain or tenderness may be definitely located over the kidney, may be felt over one side of the abdomen, or may be general over the entire abdomen in the fulminating type.

As already mentioned, if pain or tenderness are marked in the region of the kidney, the diagnosis may be readily made, but in the fulminating cases, with more general pain, conditions so much resemble intra-peritoneal disease that the kidney is very likely to be overlooked, unless it is kept prominently in mind.

When suspicion is directed to the kidney, the modern methods of accurate kidney diagnosis and prognosis should, of course, be made use of. In many instances the affected kidney is so overwhelmed that its function is entirely suspended, or nearly so, but in just these instances it is of the greatest importance to be sure of the existence of a second functioning kidney, for the affected one will, as a rule, have to be sacrificed.

As the septic infarct is so often unilateral, the influence of previous injury or disease of one kidney as the determining factor in localizing the infection has been duly considered and definitely proved experimentally.

A large percentage of the reported cases have occurred in women who have borne children, and have involved the right kidney. With the well-known fact that 22 per cent. of women

have movable right kidneys, the relationship between the congestion resulting from undue mobility of the kidney and the production of renal infarct is obvious.

Brewer, in 1906, published the result of his experiments, establishing the relationship between lowered kidney vitality and acute hematogenous infection.

Of the 28 cases of septic infarct reported by Brewer, Cotton, Cobb, Dickinson, Rinkenberger and J. M. Mason, 15 were treated by nephrectomy, with one death; 10 were treated by nephrotomy or decapsulation with incision and drainage of the infarcts with one secondary nephrectomy. This latter group of cases showed 5 deaths.

Three cases died undiagnosed without treatment directed to the kidney, while one case recovered without surgical treatment of the kidney lesion.

Cunningham's statistics, gathered from a series of 13 cases, showed nephrectomy in 6 cases, all recovering. Nephrotomy and excision of the infarcted area were done in one case with recovery, and simple nephrotomy in another with recovery. In the other 5 cases in which all signs pointed to a diffuse acute inflammatory unilateral process of the kidney, the symptoms subsided without operation. In 2 of these cases the colon bacillus was secured through the ureteral catheter.

Paul Thorndike, of Boston, did a nephrectomy on a case with recovery and Dr. Watson did a nephrotomy on a patient followed by death from progressive toxemia.

From this group it will be seen, as mentioned before, that the pyogenic cocci are the organisms most to be feared, while the colon bacilli are more liable to be isolated from the milder forms. Furthermore, one might conclude that nephrectomy would be the operation of choice, as but one case treated in this manner has resulted fatally, while 6 deaths have occurred in the cases treated by nephrotomy alone. This series is small and it is not unlikely that some of the cases treated by nephrotomy were injudiciously selected, so we should not condemn this operation in properly selected cases.

The series of cases reported by Dr. Cunningham is so striking that I would like to report one of his early cases:

A woman, 38 years old, entered the gynecological

service of the Boston City Hospital, under the care of Dr. Franklin Newell and Dr. Ernest Young, on March 27, 1912. The past history was negative with the exception that one year before both tubes, ovaries, and the appendix were removed for acute inflammation.

The illness for which the patient came to the hospital was characterized by severe pains in the right kidney region, chills, fever, and vomiting beginning three days before entrance, and gradually increasing in severity. The temperature at entrance was 103.4, and the pulse 120, and leucocytosis 28,000. The general condition of the patient was poor. The physical examination showed a flushed face, throat and lungs negative, anæmic murmur over the heart. The abdomen was not distended, but showed general tenderness in the right half, much more tender than the left. Exquisite tenderness was present in the right upper quadrant and in the right loin. There was rigidity of the right rectus and lumbar spasm. Vaginal examination was negative. The urine was turbid, 1020, acid, slight trace of albumin, no sugar or bile. The sediment was small in amount and consisted chiefly of pus, an occasional blood-corpuscle, and epithelial cells. The patient's condition became progressively worse during the following two days, and on the third day after entrance to the hospital (six days after onset of the trouble) it was extremely bad. At this time Dr. Cunningham saw the patient in consultation with Dr. Ernest Young. Her appearance was that of profound sepsis, pulse 130, of poor quality, temperature 103. There was rigidity of the right side of the abdomen, with marked tenderness over the right kidney in front and in the back. The urine at this time was only turbid and contained but little pus. The leucocytosis was 18,000.

It was believed that the patient had a nephritic or a perinephritic abscess. An operation was advised as the only chance for life, although the risk was considered great.

Lumbar incision was made, the perinephritic mass found infiltrated with cloudy serum but no pus. The kidney was exposed and delivered. It was twice the normal size, congested, and over the surface was scattered many focal abscesses from 1 to 5 millimetres in diameter. The pedicle was clamped and the kidney removed. No attempt was made to tie the pedi-

cle on account of the poor condition of the patient, stimulation and salt solution being required during operation. The clamp was left on the pedicle, and wound drained by a spiral tube with gauze, and the wound partially closed.

Twenty-four hours after the operation the patient's temperature dropped to 100 and the pulse to 110. The improvement in appearance and general condition was perceptible. The clamp was removed from the kidney pedicle on the sixth day. The patient made an uneventful recovery.

The pathological report was acute inflammation of the kidney with multiple miliary abscesses from which the staphylococcus pyogenes was recovered.

At present (five months after operation) the patient is in good health and the urine negative. The etiological factor producing the kidney infection could not be traced. This is a characteristic case of the severe type of this disease.

The following is a report of the 2 cases I have observed: The first case, seen also by Drs. Dillenbach and Van Rensselaer, was a child, aged 10, who had been ailing for some weeks, running an unexplainable temperature. There was a history of tonsillitis at the beginning of the illness, for which the tonsils were removed but the child's condition continued unimproved. The only subjective symptoms were pain and tenderness on the right side, and a tentative diagnosis of chronic appendicitis had been made. On account of a small amount of pus being present in the urine I was asked to see the patient. The ureters were catheterized, urine from the left side being normal while that from the right was slightly cloudy and showed a little pus. This patient had fever from 101 to 103 for 14 days before I saw her. This was 8 years ago, and we knew very little about hematogenous infections, but I felt there was a kidney lesion to account for her condition, and, as she was failing rapidly, an operation was readily agreed to. The kidney was exposed and delivered through the wound, the only information afforded by inspection and palpation being two places of increased solidity in the lower half of the kidney with increased redness over one of these areas.

An incision was made through the area and a diagnosis of one anemic, and one infected in-

faret was made. The infarcted areas were removed and the kidney split from pole to pole to ascertain if other areas of infection were present. A drainage tube was inserted in the lower pole down to the pelvis and the wound sutured. The patient's temperature reached normal within 36 hours and convalescence was uninterrupted. This patient is now 19 years old and is apparently in perfect health.

The second case, a female, aged 23, was seen in consultation with Dr. Stavely, and presented the following history: Had been married one month. On being questioned, she gave a history of uncomfortable feeling on the right side which had existed off and on for some time, especially following playing golf. While on the way from Florida to Washington on the night of January 8, 1914, she was seized with severe pains on the right side, chilliness and fever. The family suspected appendicitis and called in Dr. Stavely, who found her with a temperature of 102, marked tenderness over right kidney region, and some muscle spasm. Dr. Stavely did not think she had appendicitis. He found some pus in the urine; colon bacilli were isolated in culture. On January 9, leucocyte count was 30,000; on the 10th, 27,000, while temperature ranged from 100 to 103. I saw her on the 10th and my examination bore out Dr. Stavely's findings. The total amount of urine passed was normal. She was cystoscoped and right ureter catheterized. Cystoscopic examination showed a distinct reddening of the whole bladder mucosa, presenting the picture of being of longer duration than the history presented. To bear this out, she had had a history of some frequency of urination. The urine from right ureter showed numerous epithelial cells and a very moderate number of pus cells, while the mixed urine showed only a moderate number of pus cells at that date. The ureter was injected with argyrol, as I thought she might have simply a pyelitis, although the constitutional symptoms were very severe for this. Finding so little pus in the catheterized urine with no retention in the kidney pelvis, both Dr. Stavely and I felt sure she had an infection of the kidney itself; she had the appearance of suffering from severe septic intoxication.

The next day temperature was 104; leucocytes were 21,000; polymorphonuclears, 84.5 per cent. We decided on a consultation with Dr. Cunningham, as he had seen so many of these

cases. He arrived on the 14th, when her morning temperature was normal. Her urine, however, contained a very great deal of pus. Examination revealed tenderness of the kidney, and the costal tenderness was very marked. Dr. Cunningham felt sure she had an acute hematogenous infection of the kidney with a drainage of pus from the kidney into the pelvis and then to the bladder, accounting for the increased amount of pus in the urine at this time.

The result was a very happy ending, as the patient made an uneventful recovery, although the tenderness persisted in the kidney region for some days. We believe this was a case of colon infection of the suppurative type, which is usually caused by streptococci or staphylococci.

These cases might be summarized as follows: 1.—Acute hematogenous infection or septic infarct of the kidney is of comparatively frequent occurrence and is often overlooked; previous injury, disease, or mobility of one kidney serves as a predisposing cause.

2.—While nephrectomy is demanded in the fulminating type, early diagnosis and operation, with excision of the infarcted areas in the milder cases, will save some kidneys that would have to be removed if the condition went on unrecognized.

3.—When intra-abdominal operations are done for supposedly acute inflammatory conditions, and nothing is found to explain the symptoms, the possibility of acute hematogenous infection of the kidney should be seriously considered.

The Farragut.

A PLEA FOR CO-OPERATION OF PHYSICIANS TO PREVENT DEAFNESS.

By C. R. DUFOUR, Phar. D., M. D., Washington, D. C.
Clinical Professor Ophthalmology, Otology, Rhinology and Laryngology, Georgetown University Medical School and Hospital.

From experience, it is known that all diseases are more amenable to treatment, and the patient is therefore more likely to recover, when the case is seen and treated in its beginning; also, that some diseases can be prevented by certain treatment, by conforming to or following certain laws or instructions. Diphtheria can be prevented in those who have been exposed to it, and it yields more readily to treatment when it is seen in its beginning.

The same may be said of smallpox. The spread of tuberculosis has, in a measure, been checked by educating the public that it is a contagious disease, that the sputum should be received in or on articles that can be burned or rendered inert by the use of a germicide, that there should be a separation of those sleeping with consumptives; likewise, great care must be exercised in the various preventive measures that are now known, thus saving many lives and decreasing mortality. Typhoid fever is, beyond doubt, a preventable disease, but, unlike diphtheria and smallpox, was not preventable by the use of a specific remedy until very recently. Until everybody is familiar with the fact that typhoid fever can be prevented by inoculation, it must be prevented by the voluntary actions of the person or persons concerned. It is true that in the cities where the water supply is filtered, this disease will in a great measure be prevented, but where this is not done, the only safeguard is that the residents boil or filter the water. In the country, wells and water supply must be located so as to guard against contamination. If this is not done, epidemics of typhoid fever will continue to occur. So we see that without the co-operation of the people themselves, nothing can be accomplished in the way of prophylaxis. The public must be educated to the fact that typhoid fever is infectious and is preventable; they should be educated as to its cause and the methods necessary to prevent it. This must be so persistently instilled into their minds that they will understand the importance of it, and adopt the prophylactic measures taught them. Legislation cannot be enacted that will compel the water supply to be protected outside of the cities, where most cases of typhoid fever originate. This matter of educating the public to adopt measures for the protection of their health is often a thankless task, meets with opposition, and is usually a long, tedious process. We are not doing our duty as medical men and as good citizens, if we fail to do so. See the history of Jenner, in his endeavors to protect against small-pox, and the result of his determination to accomplish this purpose.

In this connection, I will say that there is another disease, the effects of which can only be prevented by educating the public that there is such a disease, teaching them its symptoms,

and of the disastrous effects upon the organ of hearing if treatment is not begun in its incipient stage. I refer to chronic catarrhal otitis media, a condition due to a catarrhal inflammation of the mucous membranes of the nose, naso-pharynx, Eustachian tubes and middle ear. Deafness due to this disease is usually progressive in character, and ultimately will reach that degree when it will become a matter of great annoyance to the subject, his family and friends. He will become practically useless in business, or will be greatly handicapped in its performance. If an employee, he will be liable to lose his position, or, if seeking employment, will find great difficulty in obtaining it. No one wants a deaf employee. The deaf are prone to accidents, they go nowhere, they are deprived of the pleasures of the church, concert, theatre, etc.; they become morose, unhappy, suspicious, a burden to themselves, if not to their family and friends. They are avoided by their acquaintances because of the effort required to converse with them. When we know that a large per cent. of such cases can be prevented by early treatment, it becomes our duty to educate the public, as before mentioned, just as much so as to prevent other diseases. It is true that it is not a condition that menaces life, but accidents to deaf persons are frequent and there is no doubt that inability to secure work to support family and self, also the inability to get relief from the terrible and continuous noises in the head and ears, have caused many to commit suicide or become mentally unbalanced. I have read only recently of several persons, prominent in their various vocations, who were compelled to give up their work on account of deafness. The otologist is consulted for all forms of deafness, and by those of different age and sex. The largest number of those having catarrhal deafness are adults, between 30 and 50 years of age, though we find this disease among children. Catarrh of the middle ear is usually due to an extension of a similar inflammation of the nose, throat or naso-pharynx, by way of the Eustachian tube. In children it is caused very often by enlarged faucial and pharyngeal tonsils. Climatic conditions and a proneness of the subject to such a disease are the most prolific causes of this condition; especially is this so in adults. It occurs at all seasons of the year,

but in cold damp seasons it seems to flourish most. Impairment of the general health, prolonged mental strain or anxiety, or privation may cause this condition. The use of tobacco, especially smoking, is very liable to cause an inflammation of the mucous membranes of the throat and Eustachian tube, which will later on affect the ears and also cause this disease. There are two forms of this disease, the hypertrophic and the hyperplastic. In the former, the mucous membrane of the Eustachian tube and middle ear swell, the result of venous congestion, which is followed by tissue hypertrophy. There is thickening of the mucosa of the tympanic membrane and swelling of the fibrous layer, which is followed by hypertrophy, and sometimes, in advanced cases, by a deposit of lime salts. The air in the middle ear becomes absorbed because of the closure of the Eustachian tube, which fact prevents air from entering. The balance of atmospheric pressure being lost, the outside pressure forces the drum membrane inward until its further displacement is prevented by contact with the inner wall of the tympanum, and is retained in this position by the action of the tensor tympani muscle, which by non-use, becomes shortened. The tympanic membrane becomes sclerosed, the intra-tympanic ligaments are more or less affected, and the ossicular chain becomes ankylosed by newly deposited connective tissue becoming fibrous in character. The catarrhal exudate becomes plastic and cements the articulations of the ossicles. All of these conditions interfere with free vibrations of the membrani tympani. We see, therefore, that the conductive mechanism of the ear becomes unable to transmit vibrations to the receptive mechanism. This being the case, sounds are not heard; consequently, they are not understood, or are heard but partially. The hearing is therefore impaired in proportion as the conducting mechanism is able to transmit the messages to the receptive mechanism. Understand, I am not discussing nerve deafness or that form of deafness where the person is deaf from the beginning of the disease.

The majority of cases of deafness begin as the hypertrophic form. The beginning of this condition is very insidious; it gives no warning of its presence until it has been present some time. The first intimation the subject

has that his ear is affected is a slight stuffy feeling in it, as if there was something in the ear that should be removed. Often he consults his physician to have the wax removed, which he thinks is the cause of the stuffiness. This sensation is not usually permanent, but comes and goes. It is worse after a cold and in damp weather. After a while it is likely to be constantly present and may or may not be followed by noises in the ear, slight at first, like bells ringing, escaping steam, buzzing, etc., not noticeable during the day, but only at night or when all around is quiet; after some time it becomes loud, is heard constantly, and becomes annoying. Sometimes the noise precedes the stuffy feeling in the ear. The hearing becomes gradually impaired, and one or both ears may be affected. It may begin in one ear and not extend to the other for a long time. Very often one ear is found to be much worse than its fellow. I think we can safely say that this condition is progressive and rarely if ever gets well of itself. It is in the very beginning we must begin treatment—in the hypertrophic stage,—and it is the first symptoms and what they mean to the ear if not combated, that we must instill into the minds of the public. The question arises as to how we are to educate the public in regard to this disease. In reply, I will say that it will be no easy task. The general physician, the family medical adviser will be the one to begin this crusade.

If the same methods and efforts were employed for the conservation of hearing as is now being done for the conservation of vision, great results would be obtained in the eradication of this form of deafness. The ears of the school children should be examined during each school year, up to and including the high school. There the early symptoms could be explained to these students for they are of sufficient age to understand their significance. In the colleges this examination of the ears and hearing should be continued, so that by the time of graduating these students who are to be the parents of the coming generation will understand the importance of these symptoms and the necessity for immediate treatment should they become manifest in their own or their children's ears.

Lectures should be given to the parents or guardians throughout the school year, and an earnest endeavor should be made to urge upon

them the necessity of attending them. These lectures should be made as plain as possible, so all will understand them. Avoid technicalities and try not to talk over the heads of your audience.

I would ask the general physician that when such a case comes to him for advice, please do not treat it as if it amounted to nothing, that it was only a transitory condition which would get better of itself. Should the family physician not understand the case, refer it to someone who does, and also bear in mind that there are institutions which will care for and treat gratis those who are found to be worthy and unable to pay. Thus, by a continuous and systematic method of instruction by physician to patient, from patient to friend, and from teachers to scholars, a knowledge of this disease and its effect upon the organs of hearing will gradually become known by the general public.

Attention of the medical students should be directed to this disease, so they will be on the alert for the incipient cases; they should become instructors to the laity. Physicians, both general and special, have avoided this disease because it is usually seen in its most chronic form, when all treatment is most unsatisfactory as to results. For this reason, patients often finally consult the quack, the advertising doctor, who promises much and does little except to keep them under his treatment as long as he can, and get as much money from them as possible.

This disease, even in its beginning, does not yield immediately to treatment. The mucous membrane of the upper respiratory tract, as well as that of the Eustachian tube and middle ear, must be restored to its normal condition. All tonsillar enlargements must be reduced, spurs, deviation of the nasal septum, hypertrophies, and growths of the nasal cavities, must be removed or reduced. Inflation of the middle ear, especially by means of the Eustachian catheter, must be systematically and continuously performed. Iodine, with some of the volatile oils vaporized into the middle ear through the catheter, is often beneficial. Mobilization of the tympanic membrane and ossicles is also of benefit. The general health must be looked after, urinalysis made, blood pressure taken, and above all the patient must be encouraged to continue the treatment sufficiently long to ascertain if there is any chance

of improvement, or at least to prevent the condition becoming worse. Six months is not too long to keep them under treatment, for in many cases no result is obtained in less time.

Digressing for a moment, let me say, when oculists began their crusade against ophthalmia neonatorum, a preventable disease, and one which costs the governments of the civilized nations millions of dollars to build and maintain the institutions for these unfortunate blind people, it was a long time before this crusade brought tangible results. Physicians and midwives had to be educated as to the method of preventing it. Laws had to be enacted making it a punishable misdemeanor for a midwife not to report a case of sore eyes in a baby she had delivered, unless a physician was present at such delivery. Several years ago it was very common to see two or three cases of this disease at each clinic. Some were recent cases and prompt treatment would save the sight, and in some there was so much damage caused by the disease to the cornea that vision was either partially or totally lost. Now it is rare to see a case of this disease. It has been practically eradicated, but only by the persistent efforts on the part of oculists and physicians. I think the same results can be obtained in very materially lessening, if not entirely eradicating, the deafness of which I have been writing. My plea is for a continuous and persistent crusade against deafness, and I believe that by adopting the methods I have advised, much can be accomplished in preventing it.

I hope I will not be understood as making a bid for work for the otologist, but I do hope I have succeeded in impressing you with the fact that the majority of cases of deafness yield more readily to early treatment and are most obstinate in the later stages. If I can secure the co-operation of general physicians and teachers to educate the public, as I have suggested, the object of my paper will be accomplished.

1343 L Street, N. W.

A CASE OF MYDRIASIS FROM THE SEED OF THE JAMESTOWN WEED.

By J. HERBERT CLAIBORNE, M. D., New York, N. Y.

Two gentlemen were hunting in the fields of eastern Virginia; the one who happened to be in front kicked a small shrub with his foot. The rear one felt something fly into his right

eye, but it gave him no further concern for several hours. Later, on board the train, he noticed an irritation in that eye, and observed that his pupil was dilated. On inspection, his wife skillfully removed from the lower lid what appeared to be two dark seeds stuck together. The following day, his pupil being no better and his sight being blurred, he came to consult me about his pupil and his vision.

As soon as he had related the facts of the case, I suspected from my acquaintance with the flora of the region where he had been hunting, my own native heath, that he had been poisoned by the seeds of the Jamestown weed. I requested him to write to his friend in Virginia, asking him to go to the fields through which he was walking, pluck and send me, if possible, a sprig of the shrub which he had kicked. In a few days, my patient brought me several leafless, dried stems of a shrub having prickly pods. I immediately recognized the specimen as the pods of the Jamestown weed, or *datura stramonium*. The moisture and heat of the eye doubtless softened the cortex and the alkaloid produced this effect. On biting into one of the seeds, I noticed the characteristic taste of the Jamestown weed, with which I was acquainted from my boyhood. Not content with my own recognition of the plant, I took it to the College of Pharmacy, in this city, where Dr. Ballard, the botanist, likewise recognized it as *datura stramonium* and gave me some information concerning its habitat in this country. It grows from Nova Scotia to the Gulf, in California, Texas and Mexico, as *datura stramonium*, *tatula*, *fastuosa* and *metel*, the most usual form being the one concerned in this case. The further south it grows, the stronger the percentage of alkaloid contained. This plant belongs to the same order as the belladonna, or deadly night-shade, the *solanaceae*, all of which have the physiological effect of dilating the pupil, either when directly introduced into the eye or into the general system in sufficient doses to produce its physiological effect.

I have often come in contact with this plant when I was a boy, but never knew a case of poisoning from it and I have never heard of one proceeding from the seeds. The leaves likewise contain the active principle, and a case which was narrated to me personally by Dr. Holzelaw, of Chattanooga, Tenn., establishes

this fact. In 1898, when my regiment was stationed near Chattanooga, Dr. Holzclaw told me of the case of a gentleman in his private practice who awoke one morning with a widely dilated pupil and inability to see objects near by. It was his right eye. He consulted a number of physicians in the city without any satisfactory explanation and naturally was much alarmed. He finally fell into the hands of Dr. Holzclaw, who cross-questioned him concerning every act committed during the antecedent two or three days; finally, the patient admitted taking a walk through the fields the day before, which was Sunday. Dr. Holzclaw asked if by any chance he had touched any shrub. He remembered pushing aside a bush which was in his way with his right hand and tearing off a few leaves of it at the same time. Dr. Holzclaw requested him to go with him to the place and, on finding the identical bush, he recognized it as the Jamestown weed. I am rather inclined to think that if I had not known of this case, I might have missed the diagnosis in mine.

A suddenly dilated pupil from no obvious reason is an alarming symptom even to the experienced in medicine. To the laity, it is naturally mysterious. It suggests to the experienced, third nerve paralysis, glaucoma, or beginning general paresis. It is important always that the cause of the dilatation be thoroughly investigated, not only for scientific accuracy, but for the peace of the mind of the individual who is affected. My patient was an educated and intelligent man who, though not greatly alarmed at the symptoms, was very much relieved mentally by the quick diagnosis. As a certain Latin author says, "Fortunate is he who can recognize the causes of things."

11 East 48th Street.

PILES—WITH ESPECIAL REFERENCE TO THE METHOD OF INTERSTITIAL INVASION AS APPLIED TO THE INTERNAL VARIETY.

By HAROLD EDMUND DUNNE, M. D.,
Washington, D. C.

The term "pile," from the Latin word "Pila," meaning a ball or swelling, is, to my mind, a more adequate term than hemorrhoid, from the two Greek words "blood" and "flow"—a flow of blood. True, the term "piles," is very loosely applied by the laity; nevertheless, from the standpoint of Medical Terminology,

the word "pile" has an equal standing with hemorrhoid, when used by the medical profession. It is because of this element of catholicity in the term that its selection as a title of this paper was made. Both, unfortunately, are poorly descriptive and unscientific terms; anal and rectal varicosities would seem to be not only more scientific and exact, but better adapted from a regional and pathological point of view.

Varicosities of the rectum and anus are as old as history itself, all races, all ages, and both sexes suffering from this condition in various proportions, according to the habits, customs and occupations of the individuals.

It is not within the scope of this short paper to go into the minute etiology and pathology or enumerate the various classifications of hemorrhoids. This may be had by reference to the standard text books on the subject. During the present discussion a clear line of demarcation will be drawn for classification which will enable us to deal with the subject in a practical manner.

All anal or rectal varicose conditions covered with mucous membrane will be designated as internal piles or hemorrhoids, while those covered with skin will be classified as external piles or hemorrhoids. The thrombotic pile and the hypertrophied anal fold of skin comprise a subdivision of the external variety. The so-called mixed pile or hemorrhoid is covered with mucous membrane at its upper portion, while the lower part is covered with skin. These mixed piles occur usually at the anal verge.

Internal piles originate above the external sphincter muscle, but may be found external to that muscle, according to the stage of their development and condition of the muscle. Conversely, external piles may be found above the external sphincter muscle when associated with internal hemorrhoids of large size and a general laxity of the anal tissues, the internal hemorrhoids being held above both sphincters, thereby drawing up external hemorrhoidal tissue within the anal canal. Hence location is not always a safe guide in making a diagnosis or applying treatment, while the nature of the covering of the tumor gives its true identity and previous history.

The great variety of operations and methods of treatment advanced for the relief and cure

of piles would appear to indicate here, as in several other departments of medicine, a lack of universality of application of any particular method; or, on the other hand, dissatisfaction with the ultimate result.

It seems to be the correct thing for each operator doing this line of work to originate his own special or ideal method of treatment. As a matter of fact, no one procedure is applicable to all cases of piles. However, in a large percentage of cases of the internal variety the method of interstitial invasion, in my hands, has proved of great value and satisfaction. The submucous diffusion of mildly irritating fluids, producing a plastic exudate which, becoming organized, applies the surgical principle of pressure to the weak and dilated venous structures, is not to be confounded with the injection method as usually understood. The injection of coagulating media into vascular hemorrhoidal structures is a hazardous procedure. The injection should never be made into the vein, but should always be extra-venous.

As a preliminary to successful treatment a thorough stretching of the sphincter is desirable. For this purpose the anaesthetic of excellence is nitrous oxide gas with ethyl chloride a good second. These anaesthetics should always be administered by an expert. Digital manipulation is carried on, as an instrument like a speculum, having no intelligence, is unsafe. Complete paralysis of the muscle is unnecessary and dangerous. The stretching should not be carried beyond the point when one feels the muscle is about to give away. Great care should be exercised so that the stretching process is not overdone, as a laceration of the muscle is more likely to produce incontinence, in my opinion, than the proper severance of the muscle by operative means. Gentleness and conservatism are the guiding thoughts of this process. The benefit obtained is more likely due to nerve stretching than muscular. The usefulness of the muscle is not impaired in the slightest, but the irritability and spasm are removed and the normal circulation of the ano-rectal region restored.

A few days after this dilation the method of interstitial invasion is applicable. Before beginning the treatment a thorough examination of the rectum and adjacent organs should be made to determine the presence or absence of

demonstrable pre-existing causative factors or modifying circumstances, otherwise the subsequent treatment or advice would be founded on an irrational basis and failure would frequently be the ultimate result. Various fluids have been used and advocated. Acetic acid and phenic acid, diluted in water in various percentages, ergot, hamamelis, haziline, etc., have all been used by various men. Personally, I prefer solutions of phenol, 10 per cent. to 40 per cent., according to the stage of development of the hemorrhoidal condition and the tolerance of the individual.

One large or two small hemorrhoids may be treated at one time. Treatments may be given at three- to five-day intervals. The injections are made *in situ*, using a speculum. Three to seven minims of the fluid are injected, according to the size and location of the pile. The pile should be thoroughly swabbed with antiseptic solution before injecting. The solution for injection should be freshly prepared and filtered and the syringe and needle sterilized. It is always necessary to exercise care in order that no air is injected. Only uncomplicated internal hemorrhoids, that remain above the sphincter are fitted and amenable to this treatment. The duration of treatment varies from three to eight weeks, depending on the chronicity of the case.

A careful analysis of the description of this method will show its many advantages and points of superiority. The application of the treatment properly applied is safe and painless. Sloughing, hemorrhage, abscess or embolism are no part of it. Patients are kept on their feet and there is no detention from vocation. No part of the circulation of the anus or rectum is destroyed, as is not the case in all other operations for piles. The only objection to this system of treatment is the degree of skill and dexterity necessary for the correct application of its principles.

The philosophy of the method is simple. The principle of pressure is utilized here as in the treatment of varicose conditions in other parts of the body. This has been the great stumbling block in the past. How can pressure be applied to a varicose vein in the rectum? The injection is made outside the vein; a simple interstitial or submucous diffusion, which sets up a mild inflammatory reaction, producing an exudation of lymph, which, be-

coming organized, acts as a splint or support to apply the much needed pressure to the flabby varicosities. The circulation of the peri-anal and rectal regions restored to normal by dilatation and the varicose veins firmly supported in this way, a gradual restoration to their natural condition results, while preserving the complete physiological integrity of the parts. A patient cured after this manner has all of the circulatory apparatus of the rectal and anal regions intact, which means there will be less liability of a recurrence than with one who has had a part of the circulatory apparatus destroyed by any one of the radical operations.

In the past the injection method has been criticized on the basis of recurrence. The treatment by submucous diffusion is not as liable to recurrence as the other accepted methods of eradication. There is a certain percentage of recurrences that follow the ligature, the clamp and cautery, the Whitehead and all other operative methods. Patients who have been treated by the method of interstitial invasion have occasionally, after an interval of several years presented themselves on the basis of recurrence, but careful examination and comparison with case-histories and charts have substantiated the fact that the pile formation was absolutely new and in a different location. The superiority of the method from the standpoint of the patient, is marked, as these new hemorrhoids can easily be disposed of by a few painless office treatments. As a rule, the treatment is permanent. Cases treated and cured by me eight years ago are well and comfortable today.

Conservation seems to be (with the exception of the European war) the keynote of modern thought in its application to natural resources, human life and health; therefore, the conservative treatment of the diseases of the rectum is in perfect harmony with the latest conceptions of method.

RECAPITULATION AND RECOMMENDATION.

1. The classification of piles or hemorrhoids by the nature of their coverings: i. e., skin or mucous membrane, rather than location.

2. The restoration of free hemorrhoidal circulation by sphincteric manipulation prior to the interstitial invasion.

3. The application of the treatment through a speculum with the pile at its site of origin.

CONCLUSION.

The supposedly impossible phrase "Piles cured without cutting," is a realization by this method.

In selected cases this application is not only ethical, but rational and scientific.

The absence of pain and recurrence: the avoidance of ether and a hospital operation: the absolute safety of the method, when properly applied, all go to make up a complex of desirability difficult to eclipse.

1344 G Street, N. W.

MEDICAL SOCIETIES AS AIDS TO ENLARGED SOCIAL RELATIONS AND GROWING PROFESSIONAL EFFICIENCY.*

By M. P. JONES, M. D., Churchville, Va.

"Some men," it is said, "are born great; some achieve greatness: and some have greatness thrust upon them." It is hardly the common opinion that the tract lying between the crest of the Shenandoah and that of the Alleghanies—the country from which I hail—is the region of native born greatness, and none of you, I am sure, among whom my professional life has been spent have been greatly impressed by the greatness I have achieved. It would seem, therefore, that whatever greatness attaches to me by virtue of my present position must have been thrust upon me. Still the word "thrust" has two implications that I do not like, involving, as it seems, a measure of resistance on the part of the one receiving greatness, and a measure of violence on the part of those bestowing it. Any resistance I offered to being placed in the office to which you have elected me was due solely to the conviction of inability to serve you well; and I beg to assure you that it is not easy for me to express in words my sincere and deep appreciation of this honor, which, in spite of my unusual disabilities, you had the kindness to bestow so ungrudgingly upon me.

Just here, perhaps, the thought arises in your minds, as it does in mine, that in thus proposing to inflict my remarks upon you, I am making a poor return for the unmerited recognition you have given me. By way of response

*Presidential address, read before the Augusta County Medical Association, Inc., at Staunton, Va., November 4, 1914.

to this natural feeling of yours, and in some sort of justification of what you are about to suffer, I may remind you that I have heard public speakers divided into two classes,—those who have something to say and those who have to say something. Now to the first class I surely do not belong; therefore, in the second class—certainly a very wretched group of sufferers.—it would seem I must be numbered. But if I might create a third class of those who wish very much to say something but find it very difficult to say, I should place myself in that list. My wish to say something is prompted solely by a very earnest desire to contribute, however slightly, to the interest of the meeting and not that I wish at all to enlarge upon some set professional subject, some disease or its treatment, some professional wrongs and how to right them, some professional right and how to secure it. For at least two reasons I am not disposed to inflict anything of this kind upon you. First: The books of the profession, you all buy; the journals of the profession you all read; and what is perhaps of more consequence, the plainly written volume of experience lies open to you all. It would be presumption, therefore, in me to undertake to speak to you on the general themes, about which I am sure, you are not less informed than myself. Second: I well remember, what I trust most of you have forgotten, that some years ago I presented to this association a paper of very decided opinions on the proper treatment of a certain disease. I am now an older and I hope a wiser man, and as I reflect upon that notable production, only two consoling thoughts occur to me. The one is that I would be incapable of perpetrating it upon you now, and the other is that you will not remember the sins of my youth against me.

Another lesson, too, I have learned from experience, if I may tax your indulgence so far as to mention it, and that is I have been inclined to be selfish in my attitude toward our association. At times in the past those who were responsible for its programs have been kind enough to ask me to contribute something to its proceedings but with the unfortunate exception noted above I have steadfastly refused. I refused because I felt that there was practically nothing I could do to make the meetings more interesting and helpful. In this feeling I was probably not far wrong but under pres-

ent circumstances I am sure I should feel more comfortable if I had at least made the effort. "A fellow feeling," I have heard, "makes us wondrous kind" and now that I am charged with a larger share of the responsibility for our programs I find my heart warming toward those to whom formerly I should have shown more serious consideration. And begging their pardon for my apparent lack of sympathy and interest in the past, I hope they will return good for evil and that none of you will show this same disposition toward the association in this, its hour of need.

Speaking of selfishness and aloofness from those we should be ready and willing to help, I notice I am approaching the theme to which I found my thoughts turning as I considered what would be fitting for me to say to you on this occasion. That theme cast into the form of a question was: "What Can Our Society Accomplish?" In answering this question, of course I can give you nothing new, and therefore nothing absolutely original; but the first advantage that comes to my mind is the *social advantage*. I need not call to your attention the fact that man is a social being, association with his fellows is scarcely less necessary to a real man than food, drink, light and air. Cut off entirely from all association with his kind, it is impossible to tell what a human being might become, but certainly some very strange sort of creature—hardly a man. Nor need I say that our affections are largely matters of association. Any of us would rather meet a Virginian on a foreign shore, other things being equal, than a man from any other State, and this because we have been associated with him as a fellow citizen of the old Commonwealth. It is hard to over-estimate the good effect produced upon us by proper association with others when even the most transient social relations often have the most far-reaching effects. And how often have we all heard that the associations of the family fire-side determine not only individual character but also national civilization. Somewhere I have seen this line:—"A sentence hath formed a character and a character subdued a kingdom." So, beyond a doubt, in our association with each other in these meetings, effects are often produced more powerful and more permanent than we can imagine. Not always, to be sure, are the results immediately apparent.

but here, as everywhere, "still waters run deep," and the silent processes of character formation never grow weary and never cease. It takes many years to develop a good strong character, and it can only be done by contact with the world and other men. For character, we are told, is nothing but the sum total of the impressions of the constant impact of the outer world upon the inner man. While all this is true, none of us can be unmindful of the fact that association also excites warm feelings of a less pleasant kind. For instance, we do not dislike the man we do not know. It is the man with whom we associate that we fall out with. Especially does professional association produce professional friction and friction produces heat, but what I want to say is that association of a certain kind has a tendency to reduce the heat it generates.

Forty years ago one man on one gray mule carried in one bag all the mail that went from Staunton to Monterey. He went out one day and back the next. At that particular time the carrier's name was Losh. There was no other just like him. One day on his out-bound trip he reached the first post-office in Highland and was telling his friends how he had "cussed out" the Staunton post-master that morning. His friends expressed some doubt as to the correctness of his statement but Losh's affirmations only grew stronger. Finally, one fellow said: "Well, Losh, what did the post-master say?" "Oh, by gosh!" said Losh, the post-master wasn't there." The point I want to make is this, that Losh was not only a mail carrier but a philosopher. He saw how readily the presence of the other man—association, in other words—reduces personal friction. We need not, however, learn this from mail carriers and philosophers. We only have to consult our own experiences to learn the same truth. Have we not all roared like lions when the man we were mad with was absent, and become much more lamb-like in his presence, and that not always because we are cowards but because we are men? For the social forces inherent in man come into action and tame us down. And, may it not well be, that, if we would give these social forces fuller play, if we should seek, rather than avoid those we are not drawn toward, we would lose in their presence some of our improper feeling or dislike, and find a partial cure, at least, for many of

the petty jealousies and misunderstandings with which the public charge us, and for which the public is so largely responsible? I am aware of the fact that it is easier to talk this doctrine than to walk it, and that often what we *do*, speaks so loud that people can't hear what we *say*. These difficulties, I am sure, most of us have felt, have regretted, and have longed to live above. If there is much truth, though, in what we so often hear about "those who live in glass houses." I am sure I must be very careful at this point, but want to say that I am making a very earnest effort to secure quarters where I shall be less vulnerable to this sort of attack. The best place to accomplish this end is certainly not in selfish solitude, but only in open, free, and frank association with our fellows.

But we have all heard talk of this kind many times and, in this connection, I recall the experience of one of my Highland friends. He had a very troublesome neighbor who, all one winter, stole his corn—not from the field nor from the crib, but waited till it was carried to the stable for the morning feeding. It was suggested that he talk to the culprit about it. In utter exasperation and despair he replied: "Law, I've talked to him a thousand times, but talking don't do a durned bit of good." We may feel that so much talking is useless here but it seems to me that being reminded of and talking over our weak points may do us good. And one ground of my hope I may illustrate thus: Most religious talks or services, taken separately, seem to leave the people much as they find them, but their cumulative effects, much as we are disposed to discount them, do result in much good. May we not hope the same may be true of these our heart to heart talks.

And now just one word more before leaving the social aspects of our organization. Green, I am sure, in the hearts of us all must be the memory of those delightful occasions for which we in times past have been indebted to the hospitality of other members of this society—or rather, no doubt to the ladies who so graciously entertained us. Not daring or expecting to reproduce the charm of those delightful occasions, I nevertheless cherish the hope of seeing you all sometime during this year in our quiet village of churches where we can offer at least splendid roads, a nice country,

a hearty welcome and the very best that warm hearts and willing hands can render.

But I find that I am becoming entirely too tedious and shall scarcely more than mention a second advantage that I intended to speak of, that of enlarged professional efficiency. It has been remarked that this is the age for organizations. In general we have associations scientific, industrial, professional, political, religious, and social. In particular their name is legion. I shall not take time to give examples but venture the opinion that the large efficiency of many of them may be doubted, one cause of this inefficiency possibly being the vast amount of talking they produce—*talk*, often, that seems to amount to but little. So we must not expect too much of our association. Certainly not many of the papers presented can interest all of us. What helps one does not help another. What pleases one does not please another. The patient miner washes tons of sand to find a grain of gold. The valuable things of life are rare. If they were not, they would not be valued. Even in so worthy an association as the Augusta County Medical Society we must not expect complete exception to the imperfections of all things human. But surely few of us are too wise to profit by the failures of our fellows, or too listless to learn something from the record of their successes.

Having called attention to the personal and professional advantages offered us by our association, I wish, in closing, to show the relation of these two advantages to the public service we are called upon to perform. I have recently seen the statement: "The true physician speaks of those whom he serves as 'my people.' His practice is not regarded as the mere source from which he draws his living, but his life is only of moment as it is devoted to the service of his people. As he grows older he finds this conviction growing in his heart. My people do not so much owe me a living as I owe my people my life." This all sounds mighty good—in fact, I think most too good. It is hard for me to believe that we are expected to eliminate self to such an extent. If, however, the statement is true, I am firmly convinced of the fact that the true physician must be a very scarce article. I am sure the author of the quotation never practiced medicine. I am sure, too, that doctors, as a rule, are as loyal, faithful, and true to their people

as any body of men on earth, but if we are not all called upon from time to time to serve those whom we would not like to claim as our people, then I am much mistaken. I think you all know the class to which I refer and that even the good old Dr. McClure would have no difficulty in placing them where they belong. But what I believe is that if we as individuals achieve an advantage either in social or professional life, this advantage finds its true significance not only in its value to us who use it for selfish ends, but also in the larger power it gives us to be useful to the communities we serve. It is probably true that we have been too much interested in the question "How can I best serve myself?" and not enough in the more important one "How can I best serve others?" The man who makes two blades of grass grow where only one grew before is called a benefactor, but he is not such unless the increase is employed not for the benefit of himself only, but for others as well. So our enlarged social faculties and our growing professional efficiency show their real value only as they make us better qualified to prevent disease, control, check, or abate it, to lengthen the period of human life, to lessen the volume of human distress and to enlarge the sum total of human health efficiency and happiness.

To summarize and conclude, then, let me say that, to serve these high social, professional, and public ends is, I take it, the aim of our association, and to make it as efficient as possible this year in promoting these high ends, I pledge the very best service I can render and in my inadequate efforts I crave again your warm interest and your hearty support.

Proceedings of Societies, Etc.

NORFOLK COUNTY MEDICAL SOCIETY.

At the March, 1915, meeting of the Obstetric Section of the above Society, *Dr. C. W. Doughtie* read a paper on the:

Use of Obstetric Forceps in Labor.

DISCUSSION.

Dr. Geo. Thomas Myers believed that there were few things in the profession's history so savory as the subject of forceps in labor—their invention, modifications, and uses. It is one of the romances of medicine, as vivid as the story of the Count of Monte Christo.

A Huguenot family of physicians having fled from France during the religious persecutions of Catherine de Medici, set up their establishment in England, practicing their profession in a way that soon brought upon them the wrath of the doctors. It seems that in obstetrical cases hard to manage, they succeeded in bringing to their aid some sort of a mechanical appliance, with which they effected easy deliveries, after other physicians had failed.

The Chamberlines refused to disclose the nature of this adventitia; and it was not certainly known what it was they were using until long afterwards the instruments themselves were found in Peter Chamberline's house, Mortimer Hall, Essex, 1813.

The family acquired wealth, but little else, as the profession has never tolerated greed, the sort of greed the Chamberlines exhibited; but has always insisted, in its abstract teachings, upon looking beyond the dreams of avarice.

The profession has held that men engaged in the art of healing were under honorable obligations to make known their discoveries. Physicians failing to recognize, or to reach, this spiritual plane, have caught the profession's scorching condemnation, and have remained in an enduring obloquy.

These original forceps, as you know, had an admirable cephalic, but no perineal curve, an addition that came later, through Smellie in England and Levret in France, during the eighteenth century. Then a German, Busch, coming late upon the scene, added the cross arm, or shoulder piece, the last of the important modifications of the obstetric forceps as we know them today.

In 1844, Hermann, of Berne, introduced the axis-traction principle,—popularized later by Tarnier of Paris. After them came the American, Dr. Hodge, who changed the Levret forceps slightly and called it by his own name, as a host of others have done with more or less important modifications, modifications that may be found in museums, if found at all.

Forceps are to the obstetrician what the mariner's compass is to the navigator, or the knife is to the surgeon. *With it he intervenes to terminate labor* when its prolongation becomes dangerous to mother or child: heart decompensation upon the part of the mother, hemor-

rhage, or uterine inertia; a failing foetal pulse, the escape of meconium in vertex presentations, due to interference with the placental circulation, and the subsequent relaxation of the sphincter ani from imperfect oxygenation.

Dr. Myers said that the essential conditions for the use of force were a correct position—vertex or face, a dilated cervix, ruptured membranes, a fair sized head, and an uncontracted pelvis. Attempts to deliver by means of forceps through a resisting ring of tissue are responsible for the deep cervical tears gynecologists see, which might have been avoided by manual dilation of a not fully dilated cervix. If the head is floating above the strait, podalic version may be preferable to the use of forceps.

It is interesting to recall that the early Romans originated this recourse, that the method was lost sight of for a long time afterwards, until the time of Ambrose Pare, distinguished surgeon and obstetrician; private physician to Charles the Ninth, Catherine, and Henry of Navarre.

A contracted pelvis is the most absolute of all contraindications to the use of forceps. Dr. Myers had that day seen a case in consultation where an attempt had been made to deliver through a foetal, undeveloped, funnel, or dwarf pelvis. A Cesarean section was immediately done, but the child was dead, and the mother succumbed later, because of the obstetrical abuse previous to the section.

Cesarean sections should be done oftener, the speaker said, in the complications of labor. Probably it is the method of choice in eclampsia, as advocated recently by MacLean of Richmond.

Dr. R. U. Burgess was taught to use the Hodge forceps by Dr. Chris. Tompkins of the Medical College of Virginia. He had seen Dr. Tompkins use these forceps often without injury either to child or mother, an evidence of Dr. Tompkins' skill, because these forceps are hard to use, and Dr. Tompkins was a most skillful obstetrician. They had not worked so well for him, perhaps from lack of pliancy upon his own part. The Elliot forceps have given him most satisfaction, maybe on account of their handles.

Dr. L. C. Shepherd preferred the Elliot forceps, too, though he had been taught the use of the Hodge forceps, as had some of the pre-

vious speakers, forceps that were in great vogue in this country at one time.

Since the services that forceps really render are, of course, those of a tractor, to assist uterine and abdominal inertia by bringing about an immediate delivery, I am wondering to what extent the use of pituitrin will supplant the use of forceps, since it supplies a powerful *vis a tergo* in the same condition of inertia that previously would have led to the use of forceps. My own experience is that pituitrin will often furnish sufficient expulsive force to overcome the previous resistance, and render the use of forceps unnecessary in selected cases.

Dr. Chas. J. Andrews could not understand how it was possible for anybody to recommend the use of forceps in definitely contracted pelves, as was related of the obstetrician Hirst, and of certain French physicians. A container cannot contain an object larger than itself; a definite relation must always obtain between a passenger and a passage; and it must be insusceptible of variation.

Remembering the unhappy situation of the birth canal, the bladder opening immediately in front and the rectum behind, the speaker said that there was greater need for asepsis in obstetrics than in any department of surgery. It is well to emphasize the fact from time to time, as we do, because there will be less of unwarrantable disease thereafter. Certainly it is a very hazardous site, and contamination is difficult to avoid.

In reference to the uses of the hypophysis extract in labor, referred to by *Dr. Shepherd*, *Dr. Andrews* agreed that it was a most useful oxytocic, that the uterine musculature responded invariably. He thought that there should be considerable cervical softening before using it, as there might be an induction of uterine and cervical tetanus, especially after repeated doses.

Dr. Andrews was inclined to believe that the use of pituitrin in atonic uterine conditions would largely supercede the use of forceps. Neither of them could, of course, be used indiscriminately, the contraindications being definite in one case as in the other. The dose should be 1 c.c. of a .1 gram of the posterior lobe of the hypophysis, given subcutaneously. Intravenous methods of administration may be reserved for emergencies, as in severe post-partum hemorrhage.

From certain animal experiments made some time ago, it appeared that pituitrin was also a galactagogue, but latterly the idea has been abandoned as far as human mothers are concerned, because it does not seem greatly to influence their milk.

Dr. Burnley Lankford said that abnormal pelves were full of danger for both mother and child; but there was no doubt that some degree of contractions were susceptible of instrumental deliveries. Many of us have seen spontaneous labor occur repeatedly in moderately contracted pelves without undue prolongation of the act of parturition. Sometimes a let-alone policy is a very wise policy.

Most obstetricians accept the length of the true conjugate as the clinical index of pelvic contraction, and the particular species of pelvic deformity. If the true conjugate is less than three inches, and the pregnancy is well advanced, you will be wise to prepare for a Cesarean, or some other form of active intervention, because it is not a theoretical consideration that confronts you. Since the most frequent deformity is of the pelvic inlet, the head of the child does not engage, fortunately, and the most skillful hands cannot induce it to do so.

A prolonged labor with relaxation of the soft parts and a floating foetal head are suspicious circumstances, and warrant a careful pelvic examination. Pelvic deformity is much greater among the colored women of the South than among any other class of our population, but as it is very late I will not go into the discussion at this time.

Section adjourned.

THE RICHMOND ACADEMY OF MEDICINE AND SURGERY

Held its regular meeting March 23, 1915, *Dr. A. G. Brown*, President, in the chair; *Dr. Mark W. Peyser*, Secretary.

Dr. John T. Geraghty, Baltimore, read a paper entitled:

Renal Function.

DISCUSSION.

Dr. W. H. Higgins said that *Dr. Geraghty's* phthalein reaction has stood the test of four years' time without change, both in this country and abroad. It has helped in the diagnosis and prognosis of conditions concerning which we were formerly in the dark, and, with

few exceptions, it will hold its own. These exceptions are as follows: 1. In early cases of nephritis the phthalein output is practically normal. Here, the lactose test is better. For example, he mentioned an instance in which there was edema, high blood-pressure, hypertrophied heart, and an unusual amount of albumin and casts. The phthalein output was 30 to 35 without apparent change in the symptoms; sodium chloride, 7 grains. This went along until sodium chloride excretion suddenly ceased, uremia developed and the man died. The kidneys were permeable to phthalein, but impermeable to sodium chloride—one of the few instances in which such a state can occur.

In cases of passive congestion with other apparent involvement, potassium iodide and lactose are somewhat faulty, and might incline one to believe the existence of disease; here, the phthalein test is normal. Rowntree showed that in experimental nephritis phthalein is excreted normally; others have shown the reverse. Possibly no such condition is actually seen in disease of the human being.

Thayer has a record of 54 autopsies in which the phthalein test was proved to have afforded correct diagnoses. Corroborative tests may be needed where there is high blood-pressure, but, on the whole, Geraghty's test is worthy of much praise for the aid it renders; and it is inexpensive, not very painful, and readily accessible.

Dr. C. R. Robins believes that though phthalein affords the best artificial functional test, it cannot be implicitly trusted in arriving at the real condition of the patient and his kidneys. Occasionally, we find a case in which conditions are apparently normal, and yet the patient dies after operation; the reverse may also occur. He has wondered if inhibition may not be due to the operation.

There are other cases in which the output, at first small, increases under treatment, and then the patient dies.

He was surprised to hear Judd say that he had returned to the old tests—specific gravity, the total amount of urine, etc.—as being the most reliable, to which *Dr. Braasch* agreed. *Dr. Geraghty* called attention to the fact that what the kidney does today is no guarantee of what it will do tomorrow. *Braasch* has brought out the differences between the two kidneys where-by we may arrive at a definite conclusion.

Dr. Robins asked *Dr. Geraghty* what are his last thoughts as to the phthalein test in surgical cases; and what changes are present, as a rule, in the kidneys, e. g., in enlarged prostate with apparently normal kidneys, the patient dying.

Dr. T. B. Leonard said that years ago he had a patient, whose urinary examination was negative to the tests used at that time, die in uremia; and the incident impressed him with the crying need for other and more accurate means than the ordinary chemical and microscopical tests for detecting disease of the kidney.

When we realize that *Spiegler's* method shows albumin in the proportion of 1 to 350,000, the presence of albumin in the urine loses some of its significance. Practically 100 per cent. of persons examined give a positive reaction to this reagent. Casts are likewise not infrequently present in normal individuals. *Klineberger* found them in from 36 to 60 in several series of 100 each. Athletes, foot-ball players particularly, often show casts in the urine after a game.

When we come to urea, the quantity present in the urine is valueless, unless we have determined previously the nitrogen intake.

The indigo-carmin test is helpful in measuring kidney activity in interstitial involvement, but it is not an accurate index of acute involvement of the parenchyma. The phloridzin test sometimes causes prolonged hematuria or lasting glycosuria. The phthalein test removes some of the objections of the other procedures, and *Dr. Leonard* expressed himself as being glad to hear *Dr. Geraghty's* exposition of his own method.

Dr. Geraghty, concluding the discussion, said that to expect one test to give information concerning every condition in such a complex organ as the kidney, is expecting rather much. One organ cannot be singled from the others of the body, and when operating we must consider the functions of all these organs. In many patients with apparently normal kidneys, who have died after operation, may probably be demonstrated a congested kidney, but not actual disease of those organs. Then, in those cases in which there is a fall of high-blood pressure and the kidneys cease to functionate, we must also consider shock.

The specific gravity and estimation of the

total quantity of urine are very valuable because of their variations. In cases of advanced nephritis, the specific gravity is low. It is well known that in the presence of disease, the functions will increase at a high rate. Some patients have a normally low specific gravity. Therefore, if these two are depended upon, it is difficult to decide how much water the patient should secrete.

In sizing up the situation, we must consider the vital condition, for the kidneys may be in quite a bad state and yet the patient make a good recovery.

Death following prostatectomy is due in practically every case to sepsis (from spread of infection) and low vitality. In some cases, there is present in the kidney an acute process, usually of circulatory origin. It is very difficult to conceive an ascending infection in a normal ureter, though it occurs at times.

No single functional test will give all the information necessary. In practical work we are called upon to use one that will tell us as much as possible. The salt test is very difficult to perform, and is available only in hospital work. Sometimes, the lactose test will give decided information, as pointed out by Dr. Higgins; but in surgical cases, both of these have been proven of negative value. For general work, the phthalein test for excretion and the blood-urea test for retention go well together. In estimating the blood-urea, it is well to consider the amount of protein consumed by the patient. In surgical cases, for instance, reduction in the consumption of protein will reduce the amount of blood-urea. Then, before operating, put the patient again on protein diet and estimate once more.

Patients with kidney lesions die not so much from suppression of the urine as from toxemia.

Analyses, Selections, Etc.

Transplantation of the Anterior Temporal Artery.

Dr. J. Shelton Horsley read a paper before the Southern Surgical and Gynecological Association, at Asheville, N. C., December, 1914, in which he called attention to the fact that occasionally defects of the cheek are exceedingly extensive and sometimes require a lining in the mouth as well as external covering. In

such instances, it was recommended that a flap be turned up from the neck so that the skin side will line the oral cavity, and that a flap be taken from the forehead, which is supplied by the anterior temporal artery. This artery is carefully dissected out, including some surrounding tissue, and is buried under an incision leading from the origin of the artery to the edge of the defect. This incision should not be too deep, as it might then injure the branches of the facial nerve. The flap should be sutured loosely so as to permit slight oozing, which relieves passive hyperemia. The cause of failure with such a flap would be having too much nutrition, and not too little. The paper is illustrated with drawings of the procedure and photographs of two patients that were operated upon by this technique.—*Author's Abstract.*

A New Method of Lateral Anastomosis of Blood-Vessels and an Operation for the Cure of Arterio-Venous Aneurisms.

In a paper read before the Southern Surgical and Gynecological Association, at Asheville, N. C., December, 1914, Dr. J. Shelton Horsley reviewed briefly the history and technique of lateral anastomosis of blood-vessels, both when uniting an artery to a vein, as in reversal of the circulation, and when uniting vein to vein, as in Eck fistula. He doubts the practical utility of reversal of the circulation and mentions some of his experiments which are not yet ready for full report, but which seem to show that in reversal of the circulation by the end-to-end method the blood returns to the heart by anastomotic venous branches a short distance below the site of operation, and that the arterial blood in the reversed femoral vein never reaches the foot. If the circulation is to be reversed, however, it should always be done by lateral anastomosis and not by the end-to-end method. The author describes a clamp which he has devised for lateral anastomosis of blood vessels. It is five inches in length, has delicate curved blades, and the handles are in an axis with an imaginary line drawn from the tip to the heel of the blades. This permits the handles to lie flat and they are out of the way during suturing. The forceps can also be used for temporary occlusion of blood vessels and for the cure of arterio-venous aneurism. In a lateral anastomosis the vessels are clamped by two of these forceps and held

together by two sutures near the end of the proposed anastomotic opening. The opening is made with scissors and a tractor suture is placed in the outer wall of each vessel, but not tied. The suturing is done with a curved needle, the knot being on the outside. A continuous overhand stitch is used and when the other angle has been reached, one of the tractor sutures in the outer wall is withdrawn and a tractor suture placed so as to unite both walls. This, when pulled upon, everts the intima and makes the suturing easier. The thread is tied to the short end which was grasped in the hemostat when the first knot of the continuous suture was made. In using the forceps for arterio-venous aneurism, the vessels are first dissected down to the aneurism, and first the artery and then the vein are grasped by the forceps near their point of communication. The communication between them is then divided and the opening sutured. This makes the operation easier even when a tourniquet is applied, but it should be especially valuable where no tourniquet can be used, as in the upper femoral region.—(*Author's abstract.*)

Radium Treatment of Fibroid Tumors.

Dr. Howard A. Kelly, in a paper read on the above subject before the Southern Surgical and Gynecological Association, at Asheville, N. C., December, 1914, said that massive doses of radium applied within the uterus will either so completely cure or so far relieve all cases of fibroid tumors as to obviate all necessity for an operation.

In 36 out of the 37 cases here reported, radium has either caused the tumor to disappear or has so far reduced its size as to render it innocuous. In every case subjected to an intrauterine radiation, the hemorrhage has been controlled, and wherever it has been desirable, amenorrhea has been produced.

Such radium treatments, calling for from 300 to 500 mg. of radium element, only last a few hours and, as a rule, do not have to be repeated. Furthermore, they are without risk. Such a treatment is pre-eminently adapted to tumors in young women, where menstruation can sometimes be conserved, and in hemorrhage cases, especially where profound anemia is found.

Radium treatment does not preclude and in no wise complicates a surgical operation if it is thought best to do one later.—(*Author's abstract.*)

Editorial.

Interstate Migrations of Tuberculous Persons.

The results of the investigations made in North and South Carolina and California, under the direction of U. S. Public Health surgeons, proved very similar. It was noted that the migration of the tuberculous is not as extensive as formerly, which is possibly due to the establishment of a larger number of local sanatoria and the successful results obtained in home treatment of the disease; that, while travel is fatiguing to patients, it is in the main dangerous only in advanced cases, and the migration of patients has probably little effect on other travelers and employees of common carriers; and finally, that tuberculous persons should, under no circumstances, be advised by their physicians to seek a change of climate, unless they are financially able to have equal if not greater comforts than at home. The report recommended that physicians should consider not only the financial status of the patient, but also the disposition of the patient as to whether he can stand separation from family and friends, the stage of the disease, and they should ascertain whether suitable accommodations and medical advice may be obtained in the locality selected before deciding upon a change of climate.

The Norfolk (Va.) Bureau of Social Service

Has been formed for the purpose of studying eugenics from a practical standpoint. A pamphlet prepared for the Bureau by Dr. Thomas V. Williamson, of Norfolk, as announced at the outset furnishes the reader "something to think about," for it gives questions and suggestions which the laity as well as the profession have been agitating for months. The statement that "Conservative statistics claim that 60 per cent. of all men have been infected by venereal diseases and the same statistics claim that 60 per cent. of all operations performed on the generative organs of women for inflammatory conditions are necessitated by the ravages of venereal invasion" is sufficient to set us thinking.

The eugenic marriage laws adopted by several states are as yet too much in the beginning stages to see what will avail from such legislation. A suggestion made by Dr. William-

son to have a State laboratory to which specimens could be sent for examination, without cost, might, however, aid in the smoother operation of the eugenic marriage law where enacted.

The Pan-American Congress

Will meet in the Palace Hotel, San Francisco, June 17-21 inclusive, pursuant to invitation of the President of the United States, issued in accordance with an act of Congress approved March 3, 1915.

Thirty-one countries and colonies are embraced in the Congress, and the majority of them have signified their intention to be represented by duly accredited delegates. The Congress will meet in seven sections; viz., medicine; surgery; obstetrics and gynecology; anatomy, physiology, pathology and bacteriology; tropical medicine and general sanitation; laryngology, rhinology and otology, and medical literature.

All members of the organized medical profession of the constituent countries are eligible and are invited to become members. The membership fee is \$5.00 and entitles the holder to a complete set of the transactions. Advance registrations are solicited and should be sent with membership fee to the Treasurer, Dr. Henry P. Newman, Timken Building, San Diego, California. The general railroad rate of one fare for the round trip, good for three months, made on account of the Panama-Pacific Exposition at San Francisco, and the California Exposition at San Diego is available for the Pan-American Medical Congress.

The First Pan-American Medical Congress was most successfully held in the United States in 1893. Five intervening Congresses have been held in Latin American countries. It now devolves upon the medical profession of the United States to make this, the seventh, the most successful in the series.

Information as desired may be obtained from the following:—Drs. Charles A. L. Reed, Union Central Building, Cincinnati; Ramon Guiteras, Secretary General, 80 Madison Avenue, New York City; Harry M. Sherman, Chairman Committee of Arrangements, 350 Post St., San Francisco; Philip Mills Jones, Special Committee on Hotels, 135 Stockton St., San Francisco.

Richmond to Care for Colored Consumptives.

The Richmond Administrative Board has

approved plans and invited bids for the erection of two open-air pavilions on the grounds of the City Home, in which to care for colored consumptives. Each pavilion is to have twelve beds, one pavilion being for men and the other for women. The cost will be approximately \$1,000 each.

In this connection, we would state that plans for building a State sanatorium for the colored tuberculous are being daily perfected. The Virginia Anti-Tuberculosis Association is active in this work and has \$4,000 in hand for this purpose, \$2,000 of which was raised by the colored people. Several pieces of property are already under consideration as a location for this sanatorium.

The Interstate Association of Anesthetists

Will hold its organization meeting in conjunction with the Ohio State Medical Association in Cincinnati, Ohio, May 4-5, 1915, at which time an elaborate scientific program devoted exclusively to recent advances in anesthesia and analgesia will be presented.

Headquarters, assembly room and exhibits will be in the New Hotel Gibson, in which all the Sections of the Ohio State Medical Association will also meet. An informal organization dinner will be served on the evening of May 4, after which the visiting anesthetists will be the guests at a smoker, of the Local Entertainment Committee, headed by Dr. E. O. Smith. Visiting ladies will be entertained by Dr. Nora Crotty and her committee at a reception and theater party.

Anesthetists, surgical and dental, as well as interested surgeons and general practitioners who wish to participate in the proceedings are cordially invited to attend. For further information and dinner reservation, address, Dr. F. H. McMechan, Secretary, 1044 Wesley Ave., Cincinnati, O.

The Warren-Rappahannock-Page County (Va.) Medical Society

Met in Front Royal, Va., April 13, with an attendance of between twenty-five and thirty members and guests, Dr. D. M. Kipps, of that place, presiding. Among those reading papers were Drs. T. A. Ashby, Baltimore, Md., L. H. Keller, Hagerstown, Md., Oscar Wilkinson, Washington, D. C., and Drs. S. S. Gale, Roanoke, E. P. Amiss, Luray, and P. W. Boyd, H. H. McGuire and L. M. Allen, of Winchester.

The American Association of Genito-Urinary Surgeons,

Of which Dr. Francis R. Hagner, Washington, D. C., is president, is to meet at White Sulphur Springs, W. Va., May 18--20.

The American Gynecological Society

Will meet at White Sulphur Springs on the same date as the above Society. Dr. Thos. J. Watkins, of Chicago, is president of this Society. and Dr. LeRoy Broun, of New York City, secretary.

The General Hospital Board of Virginia,

In annual meeting at the State Epileptic Colony, April 15, re-elected all of the State hospital superintendents for the coming year, as follows:—Dr. A. S. Priddy, Epileptic Colony, Amherst County; Dr. J. C. King, Southwestern Hospital, Marion; Dr. Wm. F. Drewry, Central Hospital, Petersburg; Dr. George W. Brown, Eastern Hospital, Williamsburg, and Dr. J. S. DeJarnette, Western Hospital, Staunton.

Drs. Julius Friedenwald and F. H. Baetjer,

Baltimore, Md., presented a paper at the Richmond Academy of Medicine and Surgery, April 13, on "The Value of the Roentgen-Ray Examinations in the Diagnosis of Gastro-Intestinal Disturbances." This was accompanied with a lantern slide demonstration.

Dr. W. W. Chaffin,

Pulaski, Va., spent several days in Richmond, early in April.

The National Association for The Study of Epilepsy and The Care and Treatment of Epileptics

Will have its annual meeting at Hotel Chamberlin, Fortress Monroe, Va., May 10th. Dr. A. S. Priddy, superintendent of the Virginia Epileptic Colony, presiding. Dr. A. L. Shaw, of Sonyea, N. Y., is secretary. This meeting occurs on the day preceding the meeting of the American Medico-Psychological Association.

Red Cross Units for Belgium.

On April 17th, four surgeons and twenty-four nurses sailed for Belgium *via* Liverpool. In England two American surgeons will join them, thus completing two Red Cross units. These units will be attached to the Belgian army and will be stationed at La Panne. By the same steamer was sent a consignment of cotton, bandages, antitoxin and surgical instruments, valued at \$20,000.

It is announced that conditions in Serbia and eastern Turkey are frightful, owing to the insanitary surroundings and the epidemic of typhus. A number of physicians and nurses have been stricken with the disease and the force left to attend the sick and dying is inadequate.

The Virginia Social Hygiene Association

Was organized in Richmond, the middle of April, the object being to make a complete study of social evils with the ultimate hope of instituting warfare on venereal diseases. A number of committees were formed, including a Public Health Committee, the members of which are Dr. E. G. Williams, Richmond, chairman, Capt. W. W. Baker, Hallsboro, and Drs. W. Brownley Foster and J. W. Preston, Roanoke, Wm. F. Drewry, Petersburg, Thos. V. Williamson, Norfolk, and R. K. Flannagan, Richmond.

Dr. Lawrence T. Price

Has returned to his home in this city after a short visit to Baltimore.

Dr. M. L. Rea,

Charlottesville, Va., has been elected vice-president of the Albemarle Golf Club.

The American Gastro-Enterological Association

Will meet in Baltimore, May 10 and 11. Dr. Jos. C. Bloodgood, of that city, presiding.

Married—

Dr. John Porter Jones, of Culpeper, Va., and Miss Roberta C. Garth, of "Ingleside," Albemarle County, Va., April 21st.

Pennsylvania to Give Free Wassermann Tests.

The State Department of Health of Pennsylvania has notified physicians in that State that it will furnish them with containers for specimens of blood and will make the Wassermann test free upon request.

Dr. E. L. Grubbs,

Eagle Rock, Va., visited his parents in Front Royal, Va., recently.

Dr. William A. Kearney,

Of Prospect, Va., visited friends in Farmville, Va., early this month.

Vivisection to be Permitted in New Jersey.

Early this month the bill passed by the New Jersey Legislature to permit vivisection in that

State, was signed by the Governor. The passage of this bill was urged by the Rockefeller Institute which will establish a permanent station in New Jersey. The new law provides that the State Board of Health is to supervise experiments.

The Atlanta Medical College,

The property of which is valued at \$300,000, has been given over to the Southern Methodist Church, it is announced, to be the medical department of the big university established by that denomination in Atlanta. The medical department will open in the Fall.

Dr. and Mrs. J. C. Dunford,

Portsmouth, Va., spent Easter in this city.

Dr. Abraham Jacobi

Is to be tendered a testimonial banquet on May the 6th, by a number of his friends and admirers, the occasion being his 85th birthday.

The Canadian Medical Association,

Which was scheduled to meet July 7-10, will omit its annual meeting this year because many of its members are actively engaged in the European War.

The Association of American Physicians

Is to meet in Washington, D. C., May 11 and 12, under the presidency of Dr. S. J. Meltzer, of New York City. Dr. Geo. M. Kober, of Washington, is secretary.

Dr. J. L. Andrews,

Editor of the *Memphis Medical Monthly*, has been made City Health Officer of Memphis, Tenn.

Surgeon H. S. Cumming,

U. S. Public Health Service, has been directed to extend his investigations of the pollution of tidal waters to the waters of the States of New Jersey, Delaware and New York.

The American Pediatric Society

Will hold its annual meeting at Lakewood, N. J., headquarters at the Laurel House, May 25-27, under the presidency of Dr. Geo. N. Acker, of Washington. Dr. Samuel S. Adams, also of Washington, is secretary of the Society.

Dr. E. A. Lockett,

Winston-Salem, N. C., announces that he will hereafter limit his work to surgery and consultation.

Dr. J. Morrison Hutcheson,

Of this city, is spending some time in Rochester, Minn.

Montreal to Have Tuberculosis Hospital.

One hundred and fifty thousand dollars has been included in the civic estimates for the current year for a tuberculosis hospital in Montreal, Canada, which, if possible, is to be completed within the year. It will accommodate 100 patients and it is possible that dispensaries will work in co-operation with the hospital.

Dr. Benjamin Rice,

Of Forest, Va., was a recent visitor near Ashland, Va.

Dr. Tom A. Williams,

Washington, D. C., stopped over in Richmond, the middle of this month on his return from Florida.

Dr. Mary E. Lapham,

Highlands, N. C., spoke before the Cincinnati Academy of Medicine, March 15, on "Pneumothorax; Five Years' Experience and the Result."

Assistant Surgeon-General W. C. Rucker,

U. S. Public Health Service, has been directed to visit this city and Baltimore, when necessary, for conference with State Health authorities relative to interstate quarantine regulations.

Dr. Bradshaw Loses His Home by Fire.

Dr. C. L. Bradshaw, a young physician located at Falmouth, Va., who graduated from the Medical College of Virginia in 1912, had his home completely destroyed by fire on April 6th.

Christian Science Practitioners Not Exempted.

The New York State General Assembly, on April 13th, defeated the bill intended to exempt Christian Science practitioners from the State law requiring physicians to be examined and licensed in that State. The vote was 46 for exemption and 79 for requiring the examination and license.

Dr. Herbert M. Evans,

Formerly associate professor of anatomy at Johns Hopkins University, Baltimore, has been appointed professor of anatomy in the University of California.

Kansas to Look After Child Hygiene.

A division of Child Hygiene has been created by the Kansas State Board of Health, the general duties of which will include an educational campaign on the care of the baby and hygiene of the child, a study of the causes of infant mortality and the application of preventive measures for suppression of same.

Dr. Lucius N. Glenn

Has been appointed an assistant surgeon for the Southern Railway, at Gastonia, N. C.

Typhoid Fever Again Caused by "Typhoid Mary."

Twenty-five cases of typhoid fever occurring in a hospital in New York City have been traced to the cook who, it happens, is none other than the woman popularly known as "Typhoid Mary" to whom a number of cases were traced in 1907. For some time after the first outbreak, she was kept in a hospital as a person whose continuance at large would be a menace to the community. She has again been apprehended by the Department of Health of that city and is detained at Riverside Hospital.

The American Social Hygiene Association

Has been offered a prize of \$1,000 by the Metropolitan Life Insurance Company to be awarded to the author of the best original pamphlet on social hygiene for adolescents between the ages of twelve and sixteen years, approved by a committee of judges to be selected by the Association. Competition for this prize is open to all. More than one manuscript may be submitted by the same author. The contest closes July 31, 1915, at midnight, and any manuscript received later will not be considered.

Address requests for further information to The American Social Hygiene Association, 105 West 40th Street, New York City.

Tennessee Abolishes Death Penalty.

The death penalty has been abolished in Tennessee with two exceptions—in cases of criminal assault and of murder committed by life-term convicts.

For Sale—Moores Brook Sanitarium.

Owing to the death of the former superintendent, Dr. D. M. Trice, this splendid sanitarium is for sale. For particulars, see advertising page 14. (*Adv.*)

Obituary Record.

Dr. James Scales Irvin,

Of Danville, Va., a prominent physician and surgeon and a member of the Executive Council, Medical Society of Virginia from 1910-1913, died suddenly from heart trouble at the

General Hospital in Danville, April 10, shortly after completing an operation on a patient in that hospital.

Dr. Irvin was born in Wentworth, N. C., in 1867. Upon receiving his medical diploma from the University of Virginia in 1893, he took up hospital work in New York City, after which he located in Reidsville, N. C. Shortly thereafter he moved to Danville, Va., where he had since made his home, and was popular in social as well as medical circles. He was a member of a number of local and national medical societies including the American College of Surgeons; and was an ex-president of the South Piedmont Medical Society and of the Danville Academy of Medicine. His widow, a sister and several brothers survive him.

Dr. Ernest Pendleton Magruder,

Of Washington, D. C., one of the physicians at the head of the American Red Cross unit in Serbia, died in that country early this month, from typhus fever. He was forty years of age. Dr. Magruder studied medicine at the George Washington University, from which he graduated in 1902, and was later clinical professor of surgery in the Georgetown University School of Medicine. He was prominent in medical circles in Washington and was a fellow of the American College of Surgeons.

Dr. H. M. Drewry,

A native of Chesterfield County, Va., but since young manhood a resident of Martinsville, Va., and for many years a prominent practitioner in that section, died at his home, April 11, at the age of 83 years. He had retired from practice some years ago, owing to failing health. He is survived by several children.

Dr. William Alexander Crowder,

A prominent colored physician of Petersburg, Va., and secretary of the Old Dominion Medical and Surgical Society, died at his home in that city, April 14, as the result of a heart affection. He was born in Petersburg 37 years ago and studied medicine at Leonard School of Medicine, Raleigh, N. C., from which he graduated in 1904.

Dr. Friedrich Loeffler.

The death was announced from Berlin, on April 9th, of this German bacteriologist, renowned as the discoverer of the bacillus of diphtheria. He was born in 1852.

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MENDELIAN LAWS OF HEREDITY AND THEIR RELATION TO EUGENICS.*

By ALFRED GORDON, M. D., Philadelphia, Pa.
Neurologist to Mt. Sinai, Northwestern General and
Douglass Hospitals.

The conception of "Evolution" in natural history became a solidly established acquisition with the advent of Darwin's "Origin of Species" in 1859. Following his genius an army of naturalists became convinced that the cause of variation of species lies exclusively in the operative influences of "natural selection." For a decade their view was the only one that held the largest majority of naturalists imperturbable. When, however, the problem of congenital diversity began to be studied more profoundly and the question of hereditary transmission commenced to arouse great difficulties for its solution, the significance of variation in individuals and species could no more be established on the basis of the old Darwinian conception. A new generation of evolutionists made its appearance. The experimental study of the species problem acquired a new orientation, and a complete revision of the former views became necessary.

The first serious attempt to disturb the Darwinian school was made by Weissman who insisted on actual proof of the fact claimed by Darwinians, viz.; that acquired characters may be transmitted by parents to offspring.

Next in order of importance came the work of de Vries who called attention to the great importance of the individual characteristics or "unit-characters" in the problem of hereditary transmission.

The principle of the unit-characters being at work in genetic processes constitutes the funda-

mental structure of Mendelian laws of inheritance upon which modern evolutionary ideas may be solidly based. Let us therefore consider the essential features of Mendel's discoveries.

Mendel observed that in crossing plants possessing one strikingly different character or in mating animals differing in certain characteristics, the result will be that the first cross-bred plant or the first offspring animal exhibits the character of one parent to the exclusion of the opposite character. The character which is present is called "dominant" (D), the character which disappeared he called "recessive" (R). But while the latter is not seen in the immediate family, it is nevertheless present in a latent state and will reappear in the subsequent family or families.

This law of dominance was demonstrated by Mendel first on peas. By applying the pollen of a tall variety of the plant to the stigma of a very small variety he obtained seeds which grew all into tall plants. Tallness was, therefore, the dominant character, smallness—the recessive. The first generation or family is, therefore, composed of a pure character of one or of the other parent. The second and later generations on the contrary are characterized by polymorphism: each possesses characteristics resulting from combination of those of both parents. Mendel discovered that in spite of the polymorphous manifestations there is a certain regularity or law which can be traced in almost every case.

Pursuing the observations on peas, it was noticed that in the second generation the products were of both kinds, tall as well as small; but three tall to one small, otherwise speaking three dominants (D) to one recessive (R). In the 3rd generation we find that the recessive give exclusive récessives, otherwise speaking the small variety presented only small plants. But the dominants (tall ones) gave two kinds

*Read before the College of Physicians, February 3, 1915.

of offspring, viz.; tall and mixed, the latter consisting again of three tall to one small. The same ratios may be observed in crossing yellow with green peas. Yellow color was found to be dominant over green. The first generation of seeds will all be yellow. Plants raised from this product presented both yellow and green seeds and in the ratio of 3 to 1. In the next generation the green seed bore only green, while among the yellow, one out of 3 seeds produced only yellow and two produced green and yellow, 3 of the latter to each of the first, precisely what we have seen in the selection of the tall and small varieties. We therefore observe the proportion of 3 dominants to 1 recessive as being a constant characteristic feature.

Thus far, two important conclusions may be drawn from Mendelian observations on plants: First, separation or dissociation of specific characters and their reappearance in the later formations of germs; this special feature is called *segregation*. Second, the constant ratio of three dominants to one recessive. The phenomenon of segregation is the most fundamental part of Mendelian laws of heredity. It emphasizes at once a regularity in transmission of hereditary features. It points out the direction in which certain units of characteristics may develop or else disappear.

Pursuing further our study of dominance or recessiveness of characters in plants, we find that the above enunciated laws are applicable to other characteristics besides those mentioned already. They are: shape of seeds (round or wrinkled), shape of pod, arrangement of flowers on stem of the plant, branching, surface of the fruit, surface of foliage.

The principle of dominance and recessiveness which consists respectively of the presence or absence of a certain definite factor is equally applicable to animals. In normal conditions color inheritance has been well studied from this standpoint. Pigmentation has been shown to be dominant to absence of pigment. L. Cuenot (*La loi de Mendel et l'hérédité de la pigmentation chez les souris*, *Compt. rend.*, Paris, T. 134, p. 779) demonstrated that by crossing gray with white mice, one obtains in the second generation both kinds of mice and in the ratio of 3 grays to 1 white. The same may be observed by crossing gray rabbits with white ones. C. C. Hurst (*Linn. Soc. Jour. Zool.*, 1905, XXIX, p. 283) studied the color inheritance

in a variety of rabbits called "Dutch." In this fowl the hind part is colored, gray or black; the front part is white with the exception of a small portion on the ears and under the eyes which is gray or black. The crossing between a self-color and a Dutch gives in the first generation only self-color, and in the second generation 3 self-color to one Dutch. This fact proves that the Dutch is a recessive.

The color of eyes presents interesting data from this standpoint. The pigmentation of the iris is the cause of differences in eye-color. Hurst has shown that brown eyes contain pigment, blue eyes are characterized by absence of pigment. The presence of brown pigment behaves as a dominant, while the absence of it—as a recessive. In albinos pigment is totally absent and the reason the eyes appear pink is because the light penetrates through a transparent iris. Albino behaves as a recessive to gray or black which are dominant. By crossing two pure albinos one obtains only albinos.

Albino should not be confused with whiteness; while in the first there is fundamental absence of pigment or rather absence of chromogenic substance, as Cuenot expresses himself, the latter may be caused by mere temporary suppression of the pigment producing factors. A mating between such whites may result in colored offspring in the second generation, a fact which is in accord with the principle of segregation described above. When an albino is crossed with a colored individual, the real absence of pigment in the first will be demonstrated if the particular color of the other individual happens to be recessive. In such cases the albino factor will be the dominant and will be manifested even in the first generation. The presence of the dominant albino element will bring breeds in which the color of the other mate will appear altered. Should the color of the other individual be dominant, we will find in 2nd generation 3 colored to one albino, the same constant ratio mentioned above. For example, on crossing a gray rabbit with an albino (gray being a dominant), the result will be: in the 1st generation gray; in the 2nd generation 3 grays to 1 albino.

These several examples tend to prove that colors in animals as well as in plants may be altered by suitable matings. The latter must follow the laws of dominance and recessiveness. This law has been observed in many other individual characteristics besides those already

mentioned. A very curious and interesting phenomenon is the hereditary transmission influenced by sex. T. B. Wood, for example (*Journal of Agricultural Science*, V. 1, pt. 3, p. 364), crossed horned (male and female) and hornless (male and female). In the first generation all the male elements had horns, the females had no horns. The horned character is dominant in males and recessive in females. The 2nd generation presented all types, viz.; horned and hornless males or females, and again in ratio of 3 to 1.

The influence of sex on inheritance can be also seen from the well-known condition called color-blindness. According to Bateson, 4 per cent. of the male population in Europe and less than 0.5 per cent. of the female are color-blind. Color-blindness is a dominant characteristic in male and recessive in female. The same author speaks of the records of seven color-blind women whose 17 sons were all color-blind. These facts point to a possibility that the female organism contains some element which inhibits or interferes with the effect of the dominant element.

This so-called sex-limited condition may be observed in other directions than color-blindness.

Doncaster, for example (*Proceed. Camb. Philos. Soc.*, XIII, pt. I, p. 35; 1904), has shown that the largest majority of tortoiseshell color of cats are females, while those of orange color are mostly males. Orange color is dominant in males. Tortoiseshell color is the result of combined influence of orange and black. The dominance is incomplete or imperfect in females, hence—tortoiseshell color.

Extensive experimentation with regard to variations or limitations produced by sex, particularly the investigations conducted by Bateson and Punnett (*Proceed. Camb. Philosoph. Soc.*, 1905, XIII, p. 165), in matings between certain fowls, such as silkies with unpigmented shanks, all tend to prove that sex is a problem which is governed by Mendelian laws. The fact that the above mentioned interference with the operations of a dominant factor occurs constantly in females, but not in males, leads one to conclude that femaleness itself is due to the presence of a dominant element.

The study of inheritance in man on Mendelian plan with regard to normal characteristics is still in its incipiency. Some advance has been made in the study of a few features,

such as color of the eyes, the color and the general character of the hair, of stature. But unlike animals or plants in which, as it was mentioned above, the rules are simple, in man a great multiplicity and diversity of factors have an influence on the transmission of normal hereditary characteristics which therefore render the problem quite complex. However carefully collected and recorded pedigrees are apt to bring light into this difficult subject. The studies of Hurst on eye-color, of Bell and Rizzoli on hair, of Mudge on mulattoes (*Nature*, 1907, Nov. 7), of Galton on stature, prove that the proper effort in collecting data on normal characteristics through generations may render invaluable services in the study of Mendelian inheritance.

The study of abnormalities and of pathological conditions has been more fruitful. The reason of it undoubtedly lies in the facility with which striking dominant factors can be elicited and traced from generation to generation. Speaking generally, it is established that abnormal features play the role of dominant in relation to normal features. Nettleship (*Report of Royal Ophth. Hosp.*, in London, 1905; XVI, p. 1) observed that various forms of cataract have played the role of dominant in his series of cases and he could trace them in several generations in which the pathological condition was transmitted chiefly through the affected members. He also reports a history of congenital night-blindness in nine consecutive generations (*ibid.*, 1907, XXVII) and all occurred through the affected persons. Night-blindness, therefore, behaved as a dominant factor. Various other eye affections have been found to be dominants, such as glaucoma, coloboma, ptosis and others.

Some skin or hair affections have also been traced as following Mendelian laws of heredity. Gossage (*Quart. Jour. Med.*, 1908, p. 331) speaks of keratosis palmaris and plantaris, xanthoma, telangiectasis, hypotrichosis congenita familiaris.

Polydactylism has occasionally been observed among other malformations as following Mendelian laws. Fotherby, Tubby, Lewis and Embleton described such occurrences. In two cases that came under my observation I was able to trace the malformations through four and three generations respectively.

In the first case, there are supernumerary fingers on both hands. The individual, a girl

of 14, was under my care for neurotic manifestations. A prolonged and careful inquiry of the parents and relatives revealed the presence of physical peculiarities with regards to fingers in many members of this family. I was able to obtain data on four generations.

1st generation.—Great-grandparents—both normal.

2nd generation.—Grandfather had six fingers on the right hand, but not on the left. Grandmother normal. One brother of the

one common base; the sixth is considerably shorter than the 5th. On the left hand, the 5th and 6th metacarpal bones are equal in length. Besides, the 1st and 2nd phalanges of the 6th finger are bent at a right angle and are ankylosed. It was impossible to determine with any degree of accuracy whether the last deformity as well as the mode of origin of the 6th fingers existed in any member of the 4th generations. The family came to this country from Austria. The grandfather was an Austrian, the grand-



Case I.—Polydactylysm. Six fingers in each hand. Note common base of 5th and 6th metacarpals of right hand and different formation of same metacarpals in left hand. Angle formation of left 6th finger. Polydactylysm in four generations.

grandfather had six fingers on both hands. Two sisters were normal.

3rd generation of 8 children.—Father—six fingers on both hands. 4 male children—normal. 3 female children—six fingers on both hands. Mother normal.

4th generation—family of parents; 11 children. Five boys—normal. 4 girls—six fingers on both hands. 2 girls—six fingers in one hand, and in both cases in the right hand.

Of all the females, my patient is the only living. The other girls and 3 boys died at an early age from various acute infectious diseases.

The radiograph of the patient's hands (Fig. 1) shows a difference in the origin of the supernumerary finger in either hand. On the right side, the 5th and 6th metacarpal bones have

mother French. With the exception of my patient, who was born in this country, all were born in Austria. No consanguinity could be traced in any of the marriages.

An analysis of the several generations from the standpoint of the abnormality shows the presence of a remarkable correspondence to Mendelian requirements. Beginning with the 2nd generations, there was one parent affected and the other unaffected. The polydactylysm behaved as a dominant factor. The marriage of the person having this dominant with a normal resulted in children of about equal numbers, affected and unaffected.

In 2nd generation we find: 2 males affected; 2 females unaffected.

In 3rd generation: 4 males—normal; 1 male—affected; 3 females—affected.

In 4th generation: 5 males—normal; 6 females—affected.

The fact that in the first generation both parents were normal does not disprove the fact that the abnormality did not exist. It evidently existed but in a potential form, and segregation of the characteristics apparently commenced in the 2nd generation. This phenomenon is identical to what we have seen in plants (see above).

It is also interesting to observe the phenomenon of sex-limitation in our case. Beginning

from the Mendelian standpoint. I was able to trace the deformity only in three generations, but not all the members presented it simultaneously in both feet.

1st generation.—Grandfather had six toes on the right foot and the toes were much longer than those of the left foot. His two brothers were normal. He had no sisters. Grandmother normal.

2nd generation.—Father—deformity in both feet. 2 brothers—deformity in both feet. 1 sis-



Case II.—Polydactylysm. Six toes in each foot. Note the different formation of the supernumerary toes in the right and left foot. Polydactylysm in three generations.

with the 3rd generation the females appear to present the largest number of individuals affected with the abnormality. The above discussed role of sex in inheritance finds its support in the interesting manifestation of our case.

The 2nd patient (Fig. 2) was an imbecile, 15 years of age, who presented polydactylysm in his feet. Each foot had six toes; the 5th or last metatarsal bone of the right foot is very thick and its large head is continued by two toes (5th and 6th). On the left foot the 5th metatarsum is divided in its middle portion into two branches which give off two toes (5th and 6th). It took considerable time and labor to investigate the family tree of this patient. The result of the inquiry was very gratifying

ter—deformity in right foot. 3 sisters—normal. Mother—normal.

3rd generation.—Patient—affected (both feet). 2 brothers—affected in right foot. 2 brothers—affected in both feet. 4 sisters—normal.

These families were all Italians. The father immigrated to this country two years ago with his children, all born in Naples. The brothers died at an early age soon after they reached United States. They were mentally somewhat below normal; two had epilepsy. The mother had several miscarriages. A Wassermann test made on the patient's serum two years ago proved to be positive. The patient died from pneumonia six months ago. No consanguinity was present in the parents.

An analysis of the cases from the standpoint of Mendelian inheritance shows the polydactylism to behave as a dominant. I was unable to establish the presence or absence of the dominant factor beyond the first grandparents. In the latter the polydactylism is present in all intensity. In the 2nd generation we find about the same number of affected and unaffected individuals (4 to 3). In the last generation the proportion is 5 to 4.

Besides polydactylism, other varieties of finger and hand malformation have been observed, as playing the role of dominant and following Mendelian laws of inheritance. Brachydactyly, for example, was reported by Farabee (in Peabody Museum of Amer. Arch. and Ethnol., Harvard Univ., III, 3; 1905; p. 69) and Drinkwater (*Proceed. Royal Soc. Edinburgh*, XXVIII; 1908; p. 35). The first observed through 5 generations shortening of fingers and toes which had only one phalangeal articulation. The second author traced the same peculiarity in 7 generations.

Cases of "Spalt-Hand and Spalt-Fuss" traced through several generations were first described by W. Kummel in *Bibliotheca Medica*, Abtheil. E., Hft. 3, 1895. The deformity consists of the existence of a deep cleft in hand or foot, each of which contains two fingers and two toes respectively between which the cleft is situated. An excellent account of such deformities as well as of other defective conditions associated with this deformity, such as syndactyly or ectrodactyly is given by T. Lewis and D. Embleton in *Biometrika*, March, 1908, v. VI, part I, p. 26. They collected 180 individuals through five consecutive generations. More recently, K. Schlatter (*Correspondenz-Blatt f. Schweizer Aerzte*, Feby. 21, 1914) reported 19 cases of syndactyly in 33 members of one family in the course of four generations. The family transmission of the deformity seemed to conform to Mendel's law of inheritance.

More recent investigations show that certain diseases have been traced in several generations of the same family and followed quite closely Mendelian plan. Thomsen's disease, pseudo-hypertrophic muscular paralysis, retinitis pigmentosa, diabetes, hemophilia, are the few affections which have been studied from this standpoint.

More elaborate studies have been made on transmission of morbid hereditary features in

mental deficiency and psychoses. The most interesting account is presented in recent contributions by G. L. Cannon and A. J. Rosanoff in the *Journal of Nervous and Mental Diseases*, 1911, p. 272 and by A. J. Rosanoff and F. I. Orr in the *Amer. Jour. of Insanity*, v. LXVIII, p. 221. They all examined a very large number of pedigrees of patients in Kings Park State Hospital with the utmost care. Comparing their statistical data with the theoretical possibilities according to Mendelian laws, one is struck with the remarkable correspondence between the two. Six different matings are considered by them and the conclusions to which this study leads are most significant. In view of their practical, viz.; sociological interest, they deserve to be emphasized.

(1). Both parents being normal and of pure normal ancestry, all children will be normal and not capable of transmitting the neuropathic make-up to the offspring.

(2). When both parents are neuropathic, all children will be neuropathic.

(3). One parent being normal, but with neuropathic taint from one parent, and the other parent being neuropathic, half the children will be neuropathic and half normal, although capable to transmit the neuropathic tendency to their offspring.

(4). One parent being normal and of pure normal ancestry and the other parent being neuropathic, all children will be normal but capable of transmitting the abnormal tendency to offspring.

(5). Both parents being normal but each with a neuropathic taint from one parent, one-fourth of the children will be normal and not capable of transmitting the neuropathic tendency to offspring; one-half will be normal but capable of transmitting the neuropathic make up; the remaining one-fourth will be neuropathic.

(6). Both parents being normal, one of pure normal ancestry, the other with a neuropathic taint from one parent, all the children will be normal, half of them capable and the other half incapable of transmitting the neuropathic tendency to offspring.

An analysis of the results obtained from crossing plants or from mating animals possessing certain characteristic units, the observations on transmissions of bodily defects and malformations, as polydactyly or brachydactyly, of certain diseases, of mental deficiencies

and of neuropathic tendencies, such as described above, analysis of all these accumulated data points strongly to the existence in the original parent germ-cells of a definite factor or determiners which possess the power of transmitting certain characteristic units. What these factors actually are, in the light of our present knowledge, we are as yet unable to say, but we do know their potentiality. We know that they are capable to transmit certain color, certain shape, certain make-up of mind. The differences in individuals and species are unquestionably due to those same factors. Moreover, the facts related above demonstrate with evidence that hereditary transmission is accomplished according to strict laws and in a regular manner. No individual can transmit to the offspring a character-unit which he or she has not possessed.

This knowledge of inheritance tends to prove that the old conception concerning variation of individuals and species is not tenable. For the same reasons the Darwinian principle of natural selection as being the main cause of the variability of plants and animals does no more hold a solid ground. Neither the idea of survival of the fittest in the struggle for life can give the clue to the existence of the great variability of races and individuals.

Mendelian laws of heredity prove, in my opinion, beyond doubt that variation is the result of special crossings in which addition or loss of special characteristic units plays the most essential role. The importance of dominance and recessiveness cannot be overestimated. Once the special units of character exist, they are permanent and cannot be obliterated. Their segregation is only a distribution, but they invariably come out in subsequent generations. Species and their variations depend exclusively on special crossings. Consequently, variation of individuals and races is a definite occurrence based on definite combinations of segregated character-units. The conception of evolution, therefore, can no more admit a gradual transformation of individuals by gradual additions of imperceptible changes, but it must admit that those changes are controlled by physiological laws and that each new apparently additional character has in reality existed in the germ-cell of the individual. These newer ideas of biological diversities which are founded on physiological observations and analytical breeding lead us directly to great pos-

sibilities in the domain of genetics and, consequently, to eugenics.

It is evident that the composition of members of society can be predicted and therefore controlled. Elimination of undesirable strains by forbidding marriage of individuals possessing them, encouragement of marriages of individuals with desirable elements,—these are the two sociological problems that should appeal to an enlightened community. We know that consanguineous marriages tend to transmit to the offspring the same defective character-units which both parents possess in their germ-plasm. Beginning with the second generation, multiplicity of abnormal children may thus be created. As society has the right to protect itself, it certainly possesses all the prerogatives for forbidding marriages among relatives. Especially strong interference should take place in consanguineous marriages among feeble-minded, alcoholics and syphilitics. But if matrimony has not been prevented, the normal offspring should be directed to marry only normal individuals possessing a normal pedigree, but not to select their mates indiscriminately. If the abnormal offspring cannot be prevented from marrying, they should be directed at least to marry normals possessing a normal pedigree. By these precautionary measures we mate two individuals one of whom is characterized by absence of the special determiner which is capable to produce a certain neuropathic or otherwise abnormal characteristic unit. Thus, the pedigree in these cases will present a considerable sparseness as far as neuropathic elements are concerned. Castration in both sexes, vasectomy, are other measures which enable us to prevent the production of generations of abnormal types. Much has been said in certain quarters against them but the voices raised come from individuals who were either prompted by sentimental motives or else are not familiar with the laws of heredity as described above, with the power of transmission of character-units once they originate in the germ cells, with the constancy and regularity of this transmission. Segregation of persons with a marked neuropathic inheritance during the reproductive period of life is still another prophylactic measure in our endeavors for disappearance of abnormal character-units in successive generations and therefore for improvement of our race.

The foregoing analysis of our knowledge of

laws of heredity directs us physiologically so to speak to the proper understanding of breeding or crossing. Herein lies the fundamental principles of formation of certain characteristic features of individuals and races and of the manner with which varieties and species arise. The entire phenomenon of heredity is merely a phenomenon of individuals and controlled by precise and specific physiological laws. A profound knowledge of the principle of inheritance enables one to grasp the fact that the character of the component elements of human society can be greatly controlled. Consequently, the proper conception of eugenics is the direct outcome of this fundamental knowledge.

1812 Spruce Street.

MIS-DIAGNOSED CASES OF COMPRESSION OF THE SPINAL CORD.*

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Compression of the spinal cord presents a syndrome so clear that there should be no mistaking it; yet the cases here reported show for how long a period this condition may be overlooked, to the great suffering of the patient. One of the patients was treated for rheumatism for several months; and the disease was only detected when aneurism was suspected and a consultant called, who quickly found the need of a neurologist, by whom the diagnosis was at once made. Another patient went for a week without a correct diagnosis, although suffering acute pain, an alienist having diagnosed infantile paralysis. In another case, a different alienist entirely overlooked the spinal condition, mistaking a toxi-infectious psychosis, which had succeeded a small dose of narcotics for dementia precox, and sending the patient to an asylum, from which, of course, she was discharged in a few days. None of these errors would have been made had a proper neurological investigation been conducted clinically; but an examination of the reflexes or the sensibility seems to be the last thing to enter the head, even in cases where severe pain is accompanied with no objective signs in connective tissues or muscles. The all-too-ready diagnosis of "rheumatism" is made without proper investigation.

Case I. *Radiculitis Productiva Syphilitica with Compression of Cord.* A woman of 29.

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who had consulted an alienist a week before, who diagnosed poliomyelitis, was seen with Dr. Charles White. She had a history of gradually increasing weakness of the legs, with pains for some months, and a sudden paraplegia two weeks before.

Examination showed marked atrophy of the lower extremities, and complete helplessness with the exception of slight capacity to extend the right hip and flex the right leg. There had been muscular twitchings and cramps in the night. Decerebrate movements were easily provoked upon stimulating the skin. Sensibility to pin prick was absent below the knees and was much dulled in the thighs and lower abdomen as far as the 11th thoracic segment; the deep reflexes were absent and there was extension of the great toe on stroking the sole. The diagnosis was spinal and radicular compression by a growth, probably granulomatous. A lumbar puncture was recommended to decide its nature. On examination, the fluid, slightly yellow, was reported to contain 38 lymphocytes per c. mm., and a considerable increase of protein.

The diagnosis made was syphilitic radiculitis; the prognosis given was good, and salvarsan was given 4 times intravenously. One month later, the muscular weakness was greatly diminished, the patient could walk quite well, the sensibility had returned save a slight dulling in the feet, the plantar reflex was no longer in extension; only the patellar reflex was still absent. Two weeks later the cerebro-spinal fluid presented only 11 lymphocytes in the c. mm.

Case II. *Radiculitis Productiva Tuberculosa with Compression of Cord.* A widow of 23 had sudden pain in the back and knees three months before I saw her for Dr. W. Earle Clark. One month before pain became worse, and retention occurred; there was also constipation, headache and pain in the shoulder and she became delirious for three days after receiving five grains of trional and one-sixth of a grain of heroin. She was seen by an alienist who, diagnosing dementia precox, sent her to an asylum from which she was quickly returned; the pains, however, did not cease.

Examination showed great inequality of the reflexes, that of the right patella being greatly exaggerated; while the Achilles reflex on that side was absent and there was plantar flexion.

The left side, on the contrary, showed a normal patellar reflex, while the Achilles jerk was increased to the degree of clonus. Although the plantar response when stroking the sole was extensor, when the fibular border of the heel was stroked the great toe flexed. The gluteal and the left upper abdominal reflexes were very feeble. Sensibility to pin was much diminished in the lower two-thirds of the legs, especially the left; and over the 3rd, 4th and 5th sacral segments in the gluteal region: deep pressure was very unpleasant over the Achilles, especially in the left; there was hyper-aesthesia over the 3rd, 4th and 5th lumbar vertebrae.

The motility was much impaired, especially in the left leg, where all the movements were absent except the extension of the foot and hip. On the right side she can also feebly reflex and extend the thigh. The iliopsoas was very weak on both sides; but abdominal strength was retained and the gluteal was fairly strong. Faeces and urine were retained without consciousness of their presence. There had been cough and expectoration for some years, and the patient, a small woman, had lost 20 lbs. since last October.

The diagnosis made was a granulomatous condition of unequal distribution over the sacro-lumbar roots, compressing the spinal cord at least as high up as the first lumbar segment. The nature of the growth was believed to be tubercular and a lumbar puncture was recommended. The fluid was reported to contain 98 white cells to the cubic millimetre, of which two-thirds only were lymphocytes, and an enormous increase of protein.

This opinion was afterwards confirmed by the bony deformation which occurred while the patient was supine on a frame which was designed by Dr. Erving to keep the parts at rest. After some weeks of great weakness, mental depression, nervousness, insomnia, lack of appetite and an aggravation of the spinal irritation, shown by the painful cramps and startings of the lower extremities, the patient turned the corner, thanks to careful nursing at Miss Thompson's sanitarium, well chosen dietary regulated by Dr. Earle Clark, and persistent psycho-therapy by myself. When the hot weather began, she went with her mistress to the North; and is still there, greatly improved, having gained 20 pounds in weight, the active irritations having completely subsided, the sensory defects having greatly im-

proved, and considerable motility having been recovered, so that the patient could move about on crutches.

Sclerotic conditions may simulate compression. But they differ both pathologically and in clinical signs. For example, the cord changes in pernicious anemia are due to the permeability or friability of the blood vessels, in consequence of which an exudate of plasma escapes into the cord and destroys portions of it, generally in an irregular fashion; so that there is not a system disease properly speaking. Of course, if there is a focus low down in the posterior column, there will be an ascending degeneration just as one finds in tabes dorsalis, consequent upon the involvement of the posterior roots in syphilitic lepto-meningitis. Again, if the exudates occur in the lateral columns, we may find spastic symptoms because of the implication of the crossed pyramidal tract. As a rule, indeed, the sclerosis which ensues upon the exudates, is scattered in such a way as to create the clinical picture known as mixed sclerosis, which easily distinguishes it clinically from tabes dorsalis. In syphilitic endarteritis, however, we may find a similarly diffused process; so that the differential diagnosis must be made from the condition of the blood.

In a case seen with Dr. D'Arcy Magee in 1912, the clinical picture was so characteristic and severe that the diagnosis was made from that alone, to the profound surprise of the attendant physician who had not suspected anything of the kind. A very bad prognosis was given. The blood examination confirmed the diagnosis, and the patient died in six weeks. In another case seen with Major Johnstone at the Walter Reed Hospital, and also unsuspected until examination of the nervous system, the blood picture was less typical and considerably improved by treatment. A better prognosis was permitted by the more gradual onset of the changes in the cord.

The resemblance of the pernicious anemia cord picture to that of compression is only superficial, and because of the preponderance of the lower limbs in the clinical picture. A proper neurological examination will, however, in most cases reveal perturbations of the functions of the upper extremities also; and the absence of pain in conjunction with the diffuseness of the lesions enables us to exclude spinal compression.

Serous Meningitis.—A condition often very widely diffused and very puzzling in diagnosis which gives many of the signs found in cases of pernicious anemia, such as spasticity, paraplegia, numbness, tingling, burning, cold sensations, formication, disorders of attitude sense, and, perhaps, muscular weakness, is serous meningitis, and I append a carefully observed case in which compression was diagnosed and the true condition only suspected and verified at operation by Dr. W. P. Carr, who had referred me the case.

(*To be continued*).

1705 N Street, N. W.

ENLARGEMENT OF THE PROSTATE—AN OPERATION LESS DANGEROUS THAN THE CATHETER.*

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The method of handling the victims of prostatic hypertrophy and its serious effects upon the urinary organs, presents to the attending doctor problems necessitating careful consideration of first, the dangers of the disease; second, the dangers of the treatment.

The dangers of the disease have always been and will continue to be the same progressive hypertrophy of the gland, progressive elevation of the posterior urethral orifice and neck of the bladder, progressive atony with thickening and dilatation of the bladder, hydronephrosis and kidney break down, infection of the gland, bladder, ureters and kidneys, vesical calculi and malignant disease, all the pernicious effects of urosepsis, distressing pain, loss of sleep, and the final breaking down of the patient's general constitution plus the intensification of cardio-vascular sclerosis incident to old age. No one expects prostatic hypertrophy to subside spontaneously, and patients do not have to be advised to seek treatment—they demand it.

For many, many years, the only treatment which would produce even temporary urinary relief, with a minimum risk of immediate death, was the use of the catheter. The dangers of the catheter have always been the same, namely, traumatism followed by infection of the urethra, prostate, and bladder. Occasionally the end of a catheter would remain in the bladder as a foreign body. In the olden days

the patient applied the catheter treatment, carrying the instrument around with him in his hat band and using it as necessity demanded. The necessity for asepsis caused doctors to use the instrument more or less systematically themselves, and to teach patients the principles of surgical cleanliness. In spite of the catheter, certain cases have always been the victims of retention of urine and inability to introduce the catheter on account of temporary engorgement of the prostate. In former years, and this was not long ago, when the introduction of the instrument was impossible, suprapubic puncture of the organ was made and a fistula established. Until just a few years ago such palliative treatment was the best to be employed because the disease and this treatment were less immediately dangerous than radical operation directed to removal of the gland.

With such a disease and such a treatment of one complication, retention of urine, by the addition of another, catheter traumatism and infection, the progress must inevitably be toward death, and if these old patients can live long enough, they all die from the direct effects of prostatic hypertrophy or of the use of the catheter. Think of it, 100 per cent. mortality within less than four years; 66 2/3 per cent. within two years and eight months (Squier).

Apart from the crippling effect and the dangers to life of ordinary benign senile hypertrophy of the prostate, there are certain complications present in a sufficiently large percentage of cases, of themselves to demand surgical treatment. About 25 per cent. of the cases, for example, are complicated by stone, either in the bladder or sometimes in the prostate itself. It is estimated that from 10 to 20 per cent. of cases, if allowed to progress, will undergo malignant changes and become cancer. Every case in which the catheter is employed will be complicated by inflammation of the gland, and this is followed by inflammation of the bladder, ureters, kidneys and other regional structures. Recurrent attacks of epididymitis occur so frequently that patients are never surprised at its development. The increased blood pressure produced by the straining efforts at urination and vesical tenesmus intensify an already existing arterio-sclerosis and cause dilatation of the heart. Interstitial nephritis is made worse in

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every case. Inguinal hernia and hemorrhoids, when they exist co-incidentally, are made worse and sometimes they are believed actually to be caused by the straining resulting from urinary obstruction.

All of us see victims of the catheter habit die within two or three years from the beginning of its employment. Such mortality when considered with the morbidity incident to urethral chills, pain, bleeding, loss of sleep and general debility, convinces us at once that such palliative treatment does not palliate, but is distinctly harmful. When the situation is conscientiously studied, any one who has handled many of these old gentlemen and seen them go from bad to worse under the catheter life, will fully realize that the catheter, to prostatics, is a dangerous instrument. Its ability to give temporary relief from a distressing situation, to be repeated within a few hours, constitutes no valid excuse for failing to advise that the patient be cured of his trouble.

Since the modern operative treatment of these cases, based upon technique which is satisfactory, and guided by surgical judgment which permits dealing with a handicapped patient in a way to get perfect results, operative treatment of prostatic hypertrophy can be easily demonstrated to be attended by much less actual mortality and infinitely less morbidity than any so-called palliative treatment. Under these circumstances, it is quite proper for us to claim and advocate the radical curative treatment of prostatic hypertrophy as less dangerous, less distressing, less time-consuming and more humane than the repeated use of the catheter.

An ordinary case of prostatic hypertrophy presents three clinical stages in its development. The earliest stage is characterized by moderate enlargement and a small amount of residual urine, necessitating frequent calls to empty the bladder day and night. In this stage the gland is only slightly enlarged and this is the ideal time for operation.

The second stage is characterized by an intensification of these symptoms and occasional attacks of retention of urine incident to sudden change of the weather from warm to cold, a few drinks of beer or other alcoholic beverage, constipation and many other so called "little things" which precipitate retention of urine, nature's pleading for operation. If the pa-

tient in this stage gets sick with any incidental affection, his condition at once becomes critical. In this stage of hypertrophy, operation should be urged as necessary for the cure of the disease and less dangerous than the so-called catheter life, or more appropriately, catheter death.

The third stage of the disease is characterized by partial or complete retention of urine necessitating the frequent use of the catheter. In this stage all cases are infected. I have for a long time contended that the infection is first of the prostate gland. This, however, soon extends to the bladder and is accompanied by urethritis. The infection sooner or later involves the entire genito-urinary apparatus. The patient is now in a condition of very grave danger to life and, unless handled with the greatest care and sound judgment, is liable to die from almost anything. Bronchitis, uræmia, apoplexy, pneumonia, plain ordinary sepsis, may take them off, and the doctor's conscience may be soothed with the thought that death was not directly due to the prostatic disease, but to "a complication of diseases." At any rate the patient is entirely dead, much more completely so than if he had been operated upon, and much sooner.

Operations in the early stage of the disease, apart from indications based upon the pathology, are very positively preventive of complications of the disease and the necessity for operations of gravity in older and less tolerant subjects, and bears the same logical relation to the treatment of old men the victims of hypertrophy, as does vaccination in the prevention of small-pox or the administration of anti-toxin in the prevention of diphtheria.

Operation in the second stage is absolutely indicated for the very sensible reason that the modern operation is definitely curative and, when compared with the disease or with the use of the catheter, is considerably less dangerous.

Radical operation in the third stage of the disease need not be necessary if it is performed in the first or second stage. Patients in the third stage, through preliminary suprapubic cystotomy and drainage, can often be cured of their infection and placed back in the second stage, so far as the gland and urinary organs are concerned. Suprapubic cystotomy is a much safer operation than the frequent or continued use of the catheter, can be performed painlessly under local anaesthesia (and this cannot be

said of the introduction of the catheter), the drainage is complete, the bladder and prostate placed at rest and protected from traumatism. As a rule when this is done, within a variable length of time, depending upon the severity of the complications, the patient can be placed back in the second stage of the disease so far as the gland, bladder and kidneys are concerned. If the patients are too old, the sepsis is too severe and the kidney function too much impaired, this is all the operation that can be safely performed. Even in this condition, however, they are more comfortable and subject to less danger through cystotomy than they are through the continued use of the catheter.

After making the diagnosis, which is so easily done, even by casual examination, it can scarcely be questioned that our duty is to advise radical treatment. The modern technique of the radical operation for the removal of the gland has placed the operation itself in a class which, but for the age of the patient, could very properly be considered a minor operation. In spite of the age of the patient, however, if the case has not been complicated by sepsis incident to the use of the catheter, patients are usually very good risks for the modern, simple, easy and quickly performed operation, with a mortality in the hands of a qualified surgeon of less than 5 per cent. A complete cure and the patients living more than four years is the result in 87 per cent. (Squier).

The technique devised by J. Bentley Squier of New York has simplified and facilitated the operation so much that it can be justly claimed and the figures conclusively show, that this method of prostatectomy is less dangerous and should be unhesitatingly advised as preferable to the continued use of the catheter.

We have treated all cases during the past three years by this technique with uniformly good results in every case which could have been benefited by any procedure. We have had one death following the operation, probably due to apoplexy, in an old negro, the victim of uraemia and sepsis because of catheterization.

The technique of the operation need not be elaborated here. Qualified surgeons the world over are sufficiently familiar with it. The essential principles in Squier's technique include a high incision in the bladder and intra-urethral enucleation of the gland. Personally, I

make a transverse incision of the skin and fascia, a vertical retraction of the muscles and fat in the suprapubic space of Retzius, and a transverse incision of the bladder at the highest point. With the index finger of the right hand inserted into the posterior urethral orifice until the triangular ligament is felt, the roof of the prostatic urethra is punctured and the finger comes at once between the two lobes. The line of cleavage for enucleation can always be felt and there can be no error for the finger has not come in contact with the so-called "false capsule" wherein are located the blood vessels. By enucleating in this manner from the urethra to the bladder, the gland is completely removed without tearing the false capsule or any blood vessel of size. Bleeding is never excessive and a little hot irrigation from the meatus washes out the material from the bladder and at once checks the oozing. A drainage tube is sewed into the wound for two or three days, after which it is removed and the dressings are kept dry by frequent changing.

The operation thus described requires from ten to twenty minutes from the time the incision is made until the dressings are applied. All but the actual enucleation of the gland can be done under local anaesthesia and while the suprapubic incision is being made, the patient can be put under very light ether or gas anaesthesia. It requires five minutes or less of light general anaesthesia while enucleating the gland.

A very important practical point worthy of strong emphasis is the necessity for doing the operation in two stages in those cases complicated by sepsis. When we get the patient before the catheter complication has arisen, a complete operation can be done at one sitting.

An essential part of the treatment of every case is the employment of a special nurse who is interested in this kind of work. The patient's bladder can be irrigated by way of the kidneys by causing him to drink large quantities of water by mouth. Sometimes it may be introduced into the bowel, but the proper nurse will cause them to drink the water. No old man's habits should be radically changed. Ample bed clothing must be provided, regular meal hours observed, the same kind of tobacco and liquor to which they may be accustomed must be provided, and, above all, they should not be permitted to take cold. This

is no time to convert a patient from warm room ideas into a fresh air fiend. We always plead with the patient's family doctor for advice in treating the patient and when his home doctor is not accessible, we secure a competent physician to attend the patient during the entire period of preliminary and post-operative treatment. They do not need much treatment, but they do need careful watching, abundant boosting and good nursing.

During the past three years we have operated in the Memorial Hospital upon about a dozen of these cases with one death. This occurred before we appreciated the importance of a preliminary suprapubic cystotomy and prolonged rest to the urinary organs. All the other cases have recovered completely within three weeks and have had no sequelae of any kind. An abstract of these will be reported subsequently in a series of articles being prepared by the writer reporting his own work in conformity with the belief expressed in an article recently published on "*The Standardization of the Surgeon.*"

501 East Grace Street.

THE PREVENTION OF CEREBROSPINAL SYPHILIS.*

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The question of the prophylaxis of syphilis of the nervous system goes hand in hand with syphilis in general and this in turn is essentially the problem of prostitution. Since the latter has been with us for centuries in spite of efforts to control it by such State laws as registration and inspection of prostitutes, and since such Utopian dreams as the eradication of the sources of syphilis are unreasonable, it behooves the medical profession to limit its ravages as much as possible. Syphilis is most certainly a curable disease, much more so than tuberculosis, and the blame for the flourishing of the disease should not be placed entirely on the shoulders of the sufferer. We physicians who treat these cases can be blamed for many of the disastrous results which complicate the disease. A more thorough knowledge of syphilis on our part and increased perse-

verance will prevent some of the helpless cases of cerebrospinal syphilis which now fill our asylums.

We are still inclined to take too much for granted, to rely too much on the histories of our cases and not enough on what we know, or should know about the latency of the disease.

Jelliffe¹ says that he relies with considerable confidence on a completely negative history of syphilis. Pollitzer's² experience teaches him that the mild cases without cutaneous lesions are the ones which most frequently develop syphilis of the nervous system, while White³ of Boston gives statistics to prove that only three-tenths of one per cent. of his cases had exhibited any late skin lesions. Nichols⁴ believes that any active lesion in one part of the body will inhibit the development of lesions in another part of the host which may account for the above facts. This is enough to show that with histories and clinical examinations alone one is unable in many cases of obscure syphilis to make a satisfactory diagnosis. Even the therapeutic test of antisyphilitic treatment is, according to Rumph and Fournier, not always accurate proof of cerebrospinal syphilis, they having seen several cases of brain gumma which failed to respond to such treatment. Gowers and Nonne⁵ emphasize the fact that syphilis of the nervous system produces no symptom or group of symptoms which might not be called forth by other causes. It is apparently the great imitator in nervous diseases as it is in cutaneous diseases. The great amount of literature on brain syphilis causes one to think that syphilis in this form is of more frequent occurrence than formerly. The modern tendency to give more hospital treatment to these patients probably accounts for the apparent commonness, while the improved laboratory tests and the fact that these sufferers more often seek the services of the specialist also help to discover cases that formerly escaped notice.

In any paper on the prevention of nerve syphilis one must necessarily lay stress on the need of special training of the physician who treats this disease. The syphilitic, partly because of the secrecy with which he surrounds himself and partly on account of his ideas of any port in a storm, in many cases does not get the adequate advice he needs and expects when he consults the profession. The usual medical

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schools do not give a sufficient training to its students for them to handle correctly such a treacherous disease as syphilis. I firmly believe that if there is one disease in all medicine and surgery that requires special study and experience in order to carry it properly through to a successful termination, that disease is most certainly syphilis. The discoveries and methods of diagnosing that apply to this disease are improving and multiplying so rapidly that they are a study in themselves and the busy physician and surgeon has not the time to master them. Take, for instance, the disease pityriasis rosea which is not such an uncommon lesion in this country, and yet how many who treat syphilis understand the one skin disease which most closely resembles macular syphilis. It is almost invariably diagnosed syphilis, the patient is put on specific treatment, the disease clears up of its own accord and the victim goes through life branded a syphilitic. According to Rumpf and Naunyn, over 48 per cent. of the specific nervous affections occur during the first three years of the disease. Patrick and Nonne found the disease present in a large number of cases most often during the first year and isolated cases have been reported before the healing of the initial lesion. The fact that the spirochetes attack the nervous system very early in syphilis, probably during the early septicemia, seems pretty well proven by Hoffman⁶ who inoculated a monkey from the spinal fluid of a patient with the early secondary syphilis. Whether or not certain strains of spirochetes have a special affinity for the nervous tissues has not so far been proven but the occurrence of many cases of tabes and paresis in different persons as the result of a common infection points to such a conclusion. This has a great bearing on the future treatment of brain and spinal cord syphilis and probably accounts for the obstinacy of certain forms of the disease to both the intravenous and intraspinal medication. It is impossible so far to prognosticate accurately or point out the cases which will develop paresis and tabes, but if it is proven that certain strains of spirochetes are destined to involve the nervous system, it is strong evidence that these are the cases which will eventually give us general paresis and locomotor ataxia. If we were in a position to present a picture of the morphological characteristics of this special strain, if it exists, then intraspinal injections could be

instituted in the very beginning of the disease with better prospects of the prophylaxis of tabes and paresis by attacking the disease before degeneration were far advanced. At present the nearest we can come to anticipating these cases is to suspect a case with a persistently positive Wassermann in the blood or spinal fluid, which exists in spite of all our present methods of therapy. Such a case calls for the most intense treatment if we are to prevent a calamity to the patient.

It is a mistake to suppose that only a minority of the cases of syphilis develop cerebrospinal complications. Not only as we have seen does it begin very early in the disease, but, if we are to accept the foreign authors, the old ideas of the rarity of it must be changed. Gimereich, Altman,⁷ and Dreyfus have shown by an examination of the spinal fluid that from 70 to 90 per cent. of the secondary cases have nerve involvement. The headaches and sleeplessness of this period which we often attribute to intoxication, hypertension and meningismus they claim often show by the spinal fluid definite nerve syphilis and that the nervous system has during the first septicemia or generalizing of the disease, received its quota of organisms the same as the vascular and osseous system. I do not think that such a high percentage will be found in this country; the different interpretation of the tests or the lack of treatment could account for such a variation in the findings. I was very much surprised a few days ago in examining three successive spinal fluids to find that all were negative to the Wassermann and globulin tests while the cell count was less than five in each of all three cases. All of the cases were severe forms of syphilis and had double plus Wassermans in the blood less than two months before the spinal tests were made. True, they were under treatment at the time which might have influenced the tests. I was using cholesterinized fortified antigen in my Wassermann's, too, which Swift⁸ has shown will often demonstrate syphilis where the plain antigens fail. With such a large percentage of cases whose nervous system is already involved before our treatment is hardly instituted, it must be reasonable to suppose that in the past we have sent many cases forth very insufficiently treated.

Negative Wassermans in the blood give little insight into such cases and the number of patients that have been discharged with al-

ready beginning or well-developed nerve syphilis must have been enormous. The usefulness of a negative Wassermann in the blood is very much overrated. In the usual case of syphilis it means little or nothing. In certain patients where we suspect nerve syphilis it gives a more cheerful outlook to the case but it should be discarded when prognosticating the usual case of syphilis. The provocative Wassermann blood or spinal fluid test offers a much surer means of both diagnosing and prognosticating it. The luetin skin test is in many cases superior to both. I have recently had three cases with vague clinical symptoms of syphilis which gave negative plain and provocative Wassermanns. All three cases reacted positive to the luetin test and the future course of the cases proved the luetin test correct. One of these cases were recently reported to the District Medical Society by Dr. Tom Williams of this city. While we have allowed so many of these cases of early nerve syphilis to escape our attention, only nature and good luck have prevented the majority of these cases from developing into tabes and paresis. Before the advent of salvarsan and with woefully inadequate treatment, often the percentage of the cases which finally developed into general paralysis and locomotor ataxia were quite low. Pick and Bandler of Prague found in 2066 cases only $4\frac{1}{2}$ per cent. developed para-syphilis. Hjelmann found only 20 cases in every 1000 cases of syphilis. The statistics from the Austrian army⁹ where 4,134 officers were infected showed that 198 developed paresis and 113 tabes. These and other clinical reports go to show the small number which finally become helpless and the great number, probably as many as 75 per cent. which become cured by treatment which they claim has been totally inadequate and in many cases only symptomatic. If these good results are to be had with such little treatment and incomplete laboratory methods, is it not possible with our more modern methods, both diagnostic and therapeutic, to eliminate the remaining 5 per cent? I believe that it is within the powers of the modern physician if he will only insist on the proper tests and treatment being carried out. Paresis and tabes may both be considered preventable diseases, provided that the early cases of syphilis be thoroughly treated, that this treatment be controlled by the proper laboratory tests, and that no case will be discharged

so long as there remains a single test at our disposal which is positive.

To my mind the one single procedure that will give us the safest guarantee against future paresis and tabes is the spinal fluid examination. To discharge a patient as cured before a spinal fluid examination has been made is to discard the one chance he has to escape these two diseases. It seems to me that it is not so much the form of treatment, intravenous or intraspinal, as the intensiveness and thoroughness with which it is carried out, and this in turn, to be done accurately, must be controlled by the proper laboratory tests. I believe that time will show that few cases will require the intraspinal treatment if the intravenous treatment is continued in the early stages of the disease until the four spinal fluid tests are made negative. That such intravenous treatment does reach the diseased brain and cord in sufficient quantity to influence the spinal fluid reactions the above statistics prove, while Dreyfus and others have shown that it will change from positive to negative the four spinal fluid tests even in well developed cases of tabes and paresis.

The inability to influence and cure certain late cases, I believe, is due more to neuropathic action of certain spirochetes than to the lack of interchanging between the blood and spinal fluid. Certainly, it is impossible to eradicate the damage done the spinal cord in tabes by any known treatment, and this holds true even more so with the brain in cases of paresis. Remissions and the psychological effect of a new treatment will account for many clinically stationary or improved cases of both diseases. A case¹⁰ from the literature may be quoted to explain the difficulty of curing cases which have already undergone pathological degeneration.

Male, white, age 38 years, with syphilis of 8 years' duration. Tabo-paresis has developed in the past three years, delusions of grandeur, eye reflexes sluggish and knee jerks absent. Spinal fluid shows 80 cells, globulin++, Wassermann on spinal fluid++, on blood++.

The patient received 21 injections of salvarsan, totaling 9.65 grams, fifteen injections of neosalvarsan, totaling 9.25 grams, thirteen intraspinal injections of salvarsanized serum (Swift and Ellis¹¹ method), four intraspinal injections according to the Ogalvie¹² modification, besides several courses of mercury by in-

jection and inunction. After all this treatment which it would be impossible to give the usual case, the patient seems well clinically except some mental indecision. The spinal fluid test shows a positive globulin test, while the Wassermann on the spinal fluid continues++. This shows the disease still to be present and active, the improved clinical symptoms being due in a great part to a remission in the disease as only thirty days elapsed between the last injection and the report of the case. Both tabes and paresis are characterized by periods of quiescence and such remissions are often governed by the application of new methods of treatment.

Another dermatologist, in reporting advanced cases treated by the intraspinal method, was able to influence all the reactions in but one case in the eleven treated, some cases getting as many as one dozen intraspinal injections. We must remember that it has never been satisfactorily estimated how many injections of salvarsan it takes to cure an uncomplicated case of syphilis, and to employ the unreckoned quantity of the drug used in the Swift and Ellis method holds out little hope of curing any but the very earliest cases of paresis and tabes, or, more correctly, of stopping the process of degeneration in these early cases. Such instances of the apparent failure of the intraspinal method are given with no idea of discrediting a logical application of a good remedy, but rather to point out the fact that we are more or less helpless with any form of treatment in the late cases of cerebrospinal syphilis.

Conclusions.—The prevention of tabes and paresis in the future depends on—

First, A more thorough education of the medical profession of the latency of syphilis and the high percentage of nerve involvement in the early stages of the disease.

Second. The necessity of instituting vigorous anti-syphilitic treatment in the early stages of the disease at the time of the general systemic invasion.

Third, That the provocative Wassermann blood test and the luetin skin test, and not the plain Wassermann blood test, should be used as an index to the future treatment of our cases of syphilis.

Fourth. That a spinal puncture and examination of the spinal fluid should be made on all cases before they are discharged as cured, and that no patient should be considered well of

syphilis in the presence of a positive Wassermann, globulin test or a cell count above eight made on the spinal fluid.

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PATHOLOGICAL CONDITIONS OF THE URETHRA AND THEIR TREATMENT WITH THE AID OF THE URETHROSCOPE.*

By M. C. SYCLE M. D., Richmond, Va.
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Within the last twelve months I have made a number of urethroscopic examinations in connection with my private practice, and work at the Medical College of Virginia Dispensary affords a great opportunity for finding many pathological conditions, both of an acute and chronic variety. Without the aid of the urethroscope we are greatly handicapped. This instrument has a somewhat similar relation to exploration of the urethra that the stethoscope has in the diagnosis of thoracic disease, and it plays a very important role in diagnosis, prognosis, and treatment. Under proper conditions, and with a good light, we can find such lesions as ulcers, granular patches, peri-urethral abscesses, and many other pathological conditions to which I shall allude later. Peri-urethral abscesses and ulcerated urethra are of common occurrence. At the dispensary I found many such cases and, treating them directly through the scope, had many markedly good results. These cases were followed very carefully by the students as well as by myself.

The ulcerated conditions sometimes cause symptoms similar to those of other diseases in which we frequently have pain, pus, blood, and disturbance in urination, being treated, as a rule, without benefit because the operator has

*Read by title before the Medical Society of Virginia, at its forty-fifth annual meeting in Washington, D. C., October 27-30 1914.

made a mistake in diagnosis. Experience teaches that we can recognize such pathological conditions only under correct management by using the urethroscope. I believe we are justified in making examination with this instrument in all chronic states, as diagnosis is mainly dependent upon this. Resulting scars and pigmentations retain their characteristic appearance, and present to the experienced eye incontrovertible evidence of some past infection: a hidden chancre with serous secretion may be seen, or possibly some sign of tubercles or gummata. Foreign bodies in the urethra can be detected and are occasionally removed by forceps, grasping and pulling them out through the tube. Polyps can be removed from the urethra by means of a snare. Appreciating these changes, the clinical forms are easily explained. Papules are prominent on account of filling up the tissue with cellular infiltration and are recognized with the scope on account of intensity of the tissue. The posterior urethra may show many variations and evidences of tuberculosis, strictures and tumors. All these conditions may be treated intra-urethrally by electrolysis and other methods. Ulcerations, which may appear depressed and lack the smoothness and luster of the normal membrane, are very sensitive. Tumors, such as small polyps, may be the cause of night emissions, slight persistent discharge, or disturbances of urination. Venereal warts or papillomatous growths are frequently found near the meatus.

Gleet is not a disease but a symptom due to some ulcerated condition in the urethra. Local applications through the endoscope are, to my mind, the correct treatment, since we can recognize the exact location of the ulcer or granular patch that may cause the discharge and apply the necessary drug for cure with a probe. It can easily be seen how valuable treatment through the scope may be under such circumstances. At the same time, it is well to remember that most of the obstinate or serious inflammatory urethral conditions are situated in the deep urethra and, although such conditions as infected follicles in the pendulous urethra may be treated individually, any existent inflammatory condition situated further along the urethral tract must not be neglected; in other words, good results will not follow the treatment of minor lesions if the more serious ones are overlooked.

There are certain things which should be remembered by those who attempt practical work with the scope, the two things especially to be noted in the urethroscopic pictures being the central figure and the mucous surface. The central figure or window varies according to the location of the scope in the urethra.

No matter what instrument is used, certain accessories are necessary for intra-urethral work,—such as, cotton carriers, cannula to connect with syringe, small knife, electrodes, urethroscopic pipette, sound and curette.

Technique of Examination.—The patient may be either in a sitting or a lithotomy position for all ordinary work and must be on an examining table with hips considerably elevated and legs spread apart. After using antiseptic precautions, the instrument is introduced, and, if desired to insert it in the posterior urethra, the suspensory ligament is made lax by placing the left hand on the pubic region and making it give so that the instrument, held with the right hand, passes along without effort into and through the posterior canal. If necessary to use an anaesthetic, I would suggest novocaine or alypin. I have used cocaine but very little. In a recent case at the dispensary, one of the students injected a 2 per cent. solution of cocaine into the urethra and caused the patient to faint, probably due to rapid absorption.

In conclusion, I may state that no doctor is properly equipped for this work without having an instrument of this kind in his office. The specialist more clearly sees each day the failure of diagnosis by relying upon the symptoms the patient tells of rather than upon what may be detected by the experienced eye through the endoscope.

TUBERCULOSIS OF THE KIDNEY.*

By R. C. FRAVEL, M. D., Richmond, Va.
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That tuberculosis of the kidney is not the rare lesion described in the text-books ten years ago is evidenced by the enormous literature on the subject during the past few years. Progress in diagnosis has been rapid with the improvements in instruments, the accuracy of functional tests, a more careful study and better understanding of symptoms, and improvement in laboratory technique. As evidence

*Read before the Richmond Academy of Medicine and Surgery, December 8, 1914.

of the frequency of this lesion one observer, Rovsing, reports 200 personal cases.

That renal tuberculosis has been frequently overlooked is shown by the records of Kapsammer, at the Vienna General Hospital, as quoted by Bryan. He stated that from 1897 to 1907 there were found at autopsy 191 cases; only two were correctly diagnosed, four partially so, while in 185 the disease was not suspected. Of this 185, sixty-seven were unilateral and 118 involved both sides. The difficulty in the past has been in making a diagnosis, and the real advances are along this line.

A proper understanding of the clinical course was necessary before any real advance could be made,—in fact, straightening out the clinical course constitutes one of the real advances. We were previously taught that patients developed tuberculous cystitis, and then by ascending infection the kidney became involved. We now know that the primary focus in the urinary tract is in the kidney itself. Thus, the order of things is changed, first the kidney, then the ureter, and lastly the bladder becomes involved. It is almost an established fact that uro-genital tuberculosis is never primary; usually there is a pre-existing focus though ever so small in the pulmonary tract, or in the lymphatic system, entrance having occurred by way of the pulmonary or gastrointestinal region. This being the case, primary renal tuberculosis is only primary so far as the urinary tract is concerned, infection having gained entrance to the kidney through the blood stream. Many proofs of the hematogenous origin of renal tuberculosis could be cited, one of which is that the vast majority of cases are unilateral in the beginning, while the cases that are really an ascending infection are uniformly bilateral.

The pathology differs in different cases, and is variously described by various writers. The following, taken from Cheatwood, may be quoted:

1st. Tuberculous Nephritis—This condition is one of glomerular and tubular nephritis, with tubercle bacilli in the urine, running a chronic course. This must be differentiated from the nephritis of tubercular subjects which is constantly found upon autopsy, and is similar to the toxic nephritis of the opposite kidney in cases of tubercular involvement of one organ which condition often vanishes after nephrec-

tony. Dieulefoy doubts the existence of this variety.

2nd. The Infiltrating Form of Tuberculosis—Such lesions consist of a diffuse invasion of the kidney substance with tubercles, which are studded throughout the parenchyma and are later accompanied by the formation of new connective tissue.

3rd. Papillary Tuberculosis—This variety, a rare lesion, consists of small ulcerations of the papillae with submucous tubercles. Bleeding is the first symptom in this variety and affords an explanation of some cases of essential hematuria.

4th. The Cavernous Form is the most common. In this form there is first a deposit of tubercles in a vascular zone at the junction of the renal medulla and cortex. Later, there is caseation and cavity formation, and still later there may be found in other parts of the kidney isolated tubercles which run a similar course.

5th. Tubercular Pyelonephritis, as in other bacterial infections of the kidney, is only a terminal stage.

Symptomatology and the newer aids to diagnosis are the points which concern us most. It is the early diagnosis which offers the best hope of a cure—while the disease is unilateral, and before it becomes a pyelonephritis.

Pain, which is usually localized in the loin, although it may radiate through the shoulder and down the course of the ureter, is of dull, aching character, and may be one of the earliest symptoms. There may in certain cases be true renal colic, due to blocking of the ureter by particles of a broken down tuberculous area or a blood clot.

Tenderness in the loin or at the costo-vertebral angle is of common occurrence, often on account of perinephritic involvement. Renal tumor is not found early but later towards the stage of pyelonephritis, though in thin subjects the lower pole of the kidney may be palpated and found tender and irregular moderately early in the disease. It must be remembered, however, that the palpated kidney may be the healthy one enlarged to compensate for the loss of function of the diseased one. Hematuria, macroscopic and microscopic, may be one of the first things to draw attention to a possible tuberculous lesion. This is especially the case in the papillary form, as previously mentioned.

Albuminuria is a common symptom which should be given proper consideration. The albuminuria is frequently bilateral but the kidney involved shows much the more albumen. The albumen coming from the healthy side is likely due to a toxic nephritis.

Pyuria, which is a common finding, may be small or large in amount, continuous or intermittent, and the urine is acid for a long time. Various writers call attention to the low specific gravity of the urine.

The bladder symptoms are all important, for in the majority of cases there is vesical involvement before the patient seeks the aid of his physician. Early, there may be only increased urination, which is chiefly nocturnal, urine slightly turbid, trace of albumen, acid in reaction, without bladder involvement. Later, when ulceration of the bladder occurs, there is frequent, urgent, painful, and difficult urination, and pus is constantly found. Many cases at this stage are treated for cystitis with some of the time-honored remedies or with proprietary preparations with which the market is flooded. The diagnosis of cystitis as a primary condition is rapidly passing away, and a more diligent search for the origin of the infection is being made. In all cases, whether there is bladder involvement or not, there is usually loss of weight, strength, and energy, and in women sometimes scanty menstruation or amenorrhoea.

Reiter calls attention to lowered blood-pressure in tuberculosis of the kidney which may be some aid in diagnosis, in contradistinction to hypertension in most other kidney affections.

The diagnosis is made positive by finding the tubercle bacilli in the urine. This must be done repeatedly, for the bacilli occur intermittently in many cases, as does the blood and pus.

To demonstrate bacilli in the urine, the best results are obtained by collecting a 24-hours' quantity of urine, preserved with boric acid, and allow to settle; then decant off the top, centrifuge the sediment and examine in the usual way. Animal inoculation should be practiced in suspicious cases when the bacilli cannot be demonstrated before deciding positively against tuberculosis.

The cystoscope is indispensable in making a proper diagnosis. Very early there may be no changes in the bladder, but these are not the cases that the physician usually sees. Tubercu-

lar processes, however, are seen fairly early in the bladder in the majority of cases.

These usually first show themselves around the ureteral opening on the affected side making the opening more or less patent and retracted, while the ureteral orifice on the opposite side will be seen to open and close with each flow of urine. There is frequently seen an edema around the orifice, and in this region later ulceration takes place.

This latter extends to the trigone and to the opposite side and, in advanced cases, the entire bladder is involved and much contracted.

Ureteral catheterization will determine whether the condition is unilateral or bilateral; it is the only positive method of determining which kidney is involved. I have failed to find out how those physicians who belittle and criticize ureteral catheterization avoid sometimes removing the wrong kidney, for I am mindful of the fact that there are times when the changes in the bladder are seen most severe around the ureteral opening of the kidney not involved.

Functional test of the kidneys from urine collected separately through the ureteral catheter enables us to judge of the anatomical condition of either side and to estimate the condition of the patient as a surgical risk.

Treatment is essentially surgical—nephrectomy with removal of the ureter as far down as possible.

Keyes' recent article calls attention to the fallacy of spontaneous cure of tuberculous kidney. He reports two cases—one supposed cured for five years, the other for nine years. Both cases were lighted up, as it were, and nephrectomy showed active tubercular lesion.

Nephrotomy has been tried and found useless as to cure, and is only done in the presence of sepsis or very advanced kidney destruction, where the kidney cannot be removed in the hope of building the patient up to a nephrectomy later. Resection of the kidney has been tried and most cases have returned on account of recurrent trouble in the remaining portion of the kidney.

Medical treatment of these cases is reduced to hygienic consideration. The tuberculous bladder needs little if any attention unless severely involved, for after the kidney is removed the bladder cures spontaneously. The best explanation of this is that given by Dr. Beck of Chicago. He argues that patients

develop during the course of the disease a certain resistance which is not sufficient to cure the kidney and bladder involvement both, but when the kidney is removed the resistance is sufficient to cure the bladder.

I have seen six cases of tubercular kidney at St. Luke's Hospital in the past two and one half years; how many cases we have missed I do not know. Five of these six were unilateral, and one bilateral. One case was sent in diagnosed appendicitis on account of a recent attack of right-sided pain. Bacilli were found in the urine. Catheterization of the ureters showed the right kidney to be involved. Patient refused operation at the time, going home to return later, which he has so far not done. This case is interesting in that it illustrates the acute pain described above as seen in some cases.

Another case came on account of repeated hematuria. Four of these six came on account of bladder symptoms, and had been treated for cystitis. The case of bilateral involvement had had the bladder curetted. Bacilli were found by Dr. E. Guy Hopkins in the urine of all six cases.

The case in which both kidneys were involved was sent to a sanitarium for medical treatment. Four cases were operated upon by Dr. McGuire, the kidney with as much of the ureter as possible being removed in each instance with good results.

A paper of this kind which contains little of personal experience and most of the teachings of others will not permit one to draw conclusions. I should like to say, however, in closing, that patients with dull aching pain in the kidney region, in the absence of stone or other bacterial infection, should be studied most carefully for tuberculosis; also that all cases of essential hematuria, protracted pyelitis, and prolonged cystitis—every method at hand—should be used to confirm or exclude, as the case may be, tubercular involvement.

DISCUSSION.

Dr. C. C. Coleman said: This excellent paper leaves very little to be added in a discussion of tuberculosis of the kidney, but there are a few points brought out by Dr. Fravel which he would like to emphasize. He has well said that the old text-book description of renal tuberculosis is of very little value in making a diagnosis of tuberculosis of the kidney. This statement applies to all chronic surgical con-

ditions of the urinary tract and especially is this true of renal tuberculosis. Irritability of the bladder is the first and most conspicuous clinical sign of tuberculosis of the kidney. The disturbance of the bladder in these cases varies all the way from slight irritability, which may be intermittent, to the most intense strangury. The functional test is of great value in surgical disease of the kidney. The use of this test enables us to make a relative estimation of the kidney function, and this estimation is of great importance when one kidney is suspected of disease. The functional test is not so valuable in secondary nephritis due to prostatic obstruction, and can frequently be disregarded when it contradicts the clinical symptoms. Cystoscopic examination and ureteral catheterization are required in making a diagnosis of chronic disease of the urinary tract to ascertain the location and extent of the disease processes.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

Surgery of the Blood Vessels. By J. SHELTON HORSLEY, M. D., F. A. C. A., Surgeon-in-Charge of St. Elizabeth's Hospital, Richmond, Va.; A Founder and Fellow of the American College of Surgeons; Ex-President Richmond Academy of Medicine and Surgery, etc. Illustrated. St. Louis. C. V. Mosby Company. 1915. 304 pages. Cloth. 8vo. Price, \$4.

The author, Dr. J. Shelton Horsley, one of Virginia's most accomplished surgeons, states that it has been his aim to present the scientific and laboratory features of vascular surgery and particularly its practical aspects that may be of interest both to the surgeon and to the general practitioner. The treatment of hemorrhage, pathologic and traumatic, and such subjects as aneurisms, thrombosis and embolism, congenital nevi, varicose veins, and hemorrhoids are described as well as the history and technique of suturing blood-vessels and transfusion of blood.

While the author has naturally consulted available literature bearing on surgery of the blood-vessels in the preparation of his book, he has based the greater portion of what he has written on large personal experience and original research in his vivisection laboratory, the successful character of his efforts being well

recognized and appreciated in the larger surgical centers. The book, which is illustrated with numerous original drawings, describes in considerable detail his methods of "end-to-end suture of blood vessels, of transfusion of blood, of lateral suture of blood vessels, of suturing arteriovenous aneurisms, of making an Eck fistula, of transplantation of the anterior temporal artery, and of resection or transplantation of intestine after embolism of the mesenteric arteries," and the results attained indicate conclusively the high order and merit of his work.

Dr. Horsley's book is a valuable addition to the literature of blood vessel surgery, and should supply a demand by the profession for a treatise on this subject.

The publishers have done their part handsomely, and have presented the subject, from their standpoint, in the best possible manner.

Nervous and Mental Diseases. By JOSEPH DARVIN NAGEL, M. D., Consulting Physician to the French Hospital of New York; Honorary Member Societe Royal de Belique, etc. New (2nd) edition, revised and enlarged. 12mo. 293 pages, with 50 engravings and a colored plate. Cloth, \$1 net. (The Medical Epitome Series.) Lea & Febiger, Publishers, Philadelphia and New York, 1914.

For hasty reference in reminding one of essential points, this manual will serve a convenient purpose. It presents a surprising amount of matter in limited space.

Practical Therapeutics. By HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics, Materia Medica and Diagnosis, Jefferson Medical College, Philadelphia. New (15th) edition, thoroughly revised and rewritten. Octavo, 998 pages, with 144 engravings and 7 plates. Cloth, \$4 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

Hare's Therapeutics, which first appeared in 1890, has, with the present volume, reached its fifteenth edition, this, of course, not indicating the many reprintings demanded by its unprecedented sale of several editions. Such popularity must naturally be based on the value of the book as viewed by the practitioner of medicine. The *modus operandi* of drugs and other therapeutic measures in their clinical application is explained with a view to their rational use in practice, and the frequent publication of new editions has offered a splendid opportunity for the author to keep his book fully up to date, as well as to add or revise certain articles as deemed necessary. Especially is this true with reference to the subjects of salvarsan and neosalvarsan, tuberculin, anaesthetics, digitalis and other cardiac drugs, vaccine therapy,

etc. The book is undoubtedly one of considerable worth, though we are a little disappointed at not finding mention of such a drug as coto bark which has proved of service to us on a number of occasions. However, this is too small a matter to mar the value of such an excellent work.

An Epitome of Pediatrics. By HENRY ENOS TULEY, A. B., M. D., Late Professor of Obstetrics, Medical Department, University of Louisville; Editor Louisville Monthly Journal of Medicine and Surgery; Late Chairman of Section Diseases of Children; Ex-President Amer. Assn. Medical Milk Commissions, etc. New (2d) edition, revised and enlarged. 12mo. 324 pages. Cloth, \$1 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914. (Lea's Series of Medical Epitomes.)

This is an epitome and not a text-book. It supplies, however, *multum in parvo*, and when there is occasion for hurry and only a sufficient time to gather a resume of the subject before having to see the patient, the information afforded may help through a world of trouble.

Editorial.

Typhus Fever Germ Isolated.

The *Bulletin of the Department of Health of the City of New York* states that "Dr. Harry Plotz, of Mt. Sinai Hospital, announced the isolation of a gram-positive pleomorphic anaerobic bacillus from the blood of 50 per cent. of a series of cases of epidemic and endemic typhus fever (Brill's Disease). The bacilli isolated from both types of the disease are identical in their cultural and serum reactions. The bacilli are found only in small numbers in the blood, but have been isolated during the febrile period and as long as thirty-six hours after the crisis. As the disease progresses the agglutination and the complement fixation reactions become positive using the bacilli or extracts in the tests. Because of the shortness of the disease, these reactions are positive more often during convalescence. When cultures are injected into guinea-pigs or monkeys, they cause a febrile reaction similar to that obtained by the injection of blood from a case of typhus fever. The bacilli in cultures quickly lose their virulence. Whether the injection of cultures will protect animals against the inoculation of virulent blood was not stated. The adoption of preventive inoculation with vaccines made from the cultures depends on such immunity tests in susceptible animals.

"While a few points need further study the evidence brought forward by Dr. Plotz and his colleagues at Mt. Sinai Hospital, indicate that the bacillus discovered is the cause of typhus fever."

Medicinal Drugs Being Raised in Virginia.

"Necessity being the mother of invention," we are informed that the U. S. Department of Agriculture has established a medicinal drug plant farm in Virginia near the national capital. Forty-five acres have been planted this year and it is planned to increase the acreage next year. Among the plants already growing on this farm are belladonna, ginseng, cannabis, hydrastis, Japanese peppermint, etc.

With the European war in progress, the shipments of drug plants to the United States have already suffered and it seems probable that the trade will still further suffer should the war continue much longer. It is hoped by the raising of drug plants in this country, through a more careful cultivation and selection than is always given in some of the foreign countries, to provide the medicinal drug trade with plants of a standard value.

American Medical Association.

Once again doctors throughout the country are turning their attention to the meeting of the American Medical Association which convenes this year in San Francisco, and, to the interest always derived from these meetings will be the added pleasure this year of visiting the Panama-Pacific Exposition. The dates of the meeting are June 21-25. Drs. Victor C. Vaughan, the retiring president, and Wm. L. Rodman, president-elect, both hope to be in attendance.

For doctors attending from the Eastern states, unusual advantages are offered in the reduced rates given for visiting the Golden West and a number of attractive points. The Pan-American Medical Congress, meeting in San Francisco, June 17-21, as well as the American Medical Association, will have special trains from several of the largest Eastern cities, and those anticipating joining either party should make reservations at once. Dr. H. L. E. Johnson, 1821 Jefferson Place, N. W., Washington, D. C., is chairman of the Pan-American Medical Congress transportation committee. As stated by the *California State*

Journal of Medicine, hotel rates will not be raised "beyond the limit of the roof" as has been anticipated by some, but will compare favorably with those given at other meetings. Except the first or General meeting, all meetings will be under one roof.

Added to other pleasures to be enjoyed, it has been suggested that a golf club be formed for the golf enthusiasts, the game being played on local courses under the same rules and conditions of handicaps as hold in regular golf matches. This has been found a popular move by the British Medical Association, and it seems likely to meet with the approbation of a large number of the American doctors. Dr. Wendell C. Phillips, 40 West 47th Street, New York City, is chairman of the temporary committee having charge of this movement.

The South Piedmont (Va.) Medical Society

Held its regular meeting in South Boston, in three sessions, on April the 20th, Dr. Julian M. Robinson, of Danville, presiding. Several interesting papers were read by members and invited guests and the election of officers for the ensuing year was held. Those elected were: President, Dr. C. D. Barksdale, Sutherlin; vice-presidents, Drs. J. B. Bailey, Keysville, S. R. Jordan, Virgilina, Elisha Barksdale, Lynchburg, and E. H. Miller, Jr., Danville; treasurer, Dr. T. E. Armstrong, South Boston, and secretary, Dr. George A. Stover, South Boston. Both of the last named officers were re-elected. The next meeting of the Society will be held in Lynchburg, November the 16th.

Alumni of the University of Virginia,

Of Norfolk and Portsmouth, Va., at their annual banquet held in Norfolk, elected the following officers for the coming year:—President, Dr. Thos. V. Williamson; vice-president, Dr. Joseph Grice; secretary, Chas. S. Grant, and treasurer, Herbert Nash.

The Augusta County (Va.) Medical Association

Held its quarterly meeting in the library rooms of the Association, in Staunton, May 5th, at which time several papers were read by members and also a paper by invited guest, Dr. Charles Bagley, Jr., of Baltimore. The next meeting will be held on August 4th.

Dr. and Mrs. J. Allison Hodges,

Of this city, attended the exercises incident upon the installation of Dr. E. K. Graham as

president of the University of North Carolina, at Chapel Hill, in April. Dr. Hodges went as a representative of the Medical College of Virginia, Richmond.

Special Tour for Doctors to A. M. A.

The Chicago Medical Society has extended an invitation to members of the Medical Society of Virginia to join the Special Train Party leaving Chicago, Minneapolis, St. Louis, and Memphis, June 17th, merging at Belleville, Kansas, on the afternoon of June 18th. The trip is to be by way of Colorado Springs and Salt Lake City, San Francisco being reached by June 21st. The Gregory Tours, Lytton Building, Chicago, will look after Pullman and hotel reservations, transfer of baggage, etc. The tour includes also a trip to Los Angeles and San Diego and the railroad tickets will be good for ninety days. The rate from Richmond is to be \$172.79 for the service to be given.

Those interested should communicate with Dr. R. R. Ferguson, chairman of the Transportation Committee for the Chicago Medical Society, 3923 North Keeler Ave., Chicago, Ill., with request that he send pamphlet showing what the tour includes. As the time is limited to make arrangements, this matter should receive prompt attention.

Need for Greater Activity.

Miss Randolph, secretary of the State Anti-Tuberculosis Association in an interesting talk given on April 20th, stated that results in Virginia fall far short of those obtained in most States in the fight for prevention of tuberculosis. This is attributed to almost complete lack of organization. Of 25,000 cases in Virginia last year, 2,600 were fatal. The Association is supported almost entirely by money received from the sale of Red Cross Christmas Seals, of which only 350,000 were sold in Virginia the past year while in North Carolina, 1,500,000 were sold.

The Catawba County (N. C.) Medical Society

Was reorganized in April, Drs. Geo. H. West and Geo. W. Shipp, both of Newton, being elected president and secretary, respectively.

Dr. Joseph M. Burke,

Petersburg, Va., chief surgeon of the Seaboard Air Line Railway, is on a visit to Chicago.

The Association of Surgeons of the Southern Railway

Will hold their twentieth annual meeting at Battery Park Hotel, Asheville, N. C., June 2-4, under the presidency of Dr. H. T. Bahnson, of Winston-Salem, N. C. Dr. J. U. Ray, of Woodstock, Ala., is secretary of the Association.

North Carolina Surgeons Attend Clinics.

In April a party of sixteen surgeons from North Carolina visited New York, Boston, Philadelphia, Baltimore and Rochester, Minn., for the purpose of observing operations in various hospitals.

Married—

Dr. Otis Taylor Amory, Newport News, Va., and Miss Marice Hewell Tuck, of York County, Va., on April 21st.

Dr. Joseph Francis Geisinger and Miss Caroline Bragg, both of Richmond, Va., on April 27th.

Dr. Loren E. Cockrell,

Of Reedville, Va., was a recent visitor to Baltimore.

Dr. and Mrs. S. W. Maphis.

Of Warrenton, Va., were among those from a distance to join a large yachting party who left Fredericksburg, Va., April 24, for a cruise on the Rappahannock.

University of Virginia Medical School Elects Officers.

On May 1st, students in the Department of Medicine at the University of Virginia met and elected officers for the coming year as follows:—President, Edward Ballard Broocks, Chase City, Va.; vice-president, John DuBose Barnwell, Clemson, S. C.; historian, LeRoy Walter Hyde, Plattsburg, N. Y.; secretary, Richard Dabney Anderson, Red Hill, Va., and treasurer, Donald MacKenzie Faulkner, Boydton, Va.

Dr. L. G. Richards,

Roanoke, Va., was a recent visitor in Harrisonburg, Va.

The Tennessee State Medical Association.

At its meeting last month, elected Dr. Edward C. Ellett, of Memphis, president, and re-elected Dr. Olin West, of Nashville, secretary.

Dr. and Mrs. W. W. Hume.

Of Beckley, W. Va., spent a short time visiting friends in this State on their return from a visit to Florida.

Virginia Pharmaceutical Association.

Upon petition, the President, Mr. H. C. Littlejohn, of Leesburg, has changed the meeting of this Association from Mountain Lake to Natural Bridge, Va., and the time from June 15th to July 6th-8th, inclusive.

Dr. G. T. Divers,

Of Buena Vista, Va., has bought a large lot in that place, and will shortly have a home erected on same.

Commissioner of Health of Chicago.

Dr. John Dill Robertson has been appointed commissioner of health of Chicago, succeeding Surgeon George B. Young, U. S. Public Health Service.

The Medical Society of Northern Virginia and the District of Columbia

Will hold its semi-annual meeting in Alexandria, Va., May 19. Dr. W. P. Carr, of Washington, presiding. Dr. Thos. A. Groover, also of Washington, is secretary. The annual election of officers will occur at this meeting.

Dr. R. E. Booker

Has returned to his home at Lottsburg, Va., after a short stay in Baltimore.

Druggist's License Revoked.

The Board of Pharmacy of Virginia, on April 23rd, voted to revoke the license of a druggist, found guilty of selling narcotic drugs to habitues and others without the formalities required by law.

Rat-Proofing to Prevent Plague.

In view of the fact that plague is widely spread over the world and exists in California, Seattle and New Orleans, Asst. Surgeon General Rucker, U. S. P. H. S., urges as an additional safeguard to fumigation of incoming ships, rat-proofing all seaports, including the water fronts and buildings.

Dr. George D. Kahlo,

Who has for some time had charge of the medical department of White Sulphur Springs, W. Va., has been quite ill, and Dr. G. B. Capito has been looking after the work in the Medical Department.

Dr. Richard L. DeSaussure.

Formerly of Minerun, Va., but more recently of Charleston, S. C., has received a commission as assistant surgeon in the U. S. Public Health

Service, and has been put on duty in Anne Arundle County, Md., and will later go to Wilson County, Kansas.

Assistant Surgeon L. L. Williams,

U. S. Public Health Service, was directed in April to proceed to Norfolk, Va., for duty on the coast guard cutter Onandaga.

American Medico-Psychological Association.

Programs of the Fortress Monroe, Va., meeting of the Association, May 11-14, give promise of most interesting sessions. The committee of arrangements, composed of Drs. Wm. F. Drewry, G. W. Brown, J. C. King, A. S. Priddy and J. S. DeJarnette—superintendents of the various State Hospitals in Virginia—have been working hard to make the meeting an attractive one. This will be the fourth time the Association has met in Virginia, the former meeting, in this State, having been held at Staunton in 1869, Old Point in 1888, and Richmond in 1900.

American Urological Association.

At the meeting of this Association in Baltimore, in April. Dr. Edward L. Keyes, Jr., of New York City, was elected president, and Dr. Henry L. Sanford, of Cleveland, secretary. The next annual meeting is to be held in St. Louis.

Dr. Sydney E. Bray,

Formerly of West Point, Va., a member of the class of 1909, M. C. V., while specializing in New York City, won a trip abroad in connection with the course he is pursuing. He visited France, Holland and Belgium, and reported a pleasant and profitable as well as a safe trip.

The Association of Medical Officers of the Army and Navy of the Confederacy

Is scheduled to hold its annual meeting in this city, June 1-3, during the reunion of United Confederate Veterans. Meeting in the old capital of the Confederacy on the fiftieth anniversary of the close of the war, much will be done to make this reunion one of the most memorable of the gatherings of veterans and a large attendance is expected.

Dr. John B. Murphy,

Of Chicago, has had conferred upon him the honorary title of doctor of laws, by the Catholic University of America, Washington.

Louisiana State Medical Society.

Dr. J. C. Willis, of Shreveport, was elected president and Dr. L. R. Dubuys, of New Orleans, secretary-treasurer, of this Society at its annual meeting at St. Charles, in April.

P. A. Surgeon Micajah Boland,

U. S. Navy, has been detached from the Iris, with permission to go home.

Beriberi on War Ship.

When the Kronprinz Wilhelm, the German war vessel now interned in Virginia waters, first came into the harbor at Newport News, she brought in sixty-three sailors and prisoners of war suffering with beriberi. With an idea of safeguarding the State against the disease, Drs. S. W. Hobson, Newport News, and E. G. Williams, Richmond, of the State Health Department and several other health officers and physicians made an inspection of the vessel, examining the cases and consulting with the ship's chief surgeon. Many of the cases had already recovered after receiving proper diet and no trouble is feared from the disease.

Board of Pharmacy of Virginia.

At the examination held in Richmond, April 20th, there were 36 applicants for certificates as registered pharmacist. Of this number the following were given the registered pharmacist certificate:—C. H. Sebrell, Lawrenceville; S. A. Hausenflook, Harrisonburg; W. F. Korte, Roanoke; E. A. Hale, Pembroke; J. B. Spiggle, Richmond; R. R. Mosby, Newport News.

The registered assistant certificate was given to J. P. Shelton, Richmond, and C. W. Powers, Roanoke.

There were 23 applicants for the registered assistant certificate, of whom the following were successful:—T. L. Zirkle, Richmond; E. V. Greever, Chilhowie; R. L. Martin, Richmond; L. C. Rothgeb, Luray; F. R. Henderson, Fincastle; H. A. Moore, Round Hill, H. B. Harris, Edenton, N. C.

The following were registered by reciprocity:—G. R. Davenport, Norfolk, from District of Columbia; W. D. Boyer, Washington, D. C., from District of Columbia; R. S. Mills, Jr., Petersburg, from Tennessee; E. C. Merchant (col.) Lynchburg, from Kentucky.

The next examination will be held in this city, July 20th and 21st, 1915. Applications for same should be filed with the secretary,

Mr. T. A. Miller, Richmond, at least ten days prior to examination date.

All officers of the Board have been re-elected to another term of a year, as follows:—H. S. Arrington, Norfolk, President; T. A. Miller, Richmond, secretary-treasurer, and E. L. Brandis, Richmond, field secretary.

Dr. John W. Wainwright,

Formerly editor of the *American Practitioner*, has joined the editorial staff of *American Medicine*.

The United States Civil Service Commission

Announces an open competitive examination for physiologist, for men only, under 50 years of age, citizens of the United States, to fill a vacancy in the Dairy Division, Bureau of Animal Industry, Department of Agriculture, Washington, D. C., at a salary ranging from \$2,500 to \$3,000 a year, or other similar vacancies as they may occur. The examination will be held June the 8th.

An M. D. degree or a Ph. D. degree in physiological work, and at least four years' subsequent experience in the investigation of physiological problems, are prerequisites for consideration for this position.

Persons desiring this examination should at once apply for full information to the above Commission, Washington, D. C.

Dr. B. F. McGrath,

Who has been connected with the staff of the Mayo Clinic, Rochester, Minn., has resigned to accept a position with the Marquette University School of Medicine, Milwaukee, Wis.

Dr. Robert F. Jones,

Assistant Surgeon U. S. Navy, who has been on duty in Asiatic waters for several years, has been granted a leave of absence and will visit relatives in Petersburg, Va. He graduated from the University of Virginia in 1909.

The Medical College of South Carolina,

At Charleston, has received a large donation from Mrs. Huger, of that city, in memory of her husband, Dr. William Harleston Huger.

Banquet for Dr. Hurty.

A testimonial banquet, arranged by the medical fraternity of Indianapolis, was tendered Dr. J. N. Hurty in April in recognition of his service for nineteen years as State health commissioner of Indiana.

Dr. N. Thomas Ennett

Gave a talk on the subject of open-air schools in one of the schools of this city on April 29th.

Laboratory for Diagnosis of Venereal Diseases.

The sum of \$4,000 has been added to the appropriation for general expenses of the Massachusetts State Board of Health, for the purpose of establishing laboratory facilities for the diagnosis of venereal diseases.

Asst. Surg. F. L. Conklin, M. R. C.,

Has been transferred from the Naval Medical School in Washington, D. C., to the Naval Hospital, Norfolk, Va.

Richmond Academy of Medicine and Surgery.

At the regular meeting of the Academy, April 27th, papers were read by Drs. J. Garnett Nelson and E. C. L. Miller, both of this city, on Tuberculin Therapy and Some Theoretical Aspects of Vaccine Therapy, respectively.

Dr. A. M. Sneed

Has returned to his home at Hanover, Va., after a business trip to Cornwall-on-the-Hudson, N. Y.

The American Academy of Medicine,

Which specializes in medical sociology, will hold its fortieth annual meeting in the auditorium of the Panama-Pacific Exposition, June 25-28, under the presidency of Dr. Woods Hutchinson, of New York City. Dr. Charles McIntire, of Easton, Pa., is secretary.

Panama-Pacific International Exposition.

The sanitary supervision of the Exposition in San Francisco has been taken in charge by the U. S. Public Health Service, and every precaution is being taken to prevent the breeding of flies and the spread of communicable diseases. The health of the employees is being looked after, most of them having received the anti-typhoid vaccination, the water supply and buildings on the grounds are receiving special attention, and every effort is being made to ascertain that all food sold on the grounds is wholesome and is handled only by persons free from tuberculosis and venereal diseases.

Southern Sociological Congress.

The following doctors were among the delegates appointed by Governor Stuart, to repre-

sent Virginia at the Southern Sociological Congress, meeting in Houston, Tex., May 8-11:— Drs. E. G. Williams, Richmond; J. C. King, Marion; P. A. Irving, Farmville; R. L. Robertson, Charlottesville; T. J. Pretlow, Newport News, and W. Brownley Foster, Roanoke.

Richmond Nurses Graduate.

A number of nurses from the Johnston-Willis and Virginia Hospitals received their diplomas in April, there being twelve in the class from the former hospital, and three from the latter. There are sixteen nurses in the class to graduate from the Memorial hospital on May 20.

More Doctors and Nurses Go for Service in Europe.

On May 1st, seven surgeons and eighteen nurses connected with the American Red Cross sailed from New York, for service in various European fields. Two surgeons were bound for Belgium, four surgeons and fourteen nurses for Austria and Serbia, and one surgeon and four nurses for Germany.

For Sale—Moore's Brook Sanitarium.

Owing to the death of the former superintendent, Dr. D. M. Trice, this splendid Sanitarium is for sale. For particulars, see advertising page 17.—(*Adv.*)

Obituary Record.

Dr. John M. Faison,

A former Congressman and prominent physician of Faison, N. C., was found dead in the bath room of his home, with a pistol wound in the jaw, on the morning of April 21st. Ill health is supposed to have been the cause of his death. He graduated in medicine from the University of Virginia in 1884, later taking a post-graduate course in New York City. He held many positions of honor in his State. His widow and several children survive him.

Dr. William Palmer,

An officer in the Confederate Army, died at his home, Wolf Trap, Halifax County, Va., April 17, at an advanced age. He had for many years been afflicted from the results of a paralytic stroke. Several children survive him.

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TUBERCULIN THERAPY.*

By J. GARNETT NELSON, M. A., M. D., Richmond, Va
Associate Professor of Medicine, Medical College of
Virginia.

The object of this paper is, in as brief and compact a form as possible, to put at the disposal of those who are not already familiar with the principles and practice of tuberculin therapy certain information that may prove helpful if they wish to undertake the use of tuberculin; and, also, to lend such influence as I may possess towards a more general interest in the subject. It happens frequently that patients tell us that they do not believe in tuberculin, or, worse still, that their doctors do not, and positively refuse to take it. Usually under such circumstances neither the patient nor the physician has any information on the subject whatsoever, but the idea possesses the force of a fixed delusion, and any attempt to combat it is useless. A vague indefinite groundless fear, a relic of the past decade, still persists, in consequence of which I firmly believe many tubercular cases die that should be cured. There is undoubtedly a large field, at present, to a great extent neglected, wherein it should always be used, although it may be impossible to say to any individual case, "With tuberculin you will get well; without it you will not."

This is, however, quite as true of all other vaccines or sera, antitoxin, salvarsan or any similar therapeutic agent as it is of tuberculin. In the case of diphtheria 36 hours old, for example, the indication for antitoxin is positive, the outlook is uncertain. There is also a large field wherein, although its use may not be obligatory, its value as a contributing factor—just as are rest, diet, hygiene—is so great that

it is manifestly unfair to one's patients to undertake to treat them without it.

Of the relative value of the various tuberculins very little can be said. The only intelligent definition of a tuberculin that I know of is as follows: "A tuberculin is any substance that will produce a specific reaction in tuberculous." It is well to state right here that tuberculin normally has no effect whatsoever upon those who are not tubercular. No one has definitely proved that a healthy human being can be immunized against tuberculous. In our present state of knowledge we must believe that in order to accomplish immunization, there must be in the tissues or blood of the patient some bodies that are only present as a direct result of a fight with the tubercle bacillus. We do not know the chemical nature of any tuberculin, nor can we identify it by any chemical test. Briefly stated, the facts are that either a tuberculin made from the dried bodies of killed bacilli, an endoplasm tuberculin, e. g., Koch's new tuberculin, or one composed of the soluble secretions of the bacilli into a culture fluid, an exoplasm tuberculin, will produce a specific reaction in tuberculous. Theoretically, there should be quite a difference between the two in favor of the product made from the dead bodies of bacilli. Practically, results in tuberculin therapy seem to depend not at all on which variety is employed, but entirely on the skill used in its administration. If we accept then that the effects of all tuberculins are precisely the same, it seems wise to study some one as thoroughly as possible, and, as a general rule, confine one's self to its use. I am omitting any discussion of tuberculins made from different strains of bacilli, human or bovine, or of the possibility of a single strain undergoing evolution in the long course of tubercular infection, and the possible advisability of using a polyvalent or an autogenous tuberculin, for the sake of brevity, and because it is not ac-

*Read before the Richmond Academy of Medicine and Surgery, April 27, 1915.
For discussion, see page 95.

cepted that work along these lines has so far gotten any better results than the use of any exoplasm or endoplasm, as suggested above. Believing these facts and deciding to use tuberculin, several questions naturally suggest themselves:

1. What good does it do, what results can be accomplished with tuberculin that cannot be accomplished without it?

2. Are there any limitations or contraindications to its use?

3. Are there different ways of giving it in order to get the best results?

Before answering these questions, some discussion of tubercular reactions is necessary. These reactions are local, focal and general.

A local reaction consists of redness, swelling, pain, an ordinary inflammatory reaction at the site of injection, rarely occurring inside of eight hours, and lasting perhaps two or three days. Local reactions are not only diagnostic, but are of great value as indices of approaching intolerance when the dose of tuberculin is being increased. Hamman states that general reactions practically never occur without local changes to preceding doses. In the practical use of these local changes as guides to increase of dosage, three important facts are to be remembered.

1. Some regions of the body are more sensitive to tuberculin than others. Reactions occur earlier when injections are made in the arm than when the back is selected.

2. Endoplasms are more likely to produce late reactions, and harder to regulate than the more soluble and more quickly absorbed exoplasm.

3. Trauma at the point of injection, such as that caused by a coarse or blunt needle, may precipitate a local reaction.

Too much stress can not be laid on the practical value of these local reactions. It is impossible to work out any scheme to be used as a guide by the beginner in using tuberculin. We have positively no way of knowing when we undertake to treat an individual patient, certainly one with pulmonary tuberculosis, what tolerance to tuberculin he already possesses, or what tolerance we can carry him to. Consequently, the final dose can not be foreseen. Still the majority of writers on the subject take the position that fairly large doses must be given to get the best results, following Koch's original idea, with the important

modification, that we must begin with very small doses and gradually increase them until the larger ones can be tolerated. Just here the value of local reactions comes in. We naturally ask ourselves two questions, viz.: To what extent, and at what intervals can the dose be increased? Probably the one thing most important in tuberculin therapy for the beginner to remember is that in the event of a local reaction our next dose must be no larger than the last. We must, therefore, acquaint ourselves fully with exactly what a local reaction is, and then we can stand on fairly firm ground. To be on the safe side it is best to consider as such a reaction any redness, œdema or infiltration, no matter how slight, occurring after the injected fluid has been absorbed.

The general reaction consists of a rise in temperature anywhere in from six hours to three days—rarely later than 24 hours—headache, malaise, loss of appetite, nausea and vomiting, etc. As a general rule, all the information one desires can be obtained from a careful study of the temperature records, and the other symptoms mentioned possess comparatively little value. Usually a rise in temperature due to tuberculin is sharp and sudden and has a duration of about two days. Not infrequently, in the event of a slight rise in temperature only, the patient experiences a sense of exhilaration. I have had several patients accustomed to tuberculin, but in whose cases the treatment had been interrupted, tell me that they always feel better while they are taking it. However, as a rule, general reactions are to be avoided as far as possible. They are exactly parallel to the rise of temperature, loss of appetite, malaise, etc., so frequently seen in pulmonary tuberculosis. To be sure, there are some excellent authorities who employ what is called the "method of ignoring reactions," starting with one decigramme of Koch's old tuberculin and repeating it until it fails to give a reaction, then increasing the dose.

This paper is not written for the specialist, but for the physician who for one reason or another may occasionally use tuberculin. Him I would advise to look upon general reactions, if they occur, as undesirable, and to reduce his dose by at least nine-tenths.

Focal reactions are changes occurring in, or in the neighborhood of, the infected areas.

They produce either subjective symptoms or objective signs, such as dyspnoea, cough, pain, increase in amount of discharge, blood-streaks, increased area of dullness, new rales, etc. It seems that to some extent at least, focal reactions are necessary in order to obtain any benefit from tuberculin. This is absolutely true in surgical tuberculosis. They result in an increased blood-supply to the affected part, bringing nourishment to tissues that are otherwise poorly supplied and flooding them with anti-bodies. If we are to understand the use of tuberculin at all, we must not lose sight of these focal reactions. The idea is that they not only lead to diminishing the activity of the bacilli present, but by means of an active hyperaemia aid in the formation of scar tissue. We are now prepared to answer the all-important question. What good does tuberculin do? The answer is threefold:

1. Produce focal reactions with the results mentioned above.

2. Lessen the patients' chances of re-infecting themselves, i. e., help develop an immunity. In these two effects the action of tuberculin is clear and definite. The principles are as sound as those of vaccination against typhoid, differing entirely, however, in one important point. We do not know how to immunize *healthy* people against tuberculosis. However, if we could immunize all early infections against any further infection, practically all foci would take care of themselves and tuberculosis would disappear.

3. The third division of our answer is entirely clinical. Often, early in the course of treatment the patient's symptoms mitigate and the general condition begins to improve surprisingly. For this, I can offer no satisfactory explanation. It has seemed to me to occur before I had given a dose large enough for me to expect any result. So much then, sketchy as it is, for what we expect tuberculin to do.

The limitations to its use and contraindications must be gone into, though briefly. Although there are classes of cases in which tuberculin should always be used, it must be admitted that there are some in which it can do no good. Among the former must be included all forms of surgical tuberculosis, osteomyelitis, renal tuberculosis, epididymitis, tubercular glands, etc. Of course, this should not in-

terfere with the proper surgical treatment, such as removal of dead bone or extirpation of glands. Closed surgical lesions, such as well walled-off abscesses, do not respond well to tuberculin. The method of administration here is radically different from that employed in pulmonary tuberculosis. In pure surgical tuberculosis the only object aimed at is the production of focal reactions. Consequently, we do not increase our dose at all beyond what will produce such a reaction. Begin with a minimum dose, increase until you produce a focal reaction, then repeat your dose about twice a week indefinitely. The only contraindication to this method in surgical tuberculosis is the possible existence of an accompanying pulmonary focus. A question of nice judgment then arises, one to be decided in each case, whether to combat the surgical lesion by repeated small doses or to fight the pulmonary lesion by increasing the dose to the point of tolerance.

Further cases in which tuberculin should always be used are all so-called sanatoria cures, or arrested cases who have spent a few months only in a sanatorium and returned home to take up their former occupation; all cases of hilum disease; all cases of non-febrile fibroid phthisis; all early, soft infiltrations, that is, first stage cases; all children who have been subjected to prolonged exposure with or without demonstrable lesions, provided, of course, that a von Pirquet or some other test shows an infection. Indeed, it is easier to define the limitations and contraindications than it is to enumerate all the types of tuberculosis in which tuberculin is of value. Personally, I do not believe that there is any tubercular case that will be harmed by tuberculin judiciously administered, although there are many to whom neither tuberculin nor anything else offers any hope. However, I incorporate here a few points bearing on this phase of the subject.

1. In rapidly advancing progressive disease usually no good can be done, although the use of doses small enough to avoid local reactions will do no harm.

2. In early infections with fever it is wiser to attempt to lower the temperature by rest, etc., before using tuberculin.

3. Very intense infections when the tissues

possess no power of response can not usually be benefited.

4. Cases with a very rapid pulse are not very amenable to any form of treatment.

Riviere covers this whole question very well in the following sentence: "So far, then, as debility, fever or rapid pulse are the result of an intoxication with the patient's own tubercular products, they are an indication for the limitation of such autotoxaemia by rest and all other available means. Only when such limitation has been reached or shown to be impossible should tuberculin be employed in order that artificial tolerance may be induced in the absence of its natural production."

As for the method of administration, it is impossible for me to go into this whole subject. As a suggestive guide, I report briefly a single case.

White male, age 28, weight 114 pounds. The only clinical history was a recent hemorrhage; also a small hemorrhage one year ago. At that time his weight was 122 pounds. Physical examination showed fibroid phthisis in both lungs, sonfirmed by X-ray; no fever. Von Ruck's extract was used, beginning with one one-thousandth of a cubic centimetre. The dose was increased by one one-thousandth daily for ten days, that is, until a dose of one one-hundredth was reached. This was repeated twice a week for four doses; the dose was then increased by one one-hundredth until one-tenth was reached. This dose was given once a week for six doses, then increased by one-tenth until three-tenths was reached. This dose should be given once every two weeks for at least a year. The clinical results in this case have been gratifying. His present weight is 149 pounds, which is 21 pounds more than he ever weighed before. He is apparently in perfect health.

In conclusion, I may say that my own personal experience with tuberculin therapy, has been limited to 39 cases, with a number of injections of about five hundred. I have never seen it do any harm, but, on the contrary, have frequently been convinced that I was getting results with it that could not be gotten without it.

317 N. Harrison Street.

A REMITTING FEVER.

By A. A. HOUSER, M. D., and L. T. STONEBURNER, Jr., M. D., Richmond, Va.

The reason for presenting this case is not to add something new to medical information, but rather to give another illustration of the difficulty at times of making a positive diagnosis of a rather prevalent condition. It has been said that the most common things most commonly happen, but it neither follows that they are the only ones to bear in mind nor that they are always the easiest to find.

Case: Patient is a female, white, unmarried, and nineteen years old. The family history is negative with the following exceptions: Her father has some form of heart disease, two uncles have died of tuberculosis, and a younger sister had tuberculosis from which she recovered in a sanitarium.

Past history and habits are good. She had malaria when a child and an abscess in her throat eight years ago.

Present illness began in the last week of July, 1914, with disinclination for work, constipation, and more or less pain in the right lower abdominal quadrant. Calomel was taken several times, after which patient states she felt better.

On August 14, while with friends in this city, she was seized with severe pain in lower right quadrant of the abdomen, followed by nausea and vomiting. She stated that she was quite tender over that area. Patient left for her home in the country where she arrived exhausted and suffering pain. Her physician returned her to one of the private hospitals of this city, at which an operation showed a ruptured gangrenous appendix and general peritonitis. Recovery was rather tedious and at times doubtful, but the wound finally stopped draining and the incision healed. Patient began to feel better but with this came chilly sensations and an evening temperature of 101 or more. Examinations of her lungs and repeated examinations of her blood were negative. She was put on heavy doses of quinine and, against the advice of her surgeon, left for her home in the country where the quinine was continued. At the end of a week she was sent back again to the city as her temperature was rising to 102 or 103 every evening—pus in the abdomen being suspected. No evidences other than the temperature could be found.

On general treatment patient's appetite improved and some digestive disturbances she had become better, but her temperature would rise every afternoon to about 104, sometimes higher. Occasionally there would be two distinct rises within twenty-four hours; rarely did it fall below 100. Patient was losing both flesh and strength at an alarming rate, but she suffered no pain and for part of every day felt quite well.

Nine days after her return to the hospital we took charge of the case and for the next nine days her clinical picture was a repetition of the one just described. Complete physical examinations were repeated. A palpable spleen and slight tenderness over the whole body were the only positive findings. The urine never showed anything that could account for the condition, and the almost daily examinations of the blood aside from a marked secondary anemia were negative.

The problem now resolved itself into finding the cause for this remitting fever of over two weeks' duration in the hospital, and from patient's statement for a week longer. Pus in the abdominal cavity seemed probable, but neither localized tenderness nor a mass could be found. Two blood cultures were made, both proving negative. From the family history and the symptoms tuberculosis had to be excluded, but physical examinations found no evidence of this. Typhoid was suggested by a palpable spleen and a characteristic temperature in a patient who had recently been in the country, but the Widal was negative and no rose spots were ever seen. Malaria had been suspected all the time but the repeated blood examinations before quinine, the course of at least nine days' treatment with quinine, and the subsequent blood examinations, ranging from the ninth to the eighteenth day after discontinuing quinine, made this seem improbable. However, the examination on the eighteenth day showed characteristic æstivo-autumnal parasites.

The patient was immediately given calomel, after which she was put on quinine in solution and given iron and arsenic. Her temperature never went above normal again. On the fourth day she was strong enough to be put in a chair; and on the ninth day she went home where her strength and weight returned rapidly.

Aside from the fact that the history sometimes serves to confuse the diagnosis, this case represents another example of the value of giving quinine in solution when quinine is indicated.

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LATEST RESULTS AND VIEWS ON THE THERAPEUTIC VALUE OF MERCURY IN THE TREATMENT OF GERM DISEASES.*

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There are many who have doubted the efficacy of bichloride of mercury as a systemic germicide, for the reason that the text (materia medica and chemistry) makes the statement that when it is combined with albumin, it becomes a non-absorbable albuminate. A portion of it may become an albuminate; not all of it, however, makes this change, for, if the albuminate is non-absorbable and inert, when administering the drug it of necessity comes in contact with non-living albumin—the contents of the stomach and intestines; the portion that escapes this contact with the albumin and is absorbed comes in contact with the albumin of the living cells of the blood and tissues. Now, if it is changed to a non-absorbable albuminate after coming in contact with the vital living albumin of the blood and tissue cells, we get no physiological effects of the drug, unless the albuminate is absorbable. As a matter of fact, we do get physiological effects when we administer it. If all of it is changed into an albuminate, as is claimed, the albuminate of mercury must be absorbed and appropriated by the organism. If it were not, how could we get mercurialism unless a greater portion was absorbed as a straight bichloride, thereby getting its curative effects in syphilis, typhoid fever and other germ diseases?

If you will saturate an albuminous mixture (such as the contents of the stomach and intestines) with the bichloride solution, each portion of the finely divided particles of albuminous matter will have a coating around it of albuminate of mercury; but the liquid in the interspaces between the finely divided particles would still contain the mercury in its original form of bichloride, which is absorbable.

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When this remaining solution is absorbed and comes in contact with the living albumin of the blood and tissue cells, most authorities and many from conservatism and former teaching, say and believe that it is converted to a non-absorbable inert albuminate. Now, on the very face of facts, with the results secured in its administration, it is not true that it all becomes non-absorbable inert albuminate. Therefore, to get the physiological effects of the drug, which all of us know that we do, it must of necessity be absorbed by the living cells without change. You may ask the question, in the face of chemical authorities, how is it possible for it to be absorbed without change to an albuminate? My view is sustained, 1st, by the results obtained physiologically and therapeutically; 2nd, by chemical reasoning, and 3rd, by its curative effects.

The living cells of the blood and tissues are bathed in a mono-chloride of sodium solution (Na Cl), which is also a chemical constituent in an organized form of their component parts. The cells also possess life and great resistance to any form of destruction to either germs or chemical agents; hence, they are not easily changed or killed, for we know they put up a fight for life as all other living creatures do. The living cell, through its organized life and chemically resisting power, has greater affinity for its normal physical chemical and normal constituent, mono-chloride of sodium, than it has for the chemically non-living mercury and chloride. Especially is this true when the solution of mercury is absorbed into the tissues in a less concentrated solution than the sodium solution, both in the organized and the combined form, the latter forms circulating in the tissues. The mercury is not converted into a non-absorbable albuminate, but remains in the active form of a double chloride, or changes into some other active form with some chemical element of the tissues, that does not destroy its full physiologic and therapeutic effects. If the above reasoning is true, the question may be asked, if it does not combine with the living tissue cells and destroy them, how does it act as a systemic germicide on a living germ cell? The only reason I can give for its germicidal effect is the following: 1st, the living tissue cells are of a higher type of cell development than the germ cell; therefore, the former has greater resistance to the chemical germicide

than the lower form of life, the germ cell; 2nd, the mercury combines with the germ cells because of its (cells) lack of resistance, and destroys it; 3rd, the mercury increases leucocytosis and phagocytosis, and also the opsonic index of the blood, or so weakens the germ cells by poisoning them that they are easily destroyed by the leucocytes, hence its germicidal effects. This latter view is my belief when small doses are given. When full doses are given hypodermically, it is my belief that it acts on the germ as a direct germicide by a local direct poisoning effect on the germ, and not by any round about manner as when given in weak solutions. The reason I believe this is because I have observed, in giving bichloride in one-half, three-quarters and one grain doses hypodermically, that most of the acute diseases, as pneumonia, typhoid fever, tetanus, etc., are relieved in a much shorter time than normally, —in less than half the time they are relieved when left to nature to be cured by leucocytosis and phagocytosis. I have repeatedly seen typhoid fever relieved in 5, 6, 7 and 8 days from the time the drug was administered. After one, two or three doses are administered hypodermically, in a few hours (three to twenty-four) we notice a great improvement in all of the symptoms. It appears that all the system has to do is to eliminate the toxins, dead germs and inflammatory deposits (which were produced by the germs before the drug was administered), and this it does in a few days. If the germs were not killed at once, or rendered so ill by the administration of the first one of the three full doses, they would not cease to further multiply nor to manufacture the toxins; if they did not do this the diseases would continue their usual course of from two to nine weeks.

Another proof that bichloride is absorbed directly into the system before changing into a non-absorbable albuminate may be noted in cases of septicemia in surgeons (infecting hand while operating on septic cases). They are treated in Johns Hopkins Hospital and other hospitals by making free incisions into the infected hand and arm, and then keeping the hand and arm dressed with gauze kept wet with 1-20,000 solution of bichloride of mercury for days or weeks, or as long as necessary. Through the incisions and through the skin of the hand and

arm enough of the bichloride is absorbed into the system to produce mercurialism, in a few marked salivation, in the majority only the therapeutic effects. One physician from this city was so treated there and lost most of his teeth from salivation. He recovered both from the salivation and the septicemia, however. (I suppose he would rather be living without his teeth, than dead in the full possession of a sound set). In such cases when the mercury is absorbed through the wound surfaces and the surface of the skin, it of necessity comes in contact with both non-living albumin (secretions) and living albumin. If all of the drug was changed into a non-absorbable inert albuminate of mercury, we would not get mercurialism nor would we get the curative effects that are gotten by this treatment in such cases.

In an article on germ diseases (*Va. Med. Semi-Monthly*, July 7, 1910), I asked the question, why was mercury the remedy par excellence in the treatment of germ diseases, and answered it by stating, 1st, from observation and experimentation, as well as from literature on the subject, we know that it is the most powerful systemic germicide and antiseptic; 2nd, it increases leucocytosis when absorbed into the blood; 3rd, it is a physiological and chemical antidote to germ toxins; 4th, it is my belief that it increases the opsonic index of the blood. "Opsonin designates certain substances present in the blood serum which render various highly virulent bacteria subject to phagocytosis"—that is, there are bacteria so powerful and resistant to the phagocytic action of the leukocytes, that it is necessary for them to be crippled or weakened by some substance in the blood, whether manufactured naturally or introduced artificially, that will aid the leukocytes in producing effectual phagocytic action and destruction of the bacteria. Various serums and drugs will do this; 5th, it increases the immunity and resistance of the blood to germ infection; 6th, it increases all nutrition, vigor and development of the blood and tissues; 7th, in weak solutions it destroys or retards the development of lower forms of life (germs) in the blood and tissues, but it increases the number and regenerates the higher forms of life (blood and tissue cells), and makes them energetic and more resistant; 8th, it prevents round cell proliferation, and, when proliferated, destroys the cells which are the pabulum

of most germs, especially those of syphilis, tuberculosis, cancer and many inflammatory infections; 9th, it checks and stays degenerative changes, and prevents complications; 10th, it increases elimination through lymphatics, intestinal glands and kidneys; 11th, it is cathartic and diuretic, and in full doses is a purgative; 12th, it is a vasomotor constrictor, relieves local congestion and inflammation; 13th, it is hematonic—in small doses it increases the number of red and white cells; 14th, it is diffusible and is absorbed by all the cells of the body; 15th, it is rapidly eliminated; 16th, it promotes absorption of all inflammatory deposits, granulomata, hyperplasia, etc., of germ diseases, and is as much of a specific in other germ diseases as it is in syphilis; 18th, it will kill any species of plant or animal life, and it will likewise kill any species of germs. It will kill or check the development of the germs of typhoid fever, pneumonia, diphtheria, cholera, dysentery, malaria, scarlet fever, etc., just as easily and more quickly than it will those of syphilis. If such is the case, is there any logical reason why we should not use it as a systemic germicide, and, therefore, as a specific agent in the treatment of all germ diseases.

Let us see how mercury does this: In full doses it is a germicide; in medium and small doses it antagonizes the toxins, prevents degeneration of the blood, increases leucocytosis and produces polycythemia, i. e., an increased number of red cells. In typhoid, after the first few days, we have produced by the toxins just the opposite of this condition, i. e., hypoleukocytosis is produced, reduction of the leukocytes and defective formation of new cells and oligocythemia, i. e., a diminished production of red cells. This condition produces what is known as toxigenic anemia. "Generally speaking, the increase of leukocytes in the acute infectious diseases is directly proportionate to the intensity of the infection and the power of resistance on the part of the individual." But in typhoid fever and tuberculosis, except for the first few days, this is not the case as with most other germ diseases, especially "when the virulence of the infection is especially intense, and an absolute increase of the total number of leukocytes may not take place, although a relative increase of the polynuclear neutrophiles will

probably always be observed. Absence of hypoleukocytosis will usually warrant a fatal prognosis" (Simon).

We have seen from the first part of this paper, in which I gave the effects of mercury on the blood, that the mercury will prevent this condition in typhoid fever and other germ diseases; hence it is rational and logical to use the drug in the treatment of typhoid fever.

Since 1907 I have treated 150 cases of typhoid fever (seen early) with mercury without a death. Three-fourths of the cases of fever lasted from five to seven days; one-fourth of the cases from about seven to twelve days. Convalescence was rapid and uneventful. In at least 50 per cent. of the cases the clinical diagnosis was verified with Widal test, and practically all of them, if not all, were corroborated by Russo's and the diazo urinary tests, and quite a number by the biceps muscle reflex test for typhoid. When I have a suspected case of typhoid fever and I get a positive biceps reaction and a positive Russo and diazo urinary test, I am confident of a positive diagnosis. If the serum test (Widal) is positive also, I am absolutely sure of a diagnosis. If the Widal is negative in any of the cases that have proved positive with the muscle, Russo and diazo tests, I am still confident and positive of typhoid, for the Widal only proves positive in about 50 per cent. of the cases of true typhoid, unless a second or third test is made, when the test will give about 90 per cent. of positive reaction.

The Biceps Reflex Typhoid Test (discovered by Dr. Chas. B. Burke, of Atlantic, Ia.):

The arm of the patient is bared to the shoulder. Arch your thumb and middle finger in the shape of a horse shoe, and place them over the biceps muscle of the arm so that the arch thus formed is completely filled, then firm pressure is made by the finger and thumb, and the hand is briskly raised (pressure being continued) so that the thumb and finger come together with a slight concussion. The result, if the reflex is present, is a fibrillary contraction of that portion of the biceps muscle traversed by the thumb and finger, producing an oval ridge without complete contraction of the whole body of the muscle. The ridge thus formed disappears rapidly (in the fraction of a second) in the early febrile stage. In the late febrile stage, from seven days to near the

end of the disease (when it has not been specifically treated), the reflex ridge disappears slowly—from one to three seconds. So, in making the test early when the incubative stage of the disease is just past, have one of the fingers of the left hand ready to feel over the ridge or that part of the muscle that the finger and thumb have just traversed, so that the ridge will not have time to disappear before it is felt. This test is very valuable in all true cases of typhoid, and will often enable you to suspect a case where, before making the test, you have not even suspected the disease, as in atypical and walking cases which sometimes drift in your office.

When you find the test positive, follow it up with the Russo and diazo tests, and if they prove positive you can gamble on a positive diagnosis. If you are still doubtful in the face of such evidence, you can do, or have done for you, the Widal, which, if positive, gives you further, and the last remaining laboratory (except microscopic examination of the blood) evidence of the disease. If negative, it is no indication that the disease does not exist, for, as stated above, the Widal only proves positive in 50 per cent. of the true cases unless second, third or fourth Widal is made. To carry out all of these Widal tests you are losing time; hence, commence specific treatment as soon as you find the first clinical and first laboratory evidence of the disease, as early specific treatment in this disease is as important as is the early serum treatment in the early stage of diphtheria; the early specific treatment in the one is as effectual as the early serum treatment is in the other.

Diazo-Test for Typhoid Fever: Have on hand—

1. 4 3/8 bottle containing 5% solution of hydrochloric acid saturated with sulphanilic acid.
2. 1 3/8 bottle containing 1/2% of sodium nitrate.
3. 4 3/8 bottle containing ammonium hydrate.

When it is desired to make the test, a small quantity of the solution in bottle No. 1 is mixed in a test tube with that in bottle No. 2 in proportion of 40 to 1. To this is added an equal quantity of urine to be tested and the mixture is well shaken. Now, with a medicine dropper, a small quantity of ammonia from No. 3 bottle is allowed to flow gently down the side of the test tube so as to make a sharp line of contact.

At the junction of the two fluids a dark garnet or cherry-red ring will form if the reaction takes place. If the tube is well shaken, a uniform red color is imparted to the entire fluid and the whole is covered with a characteristic red foam. If poured into a white basin containing much clear water, a beautiful salmon color is obtained if only traces of chromogen are present. Carried out in this manner, no question will arise as to the presence or absence of the reaction.

Russo's Typhoid Test.—To 4 or 5 c. c. of the patient's urine add 4 drops of a 0.1% aqueous solution of methylene blue; mix well and examine against the light; a mint or emerald green coloration is positive, whereas any bluish tinge renders the test negative. (1 3/4 bottle of 0.1% solution is sufficient to keep on hand.)

I have written the above tests except the Widal, so that every physician in the rural as well as in the urban districts, can have ready at hand in convenient form the tests, so that he will be able to make an early diagnosis of typhoid fever and not wait to treat the disease until it has done its damage by producing pathological changes, before a diagnosis is made. Such delay is criminal. While the disease is bacteremic and toxic only, specific treatment commenced early will work wonders and cure all of the cases—100 per cent.

I have the biceps muscle test, the diazo and the Russo's urinary tests typewritten and pasted on the wall over my desk. I also have the chemical reagents for the two latter on my laboratory table, ready for use at a moment's demand or occasion for their use. Any physician who will supply himself with the chemicals, as given above, will be able to make the tests as easily as making ordinary urinary tests in diseases of the kidneys. I also have the biceps muscle reflex test for typhoid in my mind's eye to be used at the bedside in every germ disease, and when it is positive, I then resort to the diazo and Russo tests (urinary). If they are positive, I know I have a case of typhoid on hand, instead of any of the 44 other germ diseases. Hence, I know immediately what to do, and without losing time I proceed to do, and get 100% results.

Treatment.—Of course, the ordinary hygienic, dietetic and symptomatic treatment is necessary and helpful. Give any ordinary cathartic, from castor oil to calomel, in any

size dose deemed advisable, and give hypodermically anywhere from 1/4 to 1 1/4 grains of bichloride until 3 or 4 injections or doses are given, and give 1/16 of a grain by mouth every two hours (or, if the stomach is irritable, give 1/32 of a grain every hour) day and night for 4 or 5 days; then the night administration can be stopped and the drug continued during the day until the temperature reaches normal, when it ought to be given two or three times in 24 hours for another week to prevent relapse.

℞ Bichloride of Mercury gr. iij,
Distilled Water ʒ j.

Mix: Sig: Give ten drops every two hours, or five drops every hour in half glass of water.

Ten drops equal 1/16 of a grain; five drops equal 1/32.

Any age from two years up can take the latter doses. Any age from two years up can tolerate 1/4 grain doses hypodermically. Should you give a 1/2 grain or 1 grain dose to an adult, inject 1/4 of it at a time in four different places on hip or back, 2 or 3 inches apart. When more than a quarter is injected in one place it may cause sloughing. One quarter of a grain in one place never causes any trouble except a certain amount of irritation which passes off in a few days. Never inject it into a muscle. Inject into adipose and connective tissue as far from under surface of the skin as possible, or the length of needle will permit. By lifting up the skin and thrusting the needle in at right angles to the surface of the skin you will succeed in getting the longest distance from the under surface and avoid depositing the drugs between its layers, or interfering with local cutaneous blood vessels. In a goodly number of cases I do not administer the drug hypodermically at all,—only by mouth and inunction over abdomen.

℞ Terebinte ʒ j,
Oleate of Mercury ʒ j,
Lanoline ʒ ss,
White vaseline, q. s. ʒ j.

M. Sig: To be applied over abdomen twice in 24 hours.

When the fever runs high for the first few days I give a stimulating antipyretic.

℞ Strychnine Sulph. gr 1/5,
Salicylat. Mercury gr. 1/3,
Aspirin gr. xij,
Phenacetine gr. xij,

Salicylat. Quin. gr. xxiv.

Powdered Lactopeptin ʒj.

M. Make capsules No. xij.

Sig.: One every three or four hours as needed to control temperature. Should the capsules cause too much perspiration, I have anywhere from one-third to one-fourth of the contents of the capsule removed and give the rest.

I never give tub baths, and rarely use ice or sponging, for I do not find it necessary. Of course, for cleanliness, I have the patient bathed every day, but not in tub.

Patients treated as above described, early in the disease, get well so quickly that you will be surprised and if you are humanitarian you will be glad and happy; if not humanitarian and philanthropic, you will soon realize that you are losing money by these quick recoveries and probably you will abandon the treatment and resume the old and regular regime of treatment, which from a monetary point of view is more profitable. It matters not in what stage of the disease you secure the patient, the specific treatment is the most effectual; the late cases will not continue so long and will stand the disease better and will not be as liable to complications. The disease is a bacteremia with the possible development of a local manifestation in any part of the body, viz., bowels, heart, blood vessels, liver, lungs, brain, spinal cord, meninges, bones, muscles and skin. To prevent any or all of these, disinfect the patient as above described. It will be well for the patient, if not for the doctor and nurse.

Corroborative Evidence.—In one of the large hospitals of Chicago, during 1909, 10 or 11 experiments were conducted, to test the different antiseptics as to their value as germicides on the different germs that cause disease in man. The tests were made with culture mediums. It was found that corrosive chloride of mercury was the most effective germicide to most of the germs experimented on, and it was found especially effective, even in weak solutions, on typhoid fever germs. The experiments were reported in the *Journal A. M. A.* of either 1909, 10, or 11, which I marked and laid aside for future reference and quotations, but I regret to say it was lost in moving my offices.

Pasteur and Koch found bichloride to be the most powerful antiseptic and germicide. The former found it effective in dilutions of 1-50,000, which was the weakest solution ex-

perimented with. By making calculations on a man of 140 pounds weight I have found that I can get a tissue saturation of 1-70,000.

According to Victor C. Vaughan, see *Journal A. M. A.*, Nov. 15, 1913, the "newer theory of how bacteria cause disease may be stated as follows: The cell is a morphologic unit of life—though not the physiologic unit. The latter is the protein molecule which lies in the cell and of which the cell is essentially composed. Bacteria are particulate proteins, and viruses capable of causing disease may be without form recognizable by us. The essential and constant distinction between living and dead matter is the former is never in a state of equilibrium; it is constantly absorbing and excreting; it feeds and eliminates; it is constantly trading in energies; it is not stable. Every living cell must form ferments by which it splits up the pabulum on which it feeds. Whether a given bacterium is pathologic to a given animal or not depends on two things: First, in order to be pathologic it must be able to split up and feed on the proteins of the animal body; otherwise, it cannot grow and multiply in that animal's body and, consequently, cannot harm it. Secondly, the ferments of the cells of the animal's body must not be active immediately, at least, destructive to the invading bacterium; the latter cannot be harmful. These two things determine the pathogenicity or the non-pathogenicity of a bacterium, and one or the other or both lie at the base of all bacteria susceptibility and immunity. Dead proteins contain just as much poison as living proteins, but if the latter can grow and multiply and grow in the body, it increases the amount of poison. Quite naturally the most of the foreign proteins that find their way into the blood are living, such as bacteria and protozoa."

According to Krohl of Kiev, patients can be rendered immune to infection and contagious germ diseases by the administration of mercury (*Journal A. M. A.*, Nov. 29, 1913, p. 2021). The *Journal* says—"Krohl noticed that patients taking a course of mercurial treatment seemed to be peculiarly resistant to ordinary infectious diseases, especially to epidemics of cholera in his practice at Kiev. This fact, and others, suggested that mercury has an action on the blood, rendering it immune to septic processes, and his experiments with *seventy-*

eight rabbits apparently confirms this assumption. He found that rabbits injected with mercuric benzoate bore without harm the injection of serum from the blood of a woman who had died of puerperal fever, or injection of pure cultures of streptococci. The doses of mercury were very small: a series of injections of 0.0015 gm. to kg. of body-weight rendered the animal non-susceptible to infection with streptococci. A shorter series with larger doses also answers the same purpose. The drug was of such efficacy in the animals that he applied the same treatment to a number of patients threatened with septic processes, and reports a few typical cases to show the efficacy of the drug in prophylaxis of sepsis. A case cited is that of a woman of twenty-nine who had chills and a temperature of 39.1 C., pulse 128, skin dry, and patient very restless and extremely thirsty, the third day after delivery. She was given three injections of 0.01 gm. mercuric benzoate in the course of three days, under which the temperature and pulse subsided to normal. With another case with about the same symptoms after an artificial abortion, the mercury was not commenced until after the fourth day, and the patient died. Krohl regards the experiences as showing the importance of sterilizing the blood in this way while it is still possible to effect this. In the second case treated later, Krohl made the mistake in not giving larger doses of mercury, and a more potent preparation than the benzoate, namely, bichloride. If he had injected one grain of the latter drug the first day, a half-grain the second and a half the third day, and given her one-sixteenth by the mouth, six times a day for six or eight days, his patient would have gotten well.

In an article by me on germ diseases, read before the Roanoke Academy of Medicine in 1907, and read before the Medical Society of Virginia in 1908, I stated that in a private practice of twenty years I had treated many cases of syphilis with mercury, and that while these cases were under my observation, and taking active treatment from a few months to five years, I had not known one of these syphilitic cases to contract a serious infectious or contagious disease. I also then stated that for fifteen years I had treated scarlet fever with the double chloride of mercury without a death when the cases were secured early. From the above observations, and from two papers by

able authors, one written since the germ theory of disease has been proven a fact, and the other prior to the antiseptic era, I decided to use bichloride of mercury in the treatment of all germ diseases. For a period of six years I have so used it with most gratifying results. Since that time the average mortality rate of 12 per cent. of germ diseases treated in the old way has been reduced in my practice to less than one per cent., and the average duration of the germ disease has been reduced at least one-half. I have heard from a number of physicians who have (since reading my paper) used mercury in the treatment of typhoid fever, with the most gratifying results—practically the same that I reported in some three or four articles written by me on the treatment of germ diseases in the last six years, but they did not get quite as good results as to mortality and duration of the disease as I secured, for the simple reason that an early diagnosis was not made by them. Hence, they necessarily commenced the treatment at a late date, and did not use large enough doses in the first few days of treatment.

The hypodermic dose of corrosive chloride of mercury is anywhere from four to eight times larger than the dose is by the mouth—which is contrary to the rule of dosage with other drugs. I have frequently given from one to two grain doses hypodermically to adults, and from one-quarter to three-quarters of a grain to a child regardless of its age. I knew one physician who gave a yearling child one and forty-eight one-hundredths hypodermically in a case of erysipelas that had extended from the foot up to the nipple line. The child had a temperature of 106 and was unconscious; the case was considered hopeless. After the injection, the fever rapidly went down, and in a few days the child was out of danger. It made a rapid recovery and was not salivated. In a syphilitic case that was of six months duration without treatment, I injected two and one-half grains without injury to the patient. The aggravated secondary and tertiary lesions present disappeared as if by magic. The usual syphilitic mixed treatment has since been continued, off and on, without any return of symptoms. In both cases the drug was dissolved in about one hundred and twenty minims of water, and about fifteen minims of this mixture was injected into about six different places, three in-

ches apart, over the hips and back, which is done to prevent putting too much of the drug in one place so as to prevent necrosis. Some swelling was produced, which passed off in three or four days. When a patient is full of germs and toxins, the large doses given hypodermically are not poisonous. The toxins and germs take care of the drug, and the drug takes care of them.

In former articles on mercury, I stated that all of its preparations were germicidal, both in and out of the body. To use the latest corroborative evidence, I will give a synopsis of Dr. Douglas McFarland's notes on the study of potassium mercuric iodid (*Jour. A. M. A.*, Jan. 3, 1914, p. 17):

"Naturally the distinctive merit of an antiseptic should be first of all in antiseptic powers. No other antiseptic can claim such great power in great dilutions and none is of so remarkably low toxicity for its strength as mercuric iodid. The following formula is the one he uses: Mercuric Iodid, 1 gm.; Potas. Iodid, 4 gm.; Distilled Water, 100 c. c. The above is a one-per cent. solution which is permanent and can be kept for months without change. The liquid is clear, of metallic taste, and irritating to mucous membranes when concentrated; not so when well diluted, and does not coagulate albumin.

"When this solution is applied locally, it is a mild irritant. Dilution overcomes its irritant effects, and comparatively large amounts may be taken into the system without producing severe symptoms. Five to seven drops of this solution is the usual dose, but, when well diluted, fifteen to eighteen drops can be well borne. There is no tendency to cumulation; elimination keeps pace with assimilation.

"Internally, its effects on micro-organisms is markedly germicidal, even in weak solutions of one to eighty thousand and one to one hundred thousand. Strains of staphylococci are rendered sterile in twenty-four hours. A strain of typhoid bacillus did not appear in an inoculation of agar and broth. It was found that a solution killed a typhoid strain in two minutes. On the exhibition of the remedy the flora of the gastro-intestinal tract rapidly disappears. It is found useful in most all the infections and contagions. It has a marked effect on all catarrhal conditions of mucous

membranes. Clearing up the common cold, shortening the course of croup and relieving the acute affection of the nose. When applied locally in rhinitis, it has marked beneficial effects. It gives relief in gastritis and enteritis. It also relieves sinusitis. It has been used for a long time by the French for syphilis, psoriasis, cryptogenic infections of the skin, and lupus. They use it both internally and as an ointment. It is practically without an equal as an antiseptic. In great dilutions it is not toxic, but its germicidal qualities remain high. The one-per cent. solution is given in five-drop doses. The solution of one to eighty thousand has marked germicidal powers."

It is to be remembered that any one dose of any systemic germicide will not cure a germ disease. It is necessary to repeat it many times. In the use of mercury and salvarsan in the treatment of syphilis, the doses have to be repeated a number of times over a period of months or years. Why? Either drug will kill nearly all of the germs at each injection, but not all. Some of the germs will become encapsulated, or hidden in bone space, or lost in intercellular and gland tissue, where they cannot be reached by the drug. After a time the germs get into the circulation where they multiply and give rise to a second infection; hence, the necessity for the repetition of the dose until the disease is cured.

Many are of the opinion that I use mercury for every disease: I do not. I use it for germ diseases and as an antiseptic. The wheel of therapeutic measures contains several spokes, viz., medicine, surgery, electricity, heat, cold, light, vibration, massage, spondylotherapy, and hydrotherapy. I believe I come as near to applying all of them, when and where indicated, as any physician I know in the State. I have had an equipment for three years and have put all of them into use except hydrotherapy. I have found that with the use of one, or a combination of several or all of these spokes of therapeutic measures I can get results in germ, organic, constitutional, acute and chronic diseases, that I never did before using them. I have studied each one of them and have applied them and expect to continue to study and apply them and not confine myself to any one therapeutic measure.

PRELIMINARY REPORT ON THE TREATMENT OF TWENTY-FIVE CASES OF DRUG ADDICTION.

By GERALD A. EZEKIEL, M. D., Richmond, Va.

When the Harrison Anti-Narcotic Law went into effect on March 1st, it was confidently expected that many persons addicted to opium and coca derivatives would be forced to seek treatment. Recognizing the fact that many of these victims were unable to pay for such treatment, the city of Richmond promptly made provision for the handling of such cases at the City Home. A special service was organized and the writer given supervision of the medical treatment. Applications came in promptly. The present report deals with the twenty-five cases handled up to April 20th.

The patients, six males and nineteen females, were from twenty-two to seventy-two years of age. Seventeen used laudanum, six used morphine, and two used Squibb's mixture. Several of them had used other than their regular drug from time to time. The laudanum cases used from one dram to five ounces a day, and the morphine cases from one-half grain to thirty grains. The length of addiction ranged from two-and-a-half years up to thirty years.

Free purgation followed by abrupt withdrawal of the narcotic and the use of drugs of the belladonna group form the basis of a number of recently advocated methods of treating drug addictions. Although this is true, nevertheless there may be said to be two schools as to the explanation of the way in which the cure is brought about. Lambert refers to his (or rather Towns') mixture of belladonna, hyoscyamus and xanthoxylum as a "specific," but this specific acts as such only when liberal purgation is used. Pettey, on the other hand, regards elimination, largely through purgation, as the keynote of the treatment, and hyoscyne (or some similar drug) is used only to control withdrawal symptoms until this elimination is accomplished.

Whichever of the above may be the true explanation of the method of cure, there is no question but that treatment on these fundamental principles enables us to bring about a cure of drug addictions far more quickly,

surely and comfortably than any previous method.

While, of course, each case must be handled according to its special indications, the general line of treatment which I have followed in these twenty-five cases may be briefly summarized.

On the evening of the first day the patient is given a liberal purgative, followed next morning by a saline. No opiate is given after the evening purgative until the bowels have acted freely next day. Then this opiate is given at the usual hours but in reduced doses. The patient is to be kept comfortable, but this can usually be done on one-half the accustomed dose. On the third evening the purgative is repeated, followed by a saline next morning. After the bowels move freely from this second purgation, no more opiate is given. When the patient feels the need of his drug, he is given hyoscyne hydrobromide hypodermatically, and is kept under the influence of this drug—given according to indications—for from thirty-six to seventy-two hours. During this time, too, the use of purgatives is continued, castor oil, salines, blue mass, and sodium hyposulphite, are most useful. After about forty-eight hours of the hyoscyne treatment, and usually after there have been one or more dark green stools containing mucus, the patient states that he is comfortable and has no further desire for his accustomed drug. The hyoscyne is then discontinued and the treatment proper is over.

After this there will be two main indications to be met—building up the patient and securing sleep. Tonics may be used, but ordinarily this is not called for, as the appetite returns and weight and strength are rapidly gained. Hypnotics may be indicated for a few nights, but should not be given unless actually needed.

It is important during convalescence that the patient should become impressed with the fact that he does not need drugs of any kind.

In a well-equipped institution, with pleasant surroundings and facilities for giving the proper kinds of baths, exercise, etc., it would certainly be desirable to keep these patients under observation and direction for at least four weeks after the conclusion of the treatment proper. This was neither desirable nor feasible at the City Home. I have, however,

*Read before the Richmond Academy of Medicine and Surgery, April 27, 1915.

kept these cases anywhere from ten days to three weeks, making the total period from two to four weeks.

With a few exceptions they have done well and have had no return of desire for their drug. In two patients who had not menstruated for years, menstruation was restored. One patient had facial erysipelas and one middle ear trouble during convalescent period. Both made prompt recovery without having to return to the use of their drug.

It is, of course, too soon to speak confidently of the permanency of cure, but there are at least three reasons for taking a hopeful view: In the first place, the treatment has been essentially that advocated by Pettey. Inasmuch as the cases have up to this time responded to the treatment in every way, as depicted by Pettey, it is reasonable to conclude that their subsequent history will be parallel, and Pettey's cases furnish a high percentage of permanent cures. Next, as clearly and forcefully brought out by Pettey, the nature of the treatment is such as to hold out far greater promise of permanency than does the slow reduction method. In the latter method, the patient goes through days, or weeks, of discomfort or acute suffering. During all this period there is one thing, and only one thing, which gives any vestige of relief—the drug. The suffering drags out interminably, and the patient's mind is forced into thinking continuously of the one thing which can bring relief, and to carry with him, even after the period of suffering is over, the idea that this drug is the remedy par excellence for every sort of bodily, and even mental ill, for which no other relief can be found. Very different is this picture from that of a patient cured by the Pettey method. The only doses of his drug which are given are during the preliminary (preparatory) treatment, and during this period he is not allowed to suffer. During the real treatment, he finds his suffering made at least bearable without resorting to his drug. The final step in the treatment lasts from thirty-six to seventy-two hours only. During much of this time the patient sleeps. The mental impression of terrific suffering, relieved only by his drug, is not made. When the patient comes out from under the influence of hyoscine, he feels no need for his drug. He is weak and

needs rest and building up, but his system is not clamoring for opiates.

The third strong reason for these cases not relapsing is the Harrison law. Even though one of these patients after recovering might thereafter have a craving for his drug from time to time and even though he might also find some ingenious way of getting around the law and procuring a supply of it, this is not likely. Where relapse occurs, it is likely to be started by the impulsive taking of the first dose. Where anyone has known the misery of long addiction he is not likely to plan deliberately to get back into the toils.

Aside from the reasons just given, as pointing to the cure's being permanent, I want to say that although these twenty-five patients were driven to take the cure because of their supply of the drug being cut off, yet the majority of them said they would rather be cured than be given a supply, if a cure could be had. After the treatment all appeared to be well pleased to be rid of their addiction.

Mental effort and desire to be cured on the part of the patient is of great help. My most difficult case has been a woman, age twenty-four, with a mental age of eight years. This patient left the hospital of her own accord while she was still receiving six grains of codeine a day. This was the only case in which codeine was used for any length of time. About three or four days afterwards another patient left, her husband calling up to inform us that she was "gloriously drunk."

Two of the patients died after completion of the treatment. The first was a woman of sixty-six, with diabetes mellitus. Treatment had progressed in an entirely satisfactory manner, and the patient was doing well, as shown by the notation of "Good day, but restless," on her chart on the second day. The following day she developed diabetic coma and died in a few hours. I have never seen diabetes given as a contra-indication for treatment of drug addiction. Whether it actually is, I am not even now able to state.

The Harrison law is driving addicts by the thousands to seek treatment, and it is going to be very important for us to decide what cases, or classes of cases, should not be treated but should be given their accustomed drug.

The second death occurred four days after completion of treatment. Everything had

been entirely satisfactory. The patient, a woman of seventy-two, was doing well and had no desire for her drug. Without warning, she developed pulmonary edema and died in a short while. It is difficult to see that either the treatment or the deprivation of her drug had anything to do with her death.

My object in reporting this series of twenty-five cases is to call attention to the hyoscine treatment and the good results obtained from its use, as no doubt a great many drug addicts will present themselves for treatment within the next few months. I intend in the near future to report more cases and a more complete history of the present twenty-five.

The Shenandoah.

ORGANIZATION.*

By J. L. YELTON, M. D., Augusta, Ky.

Since the broad subject of "organization" has been assigned me, I shall take advantage of it to generalize briefly and leave the task of particularizing to others. I purposely refrain from using the word "specialize" because that is something which we poor wreck-train "first-aid-to-the-injured" fellows seldom have a chance to experiment with. What I mean is this—that I am here merely to put on the first antiseptic dressings and wind the bandages, and then the rest of you can get busy with your specialties and worry yourselves and the patient—after I have saved his life.

I am here to sound the call to unity and mutuality of purpose. In the past, I believe that each one of us has done all that it was possible to do alone, and that has been much, but these former achievements can be multiplied upon a scale more magnificent than we now realize if we administer the one great specific—organization.

Organization means "each for all" and the lack of it means merely "each for one." This is our opportunity to advance as a disciplined army instead of to skirmish alone. Let us be sure to seize it and march on in safety and certainty.

It was Elbert Hubbard who recently said, probably in one of his antagonistic moods toward medicine "Operate and exist; co-operate and live." Probably he meant to be sarcastic

concerning us doctors when he wrote: "Operate and exist" (considering it one of our principal means of keeping ourselves alive), but he thoroughly compensated for his crude joke by advising us to "co-operate and live."

Even in the ordinary walks of life, co-operation means everything, but to us who have upon our hands the duty of being ever instantaneously prepared to be at the side of some suffering human being, it becomes a paramount duty and obligation, for it alone can bring us to the apex of efficiency.

This is a "get-together" movement, and the ultimate results of it may prove far more wide-reaching than any of us now can lead ourselves to believe. If we who serve the Chesapeake and Ohio Railway, the road that has made the South co-operate with the North, can perfect an organization with the keynote of co-operation, it will not be long before this little movement of ours become national, and the surgeons of the C. & O. will be hailed as the men who made all the rest of the roads see and know the advantage of "getting together."

This is a day when our political friends in Congress frown upon "combinations in restraint of trade," but I think it is to our credit that we who follow the path of Aesculapius desire to form a combination in preservation of healing and the furtherance of altruistic service. Let us get together and adopt the motto "each for all" instead of the useless bogey of the past: "each for one."

Before leaving to you the discussion of the details and the general plan of our organization, let me repeat a sentiment of "medicine's first man of literature," Dr. Oliver Wendell Holmes:

"A triple health to Friendship, Science, Art,

From heads and hands that own a common heart;
Each in its turn the other's willing slave,

Each in its season strong to heal and save."

Clinical Reports.

LUDWIG'S ANGINA.*

By J. A. FAISON, M. D., Bennettsville, S. C.

Ludwig's angina or submaxillary cellulitis was first described by Ludovici of Wurtem-

*An address delivered at the initial meeting of the Association of Surgeons of the C. and O. Railway, at White Sulphur Springs, W. Va., September 5, 1914.

*Read before the Tri-State Medical Association of the Carolinas and Virginia at Charleston, S. C., February 17-18, 1915.

burg, and is "due to invasion of micro-organisms, generally streptococci, though the pyogenic micrococci and other bacteria may be the exciting cause." In my fatal case described below we had depressed vitality following pneumonia, and we know that slight wounds in such subjects often prove serious from pyogenic cocci, easily exciting inflammation. In Ludwig's angina we have lymphogenous lymphadenitis first, and as the pyogenic organisms grow and are swept into the blood current, we have clumping and blocking of vessels, followed by miliary, or larger abscesses. Some organisms escape and cause septic infection. On account of the plentiful supply of lymphatics and lymph nodes of the submaxillary region, we soon have an aggravated phlegmonous condition. "The cellulitis spreading backward to the pharynx and larynx, causes embarrassed respiration and at times suffocation." There seems to be in some a predisposition or susceptibility to pyogenic infection, the slightest wound becoming inflamed.

In my case there was very great difficulty in breathing, speaking and swallowing, and if an abscess had formed, it was very deep and showed no fluctuation, for I failed to reach it by incision and by grooved director. Before death the other side of face was edematous and the swelling extended downward to the clavicle. I do not know which organism caused this infection, whether streptococci, staphylococci, pneumococci or other bacteria, but from all the symptoms the organism must have been very virulent.

Coplin says collections of pus amounting to abscess are usually absent. Suppuration may be produced by sufficient numbers of pyogenic organisms entering the submucosa. "Seman regards Ludwig's angina, abscess of the pharynx, and edema of the larynx as closely allied manifestations of infection by a number of bacteria." Recent writers are of the opinion that streptococcus erysipelatis and streptococcus pyogenes are identical, and that the point of inoculation, attenuation of the virus and similar conditions must determine whether erysipelas or diffuse suppuration shall occur in a given case. We know that "the septic symptoms are due to the chemical products of the organisms." In some cases of angina "the polymorphonuclear leucocytes, being distrib-

uted in the lymph spaces are not aggregated to form abscesses."

J. F. L., male, age 16—In March I attended him through a case of pneumonia, lasting for a month or six weeks. On June 24, 1914, he was lying on the floor playing with a pet chicken when it picked off a small papule on right side of his face midway between chin and mouth. I saw him next morning and found the lower lip and chin swollen and painful. This slight wound was cauterized with carbolic acid and followed with iodine later in the day. Hot boric acid dressings were applied. By next day submaxillary cellulitis was marked, and the floor of the mouth was rapidly swelling. By the third day the whole face on one side was swollen, and the neck was edematous and indurated. The pharynx was likewise involved. Rapidly the glottis became edematous and he suffered with great dyspnoea toward the end. Constitutional symptoms were severe from the second day, from which time the fever was continuously high, showing marked general infection. A few hours before death he was delirious, would sit up in bed and scream, and had to be held in bed. Notwithstanding free incisions were made, sloughing on inside of lip followed, and manifold small pus pockets resembling carbuncle occurred on chin. For a day prior to death respiration was difficult. There were no symptoms of pneumonia, pleurisy, or mediastinal trouble, to complicate. He died from excessive edema of the glottis.

Treatment.—Cauterization; free incisions; hot moist boric acid dressings; and injections of antistreptococcic serum and stimulants.

Strange to relate, I had a similar experience with an elder brother four or five years prior to this, from picking a tiny cyst with brass pin on the inside of his lower lip. He, too, had marked Ludwig's angina, and had a narrow escape from death. Both of these cases resulted from pyogenic infection from insignificant causes, as considered by the laity. The patient who recovered was not given antistreptococcic serum.

I realize now that my incisions were not adequate, and should have been deep in the submaxillary region, through the deep fascia, and probably a median incision to the mucous membrane covering floor of mouth. No blood count was made. Tracheotomy was not per-

formed in this case. I never have a fatal case that I do not wish that I had done something else afterward, but when the glottis is involved in Ludwig's angina, there is small chance of recovery.

Proceedings of Societies, Etc.

THE RICHMOND ACADEMY OF MEDICINE AND SURGERY

Held its regular semi-monthly meeting, April 27, 1915, Dr. A. G. Brown, President; Dr. Mark W. Peyser, Secretary. The first order of scientific business was the Report of Cases, which follow:

Cyclic Vomiting:

Dr. St. Geo. T. Grinnan said that he has recently seen three cases of cyclic vomiting, and reported the following: A child, aged 6 years, has had an attack every month for three years. It was noticed that every four weeks the child lost its appetite and color and then began to vomit. The temperature in the beginning rose to 101° F., subsiding as the vomiting progressed, and disappearing in two days. The child had been under homeopathic treatment previously, and without benefit. When seen by Dr. Grinnan the eyes were sunken, and the appearance was one of peritonitis. The urine contained diacetic acid and acetone. There was practically no diarrhoea.

Holt, in his last issue, appearing two years ago, does not give the correct diagnosis of this trouble, nor does any other work appearing up to that time do so. Most authorities say that it is due to autotoxemia; it is certainly due to deficient oxidation in the liver, and belongs to the rheumatic type.

Generally, the cure requires from one month to a year. In this case all fats and sugars were eliminated from the diet. Medical treatment consisted in the administration of four grains of sodium salicylate with sodium bicarbonate after meals for four days. Then there was an intermission of five days and the treatment repeated. In case of failure to retain the medicines, it is given by enema in doses of 10 grains of each.

In the case of a woman who had had cyclic vomiting for twenty years one treatment of 40 grains of each of the medicines in a quart of water, per rectum, entirely relieved the patient.

Dr. H. H. Levy said there is nothing peculiar in a person's vomiting every month, or five weeks, or year. It only shows that there is some carelessness as to the nature and amounts of what he eats. In analyzing such cases, it is important to determine not only the presence of acetone and diacetic acid, but also of indican. Where there is chloroform breath, acetone is present in the blood, of course.

As to the use of sodium salicylate and sodium bicarbonate, it is somewhat doubtful whether these medicines themselves or the mere washing out of the large bowel is the beneficial agent. In this connection, he referred to rectal washing and feeding after surgical operations proving of much good in protracted vomiting after anaesthesia, nothing being given by mouth.

Autointoxication is no new thing. Possibly Hippocrates knew of it. Minute doses of calomel do much good, the trouble being soon over when bilious actions have been produced.

Glossitis Following Acute Tonsillitis.

Dr. B. L. Summers reported a case of glossitis following acute tonsillitis. On the day after she was first seen by Dr. Summers, the patient's tongue was protruding an inch and a half from the mouth, and was bleeding at the sides from cuts inflicted by the teeth. There does not appear to be any abscess formation.

Dr. C. C. Coleman reported a case of "Exstrophy of the Bladder."

Dr. G. A. Ezekiel made a Preliminary Report on the Treatment of Twenty-five Cases of Drug Addiction.*

Papers were read by Dr. J. Garnett Nelson on "Tuberculin Therapy,"† and by Dr. E. C. L. Miller on "Some Theoretical Aspects of Vaccine Therapy," the two subjects being discussed conjointly.

DISCUSSION.

Dr. G. B. Cook has used tuberculin in about 20 cases, and his experience is that it is not so satisfactory in those that are acute as in those where the condition has been more or less ar-

*See Dr. Ezekiel's paper on page 91.

†See Dr. Nelson's paper on page 79.

rested. Its use would be advantageous following operation for tuberculosis of the bones. In the tuberculosis camps in the Adirondacks, patients are given the option as to whether or not it shall be used upon them.

Dr. S. B. Moon remarked that the men engaged in tuberculin work have not yet come to any conclusion. Even after the theoretic aspects of the question have been worked out, considerable difficulty will be found in its practical application. The reverse will also be true, e. g., selection of patients in whom this form of treatment will be applicable; the same condition holds good in drug administration.

Regarding the vaccine theory, those subjects are best who have subacute infections, as of the staphylococci; often, several varieties of infection are coincident in the same patient. In those who are not favorable subjects for vaccine treatment he makes a blood examination previously, and has found that iron and arsenic make good preliminary treatment. Because of idiosyncrasy, the size of the dose must be considered. It is his experience that a three day interval is the best; and as for the length of the course, some need only six or eight injections while others require many, many more. He would not consider as a failure no benefit after two or three weeks of vaccine therapy, but would persist for a period again as long.

As has been pointed out, the location of the trouble must be such as would enable the patient to receive the benefit.

Dr. W. T. Oppenheimer said that when tuberculin was first launched, he received the first package that ever came to Richmond. He gave it in varying doses and at varying intervals in many cases, and every patient died and died quickly. Since that time he has never employed it, and, except for diagnosis, he does not believe it practicable. There has not been developed a particular method for administering it, nor has he ever heard of a cure resulting from its use.

He would not decri the use of vaccines, for some of them are of great value.

Dr. C. M. Miller's experience with tuberculin at the time it was first put forth by Koch, in 1892, was a repetition of *Dr. Oppenheimer's*. The temperature always went up following an injection, and when the agent was pushed, the

patient died very promptly, though, because of the nature of the cases and of the subjects in the Public Health Service, they probably would have died any way. At that time nothing was known of selecting cases for the treatment, nor the value of rest; the gross and microscopic pathology were understood to a certain extent only, and a remedy was being used of which nothing was known. He has had no experience in modern tuberculin therapy, but he does not think it fair to condemn a thing which in its early days proved of no value.

Dr. Shepherd said the question of *Dr. Von Ruck's* claims is *sub judice*. His immunizing tuberculin has been discredited by the government. Enthusiasm in vaccine therapy has run away with the facts as seen in the laboratory. Things must come to a norm some time, and that will be when there has been elaborated a blood-examination better than the opsonic index for the gauging of the dose and the intervals of injections, and observing effects.

Dr. Grinnan remarked that *Von Ruck* uses tuberculin largely, while *Minor*, also of Asheville, does not use it to the same extent. There is a sharp line between the two, but *Von Ruck* is very scientific and knows more about tuberculin than do the others and, on the whole, gets good results. The work is not to be taken up without previous study; one must have a large number of cases before he can determine the benefits. He imagines that the vaccine used at the time mentioned by *Dr. Oppenheimer* and with the lack of necessary knowledge must have been very destructive.

Dr. F. M. Hanes said that one of the greatest drawbacks to the successful development of vaccine therapy in tuberculosis is the impossibility of using animals for experimental purposes.

A condition analogous to that obtaining with the tubercle bacillus exists in the group of encapsulated bacteria. Perhaps the further study of members of this group will suggest a means of overcoming the obstacle offered by the capsule of the tubercle bacillus.

Dr. E. C. L. Miller explained that *Koch's* announcement of his tuberculin was forced by the German Minister of Kultur, much against the former's will. The statement that patients have been killed by tuberculin is perfectly true; it is also true that they have been killed

by other vaccines and by strychnine. These substances are two-edged swords; and the unfortunate thing is that we know more about strychnine than we do about tuberculin. We have no means of measuring the patient's condition. If he has an immunity, we can use tuberculin with impunity. Should there be a focal infection in the lung, and we knew that a substance containing immunizing bodies could enter it, then the administration of the agent would be of benefit. But who knows that such a state exists? It is unfortunate that we must rely entirely upon our judgment. Wright has continued to employ only small doses, and is still treating patients that he began to treat seven years ago.

Dr. Nelson, closing the discussion, referred to the statement as to the usage in one of the Adirondack tuberculosis camps, saying that if there be anything about which to criticize Dr. Brown it is this: Dr. Brown does not permit his patients to decide in any other treatment; nevertheless, his results are better with tuberculin than without it. If we start with a small dose and gradually increase it, we are bound to prevent the patient's reinfecting himself. One writer has said that although the results in the period of which Dr. Oppenheimer spoke were most fatal, yet that period was the most brilliant in the history of tuberculin.

Von Ruck claimed that he could produce immunity in a healthy infant, and his idea is certainly practical. Compare it with the production of typhoid immunity. He states that the government gave him a time limit in which to produce his evidence, but that before it had expired, the Public Health Service advised that he has failed to do so.

It is very difficult to deal with the possibility of producing injury in a patient who has no immunity. Many claim that in every case of pulmonary tuberculosis the bacilli may be found in the blood from the very beginning of the case; others claim that this is not true; but, said Dr. Nelson, there are certainly many fields in which tuberculin is of much benefit.

Bequest to Hospital.

We are informed that the Rockingham Memorial Hospital, Harrisonburg, Va., is to be a beneficiary to about the sum of \$15,000 by the will of W. H. Marshall, who died in Elkton, Va., this month.

AMERICAN PROCTOLOGIC SOCIETY.

Reported by A. J. ZOBEL, M. D., San Francisco, Calif.
(Continued from page 490, last volume).

Retrorectal Infections.

By COLLIER F. MARTIN, M. D., Philadelphia, Pa.

Martin reviews the histories of sixty-seven cases. In addition to the infection of the retrorectal space many of the cases also had involved the pelvirectal and ischiorectal spaces. Some of the more chronic cases were complicated with stricture of the rectum and multiple fistulæ.

Eighty-five per cent. of the infections occurred in males. External traumatism was not a factor in this series of cases. The author holds that most of these infections originate from internal traumatism, associated with some condition which lowers the resistance of the individual to pyogenic infection.

Pulmonary tuberculosis appears to be a most constant factor in thus lowering the resistance. Twenty-one per cent. died from tuberculosis at varying periods, either after examination or operation.

Forty-three per cent. of the cases are noted as having tuberculosis more or less advanced.

Of the fifty-five cases operated upon, thirty-three were cured. These present sixty per cent. of the operative cases, or nearly fifty per cent. of the total number examined.

In nearly half of the cases the original abscesses had opened posteriorly, either between the sphincters or at the anorectal line. Pain was not a prominent symptom.

The methods of incision applicable to the various complicating conditions are briefly outlined.

The author lays great stress upon the seriousness of these infections, and upon the necessity of the prolonged watchful after-treatment.

While the prognosis as to both complete recovery of the local condition and the general health, as well as to the preservation of the sphincter control, should be guarded, careful after-treatment and prolonged observation will result in saving a large proportion of these really serious cases.

An abbreviated history of the findings in the entire sixty-seven cases is given.

Hemorrhoids; Their Treatment.

By J. RAWSON PENNINGTON, M. D., Chicago, Ill.

Dr. Pennington states that clinically hemorrhoids should be calssified:

- (1) According to their location.
- (2) According to their structure.

According to their structure they are divided into, (a) those containing fluid blood, (b) those containing clotted blood, (c) those containing both fluid and clotted blood, and (d) those consisting of "skin tabs" or folds of skin.

Most hemorrhoidal cases can be operated on under some form of local anesthesia. He operates on 90 per cent. of his cases by blocking the field of operation. The cocaine is usually employed in the strength of from $\frac{1}{4}$ to $\frac{1}{2}$ of 1 per cent. The quinine and urea in from $\frac{1}{4}$ of 1 per cent. to 1 per cent. solution. Sometimes he combines the solutions, the cocaine being used for its immediate effect and the quinine and urea for prolongng the anesthesia.

During the last twenty years he has given a fair trial to a number of methods advocated which promised a reasonably good result, including the ligature, the clamp and cautery, Whitehead, injection, suturing and other methods which unite tissue in mass, and has come very definitely to the conclusion that by far the best way of treating this condition is by the excision or enucleation method.

The operative procedure should have for its object the removal of the cause of the tumefaction. The treatment for each type of hemorrhoid should be practically the same. This should consist in removing an ellipse from the tumor-like formation and in the case of the thrombotic pile turning out the clot, and in that of the internal variety the varicosity and allowing the blood to escape, and in the fleshy pile of dissecting out the excess of tissue.

Some Problems Before the American Proctologic Society.

By J. A. MacMILLAN, M. D., Detroit, Mich.

The writer states that: (1) During the past decade proctology has come to include diseases of the colon, and that the extension is beneficial inasmuch as it encourages and provides for a better diagnosis, and for a more thorough search after etiology. (2) The effort should be the aim of the Society to begin a

Society to standardize some of well tried methods of treatment which have been proven effective and reliable. That on the other hand there are certain procedures in common use that are faulty and pernicious, and that it should be the aim of the Society to begin a campaign of education against these. (3) That in regard to rectal cancer he recommends that statistics from the members of the society be collected annually, and utilized to ascertain the prevalence, and location of the disease, together with the extent of surgical interference or non-interference, kind of operation, and subsequent results.

The writer recommends that a cancer committee be appointed to take charge of this work.

Editorial.

Typhus Fever as a Present-Day Scourge.

When the great European war broke out during the summer of last year, typhus fever, regarded in times past as one of the most epidemic and fatal diseases, had come to be considered by many as a malady which would no longer plague civilization, except, perhaps, in a greatly modified way. It was known to be mildly endemic in certain parts of Europe and Asia, and sporadic cases occurred from time to time in the majority of other countries, occasionally being recognized as such even in the United States. It was conclusively proven by Anderson and Goldberger that the condition described by Brill as having been observed and studied by him in the wards of Mount Sinai Hospital was nothing more nor less than typhus fever—unrecognized. Reports of so-called Brill's disease in other sections of the country went to show, therefore, that typhus fever—which was in every respect identical—was more commonly met with than had been generally believed, and it is interesting to note that the ratio of its occurrence in our large cities, when compared with typhoid fever, is estimated as about one to forty-seven.

In 1909, Nicolle, working with Comte and Conseil, reported transmitting typhus fever successfully from one monkey to another by the bite of the body louse, this being confirmed by Anderson and Goldberger whose experiments pointed further to the fact that the louse was

the sole agent through which transmissions occurred. Fleas and bed-bugs were said to be absolutely negative. The virus of typhus fever, as definitely shown by various investigators, is found in the blood, while Plotz is reported to have recently cultivated an organism from a case of typhus at Mount Sinai Hospital. The prevention and management of the infection have thus been put on a firmer foundation during the past six years.

The apparent dependence of typhus fever upon various unhygienic conditions has long been recognized, and a correction of these has ordinarily lessened the severity of such epidemics. When, in addition, it became known that the body louse was the definite medium of infection, the conviction grew that the disease would never again become a menace of large proportion. Probably under normal conditions of government its management would not have proved difficult. Certainly in this country the disease has caused no special alarm. Under the altered circumstances of war, however, the situation becomes entirely changed, and the present strife abroad in a number of places is furnishing concrete evidence that suffering, privation, crowding, poor ventilation, filth, and resulting disease are possibly more serious than have been noted in any former conflict.

The Rockefeller Foundation War Relief Commission, in a recent report, gives a graphic description of the destitution and disease prevalent in Serbia. This little country which, with not quite three million inhabitants, mobilized during the recent Turkish and second Balkan wars nearly one-half a million men, has once again mobilized for military service everyone capable of bearing arms. The prevailing idea has been to meet the powerful enemy with as many soldiers as possible, with every resource strained to fight, and only fight. All other things have been neglected, and material facilities for sanitation have been wanting. With this state of affairs, much of the country devastated, and people homeless as the result of invasions by the enemy, disease unrestrained has played havoc. Typhus fever, which it is claimed was contracted from Austrian prisoners, has spread to an alarming extent through the whole country, and proves both in point of number of cases and mortality, the greatest menace of any of the diseases.

The danger which threatens the rest of the

world from these conditions is fear of spread to other countries for lack of sufficient force to care for the sick and dying, and a dearth of hospital supplies as well as the necessities for hygienic living. Normally, Serbia has had not more than 400 physicians, and the help given by the Rockefeller Commission, the Red Cross and other humanitarians, in the way of surgeons, nurses and finances has been unable to meet the demands. Many of the Red Cross surgeons and nurses have been afflicted with typhus fever since reaching Serbia and several have succumbed.

The American Medico-Psychological Association

Convened for its seventy-first annual meeting at Chamberlin Hotel, Fortress Monroe, Va., May the 11th, continuing in session for three days. Dr. Samuel E. Smith, of Richmond, Ind., presided. The two hundred or more prominent alienists from all parts of the United States and Canada were welcomed to this State by Hon. Harry R. Houston, of Hampton. Dr. Henry Hurd, Baltimore, chairman of the committee on history, recommended that a history covering fifteen volumes be published, this to include a complete history of insanity and the State institutions for treating the disease. Dr. Douglas S. Freeman, Richmond, Va., had been selected to give the annual layman's address before the Association this year. His address Wednesday evening, on "Publicity and the Public Mind," was followed by a reception at the Hotel. Other entertainments enjoyed by the visitors were a visit to the batteries and parade ground at the Fort, where a regimental parade was witnessed, a boat ride on Hampton Roads, and an entertainment at the Hampton Normal and Agricultural Institute. Scientifically and socially, the meeting was enjoyable throughout. An interesting feature of the convention was an exhibit of the work done by patients in the various hospitals throughout the country and especially in Virginia.

New Orleans was chosen for the next place of meeting, and the following officers were elected:—President, Dr. Edward N. Brush, Towson, Md.; vice-president, Dr. Charles G. Wagner, Binghamton, N. Y.; secretary-treasurer, Dr. H. C. Eyman, Massillon, O.; executive committee, Drs. S. E. Smith, Richmond, Ind., Charles P. Bancroft, Concord, N. H., A. P. Herring, Baltimore, and J. M. Forster,

Toronto, Ont.; auditors, Drs. A. S. Priddy, Madison Heights, Va., and C. E. Laughlin, Evansville, Ind.

On the day preceding the meeting of the above association, the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics held its annual sessions at Hotel Chamberlin, under the presidency of Dr. A. S. Priddy, superintendent of the Virginia State Epileptic Colony. This meeting was not so largely attended as usual owing to the absence of foreign members on account of the war.

The Virginia Public Health Association

Held its annual meeting in Lexington, May 10-12, the president, Dr. B. B. Bagby, of West Point, in the chair. Surgeon-General William C. Gorgas, U. S. Army, the principal speaker at the meeting, called attention to improved health conditions in Cuba and Panama which had been brought about by the proper expenditure of public funds under the direction of trained sanitarians, and applied this to Virginia by announcing that this State would be free from malaria, typhoid fever, etc., just in proportion as she was willing to pay for adequate prevention. This was the idea emphasized by practically all the speakers. In his address, Dr. Gorgas made special reference to Dr. Robert Page Cook, a retired U. S. Army surgeon now practising in Front Royal, Va., and others who had not received the praise they deserved for their share in the investigations demonstrating the mosquito as the carrier of the yellow fever germ.

Dr. Samuel Lile, Lynchburg, president of the Medical Society of Virginia, Dr. W. S. Rankin, Raleigh, secretary of the North Carolina State Board of Health, and a number of prominent Virginia sanitarians, lay and medical, were among the speakers. One of the many addresses seeming to call for immediate attention was that by Mr. Richard Messer, sanitary engineer of the Virginia Health Department, who gave names of a number of Virginia towns using highly polluted drinking water, from which they stand in danger of serious epidemics at practically any time.

On Tuesday evening during the convention, a reception was tendered members and guests of the Association in Carnegie Library by the president and faculty of Washington and Lee

University. The meeting, which was largely attended, was brought to an end on Wednesday afternoon, after a trip to Natural Bridge.

Officers elected are:—President, Dr. J. W. H. Pollard, of Washington and Lee University, Lexington; vice-presidents, Drs. C. C. Hudson, Danville, and T. J. Pretlow, Newport News; secretary-treasurer, Dr. W. Brownley Foster, Roanoke, and assistant secretary-treasurer, Dr. Roy K. Flaunagan, Richmond, both of the latter re-elected. The following were elected new members of the executive committee:—Drs. A. C. Fisher, Emmerton; W. P. McDowell, Norfolk; J. M. Biedler, Harrisonburg; M. J. Payne, Staunton, and R. T. Ramsey, Gretna.

American Medical Association.

A number of attractive trips may be arranged across the continent for those who contemplate attending the American Medical Association, which convenes in San Francisco, June the 21st. Those who expect to join any of the A. M. A. specials from Chicago, however, should make their plans ahead. For those who go independently, the Pennsylvania Railroad has issued a schedule of fares for round-trip railroad transportation to San Francisco, with stop-overs. The rate given from Washington, D. C., which would be central for this section, exclusive of Pullman, is \$92.95, proportionate rates being given from other places.

As the visitors will wish to spend much time at the Exposition, the entertainments will partake mostly of the nature of banquets and smokers of various sections and smaller societies in the city at that time. The annual reception and ball given the president will be held on Wednesday evening, this being the most formal of the entertainments.

Virginia's delegates to the meeting this year are Drs. W. E. Anderson, Farmville, Kirkland Ruffin, Norfolk, and Robert C. Bryan, Richmond.

The Medical Society of the State of North Carolina

Will hold its annual meeting in Greensboro, June 15-17, under the presidency of Dr. L. B. McBrayer, of Sanatorium. The North Carolina State Board of Health is scheduled to meet at the same time and place, while the Health Officers' Association of North Caro-

lina will have a one day's session on the day prior to the other meetings.

Tuberculosis Commission Appointed.

In accordance with a joint resolution adopted by the General Assembly of Virginia, in February, Governor Stuart has appointed five members of a State Tuberculosis Commission, "to consider the question in all its phases and report to the next General Assembly a comprehensive plan for the control of tuberculosis in Virginia." The commission, composed of W. L. Andrews, Roanoke, I. E. Spatig, Lawrenceville, Dr. Harry T. Marshall, University, Edmund Strudwick, Richmond, and A. T. Lincoln, Marion, will co-operate with the State Board of Health in its war on the white plague.

Dr. Williams Honored.

At a meeting of the State and Provincial Boards of Health of North America, in Washington, on May 14th, Dr. Ennion G. Williams, Richmond, State Health Commissioner of Virginia, was elected president of the conference for the coming year. The election came as a surprise to Dr. Williams, he having been selected by the nominating committee without having been consulted by them.

The University of Virginia Finals

Commence this year with a "get-together" alumni smoker at the Commonwealth Club, Richmond, Saturday night, June the 12th, which will be followed by four days of events at the University, including the usual dances, etc. The conferring of degrees will take place on the morning of the 16th. A number of alumni and prominent speakers will attend.

New Medical Examiners in District of Columbia.

The following are the newly appointed members of the Board of Medical Examiners of the District of Columbia:—Drs. Edgar Snowden, Edgar P. Copeland, Edward H. Reede, Harry Hyland Kerr, and Roy D. Adams.

The Medical College of Virginia

Commences its final exercises May the 30th with the baccalaureate sermon at Centenary Methodist Church. The Alumni Association will have their annual meeting on the evening of the 31st, while the commencement exercises

proper will occur on June the 1st. Receptions, luncheons and dances will be interspersed to add to the gaieties to be enjoyed by the graduates and alumni. It is expected that there will be more than a hundred graduates from the several departments.

Dr. J. Shelton Horsley.

Richmond, on May 11th, by invitation addressed the Medical and Surgical Society of the District of Columbia in Washington, on "The Uses and Limitations of Blood-Vessel Suturing with Special Reference to the Reversal of the Circulation." This was delivered on the occasion of the annual banquet of the Society, at which Dr. Horsley was the guest of honor.

Dr. and Mrs. J. Burton Nowlin

Motored to Buckingham, Va., from their home in Lynchburg, on May 9th, for a short visit to friends and relatives.

The American Proctologic Society

Will hold its seventeenth annual meeting at San Francisco, June 21-22, under the presidency of Dr. Louis J. Krouse, of Cincinnati. Headquarters will be at the St. Francis Hotel and the meetings will be held in the civic auditorium. The profession is cordially invited to attend all meetings. The preliminary program shows fifteen papers in addition to the president's address. Dr. Alfred J. Zobel, Shreve Building, San Francisco, is secretary-treasurer.

Dr. Frank Hancock.

Norfolk, Va., has been appointed by the Pickett-Buchanan Camp No. 9, Sons C. V., of that city, one of the delegates to attend the Confederate Reunion in this city, June 1-3.

Married—

Dr. Landon Davies Walker, of Unionville, Va., and Miss Josephine Neff Burnet, of Price Hill, Cincinnati, on May 26th.

Dr. John Thomson Booth, of Williamsburg, Va., connected with the Virginia Health Department, and Miss Conde Roy Bridges, of Ashland, Va., on May 22nd.

Dr. William F. Williamson,

Of this city, with a party of friends, motored to Alexandria, Va., the middle of this month and spent several days visiting points of interest in that vicinity.

The South Carolina Medical Association,

At its meeting in Greenwood, elected Dr. G. A. Neuffer, Abbeville, president. Dr. E. A. Hines, Seneca, was re-elected secretary-treasurer.

Dr. A. Murat Willis

Has returned to his home in this city after a few days spent in New York City.

Medical and Chirurgical Faculty of Maryland.

At the annual meeting of the faculty in April, Drs. J. Whitridge Williams and Joseph I. France, both of Baltimore, were elected president and secretary respectively, for the ensuing year.

The Southside Virginia Medical Association

Will hold its regular quarterly meeting in Franklin, on June the 8th. Dr. E. R. Hart, Suffolk, is president, and Dr. E. F. Reese, Jr., Courtland, secretary-treasurer.

Dr. Roy K. Flannagan .

Of the Virginia Health Department, Richmond, has been appointed by Governor Stuart, as one of the representatives from Virginia, at the National Child Labor Convention, to be held at San Francisco, May 29-31.

The Board of Pharmacy of Virginia.

Announces a change in the method of conducting examinations. Beginning July, 1915, examinations will be held on two days as follows: Tuesday, 10 A. M. to 1 P. M., theoretical pharmacy; 2 P. M. to 5 P. M., botany and materia medica; Wednesday, 10 A. M. to 1 P. M., practical work; 2 P. M. to 5 P. M., chemistry.

On the theoretical branches, candidates will be required to make not less than 75 per cent. general average, not less than 60 per cent. on any one branch, and not less than 75 per cent. on practical work.

Dr. and Mrs. A. C. Swimley,

Of Winchester, Va., were visitors to Richmond, early this month.

The Virginia Osteopathic Society

Held its semi-annual meeting, April 10th, at Staunton, Dr. H. H. Bell, of Petersburg, presiding.

At the close of an interesting scientific program, the visitors were entertained by an automobile tour of the city as the guests of Dr.

H. S. Beckler, and many places of interest were visited, including the birthplace of President Wilson. Following a business session in the evening at the home of Drs. Beckler, refreshments were served by the hosts.

The meeting adjourned to meet in Norfolk, October 9th next.

Dr. E. Howe Miller,

Danville, Va., announces that he has limited his practice to surgery, gynecology and office consultations.

Dr. and Mrs. Jacob Michaux,

Richmond, visited their daughter in Norfolk, Va., early in May.

Examination for Assistant Surgeons. U. S. P. H. S.

Boards of commissioned officers will be convened to meet at the Bureau of Public Health Service, 3 "B" Street, S. E., Washington, D. C., and at the Marine Hospitals of Boston, New York City, Chicago, St. Louis, Louisville, New Orleans, and San Francisco, on Monday, June 21, 1915, at 10 A. M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, not less than 5 feet, 4 inches, nor more than 6 feet, 2 inches, in height, with relatively corresponding weights, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work, and must certify that they believe themselves free from any ailment which would disqualify them for service in any climate and that they will serve wherever assigned to duty.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. They will receive early appointments. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Assistant surgeons receive \$2,000, passed assistant surgeons

\$2,400, surgeons \$3,000, senior surgeons \$3,500, and assistant surgeon generals \$4,000 a year. When quarters are not provided, commutation at the rate of \$30, \$40, and \$50 a month, according to the grade, is allowed. All grades receive longevity pay, ten per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitation to appear before the board of examiners, and details of examinations, address "Surgeon-General, Public Health Service, Washington, D. C."

Dr. Samuel W. Hobson,

Newport News, Va., spent a few days this month at his old home, "Mt. Airy," in Powhatan County, Virginia.

Candidate for State Senate.

Dr. Thomas S. Hening, a well-known physician of Jefferson, Va., upon the solicitation of his friends has decided to become a candidate for the State Senate from the sixteenth district, composed of the counties of Chesterfield, Goochland and Powhatan.

Dr. Frank W. Lewis,

Of Morattico, Lancaster County, Va., has been appointed by the Governor as a member of the Board of Visitors of the University of Virginia *vice* Judge Joseph W. Chinn, of Richmond County, resigned.

France Seeks Absolute Prohibition.

The government of France contemplates introducing a bill "prohibiting absolutely the manufacture, sale and transport of all alcoholic drinks during the war," this also to include beverages containing even a slight proportion of alcohol.

Dr. J. S. DeJarnette,

Staunton, Va., was a recent visitor to this city.

Cost of Foot and Mouth Disease.

Foot and mouth disease among cattle has been exterminated in Virginia at a cost of \$12,759.32, which is one-half the actual expenses, as the Federal government divides equally with the State government. Pennsylvania spent \$760,000 and Illinois \$1,300,000 in fighting the disease.

Dr. Herbert Mann,

Of this city, spent a few days in New York, this month.

New Head of Long Island College Hospital.

Dr. Otto V. Huffman, secretary of the N. Y. State Board of Medical Examiners, has been elected secretary of the faculty and executive head of Long Island College Hospital, Brooklyn, to succeed the late Dr. Joseph H. Raymond.

Dr. A. L. Martin

Has returned to his home in Highland Park, this city, after a short time spent in Giles County, Va., where he was called by the illness of his mother.

Encampment for Medical Officers.

All medical officers of the Virginia Volunteers have been ordered to attend camp this year at Tobyhanna, Pa. This is the first encampment for the medical men since 1913, as the encampment was indefinitely postponed last year, owing to the acuteness of the Mexican situation.

Dr. Thomas J. Stanley,

Bracket, Va., early this month, cut his face and badly hurt one eye by a fall while attempting to get to his telephone in the dark. He was brought to this city for treatment.

Child Labor Bill a Law in Pennsylvania.

The Governor of Pennsylvania has signed the Cox child labor bill, barring children under 14 years of age from working at any occupation. Messengers employed between the hours of 8 P. M. and 6 A. M. must be 21 years of age. With the exception of domestic servants and farm laborers, children under 16 years of age will be prohibited from working unless they attend school eight hours a week.

Dr. H. Norton Mason,

Of this city, has returned from a visit to Alexandria, Va., and several Northern cities.

The N. C. State Board of Medical Examiners

Will meet in Greensboro, beginning June the 8th. Dr. J. F. Highsmith, Fayetteville, is president of the Board and Dr. H. A. Royster, Raleigh, secretary.

The Petersburg (Va.) Health Department

Reported 48 births and 59 deaths, including

seven non-residents, for the month of April. Pneumonia led as the cause of death. The mortality rate for the month was 27 per 1,000 population, or a white death rate of 23 and a colored rate of 33 per 1,000.

Dr. B. F. Noland.

Of Leesburg, Va., motored to Richmond on May 11th, to attend the I. O. O. F. convention, to which he was a delegate.

Deaf Children.

Anyone interested in a little deaf child can obtain free literature explaining approved methods of training them from infancy to school age, by writing to the Volta Bureau for the Increase and Diffusion of Knowledge Relating to the Deaf, 1601 Thirty-fifth Street, N. W., Washington, D. C. This literature relates only to the training of little deaf children, not to medical treatment nor to the deafness that comes in later life. Age of child and other details are welcome.

Dr. C. W. Tucker.

Drakes Branch, Va., was in Richmond on a business trip the middle of the month.

Schools for Crippled Soldiers

Have been started at Berlin, Heidelberg and Dresden to teach one-armed soldiers how to earn a living and a special organization will secure employment for the men after they complete their training.

Dr. William J. Gills.

Farmville, Va., who has been quite sick at the Johnston-Willis Sanatorium, this city, is reported as being much better.

Gala Days for Richmond.

The twenty-fifth annual reunion of the United Confederate Veterans to be held in this city June 1-3, will bring to Richmond one of the largest gatherings in its history. Governors of several States have signified their intention to attend and the great parade on the last day promises to be so brilliant as to live long in the memories of those who witness it. Every effort will be made to look after the comfort and pleasure of the veterans especially, but Richmond extends a welcome to any and all who may be able to visit our city on these dates.

Dr. Andrew MacPhail,

Of Montreal, editor of the *Canadian Medical Association Journal*, has joined the hospital work in France.

The Medical Association of the State of Alabama,

At its meeting in Birmingham, last month, elected as president, Dr. J. Norment Baker, of Montgomery, who has served for a number of years as secretary. The new secretary is Dr. Henry C. Perry, of Montgomery. The next meeting will be held in Mobile.

Governor Vetoes Bill.

Governor Rye, of Tennessee, has vetoed the bill abolishing capital punishment in that State, fearing such a law would increase crime and mob violence. This bill, we announced several weeks ago, had been passed by the legislature of Tennessee, and it would have become a law but for the veto of the Governor.

Dr. and Mrs. H. W. Porter,

Of Louisa, Va., are guests of friends in Lexington, Va.

Dr. B. D. Spalding

Has returned to his home in this city after several weeks spent in Maryland.

For Sale— Moores Brook Sanitarium .

Owing to the death of the former superintendent, Dr. D. M. Trice, this splendid Sanitarium is for sale. For particulars, see advertising page 16.—(*Adv.*)

Obituary Record.

Dr. Alfred Bland Tucker.

Of Berryville, Va., died at his home in that place on May the 14th, at the age of 58 years. He had been in bad health for some time. Dr. Tucker was graduated from the Long Island College Hospital, Brooklyn, in 1887, and was well known in the Northern section of this State, having been a native of Clarke County, Va. His second wife and three children survive him.

Sir William R. Gowers, M. D.,

Of London, England, eminent as a specialist and writer on diseases of the nervous system, died on May the 4th, at the age of 70 years. His books have been translated into many foreign languages. He was consulting physician to the University College Hospital, in London, and to the National Hospital for the Paralyzed and Epileptic.

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CONCERNING "TWILIGHT SLEEP."*

By VIRGINIUS HARRISON, A. M., M. D., Richmond, Va.

Dammerschlaf, "twilight sleep," or "painless child-birth," according to Knipe,¹ is a name given to that condition of the mind in which, while the patient remains perfectly conscious and intelligent, she loses a knowledge of present events when they are completed. In other words, he says a period of amnesia results, during which time painful sensations, which may be felt, are not stored up in the memory, to haunt the patient after the labor is over.

Twilight sleep was conceived in Germany, and the infant method was delivered by Steinbuechel in 1902. It was a blue baby from the beginning, and was attended by many Germans (Wartapatian, Reining, Weingarten, Ziffer, Pusching, Bertine¹ and others) with varying degrees of success. Gauss made his first report of 200 cases in 1906, having increased Steinbuechel's dose of scopolamin from 1/200 of a grain to 1/150, retaining the dose of morphine at 1/6 of a grain, as was Steinbuechel's dose. In 1908, Gauss reported 1,000 cases, which was increased to 5,000 in May, 1914.

In reviewing the literature of the subject, we naturally find papers only from those who are enthusiastic on the subject, and among the best of them are those by Knipe,¹ Harrar, and McPherson,² and Rongy.³ Much of what I will have to say will be taken from these excellent exposes of the subject.

Twilight sleep can be divided into three periods: first, the patient is completely awake, impressions are stored in the memory, though there may be a diminution of pain; this indicates too small a dose of scopolamin. The

second period, the impressions are neither perceived nor stored in the memory; this indicates too much morphine or scopolamin. Between these periods there is a condition in which the patient perceives impressions, but does not store them up in the memory; this is the real twilight sleep of Gauss.

To obtain just the right period, it requires acute judgment on the part of the obstetrician to give the right dose to any individual woman. If the first period only is reached, the method is a failure, as memory is not interfered with. If the second period is reached, then the dangers to both mother and child assert themselves, indicated by inertia uteri in the woman with its attendant difficulties, and a blue baby to revive, which is not always successful. To obtain the intermediate period, or twilight sleep, we must first have a stable solution of scopolamin. We must know the susceptibility of different women to scopolamin, which, to my mind, is a difficult task. We must use the memory tests to prevent going too far on the one hand, and to see that we go far enough on the other. The tests are made by using some instrument or other object every thirty minutes to see if there are any "iles of memory," for if there are sufficient of these, the mind will fill in the space and she will declare that she has known everything that has happened. We see this illustrated in inhalation anaesthesia, when we only administer small quantities during the existence of a pain. If the tests are made and the woman remembers the object, she is given another dose of scopolamin, or narcophen, but the dose of morphine is not repeated except under unusual conditions. If the woman does not remember the object, she is not given another dose until the memory shows evidences of returning. The same object must not be used too frequently, as the cumulative effect in the brain may be sufficient to lead to error, and cloud the test.

*Read before the Richmond Academy of Medicine and Surgery, May 11, 1915.

Drugs and Dosage.—The Gauss method is to administer 1/6 of a grain of morphine muriate¹ subcutaneously. The needle is left in the position and another syringe with a solution of 1/200 to 1/150 grain of scopolamin, 1 cc. (Straub) is given. In from thirty to forty-five minutes, according to the tests, she is given another dose of scopolamin (grain 1/200 to 1/150). It usually requires more than one dose to produce sufficient anaesthesia. The doses are repeated as necessary, and success is claimed to be due to the gradual induction of the sleep, not forcing too much in a small space of time. Gauss claims that it requires a great deal of practice and experience to know just how much of the drug to use for any individual woman. He also emphasizes the point that the hydro-bromide of scopolamin must be a stable solution (Straub) put up in ampoules of 1 cc. each, which will be the ordinary dose.

As light disturbs the patient, the room should be darkened, and possibly goggles or cloths placed over the eyes to prevent any interference with success of the method. Noises also disturb the patient and prevent success, so no one must be allowed to enter the room, especially the family of the patient: no talking is allowed and the patient's ears are stuffed with cotton to prevent any disturbance from unavoidable confusion.

Gauss¹ maintains that failures to obtain success in this method are due, first, to attempts to hurry the condition, that is over-dosing in a short period, which may be followed by weak contraction of the uterus, stopping of the reflex abdominal pressure, and apnea of the child; second, beginning the injections too early, that is before the regular, forcible, and even painful contractions have begun. Twilight sleep is contra-indicated in uterine inertia, and *will produce* inertia in some cases; third, to suppress all painful impressions is a source of danger, and is where most of the bad results occur. Gauss further says, *to have a painless labor* is an admission of over-dosing.

The Seigel method is now being used at Freiburg on fourth class patients only. This method consists¹ of administering narcophen, grain 1/2, and scopolamin, grain 1/150. In forty-five minutes he gives scopolamin, grain 1/150, alone, and in forty-five minutes again gives both doses, then in an hour and a half he gives scopolamin, and so on. This is the

method seen at Freiburg for the last year and is not the Gauss-Kronig method. The Seigel method gives good results as far as the mother is concerned, according to Knipe, but a large proportion of the babies are born with oligopnea and apnea. This method was used by Seigel to try and establish a routine method, and one that is much simpler than the Gauss method.

To produce twilight sleep and conduct a woman safely through a labor under its influence requires a good technical knowledge of the physiological and toxicological action of morphine and scopolamin, and more obstetrical knowledge of the forces at work in both normal and pathological labor than is usually possessed by even those who profess to be particularly fitted for this work by experience and special study. The use of the drugs cannot be turned over to a man, as you would inhalation anaesthesia, for he must possess good obstetrical knowledge to know how far to carry the effect of the drugs. If he was expert in this, he would not be satisfied to use the drugs alone, he would wish the obstetrical management himself.

The after-treatment of the Freiburg patient consists of passive exercises of the upper and lower extremities, abdomen, back and perineal muscles during the first day; the second day these become active; the third day the patient is allowed out of bed; on the fourth day the patient is allowed to walk about, the only contra-indications being lacerated perineum, elevated temperature, or anemia. No bad results followed, and involution was more rapid. Gauss claims that early rising gives less phlebitis, less retro-version, less muscular relaxation and more rapid involution of the uterus. Knipe says this is due to the early rising and not to the twilight sleep.

The dangers to the child are, first, the direct effect of the drugs. That the drugs pass over the child is proven by its presence in its urine at birth. If too large a dose has been given, it gives rise to a condition of respiratory paralysis, showing itself as apnea or oligopnea; this latter condition is indicated by the child crying once at birth, and then becoming blue, with no impulse to spontaneous respiration until sufficient carbon dioxide has accumulated, when it will take one or more breaths and become blue again. It is claimed that, without

treatment, in about fifteen minutes the child will commence to cry and breathe, and soon be out of danger. While in this condition of oligopnea the infant's heart is very irregular and may get down to sixty per minute. I would think it is good advice to keep the family out, if we must let a baby stay blue for fifteen minutes without trying to do something for it. Deep asphyxia may occur and require smacking and tub baths, hot and cold, to revive it. This may be due to too much morphine, too much scopolamin or, I may add, too much pressure on the head of the child when allowed to remain in the pelvis longer than it should. We have all seen this in normal labor. If, however, the Gauss method has been followed, he claims there should be no blue babies.

All who have had experience with twilight sleep will admit that the second stage of labor will be lengthened, even if the total number of hours in labor are shortened. The prolongation of the second stage will average one hour in the primiparae and one-half hour in the woman who has borne children; therefore, the twilight sleep has a direct danger to the child, due to prolonged intra-pelvic pressure.

Hocheison, Steffen and Wartapatian¹ report cases where the drugs used had a deleterious effect on the strength of the uterine muscles, and especially on the abdominal muscles. Knipe says this is due to improper dosage. Gminder and Bass and others report cases where there seems to be a lingering effect of the scopolamin on the child, shown by a sleepy condition, the child refusing to nurse; the reflexes are slow, the pupils are dilated and without reaction, while the Freiburg clinics state that there are less still-births with twilight sleep than without it. The results reported by Gauss in his first 300 cases of the first 1,000 are as follows: Born alive, 98.3 per cent.; still-born, 1.7 per cent.; crying lustily, 56.4 per cent.; asphyxia, 14.2 per cent.; oligopnea and apnea, 27.1 per cent.; so that, of the 98.3 per cent. of those born alive, 41.3 per cent. were blue babies. This was in 1906. In Gauss's last 500 cases, he had only 19 per cent. oligopnea and asphyxia. In 92.8 per cent. there was only a physiological bleeding after labor. The placenta had to be expressed by Crede's method in 48.1 per cent. Forceps were

used in 9.68 per cent. Having given a somewhat detailed account of the Freiburg method as given in Knipe's excellent paper, I will try briefly to refer to the other splendid papers spoken of above.

Harrar and McPherson² said the technique used by them was that of Gauss and Kronig. It was instituted only when the pains were five minutes apart and occurring regularly and lasting thirty seconds. They find that only one-fourth of the patients brought into the hospital were suitable for the treatment, as they were too far advanced in labor. The drugs have no effect if the first dose is given after the second stage of labor begins. Kronig claims complete amnesia covering the duration of labor in 80 per cent. of his cases; Harrar and McPherson in one hundred cases had only sixty-six complete, ten partial, and in twenty-four, failures. The failures were due to starting some cases too early and some too late; in those given the treatment too early, uterine inertia developed, and the method had to be abandoned. They remarked that all the cases were apparently suitable for treatment. In one case the pulse went to 140, and had active delirium; she was one of their successful cases. Their cases showed a normal involution of the uterus, but saw no cause why the patient should get out of bed earlier. The average duration of labor was sixteen hours in primiparae, against eighteen in the untreated. The dilating stage of labor was the shortened part of labor; the time of the second stage was lengthened. In their 100 cases, seventeen were delivered with forceps instead of eleven without twilight sleep. There were forty-seven lacerated perineums in the untreated, and only thirty-six in the ones using the scopolamin-morphine anaesthesia. Without treatment, there were seven cases of fetal asphyxia and one still-birth; in the treated ones there were ten cases of asphyxia and two still-births.

Harrar and McPherson say that it is a strictly hospital treatment, as ward patients either come in too late, or the interns cannot spare the time to give them proper attention, so the private patients must get the only attention in the hospital. The private home will not have many cases as, unless the patient is financially able to remove the complete force of nurses and assistants to her home, to remain during the whole labor, it should not be at-

tempted. They conclude by saying that it is a valuable method of abolishing a woman's recollections of the ordeal of labor in from 60 to 70 per cent. of the cases in which it can be used.

Rongy,³ in a paper, gives his experience with twilight sleep in the Jewish Maternity and Lebanon Hospitals. He had a very good chance to study the method correctly, as he said that he had the good fortune of obtaining the services of Dr. K. Schlossingk, who had been one of the assistants of Professor Kronig at Freiburg. Dr. Schlossingk took entire charge of the cases and followed the identical technique of Kronig and Gauss. This has already been given, so it will not be repeated. When the presenting part is on the perineum, he administers usually one cc. of pituitrin to hasten the expulsion of the child. This assistant used narcophen, instead of morphine, to produce twilight sleep, and it required sometimes two and sometimes fourteen injections.

Results in these hospitals: Rongy said that Schlossingk was not familiar with our type of women, and the solutions were not what they wished (not made in Germany, I suppose); the hospital not equipped as it should be, so the early cases were not encouraging. This to me is a great warning to those of us who have seen none or only a few cases, but who are willing to use a method, when one who has learned it from the originator, cannot use it successfully, unless he has had experience in such details as were just mentioned. After making improvements, he reports the results in 125 cases: 104 cases, complete amnesia and analgesia, or 83.2 per cent.; nine cases, analgesia without amnesia, or 7.2 per cent.; and twelve cases, or 9.6 per cent. failures; 102 babies cried spontaneously, 81.6 per cent; twenty-three, or 18.4 per cent. had oligopnea or asphyxia. Infant mortality was three or 2.4 per cent. Operations to terminate labor, fifteen cases, or 12 per cent. Ether was used when artificial delivery was done.

E. B. Cragin,⁴ in discussing these papers, says the more he studies the subject, the more he finds he has to learn. He had Dr. Schlossingk, the assistant of Freiburg, to do the teaching at the Sloan Hospital, and Dr. Cragin says he "freely confesses that they have had all the bad results one is likely to have in a long series of cases, but as they were but

beginners, he has to learn the advantages; he would present the disadvantages." The first disadvantage he mentioned was the liability to uterine inertia, which was of frequent occurrence without the method, would be more frequent with it. The patients at times were markedly excited and were liable to get out of bed, which interfered with aseptic work if not contributing to sepsis. Again, it is hard to tell when a woman passes from one stage of labor to another. He reports one case of still-birth at Sloan, under the charge of Dr. Schlossingk, which he thought could have been saved by a forceps delivery one hour sooner, though he admits the child may have been killed by the repeated doses of scopolamin, or it might have been killed by the pituitrin: he thinks the pituitrin is questionable in these cases. Another case showing the disadvantages was that of frank breech, the child being left too long, and died soon after birth. Another disadvantage was that the woman could not use her abdominal muscles to aid in expelling the child, and would require forceps operation, whereas if the other methods of anaesthesia had been used the woman would deliver herself.

He mentioned as the advantages that it made the first stage of labor more comfortable, and might be used in this stage, allowing the second stage to be conducted as before. Dr. Cragin condemned the method for the general practitioner as it required not only unusual obstetric skill but a thorough knowledge of the drugs. Broadhead had used the Seigel method with satisfactory results in the main, but he incidentally remarks that several patients would have jumped out of bed if the nurses had not been there to restrain them. Some cases have been referred to in literature as being temporarily insane during this method, but I cannot put my hands on the report. Humpstone said it would never be used outside of a hospital as routine, as no one would be able to watch enough cases to make a living without killing himself. Fetra² stated the reports from Freiburg were that a large number of babies were asphyxiated, and should be a warning that the method should not be used except by an expert obstetrician who can stay with the patient the whole time.

Since writing the above, I have today received one paper written by Dr. John O. Po-

lak,⁶ in concluding which he says: "In my personal experience and that of my associates, Drs. Ralph M. Beach and F. C. Holden, at the Long Island College, Jewish and the Methodist Hospitals of Brooklyn, 135 cases in all, there have been but three failures. One hundred and fifty had no recollection of the labor after the second injection, a few have islands of memory, 10 per cent. have shown some delirium during the perineal stage. There has been no fetal mortality. Hence, we must conclude that scopolamin-morphine anaesthesia can be used without detriment to either mother or child in properly selected cases * * *. We are further impressed, as our experience increases, with the wide field of usefulness of scopolamin anaesthesia in hospital obstetrics. We feel, however, that, for the present at least, it is a method for the expert in a maternity hospital, and that its greatest usefulness is as a first-stage procedure."

The other paper was by Ralph M. Beach⁷—"Report of One Thousand Cases of Twilight Sleep."

All these cases are gathered from men in America, and represent about twenty-five different reporters. After an exhaustive study of these cases, he presents the subject with statistics in a tabulated form which are too long to present tonight. He draws the following conclusions:

First, That twilight sleep is a reality and not a fad.

Second, That, by its application, we may give about 85 per cent. of cases in which it is used a practically painless labor.

Third, That it is contra-indicated in certain definite cases, especially in primary uterine inertia, markedly contracted pelvis, and the emergencies of labor which demand operative interference.

Fourth, That it may be used in all other labors, and is especially applicable to the nervous and psychically unfit women, in long painful first-stage labors, in cardiac cases, etc.

Fifth, That the women after twilight labors are in better condition because there are less difficult forceps operations, less lacerations of the cervix and perineum, better milk secretion and less nerve exhaustion. They recuperate much faster than by the old method.

Sixth, That it does not cause insanity, as

stated in the lay press, but rather tends to diminish its occurrence.

Seventh, That we have more and better babies.

Eighth, That the disadvantages are slight, and we are learning to overcome them by a further knowledge of the method, a closer attention to detail and a perfection of technic.

Lastly, that twilight sleep is a method which, to get the best results, must be performed under ideal surroundings, with the minimum possible dosage, and by someone who has trained himself to do the work. Dr. Richard C. Norris⁸, in discussing Dr. Polak's paper, says: "not all women suffer so much in labor, as attested by how we have to hurry to get to some of them before the baby is born. Usually these are multiparae. In a strong robust woman who has had children, ether analgesia and the judicious use of pituitrin in this class is a practical substitute for twilight sleep. But when we come to the hyperesthetic primiparae, the girl raised in the lap of luxury, whose nervous system cannot stand the strain, whose uterus refuses to act and who, when she falls into labor, is almost hysterical at the approach of suffering, I believe this method of twilight sleep, carried out with strictest details to minimize its dangers, will be a blessing." Dr. Barton Cooke Hirst⁸, after reciting how difficult it was to get anything out of Professor Gauss, and how dictatorially he asked each patient in his hospital every morning, "you have not had any pain in your labor, have you?" said the patient did not dare to say any thing but "No." Dr. Hirst also says, "In individual cases it is all right. As a routine practice, those of us with most experience must condemn it."

Dr. McGlinn⁸, suggests that if the "philanthropist" who is sending women to lecture upon the advantages of twilight sleep would instruct them to educate women to consult their doctor early in pregnancy for a proper study of their condition, it would be much the wiser procedure. Others took part in the discussion, some favoring the method and others being opposed, while some were on the fence, willing to use it if it could be proven it was what it is claimed by its enthusiastic users.

E. P. Davis⁵ says the method needs a further and careful trial in comparison with other

methods before its exact value can be determined.

Whitridge Williams, DeLee, Green, Hirst, and others have tried twilight sleep, and abandoned it as having no advantage over the present methods and so recorded themselves one year ago.

In this review I have tried to present the subject as I understand it. Personally, I have had no experience with it, but when Johns Hopkins Hospital, the Chicago Lying-In Hospital and other hospitals of equal note, under the charge of such men as named above, have tried the method and found it wanting, I think it is safe to sound a word of warning to those less well equipped, to desist using the method until sufficient hospital data be given to assure that we will be able properly to safeguard the lives of the babies, which is the *fundamental* end of pregnancy. "We must save the kiddies."

In order to discuss this subject, I will summarize what has been said:

1.—The method is strictly one for hospitals, and not for the private home, unless the patient is financially able to pay a full working force of nurses and doctors to remain in her home for the whole period of her labor.

2.—The obstetrician must be thoroughly trained in the method, so he will understand the physiological and toxicological action of morphine and scopolamin when administered to a woman in labor, and also be able to detect the evil effect of the drug on the unborn child. He must do more than this; he must be ready with assistants who are capable of giving the child the proper treatment when born. We can readily see that the knowledge necessary to use this method is not easily obtained, for Dr. Schlossingk was assistant to Professor Kronig and Dr. Gauss for four years, yet according to testimony of Drs. Knipe and Cragin, he lacked experience or something else, for the particular people he saw in New York.

3.—The obstetrician must be more than ordinarily skilled in the diagnosis of the normal as well as the abnormal conditions of labor and the methods of correction. We have lost the usual signs of the stage progress in an amnesic patient, and have to rely on more internal examinations to tell what progress the case is making, and for this reason we may

have more sepsis to deal with. Obstetricians are just now trying to preach attending cases without vaginal examinations, and this looks like a step backward. I do not believe rectal examinations are free from danger, nor will they give the desired information.

4.—The method must be that of Kronig and Gauss to be successful; no other worker has attained the results reported by them. The scopolamin must be standard stable solution (Straub) or Hoffman-LaRoche) "best made in Germany." The memory tests must be taken every thirty minutes; the pulse of the mother and the heart of the child must be counted every fifteen minutes. Pain must not be abolished, or you have over-dosed; you must not let the patient have any iles of memory, or you have underdosed; and she will declare when it is all over that she has been faked, and she knew everything that happened.

5.—Primiparae are the cases that give the best results, and they must not be given the treatment until the pains are five minutes apart, and are regular, and some dilatation of the os has occurred, to be sure that labor has really started. The uterus must be felt contracting, to be sure that labor is progressing, and not false labor pains. To these cases relief of pain and memory will occur in from sixty to eighty per cent. of those who are suitable for the treatment. Twenty to twenty-five per cent. whom we promise relief will have to obtain it by the present methods. In women who have had children, we cannot promise relief, as it takes one or two hours to obtain amnesia, though it can be successful if we see the patient soon enough. If the second stage is well begun in multiparae, the drug has very little effect as far as memory is concerned, but some relief or pain is obtained.

6.—The perineum must be watched, as the child may be expelled without the knowledge of the attendant. If the child remains too long on the floor of the pelvis, it must be extracted with forceps under a general anaesthesia, though some report doing this work under the analgesic and amnesic condition.

A difference of opinion obtains in regard to the administration of pituitary extract for the completion of delivery; some say mechanical injury is done; others, that the child is already poisoned by too strong drugs, and

another, that may cut off some of its circulation, may be sufficient to terminate its life.

Lastly, we must consider the method, suggested by Cragin and others, as an adjunct to the well-known ones, viz.: to shorten and lessen the pain of those tedious first-stage labors, as for example, dry births in multiparae, and in primiparae with a tedious dilating period, and in a nervous, hysterical woman.

"Be not the first by whom the new is tried, nor yet the last to lay the old aside."

401 North Allen Avenue.

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The following as bearing on the foregoing subject, but in lighter vein, was sent us by Dr. H. H. Levy of this city:

Adam lay down and slept, and by his side,
 Woman in her wondrous beauty rose.
 Adam awoke and called that woman bride,
 And his first sleep became his last repose.—*Pryor.*

This "Twilight Sleep" is a thing very old,
 For in Gen. II:21, we are told
 That on Adam there fell a slumber deep,
 So the advent of Eve was in twilight sleep.

—H. H. Levy.

SYPHILIS AS A CAUSE OF INSANITY.*

By J. S. DeJARNETTE, M. D., Staunton, Va.
 Superintendent Western State Hospital.

To hark back to twenty-six years ago when I began to study insanity, it was thought that syphilis played but a small part in its cause; alcohol and a strenuous life had more to do with paresis than syphilis. That syphilis originated in America seems almost inevitable in view of the lack of observation of syphilitic disease of the nervous system before 1500; also the lack of observations relative to general paresis and locomotor-ataxia, in spite of Sandhoff's recent findings of an Italian book, dated 1465, with receipts for the French disease.

"Whether the disease is of American origin or not, it is very certain so far as Western

medicine is concerned, its first great epidemic began between 1493 and 1500, and its study began at that time. Diaz de Isla in Barcelona treated the pilot of Columbus and his sailors on their return from Hayti," and ever since then the effect of the disease on the nervous system has been studied and described. Syphilitic neuralgias, hemiplegias, paralyses, headaches, spasms, meningitis, epileptiform attacks, cranial osteitis, blindness, locomotor ataxia, gummata, eye palsies, myelitis, paresis, etc., have all been noted and described, and ascribed to syphilis. It only remained for Schaudinn in 1905 to demonstrate the parasite which he called the *spirochaeta pallidum*, *spironema pallidum*, and *treponema pallidum*. This parasite was also found in congenital syphilis in the nervous system, in gumma of the brain, in the spinal cord, syphilitic meningitis, and even in the cerebrospinal fluid, in both the congenital and acquired form. Noguchi found it in the paretic brain.

The diagnosis of the disease, especially of the nervous system, can now be made with almost certainty by the Wassermann reaction to blood and spinal fluid, increase of globulin in the spinal fluid, and pleocytosis in the spinal fluid. Over 7 to 10 lymphocytes to the cubic millimeter is pathological. Scarlet fever, trypanosomiasis, frambœsia, and a few cases of multiple sclerosis may occasionally give positive blood Wassermann.

The eye reflexes are also extremely important in making a diagnosis, inequality in size of pupils, irregularity in shape, impairment of consensual reflex, fatiguability of light reflex, Argyll-Robertson pupil, (in which there is reaction to distance but not to light). This symptom alone, if bilateral, is a fairly positive criterion of syphilis of the nervous system.

Other symptoms of syphilitic attack on the nervous system are abolition of patella reflex, inability to stand with feet together and eyes closed, implication of the optic nerve which shows itself as a pressure neuritis, choked disk in both eyes, ptosis. Non-traumatic paralyses in those under 40 years of age are apt to be caused by syphilis, unless caused by some acute disease.

Syphilitic Insanity is manifested by dementia, mental enfeeblement, aphasia, etc., but by far the greater number of its mental victims are the paretic cases which claim about 4 per cent.

*Read before the Augusta County Medical Association, Inc., at Staunton, Va., February, 1915.

of all syphilitics. About one-fifth of the first admissions to the Manhattan State Hospital for the Insane in the year 1913 were paretics, and, as 100 per cent. of this disease is caused by syphilis, it is plain to see it is a veritable scourge to humanity, especially since it usually attacks its victims in the prime of life (about 35 years) and literally kills in an average of about 2½ years, the strongest seeming to have no more resistance than the weak.

To illustrate the fearful effects of the syphilitic venom, Fournier states that 68½ per cent. of the children born alive of syphilitic parents die from the disease. This does not include the aborted offspring. In 72 families where there was paternal syphilis, the mother not being syphilitic, 70 mothers gave birth to 370 children, 110 still born, 166 syphilitic, and 31 healthy. The healthy children were all the last born save in four instances.

The disease diminishes the vital energy of the germ plasm prior to conjugation, and, according to the classified formula of Fournier, which seems to hold good, the expectation in regard to children of syphilitic parents is as follows: Abortion, dead child, early death, healthy living child.

A later formula is sterility, miscarriage, abortion, still-births, dying in infancy from convulsions, marasmus, meningitis, hydrocephalus: then there are children who are comparatively healthy but later develop hereditary syphilis.

It is strongly suspected that hereditary syphilis may be transmitted to the third generation.

Hydrocephalus was found in 34 out of 362 cases of congenital syphilis. Atwood and Clarke show 20 per cent. of the idiots, imbeciles and morons at Randall's Island were syphilitic.

Think of it, a *preventable disease* in our midst that is destroying thousands of our young men and women and children, and we, here in old Augusta and Stannton, have scarcely lifted our voices above a whisper to halt its insidious attacks, or so much as given the people in general a hint of their danger.

We are too respectable to tell the people the plain truth in time to save them from exposure to this infection. We say the subject is too delicate to be talked about. This is false modesty, and shame be to us to keep silent when we can, certainly in some instances, save some

of our people by speaking boldly what we know about its prevention, its horrors, its insanity and its death. If a man breaks his leg, his life not being in danger, we rush like mad to relieve him; but we know many of our youth are exposing themselves to the *treponema pallidum* unconscious of its certain and deadly course.

There is a great awakening on this subject and we should lead in the fight and not be stragglers in the attack. The newspapers should be requested to spread this knowledge and arouse our citizens to their danger. Dr. Phelps sounded an alarm on this subject about two years ago, and its echoes have almost died away. The people still sit in darkness and in the shadow of death.

Treatment. — Salvarsan or neosalvarsan should be given in repeated doses along with mercury in some form; also the iodide of potash, while not a true poison to the spirochaetae, yet it is an adjuvant to mercury. Thirty grain doses should be given, as the large doses formerly given are not now recommended. Creams of calomel are recommended for injection, mercury by inunctions, and hypodermic injections of the soluble mercury salts, some of which are very painful.

For paresis no treatment up to this time has been successful, and almost everything has been tried faithfully. Swift-Ellis recommended what is called spinal flushings, but it has given very little benefit. Their process is to inject nine-tenths of a gram of neosalvarsan; one hour later, about 6 ounces of blood is drawn from the median basilic vein. This blood is set aside to clot at room temperature for about three hours, then put in an ice box at a temperature of about 50° F., until the following day. The clear, supernatant serum is then poured off, centrifuged and mixed with its own bulk of normal saline solution. It is then heated to 56 degrees for half an hour, and again placed in the ice box until ready for use. Then a lumbar puncture is made and about 20 c.c.s. of spinal fluid drawn out, when the same amount of the salvarsanized serum is injected into the spinal canal.

This procedure was expected to give great results, but few if any cases have been cured. One supposed cause of its failure is that the circulation of the spinal fluid is downward, and injected fluid never reached the surface

of the brain where the parasites were doing their damage.

Dr. Guy Payne, of the Overbrook Hospital for the Insane in New Jersey, reports six cases of paresis treated by a somewhat similar method, except he trephined over the precentral gyrus and injected the salvarsanized serum under the dura. This is done with a needle bent at almost right angles $\frac{1}{4}$ of an inch from the point. The opening in the needle is next to the cortex of the brain when inserted under the dura. The fluid flows in very rapidly. In about 10 days the opposite side of the patient's head is trephined, and same dose given subdurally. He claims five improvements out of six cases. This seems to be applying the remedy to the right place, and offers more hope than any procedure I have seen recommended.

Prevention.—I believe if we could treat all of our cases when first infected, until we get negative Wassermann, there will be but little locomotor ataxia or paresis, as these diseases are usually found in syphilitics of over ten years' duration. Therefore, let us treat all our syphilitics thoroughly, and impress on them their danger in after years, so they will know the danger.

By far the best known treatment is *prevention*, which should be *taught to all in time to really prevent it*.

CERTAIN POINTS OF PRACTICE IN GASTRO-INTESTINAL DISEASES.*

By W. A. SHEPHERD, A. B., M. D., Richmond, Va.
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Perhaps no part of the body so surely and promptly reacts to derangements of the other parts, or to the general condition of the system, as does the digestive tract. Comparatively few symptoms referable to the stomach and intestines arise from essential disease of those organs *per se*. Therefore, he who would successfully cope with disorders of this portion of the body must be fully acquainted with disease processes in other parts, and his skill in treating digestive disorders will be commensurate with his knowledge and experience in the various disease processes in other organs and tissues. No greater mistake could be made than to limit one's investigations to the diges-

tive tube alone, when disorders of digestion in the patient are chiefly complained of.

A robust looking negro man presented himself lately at my clinic at the Dispensary, complaining only of gastric disturbance after meals. Examination showed marked involvement of both apices with tubercle bacilli in the sputa. He may have had essential gastric disease complicating pulmonary tuberculosis, but failure to recognize the condition in the lungs would have certainly been a handicap in the treatment of his condition. A full investigation of the body and its functions is therefore called for, including laboratory tests applied to the secretions, blood, and in some cases to the serum. Only recently we have come to recognize the part played, for instance, by syphilis in the causation of essential gastric disease. Likewise, the anemias would go unrecognized as causative factors of digestive disorders unless proper investigations of the blood were undertaken. Too much stress in certain directions should not, however, be laid upon laboratory examinations in these disorders. We have learned that a comparatively simple laboratory investigation of the gastric contents is, in most cases, sufficient, in contrast with the practice some years ago of making most elaborate tests as a means of diagnosis. No laboratory examinations could possibly supplant the valuable data to be obtained through a carefully taken anamnesis. This does not mean that the contents of the fasting stomach or after a test meal need *not* be investigated. On the other hand, much valuable information is thus often obtained. Not uncommonly, however, a case is referred by the attending physician, with the expectation that one should tell him just what is the matter and to outline a course of treatment, based upon the findings in one specimen of the patient's stomach contents, an obviously impossible task. It is a well recognized fact that the chemical nature of the stomach contents may vary widely in the same individual at different times. Moreover, the motility of the stomach, that is its ability to empty itself in the proper time, is more important than its secretory power. We, therefore, consider an examination of the fasting stomach of even more importance than that after a test meal.

Laboratory examination of the feces is always important, in gastric as well as in intestinal disorders. By this means principally,

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we recognize catarrhal conditions in the large and small intestines and can also judge somewhat of the condition of secretion in the stomach. Likewise, examination for occult blood may clear up the point as to hemorrhage at some place along the tube. Of great importance is the finding of evidence in the feces of pancreatic or biliary disturbance as well as the presence of parasites, causing either gastric, intestinal or general symptoms. The urine should not be neglected, since frequently it will afford a valuable clue to the cause of certain digestive symptoms.

As to certain objective signs in gastric and intestinal diseases, a few salient points find place in such a paper as this. For instance, in seeking the cause for many functional disorders, or "nervous dyspepsia," we must take into account the habitus of the patient. Patients with the *habitus enteropticus* are prone to develop functional disorders, while true organic disease is more apt to attack those of normal habitus. Under this head come the prolapsed small, or large, stomach which may empty itself promptly and, nevertheless, give rise to more or less vague though, to the patient, distressing digestive symptoms. Among other physical signs in the abdomen, it may be mentioned that a splashing sound in the stomach, except when it should be empty, means scarcely nothing more than relaxed abdominal walls. In gastric cases, when a tumor can be felt in the epigastrium, it is generally too late to operate on the cancerous growth that is generally present. Diagnosis of gastric cancer must be made prior to this time by the symptoms, the history of previous good digestion, age, suspicion of ulcer in the past, and the findings in the gastric contents.

Subjectively, patients with gastric and intestinal conditions complain of most varying and, at times, confusing and misleading symptoms. A patient with functional disorder will complain of pain in the epigastrium, which, upon careful questioning, will prove to be not real pain but rather a sense of distention, fullness after meals. No functional disturbance of the stomach gives rise to real pain; so that we may say that real pain is pathognomonic of organic trouble, either in the stomach or elsewhere. Functional disturbances of the stomach are much more common than organic disease. With the exception of ulcer and car-

cinoma, organic disease of the stomach is met with comparatively seldom. However, many cases of so-called functional trouble are often due to some organic change either in the stomach or related organs, near or remote. For instance, a functional hyperchlorhydria is often the diagnosis offered when ulcer is really present.

Eye strain, diseases of the pelvic organs in the female, sexual perversions and excesses in the male, appendicitis, gall-stones and kidney colic must receive attention. Over-work, worry over financial or business troubles, bad teeth, faulty habits connected with the taking of food and drink; the excessive use of tea, coffee, alcohol and tobacco must all be considered. Even the question of clothing at times assumes importance. Some patients find that the wearing of an abdominal binder relieves them of digestive disorders. Habits with reference to bathing should be investigated. Some high-strung, nervous patients abuse the cold bath. They are stimulated by it and use up what small reserve nervous force they might have.

In the matter of treatment of gastric and intestinal diseases, we find little place for drugs, except to counteract disturbances of secretions in the stomach and the known specifics in parasitic diseases of the intestines. Diet and mechanical measures and the removal of the cause occupy the important places. Lavage is not used so much as formerly and is rarely indicated. Belladonna, alkalies, bitters, hydrochloric acid, exercises, mineral waters, mechanical devices, diet, habits, surgery and psychotherapy are now our chief means of treating digestive disorders.

206 West Grace Street.

SOME PHASES OF BANTI'S DISEASE.*

By J. L. HANKINS, M. D., Fordwick, Va.

From a clinician's point of view, the spleen is mostly considered as an aid in diagnosis of other diseases.

From the pathologist's point of view, it is the birthplace and graveyard of white blood corpuscles.

It makes the therapist a drug nihilist, and the surgeon looks at it and wonders what the future has in store for him in respect to this organ.

*Read before the Augusta County Medical Association, Inc., at Staunton, Va., November 4, 1914.

The spleen has been more carefully studied by the hematologist than by anyone else, and it is to him we owe most of the knowledge we have of this organ; and without knowledge of this art, diagnosis of splenic diseases is almost impossible. Without enlarged spleen and anemia many conditions may exist, such as leukemia, pernicious anemia, Hodgkin's disease, cirrhosis of liver, syphilis and chronic malaria.

Primary splenomegaly, splenic anemia and Banti's disease are names given to the same disease at different stages, and are as separate and distinct as the three stages of syphilis. For ease and simplicity, I think it best to group the three stages into one, calling it Banti's disease, and then divide it into the three stages, viz:

1. Simple splenic enlargement (splenomegaly) which may persist for years without anemia or with perhaps only a low color index.
2. Severe anemia or secondary type, with pigmentation of the skin and marked tendency to hematemesis.
3. Cirrhosis, jaundice and ascites. The chronicity, the great enlargement of the spleen, and marked secondary anemia are its most striking features.

Some French and German pathologists have reported a remarkable sclerosis of the portal vessels with thrombosis and obliteration, but whether this is primary or secondary, they are unable to say. The cause of the disease is unknown. It may be a chronic infective process, the chief seat of which is in the spleen where the poison causes an endothelial proliferation.

That the spleen itself is at fault is proven by the relief given when removed, if this is done during the primary stage. It seems to occur more often in married women between 35 and 50. Intestinal infection is also given as a cause.

Symptoms.—During the primary stage there are no subjective symptoms, but this is the stage of splenic fibrosis. During the secondary stage there is lowering of the color index, and little or no change in white blood corpuscles, which is *not* the case in leukemia. The above blood picture with profuse hematemesis makes a rather clear case, which rapidly develops after the last symptom, into the third stage of hepatic cirrhosis and ascites. *Remember particularly* that the cirrhosis of the liver is always secondary to the fibrosis of the spleen. The

hematemesis is due to rupture of varicose veins of the stomach, caused by back pressure through the gastro-splenic veins, accompanied by a marked sclerosis of the vein itself. The condition of the liver and the ascites can be explained by a similar course of reasoning.

Prognosis.—Under medical treatment all die. Under surgical treatment, done in the primary stage, according to the statistics of six surgeons, 72½ per cent. get well.

Treatment.—This is splenectomy, which should be done only in the first stages, although one authority claims that it does good even after the beginning of hepatic cirrhosis.

Case I.—Mrs. K., married, 58 years old, has had excellent health for the past ten years. About five years ago, while a doctor was palpating her abdomen, he discovered an enlarged spleen, which had not been noticed before by the patient. He advised her to consult a surgeon whose examination was confined to an abdominal palpation, and told her not to bother about it until it should give her trouble. The patient forgot about the enlargement until five years later; while I was palpating her abdomen during a case of dysentery, I discovered the enlargement, whereupon it was brought to her mind what the doctor had told her five years before. About five days after my discovery she vomited about 25 ounces of blood, after which she seemed to be in good shape. Pulse 92, slow and full; temperature 99 plus. Appetite good, no pain, and the patient said she had not felt better in years.

W. B. C. 6,500; R. B. C. 3,500,000; H. M. G. L. B. 50 per cent. Thirty days later the liver could be felt. In 40 days later ascites was very noticeable, which began to interfere with respiration. After two tappings I assured the patient that she should place herself in the hands of a competent surgeon and that only removal of the spleen was her bare hope. On August 22nd, fifty-two days later, she had the spleen removed. Patient reacted well, developed pneumonia August 29th, and died September 1st.

Case II.—This was similar to the foregoing in every particular except the patient was ten years younger, and there was no enlargement of the liver. Her blood picture was typical. She refused to be operated on, and is now taking radium treatment, with what result remains to be seen. I hope, however, by the next

meeting of this Society to be able to tell the outcome of this case.

The blood findings which I made in these cases were confirmed by Richard C. Cabot.

A PLEA FOR THE SPECIALIST IN ANAESTHESIA.*

By COURSEN BAXTER CONKLIN, M. D.,
Washington, D. C.

Associate in Medicine, the George Washington University; Associate Physician to the George Washington University Hospital.

We have lived through the era of transition of ideas concerning the induction of anaesthesia. We are familiar with how formerly the administration of anaesthesia was delegated to the merest tyro, until now in some cities, which are progressive in medicine, anaesthesia is given the dignity of a specialty. It is hardly necessary to recall the number of immediate deaths and the vastly greater number of subsequent deaths that caused our ideas concerning anaesthesia to flounder in a wave of adverse medical opinion. At what great expense was it, that we discovered that four years of hard theoretic study in medicine did not give us a competent anaesthetist! Have we as yet reached the ideal? Why is it that the true anaesthetist specialist, which *de facto* is the ideal, is such a *rara avis*? In consideration of this proposition, we are immediately confronted with the seeming insurmountable fact that a man with the requisite ability to be an anaesthetist worth while, in most cities of our size, with present standards in vogue, would be doing himself a gross injustice in attempting to limit his income to what he could obtain in anaesthetic fees. In other words, the fee to be obtained from the individual patient and the possible number of anaesthesias to be given, undoubtedly falls far short of what tempted some of the noted specialists in our larger cities to forsake all for the inhale. If a man, then, giving frequent anaesthesias does not devote his time exclusively to anaesthesia, let us see what line of work he is tempted to follow and if this work assists to perfect him in his avocation. The fact has been quite evident that, when not giving anaesthesias, often the sometime anaesthetist has one of his brothers fill in the role at the head of the table and he proceeds to emulate the example of his favor-

ite surgeon, becoming in this act, what we shall call the surgeon-anaesthetist. Is the surgeon-anaesthetist a good hybrid? Why is it that the good anaesthetist strives to be a surgeon, often really being mediocre in that regard? We shall advance as causes for the existence of the surgeon-anaesthetist, first, his early training; secondly, the disproportionate fees of surgeon and anaesthetist; and, thirdly, his constant surgical association with its attendant glamour.

While in college his theoretical knowledge concerning anaesthesia was obtained from surgical text-books or perhaps from an instructor "sub" to the chair of surgery. Upon becoming an interne the surgical house staff furnished the anaesthetist and thus the idea of associating the specialty of anaesthesia with surgery was early inculcated.

A strong temptation, admittedly present, is the disproportionate fees to which reference has been made. A patient pays an operator say \$200.00 for an operation, while the anaesthetist, a most important cog in the surgeon's success, must often be content with five dollars. Does this not afford a chance for the anaesthetist to ruminate while dropping the ether?

The frequent presence in the operating room, allowing the eyes to wander to witness the triumphs of surgery, but adds another overwhelming force in swaying the man with the slightest surgical inclination into surgery and, *mirabile dictu*, the anaesthetist often becomes a surgeon over night.

All this under the present order of affairs is a natural sequence. Will the patient, who is under the effects of a dangerous narcotic, profit by the administrator's interest in surgical technique? We think not, and we would suggest conversely, that the dropping of ether with the close observation so necessary of pulse, respiration, and pupil, in no way is preparatory to the skilful wielding of the scalpel.

If the foregoing represents the anaesthetist's status in the majority of instances, let us see what remedial measures may be offered. First, we should be indelibly impressed with the fact that an anaesthetist should be above all a therapist as well as a trained internist. In the schools we could have a chair of general therapeutics with "sub" co-chairs of anaesthesia, mechano-therapy, electro-therapy, etc. Anaes-

*Read before the George Washington University Medical Society, March 21, 1914

thetia administration is specialized therapeutics.

In hospitals on the house staff, let the assistant medical officer learn to give anaesthetics as a part of his medical training, not as is usually the case, the assistant surgical house officer learns anaesthesia as a part of surgery. It might be added here, parenthetically, that from our own observation, since the advent of the attending anaesthetist, the house officer's training in anaesthesia is deplorably deficient. Remove the temptation for the good anaesthetist to become a surgeon by formulating fees, perhaps on a percentage basis, which would be far less disproportionate, and thus hasten the day of the specialist in anaesthesia.

The spectacular in surgery will always remain as a lure, but the anaesthetist with preliminary training as outlined would essentially be a man with tendencies toward medicine, and supplied with much improved powers of resistance. If we must have a hybrid, the anaesthetist-internist would seem preferable.

The goal, which should be constantly in view, is the anaesthetist specialist. It is hard to conceive of a man who has demonstrated any surgical ability, real or otherwise, falling into the ranks of this specialty, and, on the other hand, with preliminary training as outlined above, with more proportionate fees it is reasonable to look for more men devoting themselves exclusively to anaesthesia.

In many places the problem has been apparently solved by the introduction of the female anaesthetist. We think that this is a possible solution that should be given consideration. Certain it is that she is not so sorely afflicted with temptations to enter the field of surgery, and so the operator employing her can be more easy at mind, as the chances of the fair anaesthetist suggesting her own surgical ability to his patient is much less than when a male anaesthetist is employed. The anaesthetist may not, now, consciously suggest his surgical ability, but the fact of his doing surgery, mutely gives the suggestion of his willingness to enter this field in the hour of need.

It may be offered that results are very good under present conditions, and this may be largely true, but may we ask what time, for instance, does the surgeon-anaesthetist have, in his day of complexities of thought, to perfect intratracheal insufflation or delve into ex-

perimentation for a safer anaesthesia? This latter may seem to some that we are advocating the saying attributed to Andrew Carnegie that "A man must not be content with doing his duty, but he must do more than his duty." We think that, even so, our arguments for the specialist in anaesthesia stand.

Let us perfect the education of the coming generation of physicians in anaesthesia, and by all means lend all assistance to the cause of developing men whose attention to anaesthesia is undivided.

1344 R Street, N. W.

MIS-DIAGNOSED CASES OF COMPRESSION OF THE SPINAL CORD.*

By TOM A. WILLIAMS, M. B., C. M., Edin.,
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(Continued from page 62—May 7, 1915).

CIRCUMSCRIBED SEROUS MENINGITIS—A CASE OCCURRING ACUTELY AFTER TRAUMA—OPERATION—IMPROVEMENT.

Chronic serous meningitis, since it was brought to general attention by Quincke, has received steady recognition. Latterly, its surgical importance has been brought forward by Horsley. In this country, however, the cases reported are few, and hence each carefully observed case adds to the body of knowledge required for early diagnosis and successful treatment. This is more especially so when unusual features characterize a case. Hence, we need offer no apology for fully reporting our notes of a case in which the examination of the nervous system is perhaps more thorough than any yet published. The acute onset, an apparently traumatic etiology, an anomaly of sensibility of a rare type, and the obscurity of the diagnosis, make the case a particularly instructive one.

The patient was a farmer, a thin man of 50, who had been quite capable of hard work until ten days before admission. For two years, however, he had been feeling a numbness of hands and feet, which varied from time to time, and had latterly improved. He had been a rather heavy drinker, but had taken less lately. The paresthesiae had first occurred after a severe attack of what was supposed to be influenza. So far as it could be obtained, the personal and

*Read at the Tri-State Medical Association of the Carolinas and Virginia, at Charleston, S. C., February 17-18, 1915.

family history was otherwise negative as regards etiological factors, for he was a married man with a grown-up family, and had been in rugged health until two years ago.

Present Illness (As far as could be ascertained).—Ten days before admission he fell out of a trap one night while intoxicated. He lay some time on the ground before being found, when he was picked up dazed though able to walk and use his arms. He remained lame and weak until two days before his admission, when he woke one morning unable to move arms and legs.

Physical Examination of the Nervous System.—*Motility.*—Facial and neck movements strongly and regularly performed. No ocular abnormalities. Complete paralysis of all limb and trunk movements except of that of the diaphragm, which is unimpaired, and the flexion of the right elbow, which can be feebly accomplished.

Sensibility.—Special senses not impaired. No gross loss of sensation could be detected except that a prick was sometimes called a burn.

The Sense of Attitudes could not be examined on account of his delirium.

Reflexes.—Both deep and superficial were entirely abolished from the clavicle downwards, with the exception of a slight extensor response upon stroking the left sole, and a slight response of the radial and olecranon reflexes.

The Pupils reacted promptly to light and accommodation.

The Control of the bladder and rectum was entirely lost.

Psychic Examination.—He understands questions, but often reacts in an irritable and annoyed manner, threatens the examiner when discomfort is produced, and is inclined to maunder.

There is marked dysmnnesia; he believed that it was Tuesday and that the accident happened yesterday, whereas it was really Friday and the accident happened ten days ago. He was disorientated also as to place, believing himself still at home.

He is possibly hallucinated, as he looks up towards the corner and calls his daughter. But there are no false visual sensations. There is a tendency to pseudo-reminiscences.

This delirium is of the type seen in intoxicative conditions, tending towards what is known

as the Korsakow syndrome. It is very often of alcoholic origin, and we attributed the patient's psychic condition to this cause.

General and Surgical Examination.—The urine was normal. The heart and lungs were sound. The blood vessels were rather hard and thickened. There were no defects of the locomotor system. The tongue was furred, but there were no manifest abnormalities of stomach or other digestive glands, except that the liver dullness was slightly diminished. There seemed to be a slight displacement of the 6th cervical spine, but the X-ray revealed no dislocation, fracture or torsion of the vertebral column.

We thought that the symptoms were possibly the result of the rupture of a blood vessel due to the accident, either within the spinal cord or without it under the dura, and a lumbar puncture was accordingly made. The cerebro-spinal fluid, however, was reported by Dr. Phelps to be sterile, free from blood or its products, and not markedly rich in cellular elements.

December 12th—(Two days later).—Delirium had ceased; he feels weak. He is conscious of the miction which he cannot arrest, but can force. There is no change in the motor symptoms. But the plantar reflex is now absent, and there is a slight quadriceps reaction when the patellar tendon is struck.

The mechanical irritability of the muscles is greatly increased. Faradic electricity causes contraction of any muscle; but requires a stronger current, and acts in some cases only when applied to motor point or muscle, sometimes failing to do so when applied to nerve trunks. Moreover, contraction is slow. The cerebro-spinal fluid is reported to contain an abundance of small and large round cells in about equal amount. It contains no blood. The Noguchi biological test is negative. Bed sores are beginning to appear on left elbow and sacrum. There is a malar flush, perhaps due to the brandy he is now taking.

December 13th—(Three days later). Condition has markedly changed into a modified Brown-Sequard syndrome. There was some voluntary movement of the left leg, and slight power had returned in the arms. The left side was hyperæsthetic to pain and temperature. On the right side, there was complete anæsthesia to pain and temperature as far as the 6th thoracic

segment, shading off above to normal sensibility. Sensibility to touch was slightly impaired also, especially distally. The knee reflexes were more responsive to electrical stimulation. The sense of attitudes of the lower limbs was completely lost, and delirium had ceased, but incontinence still existed.

Dr. Carr removed the lamina of the 5th cervical vertebra, and reported an enormous effusion of clear cerebro-spinal fluid, and that the meninges appeared thickened.

Five days after the preceding examination, the left side was still hyperæsthetic, though not so markedly. Attitude sense had not improved. Sense of pain was present in both tendons Achilles, but much delayed on the right side. The border of anæsthesia to pain and temperature on the right side extended only to the 11th thoracic. Touches were felt as low as the knee. There were no abdominal reflexes, but the left patellar was brisk, even upon tapping the right knee, on which side the reflex was absent. The left hallux extended upon stroking the sole. The bed sores were healing. Further examination was postponed. Two days later, he could lift either leg in bed, but weakly and with difficulty, especially the right. Could flex and extend either arm, better on the left.

Sensibility.—Iced water was not felt cold, but as pain on left side, although water at room temperature was felt as cool. Warmth and prick were readily detected. The hyperæsthesia was not very slight. Above 2nd thoracic, sensation was normal.

On left side, thermal and pain sense had disappeared below second lumbar, and were imperfect as high as second thoracic.

Deep pain was readily felt in tendons of foot and thigh, but hardly in the thoracic segments.

The tuning fork was perceived on the anterior superior spines, but was very faulty below the knee. The lightest touches can be felt and localized anywhere left and right. Attitudes of lower limbs imperfectly recognized.

Reflexes.—The toes no longer extend, but those of the right foot spread. Both patellar reflexes plus R. > L. Achilles unelicitable. Abdominal absent. Coarse fibrillary tremor of the left gastrocnemius. His general condition is much better.

December 23rd.—Heat called cold on left side, and cold called pain as high as thoracic 2. Slight hyperæsthesia to prick. On right side

cold only felt on prolonged application. Heat not felt. Prick scarcely felt to thoracic 7. Above, hypoæsthesia to TH 2. Hypoæsthesia to heat on arms to TH 1.

Reflexes.—Plantar flexion of great toes on both sides when sole is stroked, the patella left > right. Triceps R. plus. Spasticity diminished. Pronation and supination of the wrist can be weakly performed. Flexion of the wrist is practically absent.

December 25th.—Less spasticity. Retention and incontinence are less complete. Fæces came from the rectum while the sensibility of S 3, 4, 5, were being examined.

Sensibility.—Over S 2, 3, 4, on right side, pin prick was felt as such, but it was only felt as tickling on the left side over S 3 and 4, and was clearly felt on the glans penis. Prick was felt as low as TH 9. Ice was felt as low as L 3. Reaction below was uncertain, but it was unfelt below S 1. It was delayed at TH 1. On the right side boiling water was felt until TH 7, below which delay appeared. There was delayed perception on the left foot, and at TH 1.

The diapason of 100 vibrations to the second cannot be felt below the ilia, and is faintly so on the hands. All movements can be made except extension of the right arm and right foot. The left foot is only moved involuntarily.

The bed sores are improving.

Reflexes.—The patellar are weak although brisk. The Achilles and abdominal are still absent, the plantar is normal.

January 8th, 1910.—He has better control of the bladder than after the operation. The muscular power is improving. There is even some action of the right triceps, and both legs are much better controlled. He can feel pain, warmth and coolness as low as TH 6, but on the left side ice is felt as a painful burn.

Reflexes are exaggerated, including those of the triceps, but the radials are absent.

January 18th.—He can now feel coolness on the right side as low as the knee in front and calf behind, although imperfectly. On the left side coolness is felt only on the popliteal area of S 2, elsewhere it is still interpreted as painful heat. On the right arm temperature is not felt over TH 2 and C 8, 7, and 6. On the left arm temperature is well felt.

Sensibility to prick is lost on the right side at L 1.

Motility.—Abdominal muscles contract

strongly. The flexion of the arms is weak. Extension of the arm and fingers is slightly improved. Extension of the arm very weak. No fibrillary twitches present. The muscles respond to faradism, requiring, however, a stronger current than does a normal person.

Shortly after this, the patient returned home, as they were unable to keep him longer at the hospital. I append the notes taken at my request by a very competent nurse about ten days before the patient's departure. Six months later, his death of inanition was reported to us by the family. "Patient is constantly in a state of nervous irritability to a greater or less degree. The lower limbs seem to be only part so affected. The knees are always flexed acutely unless under resistance, as when the patient lies on his back. The tendons and muscles are in a high state of nervous tension, and feel like rods, particularly under the knee. Even when patient is not being moved there is much twitching and quivering of individual muscles as well as of the whole limb.

"Contractions may be excited by the movement of another part—arm or head—and seem to be excited by the thought of turning in bed. They are also excited by touching the limb at almost any point.

"Contraction, even when most severe and painful, can sometimes be controlled by an effort of the will. Pain on extension of limbs is less if extension occurs by the volition of the patient. The ankles and left wrist have neither flexion nor extension.

"By placing the patient's feet in water as hot as can be borne for ten minutes, there took place a marked relaxation of limbs and entire body and a lessening of pain. The painful pressure in bladder, which was present at the time, was relieved. The mind became clearer and less active, and the patient fell into a deep natural sleep which lasted two hours. Patient has good digestion."

Symptoms of circumscribed serous meningitis are most valuable, depending upon the lesions, the degree of compression and the accompanying conditions. Differential diagnosis is hence very difficult, especially as the number of cases reported is small. The chief characters so far regarded as important are, for the most part, the product of experience

gathered from Munro, 6 cases,* and Horsley, 20 cases.†

The unilateral origin is important.

Pain is nearly always present in the neck, back, extremities, or breasts, or as a girdle pain. It may be taken for lumbago.

The area of the pain is likely to be diffuse rather than referred to one nerve root as in tumour (Horsley).

Paralysis may begin with weakness and stiffness, unequal on the two sides, or it may begin suddenly, followed by more or less paraplegia. Spasticity generally coexists.

The reflex phenomena and those of sensation vary greatly in different cases and in the same case at different times.

There is no causation common to all cases. The disease has resulted from trauma, and has occurred after syphilitic meningitis, spinal caries, apical tuberculosis, multiple cerebrospinal sclerosis, typhus, glioma, syringomyelia, influenza and coryza.

The condition is important because "it imitates the conditions produced by tumour, and the outlook under early surgical interference is good, while the outlook under a policy of non-interference is fatal."

The fluid is usually retained under tension by a cyst wall of connective tissue or by adhesions which may be dense or light; but in some cases completely enveloping adhesions were not demonstrated.

Treatment consists in early laminectomy. The tense non-pulsating dura is opened and a small quantity of cerebrospinal fluid escapes under slight pressure. A tense pial membrane bulges up, and when it is opened a clear fluid spurts out under great pressure.

There is usually relief from painful and inconvenient symptoms soon after thus removing the pressure by evacuation and drainage.

ACUTE SEROUS MENINGITIS—A Milder Case.

A student, aged 24, was seen with Dr. Dudley Morgan in February, 1911. On New Year's day, he had fallen, wrenching his left side, but was in little pain for an hour. Ten days later, he was said to have grippe, causing severe pains in the back and legs, which prevented standing. This condition persisted.

Examination showed increase of patellar and cremaster reflexes, and particularly that

**Surgery, Gynecology and Obstetrics*, 1910.
†*British Medical Journal*, 1910.

of the corpora cavernosa, skin stimulation provoking turgescence. The pupils reacted promptly. There was hyperesthesia below the waist, especially in the loins. The movements were stiff and painful; he walked with difficulty half bent over. On lumbar puncture, the cerebrospinal fluid was clear, flowed rapidly and showed 2 cells per cubic m. m., of which 90 per cent. were lymphocytes, 8 per cent. large mononuclears. There was a faint precipitate with butyric acid. Ten days later, he walked better, the hypersensitiveness had decreased, and much of the stiffness and pain seemed removable by suggestion. I thought we were dealing with an acute serous meningitis, but we found it very difficult at first to exclude hysteria as the conditions of examination were not quite favorable.

The patient went home and we heard that he gradually recovered, although I did not see him again.

The case may be interpreted as an influenza meningitis, perhaps predisposed by the shortly preceding injury of the back.

(To be continued.)

Proceedings of Societies, Etc.

THE RICHMOND ACADEMY OF MEDICINE AND SURGERY

Held its regular semi-monthly meeting May 11, 1915, Dr. A. G. Brown, President; Dr. Mark W. Peyser, Secretary.

Dr. W. A. Shepherd read a paper on

Certain Points of Practice in Gastro-Intestinal Diseases.*

DISCUSSION.

Dr. Burke especially agrees with *Dr. Shepherd* in maintaining that one dealing with gastro-intestinal diseases should be fully capable of making a diagnosis of disease of other parts, for fully 90 per cent. of the trouble manifested in the stomach and intestines is caused by disturbances elsewhere, and 75 per cent. of this is due to appendicitis and gall-bladder disease, while much is caused by stone in the cystic duct. The physician should personally observe the attacks complained of, for the histories given by patients may be misleading. Laboratory findings cannot be absolutely de-

pendent upon; certainly one, and sometimes a series of examinations, is absolutely worthless.

Dr. E. H. Terrell claimed that intestinal toxemia due to constipation will give rise to gastro-intestinal symptoms. Nearly all persons affected thus are in the habit of taking purgatives regularly; and a number of them are constipated because they think they are, and may be relieved by such simple measures as regulating the diet and the habit of going to stool, by instructions as to proper exercise, etc. Observing these rules, it will be found that in a short time the constipation and the indigestion will disappear.

Dr. C. M. Miller, referring to the mention of psychology and mineral waters in the treatment of gastro-intestinal disturbances, by *Dr. Shepherd*, asked if they are not in the same class. He meant such waters as lithia, not the saline waters.

Dr. Wm. S. Gordon reported the following cases in point:

Case I was that of a young girl with nervous symptoms and much indigestion. She wore glasses that had been fitted by an optician. He advised that she be examined by an oculist; and with properly fitting glasses, her troubles disappeared.

Case II. The Patient complained of indigestion and pain in the epigastrium. Examination showed it to be a case of marked mitral regurgitation.

Case III was that of a woman who had had both breasts removed for cancer. There were much emaciation, cough, passive renal congestion, mitral regurgitation with decompensation, bronchial breathing and mucous rales. Fluoroscopy showed a tumor in the right lung, which was not defined by physical examination. In answer to a question by *Dr. H. H. Levy*, who asked, "did not the expectoration of bloody mucus precede the fluoroscopic examination?" *Dr. Gordon* replied in the affirmative, but said that from the symptoms, it was concluded that the patient was vomiting blood.

Dr. Shepherd, concluding the discussion, said that *Dr. Miller* is quite correct if he considers such mineral waters as vichy, but he, himself, had in mind those of known power. In chronic gastritis mineral waters are quite helpful.

Dr. Virginius Harrison read a paper entitled:

*For Paper, see page 113.

Concerning Twilight Sleep.†

DISCUSSION.

Dr. A. E. Turman said that while in Vienna he saw Muller who had studied the method in Freiburg, and was told that he would be given an opportunity to study the procedure; but it was a week before he was called to see a case, and it was not until the second day after delivery that he was permitted to see the patient again, when he was told that she had no recollection of pain after the second dose. He saw seven in all. The facts that it was successful in only 75 per cent. of selected cases, that primipara were the chief subjects, and that there was in the method a large element of psychology made him very doubtful. Narcophine was the narcotic given. Anyone who once sees the ghastly appearance of the patient will never attempt the procedure in the home. All the babies he saw were blue, due, he believes, to the length of labor, the second stage in all cases being unduly prolonged. He saw no difference in the length of the placental stage, nor did he see any case of post-partum hemorrhage. He saw no advantage in permitting the woman to be up on the third day and to go home on the seventh day, but thought the uniform removal of stitches on the sixth day a good method. As for himself, he would not employ the procedure under any circumstances in a home.

Dr. M. L. Anderson made reference to a paper read by the late Dr. D. J. Coleman before the Academy in June, 1906, on the use of scopolamin in labor. This paper followed one that appeared in the *Literary Digest* in 1905, which was almost identical with another that was published in the *Digest* last year. Dr. Anderson also read the report of a case in which scopolamin was used in 1910. He has used the drug in more than 300 cases in both hospital and private practice without bad results, though there have been several blue babies, attributable, he thinks, to causes other than the drug. His method is to begin with 1/100 grain hypodermically (not always combined with morphine). If no effect results in one-half hour, 1/200 grain is given, and if a repetition is necessary, from 1/200 to 1/100 is given until the desired effect is obtained. When morphine is indicated, it is given in doses of

from 1/8 to 1/6 grain. In one case four doses were given at three-hour intervals. Scopolamine is indicated in patients who are nervous and fearful, and then only in the first stage of labor. Dr. Anderson never administers it in the second stage, nor where there is toxemia. Patients do not remember the pain of childbirth; and he examines them as often as he thinks necessary. He finds that involution is better when scopolamin has been used; and post-partum hemorrhage has never followed its employment. Morphine and atropine do not answer the same purpose. Strychnine is the antidote to scopolamine.

Dr. Greer Baughman has used scopolamin for a number of years, his cases numbering from 35 to 40, in only one of which was he at all alarmed. The largest number of injections was three; he never combined it with morphine. In more recent times, he has seen only a limited number of cases of twilight sleep, but, on the whole, he is very much pleased with it. It is absolutely a first stage treatment, stopping the memory of pain, (though he has some instances in which it did not do so) and making for better recovery. It prolongs both stages of labor. This is of advantage in the first stage, especially if the waters are present. Beach from experience gained from 1,000 cases, believes that more babies have been and will be saved through this means, than ordinarily. It has happened that he has never seen a blue baby as a result. It is indicated, as brought out by Dr. Anderson, in the nervous, hysterical, high-bred, high-fed primipara. He, formerly, employed 1/100 grain doses; in the modern method, however, smaller doses are employed and repeated in an hour; but it must never be given within an hour of the time the baby is expected. Otherwise, it will be blue.

Dr. Herbert Mann has seen a few labors during which the method was used, and said that even where there is no loss of memory, most of the pain is abolished. The greatest danger lies in the attendant trying so to give scopolamin that the patient will remember nothing, i. e., by giving it in the second stage; and it is this that results in blue babies. He gives 1/200 grain for the first dose, and then two or three doses of 1/500 grain at six or eight hour intervals. He has had no patient with

*For paper, see page 105.

complete loss of memory, but there was certainly relief from pain.

Dr. R. A. Nichols first used scopolamin five years ago, giving it to those parturients who were nervous or hysterical. But one dose was given in each case, from which he saw no bad effects.

Dr. B. H. Gray said that scopolamin and morphine were being used in 1907, but not according to the technic in use today. Many blue babies were being seen, and the method was, therefore, discontinued. Patients must be individualized, and those employing the treatment must be thoroughly familiar with obstetrics. He cannot believe that drugs like scopolamin and morphine may be used without danger. Primary uterine inertia is uncommon in women seen in clinics, while it is common in those of the higher classes. It is said that the treatment must be used only in that stage where the pains are not less than five minutes apart and the uterus is soft; and it is claimed that this stage will be shortened thereby, but where it last sometimes 24 hours, it will be prolonged. One authority reports twenty-four cases with delirium in the second stage. This necessarily interferes with the technic of delivery. What the mortality is must be studied later. He would not advocate the treatment in all cases; and is really undetermined regarding its merit.

Dr. Harrison said that according to reports made, Dr. Turman had been given more opportunities to witness the treatment than any other man who had gone to Vienna. Those in charge there will not give any information concerning it. The method of its introduction into this country must be condemned. It was brought to the attention of the public first, and by two women who had no medical education. The philanthropist backing them was also paying a woman to give public lectures on the subject. Another suspicious element is that it is insisted that a special proprietary preparation, made abroad, shall be employed in the treatment. Dr. Anderson is not, properly speaking, using the "twilight sleep" method, but Dr. Harrison considers it would be even better if the dose were smaller. Dr. Anderson gives 1/100 grain, while the authorities give from 1/400 to 1/200 grain scopolamin, claiming that the patient can be studied to more advantage while under these doses.

One one-hundredth of a grain might render a woman insane immediately. If, however, the patient is not kept in the state desired she will condemn the method. Dr. Baughman has said that the first stage is prolonged, but the whole period of labor shortened. It is the second stage, however, that brings the danger. According to Beach, 91 per cent. of the 1,000 American cases he studied had lacerations. The treatment is said to be indicated in the nervous, hysterical woman. It has the advantage that it will make us study our cases more thoroughly, provided we see enough of them, and so become better obstetricians.

Analyses, Selections, Etc.

Erosive Balanitis.

N. E. Aronstam, Detroit, speaks of this as the fourth venereal disease, and defines it as a local affection of the glans penis and prepuce, characterized by a high degree of inflammation of the mucous membrane of these structures, accompanied by erosive lesions, and terminating in complete recovery without any subsequent local and constitutional manifestations. The urethra remains intact. He has encountered it in approximately three per cent. of all venereal diseases. The typical organism has not yet been isolated. Smears stained with methylene blue show peculiar rod-shaped diplobacilli, but never pus organisms.

It is distinctly a venereal disease, for it follows coitus invariably, the period of incubation being, on the average, about five days.

The symptoms are a diffuse erythema of the glans and prepuce, which deepens, and the structures become very highly and intensely inflamed. Pruritus and pain are usually present. In about three days or less, the typical erosions appear, being of the size of a split pea, superficially situated, coalescing very seldom.

In those with rudimentary prepuces or none, there is little or no secretion; but where the prepuce is tight and long, the secretion is mucoid and of an offensive odor. Aronstam has never observed any purulent discharge. In nearly all cases there is a *bilateral inguinal adenopathy*, constituting one of the most characteristic features of the disease. It appears in about a week from the inception of the

malady. The glands are slightly painful, non-plastic, freely movable, and the process occasions no constitutional disturbance either during its incipency or remotely.

Complete healing is the rule, and without complications or sequels, in about the fourth or fifth week.

Bearing in mind the initial erythema and inflammation, soon followed by the catarrhal stage, and the subsequent erosions; the benign course of the process and the mildness of the entire process; and, most important, bilateral inguinal adenitis of slight severity, leading to a complete subsidence to normal without supuration, the diagnosis of the affection from the following is easy: 1. Iodic dermatoses and abrasions. 2. Abrasions and low degrees of inflammation caused by the smegma bacillus. 3. Gonorrhoea of the prepuce and glans. 4. Chancroid. 5. Initial lesion of syphilis. 6. Herpes progenitalis. 7. Diabetic erosions affecting the glans and prepuce.

The prognosis is invariably favorable.

A masterly inactivity is the therapeutic method. Rigid cleaning with normal saline or mild permanganate solution should be done, and after drying, the parts should be dusted with non-stimulating and protective powder, or a suspension of bismuth subnitrate in paraffine oil, and covered with a layer of gauze, having an aperture in its center, through which the glans is passed, and over which the prepuce is drawn. Sometimes the dusting powder alone will suffice.—(*Medical Council*, May, 1915).

(An article appearing about two years ago stated that the causative agent is anaerobic; and that ordinary cleanliness with liberal use of hydrogen dioxide, is sufficient to bring about a cure.—M. W. P.).

Subjective Diagnosis in Malignant Disease.

Physicians are not infrequently brought in contact with patients whose lesions must be diagnosed largely through interpretation of the subjective symptoms, says Wm. S. Campbell, Macdoel, Calif. He has found this true in the primary stages of malignant diseases in the abdominal organs. This raises the question: Is it possible to make a working diagnosis in a patient of this class where the function of the organ or tissue is not absolutely up to a standard condition of health?

For example, the typhoid condition is gen-

erally recognized in medical literature, and at the same time it is well known by all experienced practitioners that other lesions produce its counterpart. However, one is never warranted in a diagnosis as to this disease on this ground unless all other lesions that are known to produce it are eliminated.

It has long been recognized by thoughtful men in the profession that a carcinomatous condition is a reality, and it is as well-defined as the typhoid condition. The subjective signs of this disease are dependable even where the primary stage is not well advanced, after all else that might cause like symptoms and signs has been carefully considered and eliminated; even where the physician is handicapped by physical conditions obscuring the symptoms, the diagnosis can be made with a good degree of certainty. In support and illustration of the foregoing, two cases are reported:

Case 1. A male, 56 years old, corpulent and of sedentary habits, presented a typical picture of the carcinomatous condition. He became tired easily; his movements distinctly slower than natural; step inelastic; voice lower in pitch; mental apathy; hesitation, perception blunt, vigor lessened, and his only complaint, besides feeling old, was sluggish bowels. In a very short time, obstruction of the bowel was complete. Handicapped by adipose tissue over the patient's abdomen, three inches thick, palpation was not instructive. In a council of three physicians, only one of them ventured a working diagnosis of a carcinomatous condition, based on subjective signs. Abdominal section revealed a morbid appearance of a section of sixteen inches of the small intestine. The gut had the appearance, in a general way, of bologna sausage, while its lumen would scarcely permit of the passage of a match. The mesenteric glands were nodular about the affected intestines. The whole diseased mass was removed in the usual way, and the patient succumbed six hours after the operation.

Case 2. This patient, a female, 56 years old, had a negative family history. She had had an unusually good appetite, and had increased in weight a few months before her health became impaired by her fatal illness. Carcinoma was not suspected in her case until metastasis involved other organs, and a nodule acting as a check-valve in the cystic duct caused a very pronounced icterus, which obscured the

characteristic malignant cachexia, if it existed, and misled for a time as to the diagnosis. As the case advanced and characteristic emesis and anorexia became marked, together with periods of mental depression, accounted for by involvement of the solar plexus, the diagnosis of cholecystitis was abandoned and that of malignant disease substituted. Ten weeks after the beginning of her illness, and four weeks after the secondary and certain diagnosis had been made, the patient succumbed, not from primary, but secondary growths of her ailment.

Necropsy, about twelve hours after death, declared the primary lesion to have been in the pancreas, the whole organ being involved. From this, metastases of the vertebrae, solar plexus, spleen, stomach, duodenum, transverse colon, and liver were revealed.—(*Indianapolis Medical Journal*, May, 1915.)

A Simple Diagnostic Reaction for Malignant Tumors.

Appropos of the foregoing article is the following which appeared as an editorial in the *N. Y. Medical Journal*. If the assertions made by M. P. Michajloff, of St. Petersburg, can be substantiated, we have in his method a wonderfully simple diagnostic test for cancer. In 1906, Michajloff made the statement that the administration of potassium per rectum (potassium iodide, 4.0; sodium carbonate, 2.0 and water 80 to 100 c. c.) is followed in one or two hours by an elevation of temperature if the case is one of carcinoma or sarcoma. In cases of syphilis, the temperature was lowered. The reaction, he maintained, is analogous to the tuberculin test and equally specific. He further stated that by the administration of potassium iodide conjointly with hypodermic injections of one per cent. of sodium arsenate in a twenty-five per cent. solution of carbolic acid, he was able to "cure" several cases of cancer. It appears that Dr. R. Robinson submitted, in 1913, before the Paris Academy of Medicine, a thesis on the diagnostic value of potassium iodide in cancer, the thesis having been accorded the Chevillon prize. Dr. Robinson is also of the opinion that the reaction following the administration of potassium iodide is analogous to the tuberculin reaction in tuberculosis. It seems that a method as simple as this could easily be verified and the statements of the originator either substantiated or disproved.—(Ibid.)

Editorial.

Medical College of Virginia Finals.

The commencement exercises of the Medical College of Virginia, now but a pleasant memory to the many participants, commenced on the evening of May 30th, with the baccalaureate sermon by Rev. Thomas A. Smoot, D. D., at the Centenary Methodist Church, this city. This was the banner year in the history of the College, there having been 545 students enrolled in the three departments, from which there were graduated 107 in the department of medicine, 20 in the department of dentistry, and 17 in the department of pharmacy. An unique feature of the exercises was the presence of Dr. J. P. Munroe, Charlotte, of the North Carolina Medical College, who conferred degrees upon graduates transferred to this school when the North Carolina College closed its doors last Fall. For the next two succeeding years, representatives will attend to also present diplomas to those in the other two classes who came from the "Old North State" school, thus graduating them from the North Carolina Medical College, while they have the advantages of the high requirements demanded at this school. The lack of funds to maintain the Charlotte school in the first grade was explained by Dr. Munroe as the reason for the transfer of their students. Nineteen of the graduates represented the Medical College of North Carolina.

The Alumni Society held its first meeting on Monday evening, May 31st, in the Chamber of Commerce auditorium, Dr. Cary T. Grayson, a native of this State, and physician to President Wilson delivering the address of the evening. Following this a smoker and buffet luncheon was held at the Commonwealth Club. The business session of the Alumni Society, at which several scientific papers were read, was held the following morning in the College Building, Dr. Benj. K. Hays, Oxford, N. C., the president, in the chair. At this meeting, a resolution was adopted admitting to associate membership in the Society, all alumni of the North Carolina Medical College which was consolidated with the Medical College of Virginia a year ago. Dr. Lewis C. Boshier, of this city, was elected president of the Society for the coming year. Other officers elected

were Drs. A. L. Tynes, Staunton, Thos. S. Hening, Jefferson, Va., W. K. McCoy, Gum Springs, Va., and Richard C. Walden, Richmond, vice-presidents; Dr. N. T. Ennett, Richmond, secretary; Dr. James H. Smith, Richmond, assistant secretary; Dr. Frank H. Beadles, Richmond, treasurer, and Mr. Wortley F. Rudd, Richmond, registrar.

The closing exercises were held at the City Auditorium, on the evening of June 1st. On this occasion, Dr. Stuart McGuire, dean of the College, gave a history of the College, calling attention to the advantages which our city derives from the location of such a school in our midst. He also announced that the entrance requirements in all three departments of the school will be advanced beginning with the coming session.

The address on this occasion was delivered by the Hon. Stanyarne Wilson, formerly of South Carolina, but now of this city, and this was followed by the conferring of degrees by Drs. McGuire and Munroe. The annual banquet was tendered later to graduates and visiting alumni at the Masonic Temple.

Hospital appointments announced for the new doctors were as follows:

Virginia Hospital, Richmond—Drs. G. C. Godwin, C. H. Childress, B. A. Doggett, C. I. Sease, F. P. Fletcher, Paul Davis, B. H. Mofatt, J. B. Anderson, C. H. Iden.

St. Luke's Hospital, Richmond—Drs. E. A. Boccock and T. N. Barnett.

Stuart Circle Hospital, Richmond—Drs. J. C. Vaughan and J. A. Martin.

Retreat for the Sick, Richmond—Dr. C. B. Courtney, Louis A. McAlpine, undergraduate.

Grace Hospital, Richmond—Dr. W. A. Reese, P. L. Hill, Jr., undergraduate.

Sheltering Arms Free Hospital, Richmond—F. Moylan Fitts, Linwood H. Justis, undergraduates.

Virginia Home for Incurables, Richmond—W. H. Remine, undergraduate.

Grace Hospital, Detroit, Mich.—Drs. Harry E. Lee, George G. Dixon, Beverly N. Jones and J. E. Porter.

St. Luke's Hospital, South Bethlehem, Pa.—Dr. Wayne M. Phipps.

Shenandoah Hospital, Roanoke—Dr. Clifford A. Folkes.

Sheltering Arms Hospital, Hansford, W.

Va.—Drs. Charles R. Irving and Leroy J. Butler.

Hill's Clinic Maternity Hospital, New York City—Dr. J. M. Mayer.

Jefferson Hospital, Roanoke—Dr. Benjamin F. Brugh.

Orthopedic Hospital and Infirmary for Nervous Diseases, Philadelphia, Pa.—Dr. William F. McAnally.

U. S. Marine Hospital, Boston, Mass.—Drs. George Vincent Wood, Jr., and John Gregg Smith.

U. S. Marine Hospital, New York (Stapleton, S. I.), N. Y.—Dr. John Henry Bullock.

U. S. Marine Hospital, Buffalo, N. Y.—Drs. John Hundley Hoskins and William Latane Varn.

U. S. Marine Hospital, Chicago, Ill.—Drs. Hunter Lee Gregory and Alonzo Walter Saunders.

U. S. Marine Hospital, Detroit, Mich.—Drs. Edward Butts Kilby and Richard Bertram Blackwell.

James Walker Memorial Hospital, Wilmington, N. C.—Dr. Baxter I. Bell.

Sarah Leigh Hospital, Norfolk, Va.—Drs. George S. Riggins, S. A. Rhyne and J. R. Spencer.

Hygeia Hospital, Richmond, Va.—Dr. L. L. Putney.

Pittsburg Hospital, Pittsburg, Pa.—Dr. J. I. Yohannan.

Protestant Hospital, Norfolk, Va.—Dr. J. B. Foster, July 1, service twelve months; Dr. Richard H. Peake, July 1, service sixteen months; Dr. George W. Schenck, October 1, service sixteen months; Dr. G. H. Sunrell, March 1, service sixteen months.

St. Vincent's Hospital, Norfolk, Va.—Dr. Henry Dominic Buccalo, July 1; Dr. F. X. Schuller, January 1; Dr. E. A. Ratcliffe, January 1.

Memorial Hospital, Richmond, Va.—Drs. S. M. Hodes, Benjamin Newman and R. E. Timberlake.

Johnston-Willis Hospital, Richmond—Drs. J. C. Braswell, John McGuire and G. G. Junkin.

Municipal Hospital, San Juan, P. R.—Dr. Manuel Roman Benitez.

Neurological Sanatorium, Richmond—Dr. R. Finley Gayle.

The Association of Medical Officers of the Army and Navy of the Confederacy,

Composed of medical officers of the Confederate army and navy, veterans who have since the war become physicians, and sons of Confederate veterans who were doctors, held its eighteenth annual session during the reunion of Confederate veterans in Richmond, June 1-3. Dr. A. A. Lyon, of Nashville, presided. A roster compiled by the secretary showed that there were 1,200 surgeons and 2,000 assistant surgeons in the Confederate army and 107 medical officers in the Confederate navy. It was stated by the committee in charge of the movement that the outlook was bright for a successful outcome of the plan to erect a monument to Dr. Samuel Preston Moore, surgeon-general of the Confederate army, the medical officers of both branches of the service, and to the women who served as nurses. Dr. Stuart McGuire, Richmond, was elected president; Dr. J. N. Upshur, also of Richmond, vice-president, and Dr. Samuel E. Lewis, of Washington, D. C., secretary.

Campaign Against Cancer in New England.

The New England States have already opened their educational campaign in the fight against cancer. The fact that the New England States generally show a higher death rate from cancer than any other group of states, does not mean that these people are more susceptible to the disease, but it is due to the fact that cancer is a disease of adult life and there are relatively more old people proportionately to the population than in many other sections. In 1913, the cancer death rate in the registration area of the United States was 78.9 per 100,000 population and the individual cancer death rate for each of the New England states is much higher than this.

Cancer is not a hopeless incurable affection as many people wrongly believe as without question a large number of cancer deaths can be prevented by early recognition of symptoms and prompt treatment. It is believed that the present mortality should be reduced at least one-half and perhaps two-thirds.

The Medical Society of Northern Virginia and The District of Columbia

Held its semi-annual meeting in Alexandria, Va., May the 19th, under the presidency of Dr. W. P. Carr, of Washington, D. C. There

were about sixty physicians in attendance and a number of interesting papers were read and freely discussed. Officers chosen for the coming year are:—President, Dr. S. B. Moore, Alexandria; vice-presidents, Drs. J. B. Nichols, Washington, D. C., and C. R. Cottingham, Remington; recording secretary, Dr. Thos. A. Groover, and corresponding secretary, Dr. Jos. D. Rogers, both of Washington, D. C. and treasurer, Dr. William I. Robey, Herndon. The next meeting will be held in Washington in the Fall.

New York Allows Nine Months for Tuberculosis Patients.

A recommendation has been recently adopted putting the time limit for the treatment of patients in the Otisville Sanatorium for Consumptives in New York State at nine months. An extension of time will be allowed in cases especially recommended for further treatment by the physician. Finding that some of the patients admitted to the Sanatorium were able to pay a weekly maintenance charge, a plan has been adopted whereby the rates of \$3.50, \$7 and \$10.50 per week have been decided upon according to the financial condition of the patient. However, those unable to pay will be admitted free of charge and no difference will be made between those paying in whole, in part, or nothing at all.

Dr. Martin D. Delaney,

Of Alexandria, Va., has returned to his home after visiting the Mayo Clinic, in Rochester, Minn., and the Murphy Clinic, in Chicago. On his return, he stopped for few days in Asheville, N. C., to attend the Association of Southern Railway Surgeons, which met in that city June 2-4.

The Virginia State Board of Medical Examiners

Holds its next examinations for those desiring to practice medicine in this State, in Richmond, June 22-25. Dr. R. S. Martin, Stuart, is president, and Dr. J. N. Barney, Fredericksburg, secretary-treasurer. It may be of interest to note that Virginia now has reciprocity with twenty-eight State boards in addition of that of the District of Columbia. This, of course, is done in accordance with certain requirements.

Married—

Dr. Achille Murat Willis, of Richmond, Va., and Miss Emma Gold Hutcheson, of Rockbridge Baths, Va., on June the 9th.

Dr. Alexander Y. Peyton Garnett, of Washington, D. C., and Miss Mildred Poor, of Easthampton, L. I., on June 12th.

Dr. W. Reid Putney, one of the resident physicians of the State Epileptic Colony, and Miss Alice Aylett Callaway, of Norwood, Va., June 3rd.

Dr. Lazarus Karp and Dr. Rachel L. Lovenstein, both of this city, June 2nd.

The Graduate Nurses' Association of Virginia

Held its annual meeting at Roanoke, May 24-25, Miss Celia Brian, of Danville, presiding. A number of interesting papers were read and the members were pleasantly entertained. Upon the day following the close of the meeting, the nurses visited Catawba Sanatorium to inspect the cottage which has just been completed, through the efforts of the Association, to care for tubercular nurses.

It was decided to hold the next meeting of the Association in Norfolk. The following officers were elected for that meeting: President, Miss Ruth Robertson, of St. Luke's Hospital, Richmond; vice-presidents, Misses S. V. Thacker, of Lewis-Gale Hospital, Roanoke, and Miss Ella C. Boulding, Danville; secretary and treasurer, Miss Agnes Randolph and Miss E. Webb, respectively, both of Richmond.

The Kansas State Medical Society,

At its recent meeting, selected Topeka as the place of meeting in May, 1916, and elected the following officers: President, Dr. O. D. Walker, Salina; vice-presidents, Drs. J. R. Scott, Newton; C. W. Jones, Olathe; and B. F. Chilcott, Osborne; secretary, Dr. Charles S. Huffman, Columbus (re-elected), and treasurer, Dr. L. H. Munn, Topeka.

Dr. and Mrs. J. W. Simmons,

Of Martinsville, Va., were visitors at Buena Vista, Va., the latter part of May.

Dr. Samuel Lile,

Lynchburg, president of the Medical Society of Virginia, visited New York City last month.

Conservation of Vision and Prevention of Blindness

Was the subject of a lecture by Dr. Joseph A. White of this city in the auditorium of the John Marshall High School, May the 27th.

In the medical inspection of schools, a large number of children were found to have defective vision, and this lecture was arranged by the school board for the purpose of impressing principals, teachers and patrons of schools with the urgent need of more carefully looking after the eyesight from birth to advanced years.

Dr. Charles H. Todd,

Owensboro, Ky., will be tendered a banquet by the physicians of that place, June the 16th, in recognition of his long and faithful services in his profession. He has been many times honored by the physicians of his State, among other things having been president of the Kentucky State Medical Association in 1878.

Dr. and Mrs. Walter Slicer,

Of Roanoke, were recent visitors at Montvale, Virginia.

Dr. Rolfe E. Hughes,

Of Laurens, S. C., was a recent visitor to this city.

The Southside Virginia Medical Association

Held its forty-ninth quarterly session in Franklin, June 8th, Dr. E. R. Hart, of Suffolk, presiding. An interesting program was arranged, the subject for general discussion being Auto-Intoxication. Between the afternoon and evening sessions, supper was tendered the members and guests by the local profession at Stone-wall Inn.

Dr. A. L. Barrow

Has recently moved from Konnarock, Washington County, Va., to Abingdon, Va.

Dr. Samuel G. Dixon

Was on May 18th appointed for the fourth time Commissioner of Health of Pennsylvania. During the ten years of his administration, wonderful strides have been made in the health work of that State and Pennsylvania now has between three and four thousand employees in this one department. The last General Assembly, which adjourned in May, appropriated \$4,632,387.00 for public health work for the next two years. Of that amount, \$2,975,807.00 was for tuberculosis work. In the campaign against tuberculosis in Pennsylvania, during the past ten years, 115 tuberculosis dispensaries have been established and three State sanatoria.

American Association of Medical Jurisprudence.

At the third annual meeting of this Association at Long Beach, L. I., May 22nd, the following officers were elected:—President, Dr. D. Percy Hickling, Washington; vice-presidents, Oscar W. Ehrhorn, Esq., New York City and Dr. Philip H. Knapp, Boston; secretary, Chas. P. Blaney, Esq., New York City. The medical members of the Council are Drs. Frank H. Daniels, Frank W. Robertson, A. Ernest Gallant, Duncan D. MacTaggart, and Reynold Webb Wilcox.

Dr. John W. Dillard,

Lynchburg, Va., was elected a member of the executive committee of the Southern Sociologic Congress at its recent meeting in Houston, Texas.

Dr. William Walter Young.

Formerly of Richmond, and a graduate of Johns Hopkins University in 1913, is now located in Atlanta, Ga.

Dr. F. E. Harrington,

Formerly of Cumberland, Md., but more recently of Washington, D. C., is in Hillsboro, N. C., for the summer months.

Malaria in Virginia.

Reports furnished by the State Board of Health show a total of 7,008 cases of malaria in Virginia for the six months from July to December, 1914, inclusive. There were 163 deaths from malaria during the whole year 1914. The disease prevails mainly in the southeastern section. The largest number of cases for the six months above named were found in Nansmond, Southampton and Norfolk Counties, respectively.

New Member of Virginia Board of Examiners of Graduate Nurses.

Miss Elizabeth H. Webb, of Richmond, has been appointed by Governor Stuart, a member of the above named board for a term of five years, beginning June the 4th. She will succeed Miss Fletcher, who is preparing to go to Europe to serve as a Red Cross nurse.

Dr. J. S. Gale,

Of Ivor, Va., was one of the delegates to the Blackwater Sunday School Convention, which met at Whitehead's Grove, the last of May.

Dr. Allen W. Freeman,

Who has recently become connected with the U. S. Public Health Service as epidemiologist, has been directed to proceed to Iowa City, Ia., for the purpose of consulting the State Laboratory of Hygiene.

Dr. Robert P. Cooke,

First Lieutenant in the Medical Reserve Corps, U. S. A., has been ordered to duty with instruction to report to the commanding officer Remount Depot, Front Royal, Va., for duty.

Dr. William F. Grigg,

Formerly of Oriental, N. C., has recently moved to this city.

Trachoma Hospital in Virginia.

Surgeon John McMullen, of the U. S. Public Health Service, has been sent to Coeburn, Wise County, Va., for the purpose of establishing and supervising the establishment of a trachoma hospital at that place.

The West Virginia State Medical Association.

At its meeting in May, selected Wheeling as the place for the 1916 meeting, and elected Dr. Arthur P. Butt, Davis, president; Dr. J. Howard Anderson, Marytown, secretary, and Dr. Hugh G. Nicholson, Charleston, treasurer.

Dr. Lyle F. Hansbrough

Has recently been appointed a local surgeon for the Southern Railway at Front Royal, Va.

Dr. Benjamin Hobson Frayser,

Who has been stationed at the Ancon Hospital, has been visiting at the home of Dr. A. J. Hurt, of Chester, Va. He will remain in Virginia for several weeks, after which he will resume his duties in Canal Zone.

Dr. and Mrs. James W. Walters

Have returned to their home in Lynchburg, after a visit to Orange, Va.

Dr. and Mrs. Frank Lord.

Of Highland Park, this city, have returned from Canada, where they were called by the illness of Dr. Lord's mother.

Dr. Lawrence T. Price,

Of this city, has tendered his resignation as major of the Richmond Grays, owing to his professional work.

Doctors Attend Reunion.

Among the Virginia physicians attending the Confederate Reunion in this city, June 1-3, were Drs. William P. McGuire, Winchester; P. A. Irving, Farmville; G. D. Meriweather,

Buena Vista: C. W. Astrop, Surry; Frank Hancock, Norfolk; James D. Hagood, Scottsburg; W. A. Harris, Spotsylvania, and Roderick Dew, Goodloes.

The American Neurological Association.

At its annual meeting in May, elected Dr. Llewellys F. Barker, Baltimore, president, and Dr. Alfred Reginald Allen, Philadelphia, secretary-treasurer.

Dr. B. F. Babb

Has returned to his home in Ivor, Va., after being in a hospital in this city for some time.

Dr. and Mrs. G. G. Painter,

Of Pulaski, Va., early in June, attended the commencement exercises of the Radford Normal School, at which place their daughter was one of the graduates.

Nurses Graduate.

Stuart Circle Hospital, this city, held its commencement exercises for the graduation of nurses, on June 8th, at which time seven nurses received diplomas. This is the first class to graduate from the hospital, which was opened two years ago this summer.

The Petersburg Training School for Nurses held its exercises on the evening of the 10th of June, at which time five nurses were graduated.

The Training School for Nurses at Catawba Sanatorium, at its exercises this month, awarded diplomas to seven graduates.

Drs. Horace and Robert Hoskins

Motored to Richmond, from their homes in the eastern part of the State, to attend the finals of the Medical College of Virginia.

Dr. W. Macon Smiley,

Formerly of Honston, Va., is now located at South Boston, Va.

Dr. Paul Redd,

Of Highland Park, this city, visited his brother, Dr. James T. Redd, at Churchland, Va., the latter part of May.

Dr. W. S. Robertson, Jr.,

Of Charleston, W. Va., visited at the home of his father in this city, the latter part of May.

Pellagra

Has recently been noticed in Wyoming and Logan Counties, West Virginia. So far as we are informed, this is the first time the disease has been found in that State.

The American Association of Immunologists,

At its annual meeting last month, elected Dr. James W. Jobling, of Nashville, Tenn., president, and re-elected Dr. Martin J. Synnott, of Montclair, N. J., secretary. This association now has a membership of sixty with twenty applications for membership on hand. By its constitution it is limited to a membership of one hundred.

Militia Medical School at San Antonio.

A school in army medical practice was held at Ft. Sam Houston, Texas, for a week the latter part of May, for officers of the militia of Arkansas, Texas, Oklahoma and Louisiana. Lt. Col. F. R. Keefer, U. S. A., was in charge. The camp was completely equipped with a field hospital, ambulance corps, regimental infirmary, with the regulation transportation facilities for each.

The American Society of Tropical Medicine

Is meeting in San Francisco, June 14-16, under the presidency of Dr. Chas. F. Craig, of Ft. Leavenworth, Kan. Dr. John M. Swan, of Rochester, N. Y., is secretary.

Obituary Record.

Dr. William J. Gills,

A popular young physician of Farmville, Va., died at a Richmond hospital, May the 22d, from pellagra with which he had been suffering for about eighteen months. He was born in Prince Edward County, this State, and had he lived until the 18th of July, would have been 37 years of age. After completing his academic education at Randolph Macon College, he took up the study of medicine at the University College of Medicine, Richmond, from which he obtained his degree as doctor of medicine in 1901. He was a member of the Medical Society of Virginia and was for some years surgeon of the 3rd battalion, 70th Regiment Virginia Volunteers. His widow and young son survive him.

Dr. Henry Bak,

Professor of medicine and pediatrics, at the Southern College of Medicine and Surgery, Atlanta, died at a hospital in Chicago, May 26. He was born in Austria-Hungary, 68 years ago, and for a number of years was chief of staff of the army medical corps of that nation. He had been in America for thirty-three years. He is survived by his wife and seven children.

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SUPERSTITION IN MEDICINE.*

By W. B. BARHAM, M. D., (Univ. of Penn.)
Newsoms, Va.

In this boasted twentieth century, the Augustan age of progress, learning and enlightenment, when every shire is dotted with school-houses, it is strange that such a thing as superstition should exist. But those of us, whose work is in the rural districts, find, often to our discomfiture, that it is still rife in the land. Almost every day a new one looms up. Usually it is of a harmless nature, serving to give us a certain amount of diversion, and we dismiss it with a smile.

But, when, as not infrequently happens, it comes between our patients and rational medical treatment, it becomes a positive menace, deserving our severest condemnation. The belief prevails that it abounds more abundantly in our South-land than in other sections of our country. This we concede and the reason for it is, I think, clear. It has been handed down, from generation to generation along with the entrancing stories of "Brer Fox" and "Brer Rabbit," so entertainingly portrayed by Joel Chandler Harris, by two extinct personages of the old plantation, the old "Black Mammy" and "Uncle Remus," and, notwithstanding what has been said and written by certain fanatics and pseudo-philanthropists of a by-gone age, the world is, in some respects, poorer because they no longer exist. It has become a part of the folk-lore of our land, possessing elements of a crude poetry, which appeals strongly to certain classes and individuals.

Dr. J. C. Bateman, in an article appearing in the *Medical Mirror*, claims that the superstitions of a people are more faithful guides in

distinguishing the origin and affinity of races than language. Deizens of every clime, whether in ancient or modern times, whether civilized or barbarous, have practiced a great variety of mythical and superstitious forms. Absurd and fanciful expedients, of every kind have, from time to time, been used for the supposed cure and alleviation of diseases. In the West Indies and the Southern United States voodooism prevails among the creole negroes and mulattoes. In Africa the Witch Doctor holds sway. He drives a lucrative business. Armed with his staff of office, consisting of gaudy paint and a magic rattle, he impresses his people as the savior and benefactor of the afflicted. Occasionally a live snake, a frog or a lizard are added to his equipment. The staff and the rattle are used to detect the evil spirit, the supposed cause of the malady. His dress is adorned with charms, such as bits of wood, bones, shells, bird and animal claws. These in turn are sold at fabulous prices, the buyers believing that, so long as they wear them, they will be saved from all manner of evil spirits, calamities and diseases.

Paganism, it should be remembered, has no semblance of true medical science. In place of it, horrible and disgusting barbarities are practiced. It is not uncommon for Persian physicians to blister the whole head of their patients with a red hot iron, teaching his patient that by this rather heroic treatment they exorcise the cause of the disease. A missionary in Turkey tells of a native physician, who had under his care a case of typhus fever. His patient, in his delirium, drank the juice of pickled cabbage and recovered. Believing that he had discovered a sure and sovereign remedy for typhus, he made this entry in his note book: "Mohomed Aghra, upholsterer, was cured of typhus fever by drinking the juice of pickled cabbage." His next typhus patient

*Read before the forty-fifth annual meeting of the Medical Society of Virginia, at Washington, D. C., October 27-30, 1914.

received the same treatment and died, and then this entry was made: "Although the juice of pickled cabbage is a sure and sovereign remedy for typhus fever, it should *never* be given, unless the patient is an upholsterer."

We are told that in the Tonga or Friendly Islands, it is not uncommon for a near relative of a patient to sacrifice one or two joints of his little finger to appease the angry Gods. This proving inefficient, especially if the patient is a personage of importance, one or two of his children or wives are offered up as a propitiation. Curiously enough, mothers-in-law are exempt. Those who become aged or helpless are disposed of by fracturing their skulls with war clubs, and, in justification of such barbarity, we are told that these victims have out-lived their usefulness and that the Gods are always glad to welcome such individuals. This plan of disposing of them is perhaps not so merciful as the chloroform method of Dr. Osler, but it is certainly more effectual.

In South America, certain tribes of Indians living along the Amazon and Orinoco Rivers, claim that diseases are caused by the curse of evil spirits, who shoot their arrows into the bodies of their victims, and it is the office of the *Piac* man or physician to drive away these evil spirits by shaking at them a painted gourd, containing small pebbles. This gourd is suspended from a rod, ornamented with the wings of beetles. Having convinced himself that the demons have fled, he applies his lips to the imaginary wound, deluding the poor dupes by pretending that he is thus drawing out the arrow heads and pieces of bone causing the trouble.

The history of medicine furnishes abundant examples to prove that from the time of Aristotle and the other fathers of our science, down through the ages, superstition in some form, relating to medical subjects, has existed. We need go no further back than the sixteenth century to find that it has, in a notable degree, held sway over the minds of certain classes, and, when we reflect that it is only within the last century that medicine has become anything like an exact science, this is not surprising. To the average layman, not versed in scientific lore, there is something about the mechanism of the human body and the action of drugs in curing and alleviating diseases that

appeals strongly to his imagination, giving rise to the wildest phantasms and the most extravagant delusions. Martin Luther in this century, regarded the "Incarnate Devil" as the paramount factor in the etiology of disease. Ambrose, Pare, Fennel, and other physicians of that period, taught the same theory. Melanchthon, too, devoted to the study of astrology, claimed that the phenomena of that science were the causes of the manifestations of many diseases, and, even at the present day, it is not, by any means, unusual to be told by old women and mid-wives that by certain phases and aspects of the moon, the time of the advent of nurslings can be definitely predicted.

In England, the belief prevailed, and even now prevails among certain classes, that by the ebb and flow of the tide, the time of deaths and births could, and can be, with certainty, foretold. Dame Quickly says of the death of Sir John Falstaff: "Nay sure he is not in hell, he's in Arthur's bosom, if ever man went to Arthur's bosom, 'a made a finer end, went away, an it had been any Christian child; 'a parted even just between twelve and one, even at the turn of the tide." Charles Dickens, with characteristic beauty and pathos, in *David Copperfield*, has portrayed the last moments of Mr. Barkis, showing that the same superstition existed in the highly cultured nineteenth century, as it did in the fifteenth: "Barkis, my dear," said Peggotty, almost cheerfully, bending over him, while her brother and I stood at the bed-foot, "here's my dear boy, my dear boy, Master Davy, who brought us together. Barkis: that you sent messages by, you know. Won't you speak to Master Davy?" He was as mute and senseless as the box from which his form derived the only expression it had "He's a-going out with the tide," said Mr. Peggotty to me, behind his hand. My eyes were dim and so were Mr. Peggotty's, but I repeated, in a whisper, "with the tide?" "People can't die along the coast," said Mr. Peggotty, "except when the tide's pretty nigh out. They can't be born unless it's pretty nigh in,—not properly born 'till flood. He's a-going out with the tide. It's ebb at half arter three, slack water half an hour. If he lives 'till it turns, he'll hold his own 'till past the flood, and go out with the next tide." We remained there watching him a long time, hours,—what mysterious influence my presence had upon him in that state of his

senses, I shall not pretend; but, when he at last began to wander feebly, it is certain he was muttering about driving me to school. "He's coming to himself," said Peggotty; Mr. Peggotty touched me, and whispered with much awe and reverence, "they are both a-going out together." "Barkis, my dear," said Peggotty, "C. P. Barkis," he cried faintly, "No better woman anywhere." "Look! here's Master Davy!" said Peggotty. I was on the point of asking him if he knew me, when he tried to stretch out his arms, and said to me distinctly, with a pleasant smile: "Barkis is willin'," and, it being low water, he went out with the tide."

To the poor and ignorant classes of the sixteenth century the almanacs brought annually the grossest superstition. In the years 1528-29 it was predicted that the aspect of the superior planets would be frightful and that they would presage dire casualties to the human family, and that in their wake would follow such diseases as madness, apoplexy, sore throat, abscess of the breast, coughs and consumption, bloody flux, premature births, sterility, uterine disease, gout of the feet, fever every second and third day, frenzy, dropsy, jaundice, colic and the French disease. Numerous other instances in which superstition manifested itself in this century might be cited and, as Baas very pertinently puts it, "beside the earnest effort to advance, a retrograde impulse of equal strength manifested itself; beside the clearest discernment appeared the darkest superstition; beside poor dupes stood the grandest impostors; beside philanthropic efforts were deeds of the most terrible delusions; in short, we observe a collection of revelations and riddles of the human mind and national psychology, such as no other period offers."

With the renaissance in Europe, the minds of men, so long fettered by ignorance of all kinds, incident to the dark ages, began to expand. A new era had dawned, bearing light and learning to hitherto deluded creatures. A new impetus was given to the development of literature and the sciences, but its blessings were not unalloyed. It brought the dawn of a new era in literature and science, but it brought also charlatanry and quackery in its worst forms. The street fakir and medicine man were then, as now, the pests of every town and hamlet, claiming for their nostrum in-

fallible cures for every ill that comes to the human family.

It was brazenly taught that it was only necessary to touch the hand of an executed felon and all the symptoms of epilepsy would speedily vanish. A midwife gave a woman in labor a teaspoonful of aqua fortis, with the comforting assurance that, inasmuch as this liquid had the power to separate gold and silver, so, by virtue of this same power, the child would be easily and speedily separated from its mother, but, contrary to this good woman's expectations, the souls of both mother and child were separated from the bodies. The genial autocrat, Oliver Wendell Holmes, is authority for the statement that Sir Kenelm Digby, author, physician and courtier in the reign of Charles the 1st of England, gave this remedy for ague and fever: "Pare the patient's nails; put the parings in a little bag, and hang the bag around the neck of a live eel and place him in a tub of water. The eel will die, the patient will recover." Nor was this the only vagary endorsed by this author. Believing in the old tradition of a sympathy existing between bodies separated in space, his weapon-salve, which consisted of an ointment made of the patient's blood and human fat, was applied to the weapon that inflicted the wound, instead of the wound. Equally absurd was his:

"Strange hermetic powder
That wounds nine miles point blank would solder,
By skilful chemist with great cost,
Extracted from a rotten post."

In the eighteenth century, pagan superstition was in full blast, even among the wearers of the highest clerical honors. And is this strange, when we reflect that in their own borders, and in the same century, Cotton Mather, President of Harvard University, gave his sanction to the persecution of alleged witches in Salem, Mass.?

And so on, down through the ages, certain classes of people have been duped, thus defeating the legitimate uses of medicine. And, even now, in the dawn of the twentieth century, with all its boasted culture and learning, can we be surprised at the error and ignorance of bygone ages, when we, "The heirs of all the ages in the foremost ranks of time" see men and women of at least fair intelligence put, stealthily, under the bed of a tubercular patient

a vessel of water for the cure of night-sweats? It is an every-day occurrence to see men carrying in their pockets a raw potato or a horse chestnut, or wearing a zinc ring for the cure of rheumatism. And, should the malady be of a chronic nature, the finger and toe nail parings of the patient are put in a hole bored in the base of an elm tree, with the confident belief that when the bark of the tree grows over the hole, the disease will depart.

Absurd you say, and so it is. But take this remedy for whooping cough: Take a slice of bread, over this spread a thick layer of butter; place on this a lock of the patient's hair, thus making a bread and hair sandwich. Throw this to the first stray dog that passes your gate and the disease will disappear with the dog. This possibly accounts for the distemper in many of our pet dogs; through the medium of the hair sandwich, the whooping cough has been transferred from the child to the dog. Another remedy for this disease, so dreaded by fond mothers, is to have a stallion blow his breath in the face of the patient. A friend of mine, a prominent attorney of Norfolk, Va., avers that his child was saved from the horrors of this malady by wearing around its neck a string of amber beads, and it has only been a short time since a lady told me that she had gotten the same happy results by using a nutmeg instead of amber beads.

This cure for corns comes to us from the Hoosier State, through the pen of the genial and delightful poet, James Whitcomb Riley:

"Prune your corns in the gray of morn
 With a blade that has shaved the dead,
 And barefoot go and hide it so
 The rain will turn it red;
 Dip your foot in the rust and put
 A print of it on the floor;
 And stew the fat of a brindle cat,
 And say this o'er and o'er:
 Corny, morny, blady dead,
 Cozy, rosy, rusty red;
 Footsy, putsy, floory stew,
 Fatsy, catsy, mew, mew,
 Come grease my corn
 In the gray of morn,
 Mew, mew, mew."

Now these lines not only convey a great therapeutic principle, but they are poetry of a high order.

This prescription for warts was given to me by my old "black mammy," God bless her: "Find a grain of red corn; rub it over each wart, then throw it over your left shoulder to

a black hen; having satisfied yourself that the hen has eaten the corn, unlike Lot's wife, walk straight away without looking back. Should you, however, look back, you will not be turned to a pillar of salt like the lady aforesaid, but you will defeat the object of the treatment.

Rank nonsense, you say! I concede it. But is it worse than the belief that existed in the eighteenth century that the royal touch would cure king's evil or scrofula? This vagary prevailed in England from the time of Edward the Confessor to the reign of Anne. William the 3rd abolished the practice of it, but it was restored by Anne. Macaulay tells us that in his third year, Samuel Johnson "was taken to London, inspected by the Court surgeon, prayed over by the Court Chaplain, stroked and presented with a piece of gold by Queen Anne. One of his earliest recollections was that of a stately lady in a diamond stomacher and a long black hood. But her hand was applied in vain." As the Sovereign was expected to give a gold coin every time the patient came to him, frequent visits were discouraged.

Listen to this very valuable prescription for styes: "Rub the tail of a white cat over the stye, and, if their treatment should fail, point nine thorns, one after the other, without touching it, and you may expect speedy relief." Attention to details, however, is very essential.

Recently the writer was called to see a case of retained placenta. He found that the cord had been securely lashed to the woman's thigh to prevent, as the midwife in attendance told him, the placenta crawling up to the lungs, thus bringing on serious lung trouble.

This remedy for chills and fever has recently come to my notice: "Find a tuft of broom sedge; uproot it on one side; blow into the cavity thus made as many times as you have had chills; bring the tuft back to its original position, pack the earth snugly around it, walk rapidly away without looking back, and the chills will as rapidly leave you." Another remedy for this trouble is to cut in the north side of a persimmon tree a notch for every time you have had a chill. In Longfellow's "Evangeline," we are told that among the Puritans malarial fever "was cured by wearing a spider around one's neck in a nutshell." And Dr. Fielding Garrison, of Washington, D. C., in his excellent "History of Medicine," tells us that in Norfolk, England, this same spider,

tied in a piece of muslin and pinned over the mantel, is an infallible cure for whooping cough.

One of my obstetrical patients was informed that the cardialgia she suffered from during pregnancy was caused by the hair of the head of the foetus rubbing against the walls of her stomach. Another kind neighbor, during her pregnancy, told her that she could prevent the excessive flow of saliva, incident to teething babes, by carrying across her bedroom a thimbleful of water, immediately after the lying-in period was over. A few days ago, a young lady informed me that she was saved from all the possible horrible results which might have come from piercing the sole of her foot by a nail, by driving the nail up to its head in the north side of an oak tree. And all this so-called therapeutic information is told by men and women of fair intelligence and excellent social standing in their respective communities. It goes to show what a grasp superstition has on the minds of the laity.

Around the function of menstruation, says Dr. Cadwalader, "has come a crop of dragon's teeth." Even as late as 1878, a member of the British Medical Association wrote to the *British Medical Journal*, asking if it were true that menstruating women curing hams would spoil the meat. He had known it to happen twice. Another member stated positively that it was so, and that he was surprised that anybody should doubt it. The same author tells us that on the Continent menstruating women are not allowed to make butter or cheese, can fruit or walk across growing grain.

Musical instruments snap their strings and all nature, we would suppose, is convulsed. Even today, operations are dreaded at that time by the ignorant. It is merely the old "taboo" of barbarism, kept alive by the Jewish "uncleanliness" to linger in the folk-lore of our race. Less than ten years ago, a physician told me that "menstrual blood was a sure cure for warts."

No paper of this kind would be complete without some reference to the so-called maternal impressions. This doctrine prevails to a certain extent the world over, even in darkest Africa. Every Bible reader knows how Jacob enchred old Lalan in that cattle deal in retaliation for the way he was treated about Leah and Rachel. Theophilus Parvin, who taught

the belief in his obstetrical lectures, tells us that Diogenes told a wayward young man that his father was very drunk when his mother conceived him. Penrose, more than forty years ago, in his lectures at the University of Pennsylvania, taught this superstition, vagary, delusion, whatever you choose to call it, and gave seemingly convincing cases to substantiate his contention. The American text-book gives the belief its endorsement. Dorland avoids the subject as far as possible, but he is very careful about protecting his patients from frights. Hirst gives it his sanction; Edgar is a straddler. Winckle, Webster and William ignore it entirely. Strange to say, Charles D. Mings, who revelled in every and anything that smacks of the imaginative and supernatural, ignores the subject. When we find such eminent teachers as Rokitauskys, Stoltz, Montgomery, Tyler Smith and Meadows abroad, and within our own borders, Fordyce Barker, Busey, Spitzka, Dabney and others giving their endorsement to the subject of maternal impressions, we cannot entirely ignore it. Goethe in his "Elective Affinities." Walter Scott in "The Fortunes of Nigel," Oliver Wendell Holmes in "Elsie Venner," Hawthorne in "The Scarlet Letter," and Dickens in "Barnaby Rudge," have built up beautiful romances, making the subject of maternal impressions the corner-stone of their structures. On the other hand, such eminent authorities as DeLee, E. P. Davis, Cadwalader, Henry Foster Lewis in our own country, and Vischow. Shultz and others abroad, condemn the belief in strong arguments. As early as 1727, Blondel of London, denounced the doctrine. But in this, as in many other instances, we, as students and medical men, are "all up in the air." We cannot "always prove our medical beliefs, we admit the influences of heredity, which we cannot as yet explain," says Dr. DeLee. There are more things in Heaven and earth than are dreamt of in our philosophy. Let us hope that further study in psychology and psycho-therapy will make all these mooted questions plain. When the Master had restored sight to the blind man, and the multitude marvelled and asked him how it was done, he answered and said: "Whether he be a sinner or no, I know not; one thing I know, that whereas I was blind, now I see."

But why cavil about non-essentials, when other more serious and weighty prob-

lems, problems that demand our serious vigilant and constant study, confront us? We are living in an age of innovation. A theory or method in therapeutics is advanced today to be discarded tomorrow. With a purpose single to the advancement of our science and to the relief of suffering humanity, the world over, let us "prove all things, hold fast to that which is good."

HAEMOPTYSIS IN CARDIAC DISEASE.*

By CHAS. R. GRANDY, M. D., Norfolk, Va.

Haemoptysis has always been considered the most positive symptom of pulmonary tuberculosis, so positive indeed, that it has been, and still is, the rule to consider all cases with haemoptysis as tuberculosis, until proved to be something else. And this is a most excellent rule, which the writer still follows and which has in the past kept him out of trouble on various occasions, though there are exceptions to it as will be shown in what is to follow.

On the other hand, it is wrong to diagnose cases as consumption simply because they spit blood without corroboration by a thorough physical examination and a sputum examination.

Next to tuberculosis the most common cause of haemoptysis is cardiac disease, and I desire to present to you a short report on twelve such cases seen in a period of little over a year. These cases are all the more interesting because they come from a tuberculosis dispensary, since, having a cough and spitting blood, they fully believed they had consumption, a thing which, in a few instances, it took several visits to disprove. Not only did the patients come to be treated for tuberculosis, but some of them were sent to us by other doctors for this purpose. I think it will be instructive to quote a short history of one of the cases:

Patient—Colored man, 25, who has worked along the docks. His mother was at the time under treatment at our clinic for advanced consumption. He gave a past history of always having been healthy, giving no history of rheumatism, but he had probably contracted lues. His present history: he had been coughing for a couple of months, raising thick sputum especially in the morning. He had raised blood on two nights during the week;

also gave history of having had fever and night sweats; slept very poorly on account of coughing and dyspnoea; his appetite, digestion and bowels were in good condition. He had dyspnoea on exertion. His temperature was 99.4, pulse 98.

This history, as you can see, points strongly to tuberculosis, as everything in it could be found to be present in a rather advanced case of this disease.

Physical examination: Fine rales were found in the right upper lobe behind. Turning him around, the apex beat was seen to be outside his nipple, where quite a marked impulse could be seen. Area of cardiac dullness was considerably increased and a thrill was felt at the apex. The stethoscope revealed a double murmur at apex, transmitted to his axilla, also double murmur at second right interspace, transmitted down the sternum, also upward into the large vessels. A single rough murmur was heard in the vessels of his neck. His systolic blood pressure was 130, diastolic was 40. Here we have a physical examination that absolutely contradicted the history given by patient. Taking the examination as correct, the patient was put on digitalis and rest, under which he markedly improved. After a few weeks he was able to return to work, though he was advised to seek a less strenuous occupation.

On looking over the twelve cases on which this report is based, I find that they are all colored, their ages varying from seventeen to seventy-seven, one being in the second decade, two in the third, one in the fourth, none in the fifth, four in the sixth, two in the seventh, one in the eighth, and one unrecorded. Systolic blood pressure varied between 130 and 210, though this last case has had a systolic pressure as low as 160 on another day. Their diastolic pressures varied between 40 and 150. Practically all of these cases showed evidence of aortic disease. As in the case quoted, the other valves were at times involved. The amount of hemorrhage varied from blood streaked sputum up to a pint in a night. The temperature was seldom elevated but occasionally, with marked congestion of the lungs, it went to over 101.

One of the cases showed quite marked aneurism of the aorta. Mitral regurgitant murmurs were noted in four of the cases only. Mi-

*Read before the Southside Virginia Medical Association, at Suffolk, March 9, 1915.

tral stenosis was only noted in the case reported and that was a little doubtful.

On what point, then, can we distinguish in the histories between cases with haemoptysis from tuberculosis and those from cardiac disease? A point which I have found to be most helpful is a lack of history of night sweats. This, however, is only relative, because we all know we get many cases of tuberculosis without history of night sweats and the case of cardiac disease reported gave a history of night sweats, probably due to his dyspnoea. The ages of these patients is, as a whole, somewhat greater than those of the average case of consumption which comes to a clinic, but this is not always absolute as shown by the ages already given. The blood pressure is a most important point, there being no cases in the twelve reported with blood pressure less than 130, while uncomplicated cases of consumption seldom have blood pressure above 120, though this again is not absolute. Many of these people showed some radial arteriosclerosis, though this was especially marked in older patients, in which the diagnosis was least difficult. The diagnosis then is to be made almost entirely on the chest findings and should be re-enforced with several negative sputum examinations in cases in which there is any doubt, for we must always remember that it is possible to have the two conditions present in the same case.

PRURITUS ANI.*

By LLEWELLIN ELIOT, M. D., Washington, D. C.

Pruritus ani is a painful, distressing, annoying, and persistent itching about the anus, with a tendency to become chronic. It has been stated by Ball and others that this affection never passes the mucous membrane about the mucocutaneous junction: that it is confined to that part of the anal canal with its cutaneous covering, and the skin in the immediate neighborhood of the anus, especially where the parts come in contact when at rest.

The questions as to whether this itching is a disease or whether it is a symptom of a disease, or whether it is a result of pressure upon the sensory branches of the third and fourth sacral nerves after they come down upon the levator ani, then pass through the sphincter, in this way reaching the skin, are undecided. Derma-

tologists and many proctologists believe the trouble is a dermatitis pure and simple.

When one considers the various causes writers have assigned in its production, and the results following treatment, a solution may present itself.

Among the causes of this trouble, we may enumerate: rheumatism, gout, syphilis, diabetes, diseases of the uro-genital organs, any disease of the rectum or anus accompanied by a discharge, any disease of the skin affecting the anal region, foreign bodies in the rectum, intestinal worms, alcohol, tobacco, and idiosyncrasies toward certain articles of diet. The majority of these causes are indefinite.

I believe the majority of cases of pruritus ani are due primarily to disease of the rectum or anus; where there is an accompanying discharge, this may originate in the crypts, thereby producing a cryptitis, which will sooner or later lead to ulceration and finally result in the formation of minute sinuses discharging about the anal border; many more are due to small ulcers situated between the internal and the external sphincters. Wallis, in 1912, found these ulcers present in 90 per cent. of inveterate cases, while intestinal worms, chief of which are the oxyuris vermicularis will be the cause in many. Sometimes we cannot find a cause. Murray has found the streptococcus faecalis predominate in most of the cases he has examined.

The symptoms of pruritus ani are usually apparent to the most casual observer. After the sufferer is warm in bed, the itching will come on and prevent sleep; so annoying and troublesome does it become that he scratches night after night, until the skin becomes excoriated and dermatitis results. Occasionally the victim is driven to the verge of suicide,—at any rate to a condition akin to neurasthenia. One case has been reported, the sufferer being a woman, where it led to masturbation for relief from her tortures. The skin around the anus is thickened, dry or moist, cracked or fissured; the redness and roughness may extend down the thighs, over the scrotum, or onto the abdomen. Eczema is generally present, sometimes scaly; there is a loss of pigment.

In the treatment of this affection, errors in diet must be corrected; tobacco, alcohol, and coffee must be forbidden. Constitutional diseases must receive appropriate treatment. For

*Read before the Medical and Surgical Society of the District of Columbia, November 5, 1914.

the dermatitis, remedies without number have been employed, and, while the skin affection may be cured, the source of the trouble remains, for it is in the anus that the fault lies and not in the skin. For this reason, I am at a loss to understand why writers on proctology and dermatitis give so much space to favorite and popular formulas. It is very true, one should endeavor to improve the condition of the skin as much as possible, softening such parts as are thickened, curing the eczema and removing offending growths in the hope of eradicating the trouble.

In order to soften the thickened skin, applications of hot water will very often be successful. Carbolic acid, 95 per cent., solution of nitrate of silver, grs. 20 to 1 ounce, or sulphurous acid and water, 1 to 2 or weaker, applied once or twice in two or three weeks, will be very effective, but this is a harsh treatment. An old formula consists of bichloride of mercury, castor oil, and alcohol; this is strong but will prove satisfactory. If the surface is tender a soothing ointment is much better. Text-books abound in formulas.

When worms are the irritating cause, anthelmintics, rectal irrigations with solution of carbolic acid, lime water, or formaldehyde, 1 to 1,000, are necessary.

Pruritus ani being, in my opinion, a surgical affection, more consideration will be given that line of treatment.

In those cases of pruritus ani where hemorrhoids, fistula, or fissure, are present, these should receive proper treatment.

Many and various have been the operations performed by different surgeons, from the removal of triangular sections of skin about the anus to a modified Whitehead operation; each has had its quota of successes, but few have been generally adopted.

Mathews suggested a dissection of all the skin covering the whole itching area, including one-half inch of the mucous membrane of the gut.

Hanes does an operation on the order of the Whitehead, as follows: He begins a little external to the junction of the mucous membrane and skin and dissects away the entire mucous membrane as a cuff. The dissection is carried up about two and a half inches, the cuff brought down one or one and a half inches and divided, the distal end being attached to the margin of

the skin by interrupted chromacized catgut sutures.

Hamilton, Mason, Wallis, did practically one operation, but who was the first I do not know; it was to remove a section of the skin for about an inch on each side of the anus, undermine the surrounding skin, draw the cut edges together to cover the denuded surface, and stitch it to the mucous membrane of the bowel. In the references to this operation I have not found mention of division of nerves.

Ball's operation has stood the test longer than any, and is the one that has been the most followed and modified; the modifications made by Krause, Lynch, and Martin have given the best results and they are free from the objections raised against the original.

Ball's operation is done as follows: a curved incision is made on each side of the affected area, enclosing the entire ellipse with the exception of a narrow neck in front and behind. The incisions are carried down to the sphincter muscle, the flap raised by careful dissection with scissors from the surface of the muscle, round its anal margin, and up the anal canal to above the muco-cutaneous junction. This dissection extends around the entire circumference, all connections with the subjacent tissues being divided. This done, the pedicles in front and behind are undercut to a point well beyond the point of irritation, and the outer concave edges of the incision are also undercut to a distance of at least a quarter of an inch free of the involved skin all around. All bleeding must be stopped before the flaps are replaced and brought together with sutures, though space must be left for drainage. The formation of a hematoma might compromise the vitality of the flaps. In some months sensation returns but no itching. Ball did his first operation in 1903.

Krause modified Ball's operation by making four or five incisions which radiate from the anus, and then dissecting up the layers of skin between the incisions, cutting through all the cutaneous nerves, and then suturing the skin flaps back in position. In following this method there is no danger of the skin sloughing, nor of anal stenosis.

Martin's modification consists in the interruption of each of the lateral elliptical incisions at their center, leaving a connecting link between the internal and external flaps.

Lynch makes a small curved incision about half an inch long, and extending just through the skin. Through this incision a blunt-pointed dissecting scissors, curved on the flat, is introduced. With this instrument a blunt dissection is now carried out, working to the anus mesially, and to the raphe anteriorly and posteriorly. When completed, there is an area of skin extending from the anterior raphe to the posterior commissure and involving all the skin within a radius of one and a half inches from the anus, which has been deprived of its sensory nerves. Any bleeding may be controlled by pressure. When the bleeding has stopped, a piece of rubber tissue is introduced into the incision and permitted to remain twelve to twenty-four hours. Sometimes, in addition, a horse-hair stitch is taken through the incision, but this is not usually necessary. As a rule, at the end of forty-eight hours the wound is entirely healed. Both sides may be treated at the same sitting, or at a future time. Lynch's results have always been satisfactory.

In doing any of these operations a general or a local anaesthetic may be used.

After having done the Ball operation, I now prefer Martin's or Lynch's method.

X-rays and the high frequency current have been used with more or less success, but neither has been generally adopted by rectal surgeons.

The treatment with vaccine, as advocated by Murray, and used by him with great success, is only in its primary stages; it has not been developed sufficiently for intelligent criticism.

1106 P Street, N. W.

A PRELIMINARY REPORT ON A NEW REMEDY IN THE TREATMENT OF HEMORRHOIDS.*

By E. H. TERRELL, M. D., Richmond, Va.

The fact that efforts are being made constantly to simplify and perfect the treatment of hemorrhoids indicates that no entirely satisfactory method has been produced. While the ultimate results following an operation for hemorrhoids, after one of the approved methods, are usually all that could be wished, the loss of time and amount of post-operative pain are out of proportion to the pathologic condition. We have felt that there should be some

simple, safe and efficient means of cure without operation, and one that would subject the patient to little inconvenience. That there is a great demand for such a treatment no one will deny. Those who suffer from hemorrhoids have a great aversion to having them removed by operation, and the quacks have prospered in this line because they advertise to cure without the knife.

Some two years or more ago I was called in consultation to see an old lady who was suffering greatly from inflamed hemorrhoids. She was supposed to have some intra-abdominal malignant disease, and, simply to relieve her of intense suffering that her last days might be passed in comparative comfort, the hemorrhoids were removed under quinine and urea anaesthesia. On account of her debilitated condition and degenerative changes in the blood vessels, there was some sloughing of the peri-anal tissues following the operation. This gave me much concern, and since that time I have used the remedy very cautiously in old people. However, from this accident, I conceived the idea that if a proper strength of quinine and urea, short of complete strangulation and sloughing, were introduced into a hemorrhoid, a cure might be effected.

From April of last year, when I first began the use of the remedy after this manner, to the present time, I have completed records of thirty-three cases so treated. Out of this number, there were thirty-two cures, and one failure. The patient in whom the treatment did no good gave a history of syphilitic infection several years previously. There was ulceration in the rectum and probably some changes in the liver which accounted for the failure. The remaining number, thirty-two in all, were entirely cured, and, as far as I am aware, there have been no returns. Some of the early cases I have recently examined, and in no instance is there any evidence of return.

I believe the cure to be as permanent as that following excision, but in regard to this, only time will tell. Out of the number treated, thirty-three in all, twenty-six have made no complaint of pain. Some have said that there was a discomfort and slight throbbing sensation for a few hours after the treatments. Four have had moderate pain, and three have said that the pain was severe. At least two, in this last class, were highly neurotic, and I am con-

*Read before the Richmond Academy of Medicine and Surgery, June 8, 1915.

vinced that their claims were exaggerated. When we consider the nature of the remedy used, a now recognized local anaesthetic, it is hard to believe that the treatment could cause much pain.

The treatment is only applicable in internal hemorrhoids, and in this series, pain, whenever it occurred, was in nearly every instance produced by injection into a pile of the mixed variety.

It is my custom to treat one hemorrhoid each day by injecting into it, very slowly, sufficient solution to moderately distend it. Most often one injection in each pile is sufficient, but sometimes two, and occasionally even three treatments are necessary to effect a cure. After a hemorrhoid is injected with quinine and urea, it will appear thickened and have an indurated feel. It soon begins to diminish in size and in from two to four weeks it has disappeared entirely.

I have used various strengths of solution in these experiments, and I am now trying to work out the indications for varying the solution, as well as some other details in connection with the treatment, so that those who have had little experience in rectal work may use the remedy with safety. If a solution too weak is used, of course, no benefit will be obtained, and if too strong, a sudden strangulation of the blood vessels with sloughing will likely occur. This would be very objectionable.

The use of quinine and urea as a curative agent in hemorrhoids is entirely original with me, and, as far as I am aware, it has been used by no one else for this purpose.

It was not my desire to report upon the use of the remedy at this time. I much preferred to wait until with more cases and greater experience, I could give you statistics of some value, but there has been some criticism by a few of the local profession because I was using, as they claimed, a secret remedy in the treatment of hemorrhoids. This they said I had no right to do. It has never been my intention to keep from the profession any positive information I had obtained, but as a protection to myself I could not afford to report on the use of the drug until entirely satisfied of its worth. In order to satisfy those inclined to criticize and to show that it is my intention to act in good faith, I am making this preliminary and very incomplete report at this time.

As previously stated, there are some details to be worked out before they can be given to the profession in an intelligent manner. As you will readily understand, much time and close observation are necessary to complete this work. As soon as it is completed, which, I think will be in the near future, I shall make a detailed report to the profession.

I am firm in the belief that I have found a remedy which, in a short time, will be used universally in the treatment of hemorrhoids. I have no desire whatever to commercialize its use, but if, through the profession, I can help some little to relieve this very large class of sufferers, I shall be satisfied.

CASES OF PYELITIS IN THE YOUNG.*

By EDGAR P. COPELAND, M. D., Washington, D. C.

I have somewhat recently had under observation three cases of pyelitis, one in my own practice and two in consultation with other physicians, and I am presenting these brief case reports to emphasize the importance of a condition too frequently overlooked. It is not that the recognition of this disease requires any special astuteness on the part of the physician, but rather that the examination of the urine be made a part of the routine examination of every patient with fever, if not indeed with every patient. No doubt the difficulty of securing the necessary specimen, especially in the female in which sex the vast majority of the cases occur, has much to do with the omission of the most important part of the investigation.

Pyelitis is of course a big subject, even when confined to a consideration of the disease in early life, and it is not the intention to bring up various facts and theories relative to the etiology, nor to discuss the varied methods of treatment.

The first case seems to have been an extension of infection from the vulva; the second an extension from the discharges incident to a gastro-intestinal attack; the third probably a direct infection from the intestine in a child with greatly lowered resistance.

Case 1.—White female, age 1 year, the youngest of three healthy children; father and mother in the best of health. The birth was

*Read before the Medical and Surgical Society of the District of Columbia, January 7, 1915. For discussion of this paper, see page 147.

normal at term, weight 9 lbs., breast fed exclusively up to a month ago, at which time corn starch, "social teas" and bread crusts had been added to its diet. Dentition began at the seventh month, and development had been normal. In fact, the infant had been all that a normal, happy one could be up to the present illness.

One week before I saw the child, it had suddenly refused to take the breast. It did not seem ill, but resented all attention, such as the older children had been in the habit of bestowing, and was happiest when left alone in its crib. At such times it would lie in perfect quiet, seemingly free from pain. There had been no regurgitation, and the stools, two or three daily, were not of bad character. The attending physician found the patient with a temperature of 103, but otherwise his examination was negative. This clinical picture had continued, as said before, for one week.

At my examination the infant weighed 27 lbs., but its muscular development was only fair. It had erupted four incisors, tongue was coated, abdomen was soft, liver of normal size, spleen not palpable. Temperature was 104.2°, pulse 135, and respirations 30. Slight vulvovaginitis. Specimen of urine obtained on day following was opaque, showed a trace of albumen and microscopically, without centrifuging, countless pus cells. The vaginal discharge did not show the gonococcus. The specimen of urine in this case was obtained by catheter and I suggest its employment, with, of course, proper technique, in every case where it can not be otherwise obtained.

No attempt was made to urge food upon this patient. She was kept at absolute rest in bed and, with the exception of being given water when possible and the necessary medicine, she was left alone. The medication consisted in the use of potassium acetate, 30 grains daily, continued over a period of 48 hours, hexamethylenamine, 20 grains a day, over the same period, and a repetition of the cycles until the clinical symptoms disappeared. In this case all symptoms had ceased after the fourth day, but that is not the rule and another case that I shall mention will show the tendency to relapse.

Case II.—White female, age 19 months, an only child of young parents who had always enjoyed good health. The birth was normal at term, and it had been breast fed exclusively to the age of 1 year, after which it had been

allowed milk, eggs, cereals, beef juice and fruit juices. The development had progressed normally, and health had been normal with the exception of two gastro-intestinal attacks. One month before I saw the patient, she had been taken sick with constipation, vomiting and irregular fever. These symptoms made their appearance insidiously and after two weeks disappeared. In about one week there was a recurrence of all symptoms and in addition apathy approaching stupor, with frequent muscular twitchings, general in character.

The child was exceedingly cross at examination, but quiet when let alone. She was well nourished, skin moist, no eruption, no adenopathies. Tongue coated, abdomen normal, liver palpable, spleen not. Temperature 101.5°, pulse 120, regular. Reflexes, pupils, patella and plantar, negative. In the absence of urinary findings, the diagnosis was obscure. Tuberculous meningitis was given serious consideration and the von Pirquet test was applied with negative result. After much effort on the part of the attending physician, a specimen of urine was finally secured, showing excessive acidity, albumen, and numerous pus cells.

The treatment in this case was just the same as in the preceding, and the outcome happy, except that in the latter the length of time required was much greater. In fact, the physician informed me that he still found some pus in the urine from time to time.

Case III.—My own patient, white female, age 4 years, younger of two children, parents both living and in good health. This little girl had been under my observation from about the sixth month, at which time I was consulted for an Erb's paralysis. She had been artificially fed, had made a very poor start, and was always delicate without having definite disease.

For one week prior to my first visit she had been bothered with fever, constipation and anorexia.

The examination showed an under-sized child, poorly nourished, with pale skin and colorless mucous membranes, all the evidences of extreme anemia. The tongue was coated, the abdomen flat, with no enlargement of the spleen. An examination of the urine showed an intensely acid urine, quite turbid with what proved to be pus. Clinically, the case progressed well upon the same treatment mentioned in previ-

ous cases, all fever having disappeared in two weeks. There was, however, in the course of a few days, a relapse, complicated with a slight bronchitis, which was more severe and lasted somewhat longer than the initial attack. The urine findings present in the original attack returned and, carefully watched, served as an index to the subsequent course of the illness. Finally, with the utmost care with diet, the continuation of the diuretics and the final employment of tonics, recovery has resulted,—that is to say, there have been no symptoms for the past month and the general appearance of the patient has greatly improved.

The Rockingham.

MIS-DIAGNOSED CASES OF COMPRESSION OF THE SPINAL CORD.*

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(Continued from page 121.)

A QUESTION OF CARCINOMA OF THE SPINAL CORD.

Woman aged 46 was seen with Dr. G. Ruffin in January, 1914. A large carcinoma uteri had been removed in October, 1913, and had recurred in the skin. Following this she had received from Dr. Burnham, in Dr. Howard Kelly's sanitarium, radium locally. A great deal of pain had ensued in thighs, legs and bladder: and the increase of this along with the impossibility of walking had caused the attendant physician to fear involvement of the spinal cord, concerning which he sought my opinion.

Examination showed the following:—Enfeeblement of the left plantar and patellar reflexes with slight increase of the Achilles reflexes, especially the left: weakness of the muscles moving the knee: dulled and delayed sensation to pin prick in the legs and thighs, changing to hyperesthesia after a few minutes; no deep bone tenderness.

In the absence of atrophy or spasticity, I hesitated to incriminate the spinal cord in spite of the increased Achilles reflex, and thought it better to say nothing even of the possibility. I attributed the pain to involvement of the nerves of the lumbar plexus by the cicatricial tissue of the carcinoma left by the radium, preponderantly on the left side.

The possibility of a cancer radiculitis later extending to the cord had to be kept in mind. The pain created a very lachrymose and irritable condition and this became worse after the consultation. Some time later great improvement was shown, and two months later, I am informed by Dr. Ruffin, the patient was in every way comfortable.

NEOPLASM INVADING AND COMPRESSING THE CORD.

*Case IV**—G. H. R., aged forty-eight years, German, married, a printer by occupation. Was admitted to Garfield Hospital, February 21, 1910.

Previous History.—Had always been healthy: one attack of gonorrhoea when young, no lues.

History of Present Illness.—Four years ago begun to have dull aching pain in the left shoulder, which, until July, 1909 (seven months ago), was the only symptom. About this time the pain spread to the other shoulder and to the spine.

In the Fall of 1909 the pains became sharp and spasmodic, occurring when he sat in one position for any length of time or turned his body suddenly, also when at stool, or when he coughed or sneezed, and even sometimes upon swallowing. The spasms of pain gradually increased in frequency so that he was obliged to hold his head in a certain position, i. e., when lying down the head was inclined forward, with the chin approaching the chest. Turning the head too far to either side produced a spasm of pain which continued until the head was returned to the above described position. When standing he had more freedom of motion, but was apt to have a sharp, steady pain when the head was turned to either side rather than the spasmodic variety. It was an effort to hold the head erect: the shoulders also fell forward, especially to the left. Emotion or change of temperature might bring on pain.

In October, 1909, he had entered an institution for treatment after consulting numerous physicians. Here he received electricity and various forms of baths and packs. While taking this treatment, he became quite ill with fever and delirium. Strange to say, the pains

*Read at the Tri-State Med. Association, at Charleston, S. C., February 17-18, 1915.

*Already published by Dr. Thos. Claytor, for whom I made the neurological examination and diagnosis—(Med. Record, 1913.)

subsided and did not reappear for three weeks thereafter.

In December, 1909, he was referred to an orthopedic surgeon, who put him in various forms of casts which gave considerable relief, probably by limiting motion. About February 14th, 1910, the legs and feet began to swell and began to become quite weak in the lower extremities. Up to this time the symptoms had been quite sensory. From now on the motor disability advanced rapidly. On February 21st he had to be catheterized for the first time, though for several weeks there had been at times trouble in starting the urinary flow. About February 10 he began to notice that the rectal control was not good, i. e., he was obliged to respond immediately to the desire to defecate to avoid an accident. There had been no loss of weight.

Result of Examination of Nervous System†, February 22, 1910.—*Reflexes*.—Radial and olecranon exaggerated; abdominal absent; cremasteric weak on right side, absent on left side; knee jerks exaggerated on both sides, as were the ankle jerks; toe extension, more marked on left.

Sensation.—No loss of sensation to wool anywhere. On the left anteriorly pin pricks were felt over C 8 (the eighth cervical segment of the cord) though there was hypoesthesia over this area. Loss of sensation to pin pricks from D1 downward (the first dorsal segment of the cord); posteriorly from D4 downward. On the right side anteriorly, lost from D4, and posteriorly from D5 downward. Relative hypoesthesia to coldness over same segments. The eighth cervical area was not affected on the right side. No loss of sensation to warmth on the left side. Delayed and diminished sensation to ice over D1 and D2.

Vibration test.—Definite diminution in sense of vibration D1 as against C7. Could feel sense of vibration over the spinous processes of the seventh cervical which could not be felt in the dorsal region. Diminution of the spacing sense in the third and fifth fingers of the left hand.

Motor symptoms.—Lower extremities quite weak, walked with difficulty. Left arm somewhat weaker than the right. Abduction of the fingers much weaker than abduction on the left; this included the thumb and little finger. Movements of all the small muscles of the left hand much weaker than normal except the ab-

ductor of the thumb and the abductor of the fifth finger. Flexion of the thumb was weak.

The more important points were as follows: The long duration of pain, the fact that it might be produced by sneezing or coughing, the attitude of spinal flexion, rigidity, with the suddenness of onset of motor symptoms seemed to indicate root pressure (tumour of the meninges.) Pyramidal pressure was shown by loss of cutaneous and exaggeration of deep reflexes. Babinski's sign being more marked on the left, together with more marked signs of left-sided involvement, suggested that the tumor was on the left side of the cord. Escape of the sense touch shows how hard it is to interrupt conductivity.

Localizing Symptoms.—*Sensation*.—The higher level of the loss of sensation to pin pricks on the left in the absence of the Brown-Sequard syndrome, indicated that the lesion might be higher on the left side. That the lesion was as high as D1 was indicated by complete loss of pain sense over that segment, and that it projected to C8 was indicated by diminution of pain sense over that segment. Diminution to sense of vibration indicated the same level, as did the hypoesthesia along the ulnar border of the left arm, and disturbance of spacing sense of left hand.

Motility.—The same segment was indicated by the weakness of the small hand muscles and relative strength of the abductors of the thumb. The Wassermann reaction was negative. The leucocyte count ranged from 9,000 to 13,800.

Operation.—Performed by Dr. L. H. Reichelderfer, February 23rd, 1910. The cord was exposed by the removal of the laminae of seventh C and first D. The tumor was seen lying upon the left lateral aspect of the cord, after opening the dura, to which it was attached. It was also adherent to the pia, but could be separated from the latter without injuring it. The operation was done rapidly and skilfully, and the shock was apparently not very great. The pain was not relieved, however, nor were the nervous symptoms, except that the reflexes were no longer exaggerated. Death occurred seven days later.* The temperature reached

*Two days before death, acute bulbar symptoms intervened with paralysis of muscles of tongue, pharynx and larynx, and hyperthermia temperature over 107, sighing and difficult respiration. At necropsy, the medulla and cord were found exceedingly dry with minute roughenings of surface. It was believed that excessive escape of cerebro-spinal fluid was the cause of death, as cultures were negative and no meningitis was present. Some months later appeared a paper by Dr. Pearce Bailey, relating similar accidents and attributing these to dry bulb.

107.2° F. shortly before death. Microscopic examination showed the tumor to be fibrosarcoma.

LOCOMOTOR ATAXIA AND THE SPINAL CORD.

To distinguish lesions of the spinal cord, such as here discussed from *tabes dorsalis*, is not difficult if a proper neurological examination is made; but it is surprising how frequently the one is mistaken for the other. Still more frequent, however, is the mistaking of the symptoms of *tabes dorsalis* for rheumatism. And I append two cases which illustrate this point as well as the great satisfactoriness of proper treatment of this disorder, even after it has lasted a considerable time and caused much disability and impairment of health.

Case I.—A lawyer from Pennsylvania had had pains treated as rheumatism for six years; latterly, these had increased and some numbness and unsteadiness in gait and mictional difficulty had supervened. His left eye and ear too were losing function. When he was referred to me, I found the left patella and Achilles reflex absent; the left pupil was dilated, irregular, and parietic to light; the pain sense dull and delayed in the lower limbs and thorax; tremor of the tongue; slight slow nystagmus; slowed diadokokinesis, a stamping and occasionally uncertain gait, with left Romberg; the Wassermann reaction was negative, but in the cerebrospinal fluid we found 38 cells per c. m., and an increase of protein. He was given four injections of mercury and two of salvarsan. At first the pains were increased, but they quickly ceased. Forty days after, there were only 13 cells per c. m. in the spinal fluid; five months later, the diadokokinesis was normal, the gait was improved, there was less tongue tremor, and no nystagmus; the sensibility except in the left tibia had returned, although the left pupil had remained parietic; but the pains, having returned, were quickly dissipated by salvarsan, and he was urged not to neglect the injections as he had done. The following year he again returned for examination and only 9 cells per c. m. were found in the fluid. Although he had practically no further trouble, he was again given salvarsan twice. It is now two years and a half since he was first seen and he remains quite well without any ataxia.

Case II.—Two years ago I saw a woman in West Virginia who had been treated six years

for rheumatism at Clifton Springs and other places. She showed great loss of weight and strength, marked ataxia, almost complete loss of pain, vibration and attitude sense of the lower limbs, as well as loss of the tendon and pupil reflexes. She was recommended salvarsan and mercury against the opposition of several physicians. I saw this patient only a few weeks ago and, although she has had only four periods of treatment of two salvarsans and from four to six weeks of mercurial injections, she is perfectly well, at normal weight, save for the lost reflexes and a slight sensory loss in the tibial border of the feet, and can work with enjoyment again.

Of course, I do not pretend that these patients are entirely free from syphilis. They will probably require periodic medication just as experience is showing to be the case with patients reported cured by intrathecal treatment. I have already seen or been consulted about many such relapsed here and in the West.

It must be remembered that the *tabes dorsalis* is not primitive but is a secondary degeneration following upon radiculitis due to a lepto-meningitis of syphilitic origin. The disease, however, is not a serositis for the lesions are in the main quite deep in the membranes, which in places are thickened and filled with exudate and of small round cells, the transmigration of which is most likely the source of the lymphocytosis seen under the microscope when the spinal fluid obtained by puncture is examined. Medication, which reaches these deep areas, must therefore do so by means of the blood. Any benefit of intrathecal treatment must be attributed largely to its effect in stimulating circulation through these subjacent areas; although, of course, any drugs actually introduced may affect locally the region of the root canal, which is the source of posterior root degeneration which results in *tabes dorsalis*.

The results of the two cases above and many others reported in 1914 at the Tri-State Society, but not yet published, show the needlessness of much of the intrathecal medication, even in long standing cases so vaunted by a few enthusiasts at present.

PSYCHOGENETIC CONDITIONS RESEMBLING SPINAL DISEASE.

No where is a more delicate diagnostic prob-

lem presented than in instances where disability of the patient from the actual physical changes is added to by fear or by a fixed idea. The very instructive case which follows illustrates how an actual severe injury causing permanent damage to the spinal cord was not in itself the cause of the patient's industrial incapacity, which was induced by the belief that the partial incapacity caused was total:—

Incapacitating Hysteria Engrafted upon Hematomyelia of the Right Hand and Arm Segments.—A man, aged 20 years, apprenticed mechanic since the age of 16 years, was seen with Dr. Conklin and Dr. Lewis Taylor in June, 1911. Two years before he had dived to the bottom of a creek. The concussion which ensued kept him in bed with severe headache and unable to move for three days. Urinary incontinence lasted one day. He vomited at first. For nearly a year he was unable to walk without severe staggering; his speech became difficult, and still remained slow. He complained also of great sleepiness and difficulty in holding his water; so that he was quite unable to go to work, especially as the right hand was partly wasted and paralyzed, and he feared that what he knew to be a nervous organic disease might be aggravated by exertion. There was loss of sexual power. The boy was normal with the exception of the following abnormalities. The right plantar reflex was absent, but there was inversion of the foot on stroking the sole. The right triceps was diminished. There was great atrophy and weakness of the extensors of the third, fourth and fifth digits of the right hand to an extreme degree. The apposition of the thumb was now quite weak. The grasp of the hand and the flexion of the wrist were relatively stronger. The abduction of the wrist was strong; the abduction of the fingers was quite weak. There was no other distinguishable weakness of the forearm.

He complained of a perpetual tingling down the right leg, which occurred with each beat of the heart, night and day, except during sleep. But there was no difference on the two sides in the perception of coolness and warmth, and the sense of attitudes was now normal, although he stated that for two months he was unable to recognize the position of his limbs. I could not satisfy myself that he felt less intensely, as he alleged, stim-

uli to the right leg by the tuning fork and the point of a pin, so that his hypæsthesia might have been suggested during my examination. A suspicion of its psychogenetic nature was corroborated when I found that, although he declared he would sway when he closed his eyes, he did not actually do so when his balance was deprived of the assistance of his vision while I pretended to be examining the eyes.

Diagnosis and Prognosis.—The abnormalities of the reflexes, motility and subjective sensibility, as well as the slow speech and difficult retention, were due to organic changes, very probably hematomyelic, resulting from the blow on the head in diving. They were not amenable to treatment, but they were by no means incapacitating, for even the grasp of the right hand was fair and the right thumb could be apposed so that he could handle a tool. The prognosis as to efficiency was therefore good.

Treatment. He was accordingly informed of the organic nature of part of his difficulty; he was also told that the disease was not progressive, and would not be exaggerated by work, which would, on the contrary, improve him in every way, and very likely rid him of his heavy feelings. I recommended him, therefore, to begin work, and behave as if he were quite well. This he did, with the result that he continued at work, and was in excellent condition six months later.

Even more common are the instances where, although there is no lesion whatever of the spinal cord, yet a clinical picture is presented which causes such belief. A thorough knowledge of neurological signs enables differentiation to be easily made, and from this appropriate treatment may be planned. An example follows:—

Spinal Trepidation Simulated by Hysteria.—A woman, aged 28, whom I saw in February, 1911, with Dr. Hardin, to whom she was referred by Dr. Maphis of Warrenton, Va., in the preceding June, had had a chill, after which she cried. The next day she felt very weak, and the next day she had pains in the knees, she thinks only in the left, with hyperæsthesia. There was also, she says, tenderness of the lumbar spine, and later on in the groin and hip. She was treated by massage, and for four months she was relieved. About

Christmas time these pains recurred when her sister was visiting her. There were then nausea and persistent dull pain in the knees, which caused her to groan in her sleep.

Examination was negative, except that there was great hyperæsthesia of both knees and one arm. Also the right abdominal reflex was absent, and the adductor reflex was exaggerated on the same side. I decided that the case was psychogenic, and that afternoon attempted psychoanalysis to seek the origin of the psychalgia. I found two suggestive incidents, one being the visit of a sister on the second occasion, the other being the fact that when first attacked her brother had a severe hysteric spell. He had consumption, which she feared. Another fact, perhaps significant, was that she had been two weeks in a newspaper office during its change of ownership, alone with the man in charge much of the time.

As she could stay in Washington only a short time, I concluded that it would be better to remove the effects of whatever had been the source of the hysteric symptoms by psychomotor discipline rather than try to pursue psychoanalysis, which might be unfruitful in the short time at her disposal.

Method.—As the least approach towards the patient's knee would set up a spasm of terror during which the adductors, hamstrings and extensors went into spasms, I began a course of gradual habituation, first to the approach of a person's hand toward the knee, later to manipulation of the patellar region, followed by pressure on it. A sister attended her in the hospital and helped her to accomplish these exercises several times each day. In this way she taught herself in a few days to control the muscles around the knee-joints so as to prevent them contracting when her knee was touched. The pain ceased when the spasm did, as it was in part maintained by the latter. Then her alarm vanished, as there was no reason for it, and she was satisfied that her pain lay in her own power to control. The dangers of prepossession by a fear, in conjunction with the mental vacuity engendered by lack of occupation, were explained to show the genesis of false fixed ideas regarding disease, and she was told how to avoid them. She returned to Vir-

ginia in a week well, and has remained so since.

1705 N Street, N. W.

Proceedings of Societies, Etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Reported by LEWIS C. ECKER, M. D.

This Society met December 3, 1914, Dr. John Dunlop presiding. Under the heading of

Pathological Specimens,

Dr. Hagner reported a case of *chronic prostatic cystitis*. The prostate was treated in 1911. Catheterization of the ureters showed pus from the left. The case was again seen in October, 1914. Marked emaciation. Cystoscopic examination showed no urine from the right kidney, the phenolphthalin test showing 45 per cent. for the one kidney. After the case had improved the left kidney was removed. The kidney as presented was very large and gave much the appearance of a hypernephroma. The size was all due to inflammatory tissue. Operation was done November 6th, and the case was able to leave the hospital November 28. Has gained 15 pounds since the operation. The calculus removed was very large and was presented to the Society for inspection.

Dr. W. F. M. Sowers gave the history of a case of

Giant Cell Sarcoma of the Lower Jaw.

DISCUSSION.

Dr. Shands had two cases of tumors of this type. One followed a fracture of the humerus. This presented the appearance of an exuberant callus. The X-ray showed the condition clear enough for a diagnosis. The arm was amputated at the shoulder. This was two years ago. There has been no recurrence. The other case was a female 27 years old, a Christian Scientist, and involved the lower end of the radius. Amputation was refused, and an excision of the growth done. Four inches of the radius was removed. Patient made an excellent recovery. The case never returned because of the attitude of the family toward active medical treatment, but recently, a year after the operation it was learned the patient had evidences of a recurrence.

Dr. Selby said he had seen a number of cases

similar to the one Dr. Shands had mentioned in which enucleation had been sufficient.

Dr. Dunlop mentioned the cases Dr. Bloodgood had first operated upon, and thought the giant cells in these cases were smaller than in the one Dr. Sowers presented.

Dr. Sowers, in speaking of the case Dr. Bloodgood reported, said this was a large tumor in the upper end of the tibia. With the idea of saving the limb, he curetted the growth and left the wound open to granulate. Treated with X-ray, and from time to time curetted the exuberant granulations. The skin finally grew in. There has been no recurrence. All of his series were in the long bones. There may be periosteal form. The case Dr. Shands mentioned of the Christian Scientist is especially interesting. One of the arguments in favor of conservative treatment of these tumors is that in the small round cell variety amputation offers practically no hope as there are always internal metastases.

Dr. Hagner read the essay of the evening, his title being,

Bulgaria Bacillus in Cystitis Alkaline Urine.

DISCUSSION.

Dr. Fuller said the beneficial results in the use of the lactic acid bacillus in this case shows what can be done in the treatment of this unpleasant condition. He had seen several cases of cystitis with enlarged prostate show much improvement with this treatment. One of these was a case of supra-pubic prostatectomy, with much lowered resistance and a very slow convalescence, with sloughing at the edges of the wound and crusting with salts. Curetting did no good. Marked improvement was noted after the use of the lactic acid bacillus.

Dr. Copeland asked if lactic acid had been used in these cases.

Dr. Hagner, in answer to Dr. Copeland, said he had never used the lactic acid, but other acids had been used. It is especially valuable in those cases following a suprapubic operation where the edges of the wound become encrusted with thick deposit and the wound becomes gangrenous, also when the odor is very offensive. He is sure no acid medication can equal the bulgaria bacillus, as here the bacilli may collect on the wound and form fresh acid all the time, while acid introduced is carried away with the leaking urine and the effect is transitory.

At the meeting of this Society on January 7, 1915, when Dr. Dunlop again presided, a committee was appointed to draw up resolutions on the death of Dr. A. F. A. King.

Dr. Hagner reported a case of

Bichloride Poisoning in a Boy.

Onset was with vomiting and diarrhoea. During the first 24 hours the patient excreted 28 ounces of urine of low specific gravity. Phenolphthalin output $1\frac{1}{2}$ per cent. Practically no solids excreted. Second 24 hours passed 2 ounces. No phenolphthalin passed.

Dr. J. D. Morgan said the case was seen 24 hours after taking the poison. The cases seen early can be helped; after 4 or 5 hours' delay, the prognosis becomes grave. This case had frequent convulsions. Still alive 7 days after taking the poison. Has seen cases live two weeks.

Dr. Bovee wished to know whether the cases died of asthenia or uremia. Mentioned a case in which, after removal of a solitary kidney, the patient lived for 30 days.

Dr. Hagner, in closing, said if the kidneys alone suffered, operation might help, but with bichloride poisoning there is marked involvement in other organs with marked lesions in gastro-intestinal tract.

Dr. Edgar P. Copeland read a paper entitled, **Cases of Pyelitis in the Young.***

DISCUSSION.

Dr. Hagner agrees that catheterization is very important. The infection, as shown by recent experimental work, travels up the lymphatics.

Dr. Bovee read a paper on **Retro-Version and Its Correction.**

DISCUSSION.

Dr. Bowen, after complimenting the essayist, said that he had very good results with the Baldy-Webster and Gilliam operations. States that he had never been able to recognize the utero-sacral ligaments.

Dr. Sprigg thought there was no one operation for correction of retro-version. Agrees most heartily in the treatment as outlined by Dr. Bovee. He is able to palpate the utero-sacral ligament in most of his cases.

Dr. Martell prefers to open the abdomen so he can see the underlying condition. Gilliam operation is the one with which he gets the best results.

*See Dr. Copeland's paper on page 140.

Dr. Devereux spoke very highly of the treatment described by *Dr. Bovee*. One must treat the pathological condition. There should be no set treatment, the object being to rid the patient of the pathological condition.

Dr. Borden expressed his appreciation of the work *Dr. Bovee* had done. He thinks the utero-sacral ligaments play the largest part in the displacement. He said that there was a possibility that assuming the erect posture caused traction on these ligaments with stretching of the same. In the horizontal position this does not occur.

Dr. Bovee closed the discussion.

Analyses, Selections, Etc.

The "Twilight Sleep."

"Twilight Sleep" (Dammer Schlaf), as recently advertised by *Kronig* and *Gauss*, is not a new thing to the men of this country. In 1900 *Schneiderlin* suggested the use of scopolamine or hyosine hydrobromid in combination with morphine as an anaesthetic. It proved a disappointment in so far as its anaesthetic properties were concerned. Sixty-nine per cent. of the cases in which morphine and scopolamine were used had to receive ether or chloroform before sufficient anaesthesia was produced to permit of operation. In some 2,000 cases in which the drug was used, *Wood* found 1 in every 221 cases died as compared with 1 in 14,000 cases in which ether is used.

The predominating action of the drug is cerebral depression with practically no analgesic action. Patients after taking scopolamine sometimes develop a maniacal delirium. *Professor Kronig* says that after the administration of the drug is begun the actions of the patient are such as to make it desirable not to have members of the family in the room. The professor also says the time of the administration of the next dose of the drug is determined by the ability of the patient to remember when the last dose was administered. In other words the extent of intoxication determines it.

Some of the dangers from the use of scopolamine and morphine are death of the mother or child, and the necessity of applying forceps, ergo tears.

The predominating action of whisky in sufficient dose is cerebral depression with con-

siderable analgesic action. Patients on first taking alcohol develop a sort of hilarious delirium (due to paralysis of certain inhibiting centers). The *Bulletin* will take responsibility for the statement that it is desirable not to have members of the family in the room during the various stages of alcoholic intoxication.

The *Bulletin* also will take responsibility for the assertion that the dosage can be regulated by the patient's ability to remember when he had his last drink. In other words, the extent of intoxication determines it. Some of the dangers from the use of alcohol are nausea, vomiting, and loss of reputation. The latter could be avoided by attendants. The previous history of alcohol is long and interesting but mostly unprintable. However, it is supported by the fact that it is the most commonly used drug and most physicians are more familiar with its action than they are with the action of scopolamine.

Before the discovery of ether, alcohol was used as an anaesthetic by the surgeons of that time. Though not entirely successful, the patients had little or no recollection of what was done. Alcohol as an anaesthetic was supplanted by ether, then scopolamine and morphine was tried and discarded by us.

The *Bulletin*, though not officially an obstetrical organ, wonders if the pendulum indicating the trend of Freiburg obstetrical thought in swinging back to discarded scopolamin, may not (since the war has started and has made it difficult to get the especially prepared *Kronig* scopolamine and morphine) swing back to alcohol.—(*Bulletin of the Clearfield County Medical Society*).

Whoever wrote this had a long head. We wish we had him as a contributor.—(EDITOR,—*Medical Council*, May, 1915.)

Superdiagnosis.

Dujardin-Beaumetz, the French clinician, aroused the greatest indignation among his learned confreres because, according to *A. G. Heugli*, Detroit, in opening his courses he said to his students: "Gentlemen, the science of medicine, which I am commissioned to teach you, does not exist." Now, obviously, he wanted to make them understand at the very beginning of their medical careers that they did not deal with a subject which lent itself to such rigorous rules and regulations as the exact sci-

ences like geometry and astronomy, lest the practice of medicine as an art suffer through too close an observance of scientific precepts and dogmas.

This is a scientific age, however, and the spirit of inquiry dominates all regions of thought. Every premise and every conclusion is subjected to the keenest analysis, and woe to him who makes a statement which is not amenable to orthodox proof! In medicine this *Zeitgeist* has manifested itself by the development of the pathological laboratory, with its manifold aids to ascertaining the causes of disease. It would be folly to question their value for the maintenance of health and the prolongation of life. Everyone who is familiar with the tremendous strides of medicine, even within the last ten years, realizes the debt of gratitude which we owe to our men of the microscope and test tube. On the other hand, is it not also a fact that we are in danger of becoming saddled with the syllogistic ideas of science to the detriment of the healing art? Is it not possible that we are learning to lean on the laboratory so implicitly for diagnosis, that medical skill is rusting from resting and clinical judgment is becoming atrophied by disuse? May not the patient himself be a sufferer by too much of the scientific caution which our laboratory brethren insist upon? Is a Wassermann really necessary in every case before we can be sure of the presence of lues? May we not place some faith in the clinical signs which mark diseases, and treat the patient accordingly, without waiting for the absolute proofs which the laboratory can furnish eventually? We must remember that it is very difficult for human beings of finite minds ever to obtain absolute proof. A man walking along the street is struck on the head by a brick dropping from a roof, and falls dead; assuredly, no jury of reasonable men will have any difficulty in deciding what caused his death. But even here, have we really absolute proof that he was killed by the falling brick? Is there not a possibility that he died of apoplexy a fraction of a second before the brick struck him? And so, when our laboratory workers insist upon absolute proofs, upon an absolutely positive diagnosis before we undertake treatment, are they not disregarding human limitations?

Take, for instance, a condition frequently

seen by all in the winter months. You are called within a few hours after an individual has gone to bed with a severe chill. There is a rapid, bounding pulse, short, quick respiration, high temperature, possibly blood streaked expectoration—perhaps even faint crepitant rales in the chest, though of this you are not sure. Now this may or may not be a beginning pneumonia. Supposing that you promptly inaugurate the specific treatment, which is so valuable at this stage of the disease—the immediate injection of a bacterin containing killed pneumococci and streptococci. Obviously, if the man gets well within four or five days, as he most likely will, you will not have the certainty that you were really dealing with pneumonia, and you will never be able to furnish absolute proof that you saved him a six weeks' siege of this dread malady with a doubtful ending. You yourself can only gain the quiet conviction that you have done so after you have had a sufficiently large number of similar experiences, but you will perhaps never be able to single out any one case and say that here the vaccine aborted the pneumonia. If you present a large series of such cases before your medical society, you will be sure to encounter the criticism of astute fellow members who will point out that every one of these patients might have got well without any treatment. This criticism it is difficult to meet, as I know by personal experience. All I can say is that I have sufficient confidence in my clinical judgment to feel certain that the onsets were characteristic of pneumonia, and that I could not possibly have been mistaken in a large proportion of the cases. But especially the ultrascientific men will say that it was my business to wait until I could be absolutely sure of the existence of a pneumonia, and if then I had given vaccine treatment with satisfactory results. I might have some evidence of its value. Unfortunately what I might have gained by the delay in diagnostic certainty, I should have sacrificed in therapeutic efficacy, for meanwhile the invading organisms would have had time to throw up entrenchments in the shape of consolidation of the lungs, and the antibodies which my vaccine injections produced would have found an enemy fortified at the strategic points, instead of one which had not yet obtained lodgment. Here superdiagnosis, as I have termed it, is

responsible for a great deal of mischief. In typhoid fever as well, the over-anxiety to be absolutely sure of knowing what ails a man has done great harm. Obviously if, as so many antagonists to the vaccine therapy of typhoid fever have done, you wait eight or ten days until you get a Widal reaction, you have lost the most favorable opportunity for specific treatment. This is unfair to the patients who have been deprived of a most valuable aid in the combat with the infection, and the men who have been disappointed by vaccine therapy under these circumstances have only themselves to blame. There is very little satisfaction in temporizing until it is positive that a man has typhoid fever in order to make sure that he gets the approved treatment, and thereby cause him to linger near death for a month or two. If the wishes of the patient himself were consulted, he certainly would rather be treated on the supposition that he has typhoid, and later on never know whether he really had the disease, than be scientifically neglected until his ailment is duly diagnosed, when it is too late to save his life, or at best avoid a long sickness.

When I am called to a puerpera who shows a high fever, I do not hesitate to inoculate her immediately with a vaccine containing the various possible offending germs; experience has taught me that I can depend upon a rapid recovery, and I never regret not having found out whether her condition was due to the streptococcus or the colon bacillus, or, in fact, not having had it scientifically demonstrated by culture tubes that she really had a puerperal sepsis before I treated her. It suffices for me that such scientific curiosity might have involved the signing of a death certificate.

When there is an epidemic of whooping cough, I make it a point to give prophylactic injections of Bordet vaccine to children under my care, and I am satisfied with the fact that they remain free from the disease, even though I have no way of telling whether they would not have remained well anyhow.

I have directed this communication particularly against the present day exaggerated emphasis on diagnosis, because I am convinced that, especially in the specific therapy of the common infectious diseases, it has often been a great obstacle. The rule should be to inaugurate specific treatment on a clinical diagnosis in these cases, just as diphtheria antitoxin is

given when the throat leads to suspicion, and not to wait before going ahead for confirmation from the ponderous machinery of the laboratory. Even if the recourse to specific therapy should occasionally be unnecessary, at all events it is always a harmless measure, and one never regrets having employed it. I have never seen or heard of a case in which a dose of bacterial vaccine did any injury.

So the object of this paper is to encourage the use of bacterial vaccines as primary and not as final, resorts in infectious diseases. Lay aside the theoretical preconception that bacterial examination and autogenous vaccines are absolutely essential; send the patient's specimen to the pathologist if you want to, but meanwhile, give him the benefit of the injection of a vaccine prepared by a reliable manufacturing laboratory. You may not be sure afterward, in a certain percentage of cases, that your patient really had the disease which you suspected, but, at all events, nothing will ever take from you the certainty that the difference in the course of most of the cases is attributable to prompt administration of specific treatment.—(*N. Y. Medical Journal*, April 24, 1915.)

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles, on Various Topics of Interest to Students and Practitioners. By leading members of the Medical Profession throughout the world. Edited by HENRY W. CATTELL, A. M., M. D. Philadelphia, and Collaborators. Volumes III. and IV., 24th Series, 1914. Philadelphia and London. J. B. Lippincott Company. 8 vo. Cloth. Price, \$2 each. Volume III has 309 pages and presents articles on Diagnosis and Treatment, Medicine, Electrotherapeutics, Surgery, Child Welfare and other medical problems. Vol. IV, which has 314 pages, includes discussions in Diagnosis and Treatment, Medicine, Surgery, Medico-Legal matters and Medical Illustration.

The Practical Medicine Series. Comprising 10 Volumes on the Year's Progress in Medicine and Surgery. Under general editorial charge of CHARLES L. MIX, A. M., M. D., Professor Physical Diagnosis, Northwestern University Medical School, Chicago, and ROGER T. VAUGHAN, Ph. B., M. D. Volume VII: Obstetrics. Edited by

Joseph B. De Lee, A. M., M. D., Professor Obstetrics, Northwestern Univ. Med. School, with collaboration of Herbert M. Stowe, M. D., 233 pages. Price, \$1.35. Volume VIII: *Materia Medica and Therapeutics, Preventive Medicine, Climatology.* Edited by George F. Butler, Ph. G., A. M., M. D., Henry B. Favill, A. B., M. D., and Norman Bridge, A. M., M. D. 384 pages. Price, \$1.50. Series 1914. Chicago. The Year Book Publishers. Cloth, 12mo. Series of 10 volumes, \$10.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor Therapeutics, *Materia Medica and Diagnosis*, Jefferson Medical College. Assisted by LEIGHTON F. APPELMAN, M. D., Instructor in Therapeutics, Jefferson Medical College. Volume XVI, No. 3, Sept., 1914. 339 pages on Diseases of Thorax and Its Viscera, including the Heart, Lungs and Bloodvessels; Dermatology and Syphilis; Obstetrics; Diseases of Nervous System. Volume XVI, No. 4, Dec., 1914. 413 pages on Diseases of Digestive Tract and Allied Organs, the Liver, Pancreas and Peritoneum; Diseases of Kidneys. Genito-Urinary Diseases; Surgery of Extremities, Shock, Anesthesia, Infections, Fractures and Dislocations, and Tumors; Practical Therapeutic Referendum. Lea & Febiger, Philadelphia and New York. Illustrated. Paper. 8vo. Subscription price, \$6 per annum.

Editorial.

Fourth of July Suggestions.

As the Fourth of July is near at hand, it might be well to say a word about tetanus, or perhaps it would be better to use the word, "lockjaw," as this is understood by the people. It should be a comfort to the unprofessional to know that tetanus is easy to prevent. This knowledge is not intended, however, to bring about a feeling of apathy on their part—it should create interest and make them give more heed to the wisdom of the medical profession. Physicians realize the importance of instructing parents that while tetanus is easy to prevent, prompt measures are necessary, and once the infecting organisms have a start, the cure is most uncertain. Kummel tells us that as little as 20 units of anti-tetanic serum will certainly ward off the disease. Therefore, no chances should be taken in Fourth of July blank cartridge wounds. A physician should be called at once to adopt energetic measures. The use of home remedies may result in loss of life. The old-time patriotism of American youth still abounds and is likely to vent itself in the noise of dangerous explosives, especially

of the blank cartridge type. According to the Public Health Service, "In 1903 there were 417 Fourth of July victims of tetanus, in 1909 the number had been reduced to 130, while from last year's celebration there were but three." And "In 1903, before the widespread recognition of the possibilities of preventive treatment, one case of tetanus developed to every four blank cartridge wounds reported. In 1914 there was but one case to every forty such injuries."

The wound should be freely opened, preferably under an anaesthetic, and thoroughly rid of all foreign material. Then at once use the prophylactic serum.

Children who are much about horses and horse stables are in more danger than others. This applies not only to blank cartridge wounds but to all injuries, especially of a penetrating nature. It should be kept in mind that 30 per cent. of men working in horse stables harbor tetanus bacilli, as against 2.2 per cent. engaged in other occupations. The danger of tetanus to mankind is so active a factor that its source, etc., should be better known. The spores remain viable for many years. Noble reports a case of tetanus produced from a splinter infected eleven years previously. Tetanus infection seems infrequent but that is no reason why we should be calmed to inactivity.

S. H.

The University of Virginia, Medical Department,

Held its closing exercises June 13-16 this year, as usual, in connection with those of the other departments of the University. Eight nurses from the University Hospital also received diplomas at this time. The following is a list of the graduates in the Medical Department with their hospital appointments:

William Dulaney Anderson, Chattanooga, Tenn.; U. Va. Hospital; Ming-yu Chow, Ningpo, China; John Richard Dale, Jr., B. A., Texarkana, Ark., Dale Sanitarium, Ark.; John Hughes Dunnington, B. A., Farmville, Va., Waltham General Hospital, Waltham, Mass.; Marion Stevenson Fitchett, Cape Charles, Va., U. Va. Hospital; John Winston Fowlkes, Jr., Sunnyside, Va., Providence Hos-

pital, Washington, D. C.; Lucian Gaston Gage, B. A., Chester, S. C., U. Va. Hospital; Chas. Glenville Giddings, Jr., Atlanta, Ga., Mt. Sinai Hospital, New York City; George Yancey Gillespie, Jr., B. S., Duck Hill, Miss., Bryn Mawr Hospital, Penn.; Archie Ewing Gordin, Jackson, Miss., German Hospital, New York City; David Walker Grant, Richmond, Va., Stetson Hospital, Philadelphia; Marion Flint Haralson, B. S., Forest, Miss., Instructor in Pathology, U. Va.; Charles Nicholas Harper, Riverton, W. Va., Mercer Hospital, Trenton, N. J.; Jas. Manney Howard, Jr., New Berne, N. C., U. Va. Hospital; Bernard Lipscomb Jarman, Charlottesville, Va.; William Ray Little, Camden, S. C., Mercer Hospital, Trenton, N. J.; Wm. Belvidere Meares, Jr., B. S., Linwood, N. C., Ancon Hospital, Panama; Ernest Brubaker Miller, Elkton, Va., Mercer Hospital, Trenton, N. J.; Vance Lodowick Price, B. E., Stanley, Va., City Hospital, New York City; Robert Grisham Reaves, A. B., Greeneville, Tenn., Providence Hospital, Washington, D. C.; Samuel Saunders, Jr., University Va., U. Va. Hospital; Carl Wm. Shaffer, Ph. G., Woodstock, Va., Michael Reese Hospital, Chicago, Ill.; Jas. Lawrence Stringfellow, B. A., Batna, Va., St. Vincent's Hospital, Norfolk, Va.; Francis Marion Tindall, Misterton, Miss.; Orange Memorial Hospital, Orange, N. J.; Claiborne Willcox, Norfolk, Va., Waltham General Hospital, Waltham, Mass.; Frank Laird Wysor, B. A., Clifton Forge, Va., Blockley Hospital, Philadelphia.

President Alderman announced the following instructors and assistants in the Department of Medicine:—Instructor in anatomy, T. B. Reeves; assistant in histology and embryology, G. A. Pagenstecker, San Antonio, Tex.; assistant in physiology, Ezra Eugene Neff, Chillhowie, Va.; instructor in bacteriology and pathology, M. F. Haralson, Forest, Miss., and student assistants, Claude Moore, Roanoke, Va., and G. B. Gilmore, Hampton, Va.; instructor in pharmacology and materia medica, J. E. Faris, Red Hill, Va., and instructor in clinical medicine, P. E. Duggins.

The William A. Herndon scholarships in this department were awarded to Donald MacKenzie Faulkner, Boydton, Va., and Kalford Wall Howard, Portsmouth, Va., both already students in the medical department.

The Association of Surgeons of the Norfolk & Western Railway

Held its eighth annual outing at Hotel Chamberlin, Old Point, Va., June 10th and 11th, and a more enjoyable occasion has never, we are sure, been given by any Railway Company to its surgeons at any time or anywhere. And yet, this meeting was just the usual annual expression of good will on the part of the Company for its surgical staff, for it has at these times for the past several years furnished its surgeons and the dependent members of their families not only with transportation, but Pullman service, including dining cars, hotel accommodations, side trips, etc.

When the long "special" reached Norfolk, June 10th, the surgeons and their families—numbering about 300—went aboard a steamer which, before journeying across Hampton Roads to Old Point, carried the party to the Portsmouth Navy Yard, where an opportunity was presented for a close view of the large German sea raiders interned there. The scientific sessions of the Association, held in the large ball room of the Chamberlin, were short though interesting. Dr. P. H. Killey of Vivian, W. Va., presided. Officers for the ensuing year were elected as follows: President, Dr. W. L. Hudson, Luray, Va.; vice-presidents, Drs. N. P. Oglesby, Columbus, O.; J. F. Fox, Bluefield, W. Va.; W. E. Driver, Norfolk, Va., and O. H. W. Ragan, Hagerstown, Md.; secretary-treasurer, Dr. T. D. Armistead, Roanoke, Va.

Entertainment during the first afternoon included an inspection, under the guidance of several officers, of the forts and coast defences of Fortress Monroe. Work in the range-finding room and operation of one of the large disappearing guns were especially interesting. Dress parade was given later in the evening. The next morning the party was taken by electric cars to Newport News, where the great ship building yards were visited. Return was then made to the Chamberlin where lunch was served, after which the ferry was boarded for Willoughby Spit and Ocean View. At the latter place tickets were furnished to the bath house, and many took a dip in the briny surf. The dinner which followed at the Ocean View Hotel was marked by an especially pleasing incident, when a large loving cup was presented to Dr. Jos. A. Gale, Chief Surgeon, by

the Ladies' Auxiliary of the Association of N. & W. Railway Surgeons.

Not in Favor of "Twilight Sleep."

After using the scopolamin-morphin anaesthesia in about forty obstetric cases, the authorities of the Michael Reese Hospital, Chicago, announce that they will not hereafter use this method in labor except where the hospital has the guarantee of the patient that the hospital shall be free from all liability in case of ill results to mother or child.

We note that the St. Louis City Hospital has also discontinued this treatment in its maternity cases.

Precautions Against Typhoid.

The Virginia Health Department is urging early notification of all outbreaks of typhoid which seem to have a common origin so that it may make investigations. The co-operation of physicians throughout the State and improved sanitary arrangements resulted in a decrease of nearly one-half in the number of cases of typhoid in six years, there having been 14,398 estimated cases of typhoid fever in Virginia for the year beginning October 1908, and only 7,430 estimated cases for the year beginning October 1913. With continued application of preventive measures, the typhoid rate may be still further decreased.

A Medical Center for New York.

A project has been entered into between Columbia University and Presbyterian Hospital, of New York City, for the union of the two institutions through which the medical, surgical and pathological resources of the Hospital should be placed at the disposition of the Medical School of the University. This is to be done with a view of placing New York in the class with Paris, Vienna and Berlin as one of the greatest medical centers of the world for teaching and research. For this purpose an option has been secured upon a site at Washington Heights, between Broadway and Ft. Washington Avenue, 165th and 168th Streets, which will furnish not only enough ground for the needs of today but for all probable expansion. For maturing these plans, the University alone must raise a total fund of no less than \$7,500,000 in addition to the property furnished by the Hospital.

Dr. Wade C. Payne

Entertained the members of the Prince William County, Va., Medical Society at his home in Gainesville, June 18th.

Married—

Dr. Robert Hubbard Putney, of Guinea Mills, Va., and Miss Ruth Bedford Jones, of Jonesboro, Va., on June 1. Dr. Putney was graduated from the Medical College of Virginia in the class of 1914 and is now located in Elm City, N. C., where he is associated with Drs. Moore and Harrison.

Sanitary Campaign in Virginia.

Prince William County has been awarded the first "new unit" organized by the State Board of Health with the co-operation of the International Health Commission for a campaign in behalf of better sanitation, and a member of the Board's field staff has already commenced with the work. Other applications for the work will be accepted in the order in which they are filed by the counties which are willing to assume their small portion of the financial obligation.

Dr. P. E. Tucker,

Buckingham, Va., was seriously hurt about the head and neck, the middle of this month, when his automobile went over an embankment. He was slightly improved upon latest information.

Surgeon H. S. Cumming

Represented the U. S. Public Health Service at a meeting of the Oyster Growers' and Dealers' Association in Washington, D. C., June 15-16.

Dr. James M. Northington,

Boardman, N. C., has just been appointed North Carolina Division Commander, for the United Sons of Confederate veterans.

Drug Plants Not Unusually Profitable.

The U. S. Department of Agriculture has issued a bulletin stating that government specialists do not believe that the growing of drug plants offers any unusual opportunities for profit to the American farmer who undertakes it as a minor source of income. Many drug plants require a special knowledge of cultivation and handling and the demand for a number of them is so limited that there is danger of over-production. Those who undertake this line of work should devote themselves to it

entirely and be familiar with market conditions to prevent a loss of time and money.

Dr. H. W. Anderson

Was elected one of the councilmen, in the election of town officers held in Covington, Va., June the 9th.

The New Council of Health,

Which supplants the old Board of Health of West Virginia and will continue its duties as an examining board is composed of Drs. Samuel L. Jepson, Wheeling; W. W. Golden, Elkins; Jos. L. Pyle, Chester; W. J. Davidson, Parkersburg; Jos. E. Robins, Charleston; J. S. Farmsworth, Frenchton, and W. B. Stephens, Kimball. Dr. Jepson is also commissioner of health of that State.

Dr. G. B. Barrow,

Of Clarksville, Va., has tendered his resignation as captain of the medical corps, Virginia Volunteers, stationed at that place.

Richmond Academy of Medicine and Surgery.

At the first June meeting of the Academy, Dr. E. G. Williams, State Health Commissioner, gave a "moving picture" demonstration of the life history of the mosquito, besides which several interesting papers were read.

The second June meeting, the last for the summer, was turned into a social one and held on the "Roof" of the Westmoreland Club, a few prominent citizens being guests of the Academy at this time.

Dr. and Mrs. W. Wallace Gill,

Richmond, have recently been visitors in New York City.

The American Society of Tropical Medicine,

At its annual convention in San Francisco, this month, elected the following officers:— President, Dr. Milton J. Rosenau, Boston; vice-presidents, Drs. Bailey K. Ashford, San Juan, P. R., and C. C. Bass, New Orleans; secretary, Dr. John M. Swan, Rochester, N. Y.

Dr. and Mrs. Christopher Tompkins,

Of this city, attended the commencement exercises of the U. S. Military Academy at West Point, N. Y., this month, their son being among this year's graduates.

Registration Time Again.

In conformity with the Harrison Narcotic Law, physicians are reminded that they should

register with the Commissioner of Revenue of their districts before the 1st of July. The fee this time will be \$1 for the year beginning July 1, 1915. Those who fail to attend to this matter promptly may find themselves considerably embarrassed and inconvenienced in prescribing narcotic drugs for their patients after that date.

Dr. S. E. Hughes,

Of Danville, Va., is spending some time in Asheville, N. C.

Journal-Record of Medicine.

Dr. R. R. Daly, who has assisted with the editorial work of the Atlanta *Journal-Record of Medicine* for several years, will succeed Dr. Edgar Ballenger, resigned.

Dr. and Mrs. J. Kennedy Corss.

Of Newport News, Va., spent the month of May traveling in California.

Johns Hopkins Hospital

Has received from John D. Rockefeller, Jr., a gift of \$16,500, which is to be used for a department of social hygiene. Drs. Geo. Walker, Theodore Janeway and Winford H. Smith are the committee in charge of the clinic. They have appointed a physician, who will have several assistants, to take charge of the dispensary.

Dr. J. D. Buchanan

Has resigned his position as postmaster of Marion, Va., after serving for only a short time.

Hospital Restriction Ordinance Defeated.

Recently, Dr. Beverley R. Tucker, of this city, purchased a lot on Franklin Street for the purpose of establishing thereon a neurological sanatorium. A number of property owners in the vicinity objecting to having a hospital in their midst, petitioned the City Council that they pass an ordinance as to the establishment of hospitals in certain localities. After much discussion, *pro* and *con*, the Board of Aldermen, when the matter reached them, voted not to concur in the measure already passed by the Common Council, and so the probabilities are that the sanatorium will shortly be opened in this place.

Dr. Ramon D. Garcin,

Of this city, was re-elected president of the John Marshall High School Alumni Association at its meeting in this city, June 12th.

Dr. R. T. Ferguson,

Gaffney, S. C., has been elected one of the vice-presidents of the Fifth District Medical Association of South Carolina.

Dr. William R. Jones

Has been appointed Marine Surgeon for the port of Richmond, to succeed the late Dr. Staton.

The Hygeia Hospital,

Richmond, graduated four nurses at the commencement exercises of its training school this month.

Dr. Arthur M. Shipley

Has been appointed acting dean of the Medical Department of the University of Maryland to fill the vacancy caused by the death of Dr. R. Dorsey Coale.

The Mary Washington Hospital,

Fredericksburg, Va., has been fortunate in having Mrs. Chas. Steele, of New York, daughter of the late Seth Barton French of Fredericksburg, offer to supply all furnishings for the new addition which is to be built soon.

Dr. Jacob Carroll Bowman,

Of East Radford, Va., has been commissioned first lieutenant, medical corps, Virginia Volunteers.

Tennessee to Have Tuberculosis Hospital.

The house of representatives of the Tennessee legislature passed a bill appropriating the sum of \$50,000 for a tuberculosis hospital in that State.

Dr. Calvin H. Childress,

Of this city, a graduate of the Medical College of Virginia, in this year's class, was accidentally struck in the forehead by a rock on the night of the 12th and painfully though not seriously hurt.

Dr. Eugene P. Gray

Has been elected City Physician of Winston-Salem, N. C.

The Texas State Medical Association,

At its meeting in Ft. Worth, in May, elected Dr. Geo. H. Moody, San Antonio, president; Dr. J. M. Inge, Denton, president-elect, and Dr. Holman Taylor, secretary. Galveston was selected for the 1916 meeting.

Dr. H. Page Mauck,

Of Richmond, has been appointed assistant

in clinical orthopedic surgery, at Johns Hopkins University, for the coming session.

Aubrey C. Belcher,

Of South Richmond, Va., a student at the Medical College of Virginia, left for Paris, the first week in June, with the idea of joining Red Cross work in the European War during his vacation.

Pellagra in Virginia.

It will probably be a source of amazement to others as it was to ourselves to note that during the month of April alone, 77 cases of pellagra were notified in this State. The next largest number of pellagra cases reported for that month was in South Carolina for which 48 cases were announced.

Vital Statistics in France.

The *New Orleans Medical and Surgical Journal* states that for the first half of 1914, there were 2,000 fewer marriages, 4,000 more births and 20,000 more deaths than during the corresponding period of 1913. For the time named, there was a net diminution of about 17,000 in the population of France.

For Sale—

Virginia country practice, with drug business and outfit if desired. Unopposed. One of the best in the State. Most liberal terms. Inquire of "G. P.", care of this journal.

Obituary Record.

Dr. Jacob Michaux,

A widely known and beloved physician of this State, died suddenly at his home in Richmond, June 7th, from apoplexy, although his health had not been good for several years. He was born in Powhatan County, Va., August 31, 1851 and, after an academic education at private schools and the University of Virginia, he studied medicine first at the University and later at the Medical College of Virginia, graduating from the last named school in 1876. After practicing several years in his native county, he moved to Richmond, where he had since made his home.

Dr. Michaux was for several years surgeon in the 1st Regiment, Virginia Volunteers and was for a long time active in Masonic circles. He was an ex-president of the Richmond Academy of Medicine and Surgery and of the Med-

ical Society of Virginia. Upon the founding of the University College of Medicine in this city in 1894, Dr. Michaux was made professor of materia medica and therapeutics, which position he held until his appointment as professor of obstetrics in 1896. He held this latter chair until a few years ago. He is survived by his wife, a daughter, and one son, Dr. Stuart Michaux, of this city.

The Richmond Academy of Medicine and Surgery met on the 8th of June and passed the following resolutions of respect on the death of Dr. Michaux:—

Whereas, the Richmond Academy of Medicine and Surgery has learned of the death of our colleague and faithful friend, Dr. Jacob Michaux; and, bowing to the dispensation of Providence, desires to place on record our esteem for him as a man and appreciation as a physician, former fellow and past president of this society. He was a gentleman of many lovable traits of character, which endeared him to his patients; of great loyalty to his profession, whose ideals he ever endeavored to maintain and elevate. Therefore be it

Resolved, That this academy attend his funeral in a body, June 9th, at 5 o'clock, P. M., at Grace Episcopal Church.

Resolved, That we tender to his family our deepest sympathy in their bereavement.

Resolved, That a copy of this preamble and resolutions be spread on a special page of our records and published in the daily papers and medical journals of this city.

M. D. HOGE, JR., M. D.

(Signed) A. L. GRAY,

W. T. OPPENHEIMER.

Dr. Henry Mazyck Clarkson

Died at his home in Haymarket, Va., June 17th, after an illness of only a few days. He is survived by his wife and several children. Dr. Clarkson was born in Charleston, S. C., 80 years ago and after graduating from the South Carolina College, he studied medicine at the University of Pennsylvania, from which he obtained his medical degree in 1859. He served in the medical corps of the Confederate service throughout the Civil War and a few years later located in Prince William County where he had since made his home. He was prominently identified with the affairs of the County and was for seventeen years County superintendent of schools. He was an honor-

ary member of the Medical Society of Virginia, of which he was first vice-president in 1888. He was well known as a poet as well as a physician, his "Songs of Love and War," published first in 1910, having won for him much distinction in this line.

Dr. Nelson G. West,

One of the most prominent physicians of Northern Virginia, died at his home in Leesburg, May 11th. His death was due to the infirmities of old age, he being 83 years of age. He was graduated in medicine from the Jefferson Medical College, Philadelphia, in 1854 and served as surgeon in the Confederate service throughout the Civil War. He was an honorary member of the Medical Society of Virginia and member and president of the Loudoun County, Va., Medical Society.

Dr. Herbert Oliver Forbes,

Formerly of Meherrin, but who later practised medicine in Burkeville, Va., died at the home of his brother in Lynchburg, June 10, after being in bad health since last September. He was born in Buckingham County, this State, nearly thirty-seven years ago. His medical education was received at the Medical College of Virginia, this city, from which he graduated in 1904. His wife and small son survive him.

Dr. Lee Whitfield Staton,

Richmond, Va., died suddenly on the evening of June 7th, while on his way to see a patient. His horse becoming frightened when one of the wheels came off his buggy, Dr. Staton was thrown to the ground on his head and died in a few minutes.

Born in Scottsville, Va., a little more than 58 years ago, he was graduated in medicine from the Kentucky School of Medicine, Louisville, in 1879. He located in this city in 1887, where he had since made his home. His son, Dr. Louis Staton, was a member of the graduating class, Medical College of Virginia, this year.

Dr. George Berry Graves,

A former resident of Lynchburg, Va., and a graduate of the Richmond College, died at his home, Valentine, Texas, June the 7th, aged thirty-four years. He graduated in medicine from the University of the South, Sewanee, Tenn., in 1903, and went to Texas about seven years ago. He is survived by his widow and a son.

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CANCER EDUCATION—THE DOCTOR'S URGENT DUTY.

By SOUTHGATE LEIGH, M. D., F. A. C. S.,
Norfolk, Va.

At least 80,000 deaths in the United States yearly from cancer! More than 70,000 of these unfortunates could and should be saved! How? By the thorough dissemination of the necessary simple knowledge in regard to the prevention and treatment of this horrible disease.

This could be easily accomplished if the members of our profession realized fully the necessity of prompt, vigorous and systematic effort.

A few thoughtful men have from time to time during the past few years made spasmodic efforts to stimulate interest in this most vital subject, but so far but little has been accomplished.

We are appalled by the fact that in spite of the wonderful strides made by the medical profession in recent years in the prevention and treatment of disease, resulting in a marked reduction in mortality from practically every other human ailment, yet cancer is steadily and rapidly increasing both in extent and death rate.

Ignorance, misrepresentations and superstition are the causes of this dreadful state of affairs.

The public is in denser ignorance on this than on any other subject concerning its welfare. Innumerable obstacles are to be overcome, and deeply rooted prejudices have to be gotten rid of.

The "dread of the knife" and the notion that operation increases the tendency to cancer, are often heard. The heavy mortality from opera-

tion for cancer is frequently mentioned by the laymen and "quack" alike.

The teachings of the advertising "cancer specialists," who prey upon superstition of the people, will be probably the hardest obstacles to overcome.

Even in the ranks of our own profession, we have to admit that there is not as clear an understanding as there should be in regard to prophylaxis and importance of early and prompt treatment of cancer.

Many people have the idea that to do anything surgical to a small growth will change it to a cancerous nature. This is entirely incorrect. In nearly every case cancer in its early stage is a local condition which does not affect the general system or the surrounding parts. For its cure, it is only necessary to completely remove the affected spot. This is also true of the many small growths or sores which are not cancerous, but which may, from certain irritating causes, change into cancerous tissue. If removed by appropriate means, there will be no danger of any after disease.

Another great trouble with the people is that they do not seek advice from their regular medical attendants about suspicious abnormal conditions. In many instances, they use patent medicines or confer with people who advertise in the papers. This is most unwise and the delay is dangerous. They ought to know that the regular profession is versed in all safe remedies and methods.

Procrastination is the cause of many a valuable life being sacrificed to the dread disease. A patient has a condition which is suspicious, but "hopes" that it will not amount to anything and "puts off" seeing the doctor until the disease has changed from a local, curable affection to a cancer which has spread to such an extent that it cannot be eradicated.

When we realize fully that while cancer is preventable or curable in 95 per cent. of all

cases, yet only 10 per cent. are being cured, we must feel that here is a magnificent field for effective work. We all hope that before very long a specific cure for cancer may be discovered, and yet, why should we, depending on that hope, neglect those necessary measures that we know will result in the prevention and cure of so large a proportion of persons afflicted with the horrible disease?

Knowing what we do in regard to this subject, are we of the medical profession doing our duty to the public in allowing so much ignorance and misapprehension to exist? It seems to me that our duty is plain. Our people depend on us of the profession to guide them in all matters pertaining to their physical welfare. It is sadly true that only too often they follow after quackery and superstition. Yet this is from ignorance, pure and simple. And, even in that, our profession is no doubt often to blame in not publicly, though tactfully, instructing them against such a course.

In receiving statements as to the preventability and curability of cancer the public is most incredulous, and yet our information is based on the highest authority.

In the ordinary acceptance of the term, cancer is looked upon as a horrible, destructive disease, entirely incurable and producing the most intense and lingering suffering.

The public, and even the profession, some years ago had practically the same opinion of consumption. A patient with the latter disease was usually given up as incurable, and the question was as to how short or how long a time he would last. Outside of the good work which has been accomplished in tuberculosis in preventing its being communicated from patient to patient, the chief curative work has been in preventing its development and in treating it in its very early stages.

In a similar manner, cancer may be prevented or cured in the precancerous or early cancerous stages. And the public ought to know that the regular medical profession is today doing precisely this thing and doing it effectively.

In 1908 the writer first discussed the subject of Cancer Education before a local society. Since that time he has become more and more interested, and impressed with its vital importance, and has presented four other papers, taking up the various aspects of the

matter, including the dangerous ignorance of the public, the baneful effects of quack remedies and institutions, the work of the Boards of Health and the efforts of the A. M. A. and certain excellent secular publications, especially *Collier's* and the *Ladies Home Journal*.

In our various inquiries and investigations, which included correspondence with each State Medical Society and Board of Health, we have been forced to the conclusion, though much against our will, that the fault lies in lack of interest on the part of the general medical profession. We hesitate to make this statement, for the reason that our profession has done and is still doing such a tremendous amount of educational preventive work for the public, for which work the profession not only receives no pecuniary compensation, but hardly any show of appreciation. And yet, it is plainly the duty of the profession to take up the much neglected subject of Cancer Education, and handle it vigorously, especially along two lines: First, the individual doctors (and we mean every one of them) must have a full, clear and detailed understanding of the subject; and, second, they must then conduct a thorough systematic and vigorous personal campaign in educating their individual patients in regard to the danger signs, prophylaxis and prompt treatment.

Our excellent County Society system, now so near completion, may be used most effectively in diffusing the necessary knowledge among the doctors. If every county society in the state would, at its next meeting, discuss the subject of Cancer Education and go into detail in regard to the situation, the difficulties, and how to overcome them, a mighty wave of preventive work would sweep over the state and accomplish everlasting good.

Cancer tissue is of a most peculiar character, having in itself no death-dealing properties, but causing trouble by its power of "persistent and unlimited growth." It is normal tissue gone wild, "running amuck," as one writer has most appropriately described it. It grows into surrounding parts and organs. When it once gets a hold on a patient, nothing can stop its progress.

There is but little doubt that in most cases this proliferation is due to irritation of some kind.

The rational principle, then, in the preven-

tion of cancer, is to remove the source of irritation or the irritable part.

It is a well known fact, even among laymen, that a wart or mole of the scalp, from the frequent use of a comb and brush, is prone to a rapid increase in size. The same applies to such growths on the face, trunk, or limbs, where, from picking of the fingers or rubbing of the clothes, irritation and growth are produced.

All such conditions should be promptly removed by the knife, cauterization or caustic.

The same rule of extirpation should apply to all tumors, however small.

Tumors of the breast are the most prone to become malignant. According to Judd, 85 per cent. of such growths are malignant, and of the remaining 15 per cent., half will become so if the women live long enough.

It needs no argument to persuade a sensible man, therefore, that every tumor of the breast should be promptly excised, and examined microscopically. If found to be malignant, a radical operation must be performed to get rid of all infected parts.

The surgeon of today is paying much attention to the stomach, gall-bladder and intestines. This will not only prevent much cancer development, but it will stimulate the medical men to look more strictly to the digestive organs.

This is, of course, a very broad field, and will, if followed, lead to many urgent reforms in the mode of living of our people, especially in the rural districts. The neglect and reckless destruction of the teeth is a subject which needs urgent attention. Dentists should be encouraged to look after the country sections, and the members of the medical profession should never agree to extract a tooth which can be saved.

People with plate teeth cannot chew, and the bolting of heavy unmasticated food leads to all kinds of digestive troubles and eventually, in many instances, to cancer.

The use of the stomach tube, proper dieting and especially light suppers, will do much along these lines.

The worst feature of neglect in connection with digestion is in the usual care of children. It is well nigh horrifying to see babies from six months old and up, eating the heaviest, greasiest and most unwholesome of foods. If this state of affairs, which unfortunately ex-

tends only too widely, still continues, we may well fear for the physical well being of the coming generation.

Surgeons are now so well versed in the necessity of prompt operation in stomach ulcer, gall-stones, renal and vesical calculus and kindred diseases, that it is necessary only to mention them as vitally important in the prevention of cancer in these various organs.

Open sores, sinuses, bone disease and ulcers of various kinds should be looked upon as inviting the cancer process, and should, therefore, be summarily dealt with.

Ulcer of the lip deserves more than passing notice. It should be promptly treated, and, if at all persistent, thoroughly excised. If malignant, the glands must also be removed.

Our best field for work, and in which there is the most neglect, is in gynecology.

Every man who does surgical work can recall numbers of cases of advanced cancer of the cervix, a condition beyond help and hope, and many of them comparatively young women. These cases are a disgrace to our profession, since practically all of them are preventable or curable if taken in time.

Our women need educating; they must be taught to fear leucorrhœa, menorrhagia and metrorrhagia. If they have pain, they are prompt enough to apply for relief, but, unfortunately, cancer and the conditions leading to it are too often devoid of pain.

Every woman who bears a child is more or less lacerated. Various causes, such as anemia, hard work, uncleanness, etc., prevent the healing over the raw surfaces. If such an ulcer existed on the hand or face, the patient would not rest until it was cured. On the cervix, then, ulcers often exist for months and years, although much more dangerous than on the outside of the body. Cervical ulcers can be early healed by douches and simple local applications, such as nitrate of silver, peroxide of hydrogen, etc. If they do not heal promptly, operation more or less radical should be performed.

Endometritis, fibroid tumors, and ovarian diseases should all be radically treated to prevent the development of cancer.

The trouble with our women is that they do not realize the danger of their condition, and even if they do, their natural modesty often prevents them from applying for the needed relief.

The fault lies largely with the profession. We should instruct and educate the women along these vital lines. We should question them closely, especially after confinement, and urge examinations more frequently than we do.

One of the chief obstacles in the way of this work is the lack of women assistants at doctors' offices. Every physician should have an office hour at least twice a week for the treatment of uterine cases, and at that time provide a woman assistant.

A word in regard to the quack "cancer specialist." Our profession is not properly or fully informing the public as to the danger of the various methods of caustic treatment. While it is true that a very few superficial skin cancers can be permanently cured by such methods, yet a large proportion of cancers, even if they show signs of temporary improvement, are not permanently benefited. The chief danger is in the delay that the treatment entails. Precious time is lost, during which only too often the disease develops from a local curable condition to a general systemic disease which cannot be reached by radical means.

These quacks do an untold amount of harm, and our profession should use every opportunity to make the conditions clear to the public.

The A. M. A., aided by the Government, has accomplished much good in investigating and exposing a number of such concerns. The A. M. A. pamphlet should be kept in the waiting room of every practitioner for the perusal of his patients.

In the Rupert Wells case, the government chemist found that the preparation for internal use was a weak solution of quinine, and that for external use contained glycerine and water; yet this man advertised extensively in the religious papers as being "able to cure cancer without the use of the knife." It was estimated that his income amounted to \$70,000 a year! This concern and a number of others have been exposed and driven out of business.

The A. M. A. circulars published also the following: Dr. Curry Cancer Cure Company, Dr. Benj. F. Bye Sanatorium, Dr. L. T. Leach Sanatorium, Ohio Soluble Sulphur Company, Dr. and Mrs. Chamlee & Company, Dr. Wu. O. Bye, and the Toxo Absorbent Company.

Scientists the world over have been for years laboring unceasingly to discover a cure

for cancer, and have made reports from time to time of an encouraging nature. No doubt, after a while, a serum will be developed which will be a specific for cancer in all its stages. How long this will take no one knows. In the meantime the disease is steadily increasing, and a multitude of valuable lives are being sacrificed—lives that might be saved if a proper understanding of the subject existed in the minds of the people.

The fact that there is in practically all cancers a precancerous or early cancerous stage in which the disease is entirely local and can, therefore, be completely eradicated, is one that should be impressed strongly upon the general practitioner.

The time is now at hand when our profession must in justice to itself, and for the protection of the public, take up vigorously, and in a practical, systematic way, the question of Cancer Education.

No more fruitful campaign could be waged at this time. Though the public is in dense ignorance, yet the problem is not a difficult one, and the result will be far reaching and productive of great good to mankind.

109 College Place.

THE EARLY DIAGNOSIS OF CANCER.

By S. R. KARPELES, M. D., Washington, D. C.
Member of the Cancer Committee, Medical Society of
the District of Columbia.

Primarily, to achieve the ideal result in early cancer diagnosis, there must be perfect co-operation between the laity and the medical profession. Although grievous errors of omission and commission have been made by the latter, nevertheless, the time is surely ripe for all physicians to wage an unremitting, honest, intelligent campaign against the ever-increasing death rate of cancer.

Twenty-five years ago, Professor Winter, the gynecologist, of Konigsburg, Prussia, began his pioneer cancer instructive work with physicians, mid-wives and the public. The compilation of the result from 1899 to 1910, giving an increased operability of 12.5 per cent. in his clinic, speaks well for the wisdom of his method.

In the United States, much work has been done to promote the earliest possible diagnosis. The Cancer Series Pamphlets, issued by the Council on Health and Public Instruction of the American Medical Association, should

be used not only by the physician for his own edification, but may also be freely distributed to the public as a most excellent means for disseminating the best type of knowledge.

The Cancer Commission of the Medical Society of the State of Pennsylvania has been wonderfully active in the cancer field for years and its work may well be taken as a standard for other state societies. The instructive report of this Commission, issued in 1911, showed that throughout the State of Pennsylvania superficial cancer had been apparent on an average of eighteen months before the case came to a surgeon. Eleven months had elapsed from the time a physician had been consulted until the date of operation. In deep cancer this time was one year. About one case in thirty of breast cancer was not even examined by the first physician who saw the case; in one case in six, ointments were prescribed, with advice to temporize. Only sixty-eight per cent. of the superficial, and forty-eight per cent. of the deep-seated cancer were operable when they came to the surgeon. Doubtless, these same conditions prevail generally and demand united effort to replace the sporadic, poorly effective, methods of the past. From the solicitations of the Pennsylvania Cancer Commission, over seventy-five medical journals will print, this month, a cancer number, to inaugurate a nation-wide campaign.

The Reader's Guide to Periodical Literature shows that in 433 non-medical magazines, covering the periods from 1910 to 1914, inclusive, 70 articles upon the general subject of cancer were published. The newspapers, also, have not been inactive in this period, although it is to be regretted that their efforts have not been more skillfully directed in many incidents. Samuel Hopkins Adams, in the *Ladies Home Journal*, May, 1913, says, "Educate the people to save themselves." We physicians must reach the laity by personal contact and public lectures, through the columns of the press and by popular magazine articles. It is absolutely necessary that the people's attention be constantly and carefully directed to the essential precancerous and early cancer manifestations. Briefly, they must know that moles, birthmarks, etc., on the skin, lumps in the breast, persistent sores on the lip or tongue, persistent stomach disturbance, bowel pain and obstruction, bloody and painful stool, bloody and fluid vaginal discharge, are at all

times significant and, especially after the thirty-fifth year, need careful inspection and correct treatment by a physician familiar with cancerous lesions.

Adams correctly speaks of the "Inability or reluctance of many physicians to diagnose cancer early" and boldly states, "If your doctor is doubtful, get another doctor." Every physician desires to be proficient in his calling and the reason for failure in cancer diagnosis is due to a lack of knowledge and training in this important subject. This evil must be corrected by systematic, continuous courses of journalistic articles, cancer symposiums in the medical societies, and, better still, the clinical demonstration of all types and stages of cancer at frequent intervals. All physicians must specialize in cancer and select surgeons of the greatest skill and judgment, who, in turn, must have trained pathologists to pass immediately upon the gross and microscopic character of every growth removed.

Cancer of the skin never develops from normal skin: hence, pigmented moles, senile warts, horny growths, nodules, birthmarks, wens, chronic ulcers, merit the most careful investigation. Chronic lip ulcers are always a source of danger. Hazen well states, "Any abnormality of any kind about either the skin or lip is a potential cancer."

Chronic irritations of the tongue are likely to be followed by cancer. A few white patches, a vesicle, a papule, a fissure, and any area of ulceration may persist and develop marginal induration. The clinical picture and pathological findings determine the diagnosis at once.

Mr. P. L., 37 years of age, seen December, 1908: history of aphonia of six weeks' duration. The laryngoscope showed an ulcer the size of a pea on the posterior portion of the left vocal cord. Dr. C. W. Richardson, to whom the case was referred, excised a portion of the growth, which proved to be epithelioma and operated immediately. The patient is cured to date. This case illustrates the necessity of using instruments and methods of precision. How different is this result from that of Mrs. B., 56 years of age, seen in January, 1906, who two years before noticed in the breast a bean-sized mass, which grew rapidly. Through a false sense of modesty, she presented herself for examination with an inoperable cancer, the size of a large fist, with axillary and supraclavicular glandular involve-

ment. Or, we might mention the "hopeless fatalist," Miss B., 33 years of age, seen in December, 1906, presenting a small tumor in the breast, with slightly adherent skin and apparently no glandular involvement. This patient absolutely refused operation and died in February, 1915, after years of the most horrible torture. We can find some excuse for patients of the foregoing type, but Mrs. M., 42 years of age, seen in November, 1914, presenting a somewhat fixed tumor of the breast, the size of a goose egg, who several months before had been advised by a physician, trained in an excellent school, to try massage, is a vivid example of criminal neglect. Given, a swelling or tumor in the breast, regardless of size, especially after the twenty-fifth year, an immediate exploration is imperative, and the final diagnosis is indicated by the appearance of the fresh tissue or the frozen section. Eighty per cent. of all breast tumors are cancer, and these, by their ease of access and well-marked clinical picture, afford the least excuse of any of the malignant growths for the many incidents of carelessness in the past.

Thirty-eight per cent. of all cancers involve the stomach. Here early recognition, as elsewhere, is of prime importance, yet presents the greatest difficulty. Doubtless, if abdominal section was made the court of early appeal, instead of the court of last appeal, many patients would be saved. A chronic ulcer, if not already cancer, certainly well merits the title of a precancerous lesion. A patient, especially in middle life, presenting persistent gastric symptoms, with or without some loss of weight, test meal abnormality, persistent occult blood in the stomach contents and feces, does not have to present a palpable tumor, cachexia, positive Abderhalden test and typical Roentgen ray picture, before being referred to the surgeon.

It has been well said that fortunate is the patient, who, early in his disease, presents obstructive bowel symptoms; otherwise, the operation may have been delayed until the intestinal cancer had extended beyond the possibility of cure. The presence of intestinal pain, obstipation with blood in the stool, always demands a proctoscopic examination and exhaustive intestinal diagnostic methods.

Cancer of the uterus, with its terrible mortality record, gives the great incentive for the most painstaking and careful discrimination.

With our clinics reporting only from one and a half to eight per cent. cured, against Wertheim's twenty-two and a half per cent. cured, the necessity for early diagnosis is only too apparent. The bimanual and speculum examination of every woman presenting abnormal bleeding, discharge, pain in the region of the uterus, is absolutely indicated. When we add increasing weakness, loss of flesh, pale, waxy appearance of the skin, watery leucorrhœa with a foul odor, and the occasional discharge of blood, the disease has advanced beyond the expectation of cure. On digital examination in cancer of the cervix, nodules may be felt and the cervix is usually enlarged and unnaturally firm. Ulcers with indurated edges or papillomatous growths are detected. As a rule the examination causes bleeding. The appearance of the cauliflower growth or crater-like ulcers is characteristic. In cancer of the body of the uterus, the organ will be somewhat enlarged, feel more or less boggy, with perhaps points of infiltration and hardness. The finger in the uterine cavity finds it filled with a soft, greyish yellow material with a more or less infiltrated base. The examination of the tissue removed either by means of the curette or by section will render the diagnosis certain.

It will be recognized that it is impossible and not the purpose of the author to write an exhaustive essay, but if a stimulus is given to the study of early cancer diagnosis, in particular, by those physicians who have given the subject the least thought, they will be better able to give correct advice to that vast mass of grievously afflicted individuals who, in past years, have erected a horrible monument, built upon a foundation of ignorance and carelessness.

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CANCER OF THE STOMACH.

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The relative frequency of gastric cancer is shown by the fact that in a series of 70,000 cancer cases, 33 per cent. were cancers of the stomach, while Reich's Hamburg statistics (1872 to 1895) showed that 50.2 per cent. of all cancers were cancers of the stomach.

ETIOLOGY—*Age*: Cancer of the stomach is a disease of middle life, 50 per cent. occurring between the ages of 45 and 55, though it may occur as early as age 20.

Sex: Males are more prone to the disease than are females. Of Friedenwald's 1,000 cases, 588 were males. A series of 20,000 cases showed 58 per cent. in males.

Heredity: Family history of cancer affecting some portion of the body appears in 9.4 per cent. of cancer of stomach (Friedenwald).

Previous Gastric Disease: Cancer may supervene in the midst of good health without discoverable cause, in those who have not abused their stomachs, as well as in those who have. *Alcohol* constitutes a well recognized etiological factor; 56 per cent. of cases at the Royal Victoria Hospital were in those more or less addicted to alcohol. Friedenwald's cases give 15.2 per cent. alcoholics. *Ulcer* bears a definite relation to cancer. In the Mayos' clinic 81 out of 135 gastric cancers had a history of ulcer.

According to Friedenwald's figures, ulcer as a preceding condition could not have been present in more than 23 per cent. of the cases.

PATHOLOGY. The commonest sites for the location of the tumor are at the pylorus and the lesser curvature. Diffuse cancer also occurs in the submucosa of the stomach wall and may cause a general thickening throughout a greater part of the organ. The growth may be either of the scirrhous or medullary types, the former being more common. The medullary type grows more rapidly, is softer, ulcerates and degenerates earlier, and is more apt to lead to metastasis. The growth extends and is disseminated by both lymphatic and blood channels, or by continuity and contiguity. Perforation of the stomach wall may occur. Multiple metastases to various organs of the body are not uncommon.

SYMPTOMS: The onset of gastric cancer may be sudden (75.9 per cent.—Friedenwald), or very insidious without symptoms over some months, although the growth may be well developed. The typical onset is that of indigestion, ill-defined in character without assignable cause coming on in a patient over forty years of age, with history of previous good digestion. Flatulence and fullness after meals are complained of. Loss of appetite and vomiting are more or less constant findings at some stage of the disease. Vomiting may be frequent, as after each meal or at longer intervals, even two or three days, with stagnation and accumulation of the vomitus if the pylorus is affected. In

this event the vomitus is foul, contains coarse fragments of meals, often something eaten a day or more previously, contains mucus and often blood (25.4 per cent.). The blood may be evident grossly in about half of the cases, almost constantly so when the occult blood test is employed. The "coffee ground" vomitus of cancer is due to blood remaining in the stomach some time, resulting in reduction of the hemoglobin. Bright, or slightly changed small clots of blood in the vomitus may come from a cancer at or near the cardia, or in the lesser curvature.

Pain. The pain of gastric cancer is a variable factor. It may bear no relation to meals in one case, while in another it will come on at more or less regular intervals after meals, thus in some cases simulating the pain of ulcer. Only rarely is it entirely absent. It may be constantly present, or, on the other hand, come on only at considerable intervals. Pain may be very mild in cancer in contrast with the usual pain of ulcer. Often limited to the epigastrium, it may, however, in certain cases, be felt throughout the abdomen.

Nutrition: At some time during the course of the disease emaciation supervenes and cachexia may be great. Temporary improvement may occur at times and thus lead to false hopes of recovery. Rarely is nutrition maintained until late in the disease. Loss of strength progresses *pari passu* with failing nutrition. Usually anemia occurs early, though at first, in some cases, blood changes may be insignificant.

Fever which commonly occurs late in gastric cancer is toxic in origin and may simulate that of malaria, intermittent and irregular in type.

Tumor. Palpable tumor occurs most commonly after the first six months of the disease and, if not adherent, moves with respiration or change in the position of the body. If located in the lesser curvature, inflation of the stomach may cause it to disappear. If at the cardia or in the posterior wall or lesser curvature, it may not be possible to palpate the tumor even late in the disease. Usually the mass is tender and there may be rigidity of the abdominal wall; ascites, edema and jaundice are usually late manifestations of gastric cancer.

Stomach Contents. The amount of contents may be greatly increased if the pylorus is the seat of the growth. Free hydrochloric acid

may persist, though, on account of its combining with alluminous secretions of the growth, it is oftener greatly reduced and frequently absent. Lactic acid is a usual constituent of the vomitus when there is stasis and lowered or absent hydrochloric acid. Commonly encountered under these conditions in gastric cancer, the fact must not be overlooked that lactic acid may occur in stasis from any cause.

Blood in the feces is not so common or great in amount as in ulcer, but the occurrence of occult blood in the feces is a point of considerable diagnostic importance in cancer.

Microscopically, the stomach contents of cancer often show Boas-Oppler bacilli, sarcinae, yeast cells, pus and red blood cells. None of these are pathognomonic, but afford corroborative evidence only.

Duration. The average duration of cancer of the stomach is one year. Medical treatment offers nothing at all and surgery but very little and then only when a very early diagnosis is reached.

“This, it seems to me, is the key to the situation. Our adult population must be informed with the highest authority behind it, that epigastric discomfort aggravated by eating solid food is a sufficient warning. They must be told that such symptoms by no means mean cancer, or disease that may ultimately end in cancer, but that with these warnings they should seek not treatment, but a thorough examination by a competent physician trained in the investigation of gastric diseases. They must be informed that restricted diet and some medicine will often give them relief; but if the disease is cancer, or something that may ultimately be cancer, such relieving treatment will only increase the danger. A thorough examination is the essential thing, and they must know that a thorough examination consists of repeated gastric analyses and the investigation with the fluoroscope or roentgenograms. No other examination will be sufficient.

Persons so educated with this correct information will undoubtedly have the courage to act. The responsibility, then, falls on the physician. I am confident that, after most careful clinical examination, repeated gastric analyses, and Roentgen-ray studies, lesions of the stomach which should be subjected to surgery will not be overlooked, and that our comparative

figures will show an increasing number of gastric ulcers, an increasing number of gastric ulcers with microscopic changes suggesting early cancer, an increasing number of operable masses in the stomach which are microscopically distinctly cancer, and an increasing number of permanent cures among the latter. With this earlier intervention, the mortality of gastrectomy will decrease.

When there are non-adherent masses in the stomach, in patients who are in good condition, resection of the lesion in the pyloric half of the stomach should have a mortality of 2 per cent. or less.

There is no doubt that today among trained surgeons, the technic of resection of the stomach is far ahead of the opportunities to apply it at the most favorable period.”—(*Joseph C. Bloodgood, Jour. A. M. A., June 19, 1915*).

SUMMARY OF BREAST CARCINOMAS AT UNIVERSITY OF VIRGINIA HOSPITAL.

By HARRY T. MARSHALL, M. D., and CLAUDE MOORE.

(From the University Hospital and the Pathological Laboratory of the University of Virginia.)

The following study was made upon the cases from the surgical clinic at the University Hospital. We wish to thank Dr. Watts for permission to use the material and for his interest and assistance in this study. The material from the operating table was regularly examined in the pathological laboratory and a microscopic diagnosis established. In the following study the pathological features are not analyzed.

Between January 1, 1908, and May 1, 1915, 102 patients were received at the University Hospital suffering from disease of the breast, re-admissions not being counted anew. This is slightly over eight-tenths of one per cent. of all admissions and slightly under one and two-tenths of one per cent. of all surgical admissions.

The 102 cases present the following diseases:

TABLE 1.

Carcinoma	78
Benign tumor.....	20
Sarcoma	3
Mastitis	1
Total	102

Two cancer cases must be discarded owing to unsatisfactory records.

One cancer of the breast was found in a

white man of 69 years, developing at the seat of an abscess; the other seventy-five were in females, the right and left sides being equally often involved in the instances specified.

The distribution by decades and color is shown in Table 2.

TABLE 2.

	21-30 Years.	31-40 Years.	41-50 Years.	51-60 Years.	61-70 Years.	7-80 Years.	Total
White	2	9	19	16	10	2	62*
Negro	1	2	4	5	1	..	13
Total	3	11	23	21	11	2	75

*Age not specified in 4 white cases, included in the total.

The proportion of negroes with carcinoma in this series is low, (slightly over 17 per cent.), compared to the proportion of negroes admitted during the year ending June 30, 1914, which was slightly over 27 per cent. of all admissions.

The 15 unmarried women with cancer in this series were distributed by decades:

31-40 Years.	41-50 Years.	51-60 Years.	61-70 Years.
3	7	4	1

Many of these patients came from in or near Charlottesville: all except one (from Florida) came from Virginia or adjacent States. Only seven came from outside of Virginia.

Twelve of this series were inoperable cases; in 58 cases the typical radical operation was performed for the removal of the carcinoma or to give local relief. The remaining 5 cases are not considered, on account of difficulties in interpreting the records. Thirty of the 58 left the hospital with the wound healed and the patient in apparently good condition; in 24 cases the wound was healed, but the prognosis was guarded; in one case the outlook was hopeless; 3 cases died in the hospital, one of pulmonary embolism, two of cancer.

Attempts have been made to keep in touch with the patients and their physicians, and to follow the ultimate results of operation. Table 3 summarizes the results so far as they are known.

TABLE 3.

	Living in May 1915	Dead of Cancer	Dead of other causes.	No recent record of patient.	Case not treated (Inoperable.)	Total number.	Percentage of cases living.	Percentage of operated cases living.
Period since admission to hosp								
5 yr- or more	3	12	1	3	2*	21	14-18%	16-18%
Between 3 & 5 years	2	9	2	6	5†	24	8-14%	11-15%
Between 2 & 3 years	6‡	3	1	1	1*	12	50-60%	55-60%
Less than 2 years	7	3	.	4	4‡	18	39-54%	50-70%
Totals	18	27	4	14	12	75	24-34%	29-37%

* No recent record.

† 1 patient has died; no record of others.

‡ 2 patients dead; 1 living; 1. no record.

§ One of these patients has another recurrence after 3 operations.

In working out the "percentage of cases living" the number of living is divided, first, by the number admitted to the hospital during the given period; this gives the low percentage. Next, the number living is divided by the number of cases whose recent records are available. This gives the higher of each pair of percentage figures. The true percentage of cases living is probably nearer the first figure of each pair.

In computing the percentage of the last column the inoperable cases are excluded, and corresponding deduction made from the totals.

If we examine the cases now living with regard to age and sex distribution, we find:

Three patients living five years or more after operation are all white women between 30 and 50 years;

Two white women between 40 and 60 living between 3 and 5 years after operation.

Those living less than 3 years after operation are:

	21-30 years	31-40 years	41-50 years	51-60 years
White	1	2	1	4
Negro	1	1	2	1

It is unsafe to conclude from these figures that the mortality is higher among negroes with cancer, because the figures are small and the colored patients are especially hard to follow after they leave the hospital.

Two facts stand out from a survey of this series: first, the serious consequences of cancer, unless removed at a very early period; second, the infrequency with which early cases come to operation.

LIVER FUNCTION WITH REFERENCE TO CERTAIN PHASES OF GENERAL METABOLISM.*

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It is not my purpose to discuss all the functions of the liver. The multiplicity of its functions is evident when we consider that the liver has to do with glycogen formation, the formation of urea, uric acid, creatinine, and bile; also the liver acts as a blood reservoir, it is believed that it secretes antithrombin, and it plays a part in the formation of red corpuscles of the foetus, and is a source of animal heat.

It is my purpose to call your attention to a few facts, recently developed, in the study of liver function. To do this, I must say a few words about its embryologic development and some recent anatomical findings. These point to an anatomic independence of different lobes of the liver, and also suggest a physiologic independence. I shall also mention the dependence of liver function upon the ductless glands, and also the part the liver plays in fat metabolism with special reference to acidosis, and the effect of diet on liver necrosis.

Our knowledge of the metabolism taking place in the liver, while greatly augmented in recent years due to the progress made in bio-chemistry, is still very incomplete. We are realizing, however, that much depends upon the knowledge of distributed metabolism in present-day medicine, and while many of the processes are clearly understood by the clinician, yet, there are many problems, especially in physiology and physical chemistry, far removed from the ordinary affairs of clinical medicine.

To understand these fundamental activities which occur in the liver, it becomes necessary to first study its embryologic development, and note its relationship in its development to other organs concerned in digestion and

metabolic processes. In studying this relationship, we find that the liver is derived from that part of the primitive intestinal tube, called the "fore gut." Not only is the liver developed from this "fore gut," but we find other organs which play an important role in the digestive processes having a similar origin, namely, the back wall of the pharynx, the œsophagus, the stomach, the pancreas, and the upper portion of the duodenum.

The blood supply is also of interest on account of its important chemical influence exerted on digestive function and metabolism. It is to be noted that the liver receives its blood from the same source as do the other organs derived from the primitive fore gut, that is, by way of the hepatic artery which is a branch of the celiac axis.

We have been content, heretofore, to view the liver as the largest gland of the body, with its dual type of secretions and its peculiar blood supply, as having certain well-defined and well-known physiologic functions, and to consider its structure and function uniform throughout. There appears now to be evidence at hand showing that such is not the case, and that there is an anatomic and physiologic difference between the two main lobes, the right and the left.

The anatomical difference is a more or less distinct separation of the biliary and vascular system of the right lobe from those of the left. It has been the custom of the anatomist, in making the anatomical division of the liver, to state that the ligamentum teres hepatis is the dividing line. This division, while convenient, is not based upon embryonal development. This ligament, as we know, is the remnant of the left umbilical vein. The right umbilical vein, in embryonic life, is placed at an equal distance to the right of the gall bladder. So, the true division is a hypothetical plane drawn between the gall bladder and the fossa of the inferior vena cava. We see then, that the gall bladder is the true center of the liver, both in the embryo and the adult. Directly bearing upon this statement are the investigations of Wertheimer and Lepage¹ and those of Looten, reported by Bartlett, Corper,¹¹ and Long. These investigations probably show an actual independence of the bile duct and the capillaries of the right lobe from those of the left. Wertheimer and Lepage dem-

*Read before the Tri-State Medical Association, at Charleston, S. C., February, 1915.

onstrated spectroscopically the absence of a trace of cow's bile in either lobe after injecting the duct of the opposite lobe with cow's bile. Looten verified these experiments by using indigotate of sodium in a series of experiments on twenty-five cadavers. He could demonstrate no intra-hepatic capillary connections between the bile ducts of the two sides. The line of division appeared to be the plane between the gall bladder and the fossa of the inferior vena cava.

In reviewing the studies bearing on the physiologic independence of these two lobes, we must recall that the portal vein brings back the blood from the spleen, stomach, duodenum, pancreas, small intestine, and the great part of the large intestine to the liver. This physiologic independence of the liver rests upon the possibility of these small streams of blood maintaining their individuality as distinct currents after they have reached and formed the common portal vein. This phenomenon of the individuality of the currents is based upon certain physical laws of liquids, depending in great measure upon the viscosity as well as the velocity of the fluids. Bartlett, Corper and Long, in a series of experiments upon dogs, with a view of verifying this fact, conclude that there is a physiologic independence of the lobes of the liver in dogs and that it depends upon the fact that the blood flowing in the portal vein from each of the smaller veins of the portal system does not blend diffusely into a common current but remains individualized to a considerable degree, streaming in thread-like currents for distances varying up to 10 centimeters.

"Depending upon this principle it is found by injection of emulsified fats in various portal tributaries and by the absorption of copper from the various isolated intestinal segments that: first, the blood from the stomach, spleen, duodenum, firsts part of the jejunum, and from the rectum, flows mainly to the left lobe of the dog's liver, and least to the right lobe; second, blood from the lower jejunum, ileum, and the first part of the large intestines flows principally to the right lobe of the liver, and least to the left lobe; third, this independence is not entire, but over-lapping, due to an inter-mixing of the portal currents; fourth, the currents of blood from the splenic and rectal vein are at the hylus of the

liver more sharply defined than the currents of blood from the ileal veins, which must flow a greater distance in the portal vein to reach the hylus of the liver and consequently becomes more mixed and less independent."

This physiologic independence is worthy of study not only for its interest to the physiologist in studying liver metabolism, but also for the possible light it may throw upon diagnosis and treatment of surgical and medical disturbances of the liver with their possible associated gastro-intestinal lesions.

It is of interest to note that, as far back as 1890, Glenard² in his clinical observations, called attention to his examinations of the liver in pathological conditions, and his observations are in accord with the recent demonstrations upon dogs,—that is, he found in gastritis a tender and swollen left liver lobe and a hypertrophied right lobe associated with diabetes.

The problems of hepatic metabolism are so interwoven and dependent upon the sufficiency of at least certain of the ductless glands that we can no longer consider liver function as an entity, but must take into consideration the influence of the ductless glands upon liver function and metabolism. The method of procedure to determine the effect of the ductless glands upon the liver is, first, to find some substance which upon intravenous injection will be excreted with the bile by the liver cells and at the same time be estimated with accuracy from the feces; then, by removal of the different glands, note the effect each has upon the secretory cells of the liver. Phenotetrachlophthalein appears to be the drug that can serve this most valuable purpose. Whipple³ and Chrisman, experimenting with this drug, have thrown considerable light upon the rather vague activity of ductless gland influence upon the liver function. They find that the excretion of phthalein is quite constant in normal dogs; hence, a fall in phthalein is indicative of liver injury. They find that such well-known liver poisons as chloroform, phosphorus and hydrazine cause a distinct fall in the phthalein excreted in the feces and that the fall in the phthalein curve is proportional to the amount of liver injury; also, in acute fatal poisoning, the phthalein excretion may reach zero. With a given definite liver injury, they find that a definite amount of the drug will

appear in the urine which ordinarily is free from the drug in normal conditions.

The phenotetrachlophthalein method was pursued in studying the effect of partial or complete removal of different glands upon liver functions. The result of these methods, as given by Whipple and Chrisman, are: if three-fourths of the adrenal gland is removed, there will be a *drop in phthalein* excretion, and when the remaining fragment becomes hypertrophied, the excretion comes back to normal.

Pancreatic removal causes a progressive fall in phthalein excretion, indicating a grave lowering of the functional capacity of the liver. This fact has, no doubt, a direct bearing upon the question of diabetes. Parathyroid insufficiency with tetany causes no decrease in phthalein output, but may even cause an increase at times above the normal: that is, it appears to act as an excitant, thereby increasing the activity of the liver cells. Thyroid insufficiency produces no change. Hypophysis insufficiency gives varying results, first giving an initial fall, to be followed by a return to normal, with a final drop in the last few days before death.

It would appear from these experimental studies that there is now evidence at hand to prove that we cannot look upon the liver as an independent organ in metabolic activities, but that it is very much concerned in the derangement that follows the removal of the ductless glands and possibly as much concerned with the pathological conditions of these glands.

The function of the liver in the metabolism of the fats is still somewhat obscure. As to the ultimate fate of the fats, we can say that from whatever source they are derived, either as food fats or as fats converted by intermediary metabolism from such proximate principles as carbohydrates, that in any case the end products are ultimately converted into CO_2 and H_2O . This energy is converted into heat or into mechanical or functional work, and the katabolites are excreted by the lungs, skin and kidneys. The obscure point is the intermediary stages through which fatty acids are broken down or degraded into such simple end products as CO_2 and H_2O . It is during this intermediary stage compounds giving rise to the acetone bodies are formed. Whether the

formation of acetone bodies is a normal event or not, is a matter of opinion. The idea is gaining ground that it is of normal occurrence, but, ordinarily, in a normal individual, these bodies undergo complete oxidation, and it is only through the disturbed metabolism we have these bodies unveiled. Starling claims that both oxybutyric and diacetic acid, when given to a healthy person, are completely destroyed in the body,—that is to say, they are completely oxidized into the ultimate end products of fats, and it is only under abnormal conditions that they fail of oxidation and are excreted in the urine. Hawk claims that acetone is a physiological as well as a pathological constituent of the urine, and under normal conditions the daily output is 0.01 to 0.03 of a gm. Acetone and the closely related bodies, beta oxybutyric and diacetic acids, are all associated with deranged metabolism and may appear in the urine together or separately. Acetone and diacetic acid may occur in the urine alone, but beta oxybutyric acid is never found except with one or the other of these bodies. It was thought at one time that they had their origin in the carbohydrates or proteins. Investigation has, however, made it quite clear that the sole source of beta oxybutyric and diacetic acid is the fats of the food or the fats of the body. In starvation experiments upon man, the days upon which protein was given, the amount of acetone excreted falls below that of other days when the individual is living chiefly on his own fat. Moreover, acidosis is much more easily brought about when butyric acid is given than when the higher acids, such as palmitic or oleic acids are ingested. This suggests that whenever fatty acids are given, they are finally reduced to butyric acid before they are oxidized and that the condition known as acidosis means that the latter stages of this fatty acid oxidation are at fault. It appears that this oxidative break down of fats occurs by an oxidation always in the beta position: just why, the beta position, I am not able to say. Take the six carbon stages for instance:

CH_3 , CH_2 , CH_2 , CH_2 , COOH , (caproic acid).

The first change which occurs is probably the oxidation: CH_3 , CH_2 , CH_2 , CH_2 , OH , CH_2 , COOH , (beta oxycaproic acid).

A further change is the complete oxidation of the last two groups and the production of butyric acid: $\text{CH}_3, \text{CH}_2, \text{CH}_2, \text{COOH}$ (butyric acid).

This again undergoes oxidation in the beta position, forming beta oxybutyric acid: $\text{CH}_3, \text{CHOH}, \text{CH}_2, \text{COOH} + \text{O} = \text{CH}_3, \text{CO}, \text{CH}_2, \text{COOH} + \text{H}_2\text{O}$ (diacetic acid). $\text{CH}_3, \text{CO}, \text{CH}_2, \text{COOH} = (\text{CH}_3)_2, \text{CO}, \text{CO}_2$ (acetone.)

The function the liver plays in this oxidative process is a most important one, for the liver possesses an enzyme or an oxidizing ferment, beta oxybutyrase, which transforms beta oxybutyric acid into diacetic acid. This oxidation appears to occur in the normal as well as the diabetic organism; and, lastly, the liver appears also to have the power of transforming diacetic acid into acetone. This last reaction does not involve an oxidation, but is also probably performed by means of an enzyme. Pathologically, acetone is greatly increased in its elimination and is spoken of as acetonuria. This pathological acetonuria not only accompanies diabetes mellitus, but may accompany scarlet fever, typhoid fever, pneumonia, nephritis, phosphorus poisoning, grave anemias, fasting, and deranged digestive functions. It also frequently accompanies auto-intoxication and chloroform and ether anaesthesia. Those most frequently met with, however, are noted in febrile conditions, and in advanced stages of diabetes mellitus.

Another interesting feature of liver metabolism is the extent of the migration of fat to that organ. Ordinarily it appears that the healthy body does not form fats from protein though it is somewhat a mooted question. Certainly we can say that there has been, so far, no flawless experiment to prove the direct production of fats from proteins. Yet, there are certain pathologic conditions, such as diphtheria and phosphorus poisoning where there does appear to be such a conversion because the majority of the organs of the body undergo fatty degeneration. The liver usually becomes enlarged and its cells fill with fat granules. This, however, is only a seeming conversion of protein into fat, because the total fat of the body is not increased, and also the composition of fats in the liver varies according to the composition of fats in the rest of the body. Stewart has shown that a dog fed on sheep's

tallow produced fat in the dog's tissue, having the physical and chemical characteristics, not of dog's fat but of sheep's fat. The dog now being poisoned with phosphorus causes fat to accumulate in the liver. This accumulated fat shows upon examination that it is still sheep's fat and not dog's fat, as we would have expected it to be had it been formed in the hepatic cells from proteins. But there is evidence to show that under the influence of such poisons as phosphorus, they do accelerate the decomposition of protein or at least interfere with its normal metabolism, for after such poisoning, amino acids, such as leucin and glycine, appear in the urine. So, there appears to be in fatty degeneration, two processes at work. One is the migration of fats from other parts of the body, and the other a change in the relation of fats to the protoplasm of the cell. The facility with which food fats migrate to the liver suggests that the liver plays this important role in transforming this type of fat to fat of the organs. Besides this, organized intracellular fat differs from the fat of adipose tissue in its "iodine value," besides having a greater proportion of phosphatide lipoids.

The phenomenon of fat migration in the organism is a most interesting one. The reason given for the migration of fat appears to be that they must undergo some preparatory change in the liver which will make their use more available to the tissues. There is some evidence for this, because saturated fatty acids are changed in the liver into unsaturated acids. They are then carried to the organs for further metabolism. This de-aturation serves the purpose of causing an easy rupture of the long carbon chains or rendering them capable of entering into reaction with other substances.

In this connection, it is interesting to review the recent studies of Opie and Alford¹ upon the influence of certain diets in liver necrosis caused by phosphorus or chloroform poisoning. Their method was to determine if diet could influence the cause or extent of a demonstrable lesion of the liver. It is known that chloroform administered, either by mouth, inhalation, or subcutaneous injection, will cause a fatty degeneration of the hepatic cells in the center of each lobule, implicating as much as four-fifths of the lobule. It is true that fatty degeneration may occur in other

organs such as the heart, muscle or kidney, but it appears that chloroform has a selective action in destroying the hepatic cells. Phosphorus, too, has also this peculiar affinity for the liver, causing a fatty degeneration which is more advanced in the liver than in other organs. Omnivorous white rats were used in their series of experiments of chloroform and phosphorus poisoning. The series of experiments carried out were upon groups of rats, one group being fed alone on carbohydrates,—that is oats and sugar; the second group on meat, and the third group on fats. Then, noting the toxicity of the poisons upon the separate groups, the conclusions reached were that carbohydrates protect the parenchymatous cells of the liver or of the kidneys from necrosis caused either by phosphorus or chloroform, and that diet exerts a profound influence upon the toxicity of both; also that chloroform is much more toxic to animals which have recently received a diet of fats than to those which have received a meat diet.

In this connection the recent experiments of Coope and Mattram⁵, in their studies of fatty acid metabolism in the liver and fatty acid infiltration of the liver during pregnancy and lactation, are interesting. In their series of experiments on rabbits, previously dieted for a month, they found a decided increase in the fat of the liver at, or about, the time of parturition. They concluded from the results that fatty infiltration of the liver is a physiological and not a pathological process. They also found that good feeding and quietude of the animals kept the infiltration of the liver within bounds. Of course, if this is true, its bearing upon acetonuria in pregnancy is obvious. Fat infiltration of the liver has usually been regarded as being pathological rather than physiological for the reason, perhaps, that they are seen in many pathological conditions, as in diabetes mellitus, chloroform poisoning, phosphorus and arsenic poisoning, and other hepatic poisons. According to Rosenfeld⁶ the fat metabolism of the liver is explained as a normal phenomenon, insisting that the liver is calling up the last reserves of the body to meet an emergency, presumably in its own tissue. Others have reasoned along the same line—and I have mentioned this before in my paper,—that the fat is being mobilized in the liver, there to be desaturated and

passed on to the tissues for consumption wherever metabolism is active.

Graham⁷, a month later than Opie and Alford, came to certain conclusions with regard to liver poisons and the effect of carbohydrates, which were in accord with those of Opie and Alford, though arrived at in a different manner. His experiments were conducted upon new-born pups by administering chloroform. He found considerable difficulty in producing central liver necrosis in the young pup after chloroform administration. This difficulty he ascribed as due to the high glycogen content of the pup's liver. His reasons for this conclusion were that pups can readily be made to show the central liver necrosis which is found in chloroform poisoning in adults, if, prior to the administration of chloroform, they have been starved, or starved and made diabetetic by phloridzin. Second, by quantitative examination, the liver of a normal well-nourished pup, twenty-four hours old, contained as much as nine per cent. of glycogen. Third, the feeding of carbohydrates to adult animals lessens their susceptibility to the production of liver necrosis by chloroform.

The practical application of these experiments can be shown when we consider there is a close analogy between certain human lesions and those produced by substances such as chloroform and phosphorus. In the toxæmias of pregnancy, acute yellow atrophy of the liver and certain bacterial infections cause necrosis of the parenchymatous cells of the liver much like those resulting from chloroform poisoning. In eclampsia, necrosis occurs in the liver, similar to that caused by phosphorus. In typhoid fever, malaria, diphtheria, and many other infections, there occurs necrosis of the parenchymatous cells of the liver. From the experiments of Opie and Alford and those of Graham, it is shown that diet may exert an important influence upon this type of lesions,—that is to say, that with a diet made up largely of proteins or fats, we may have an increased susceptibility in the production of certain conditions, and that a carbohydrate diet may prevent their occurrence or retard their progress. The probable reason for carbohydrates exerting this protective action and preventing destruction of hepatic cells is, in all probability, due to the fact that carbohydrates spare the

Lody proteins, and thereby prevent their disintegration.

We must look upon the liver as a great chemical factory of the body and its role in metabolism is a complex one. It is practically a great central whirlpool of the circulating nutritents. In fact, it is the center of body metabolism and may well be called the organ of metabolism.

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FAT INTOLERANCE IN INFANTS.

By SAM WILSON, M. D., Lynchburg, Va.

Contrary to the generally accepted belief, certainly among general practitioners, the diagnosis of the species of indigestion in infants is relatively easy.

We have been impressed with the fact that the general practitioner pays little attention to the macroscopic appearance of the stools, still less to its microscopic findings.

Observation, with commonplace interpretation of observed data, will enable even the general practitioner to properly classify the food component, which is the etiological factor in point of the disturbed digestion of infants.

A few words as regards the physiology of fat digestion will be apropos, before considering the symptomatology and diagnosis of fat intolerance.

It is common knowledge that human milk

and cow's milk are the main sources of the infant's food supply.

The percentage of fat in cow's milk varies with the species, and also with the individual cow, the fat constituent of the Holstein species being 4 per cent., or less, while that of the Jersey species is proverbially higher.

As regards human milk, the well-known average of 4 per cent. fat obtains; however, under pathologic conditions, this ratio is subject to variations. Extremes of 0.1 per cent. and 13 per cent. have been noted. Moreover, the percentage of fat in human milk varies with the time of nursing, being relatively less during the beginning of nursing, and greater during the latter part of nursing. In fact, there is a gradual increase in the percentage of fat from the beginning to the end of suckling, the smallest percentages coming at the beginning and the highest percentages at the end. For exemplification, we find that the first part of milk usually contains 2 per cent. fat, while the last part contains 6 per cent. fat; the mixture of the whole amount secreted in a single breast containing 4 per cent.

It is manifest, then, the amount of fat intake is referable to the amount of milk ingested, the ratio of the fat ingredient, and the part of the milk taken. The practicality of this statement is evident when the problem is one of feeding a delicate or sick baby, which is unable to digest the usual amount of fat. Such babies may be given the first part of the milk coming from the breast, or may be given skimmed breast milk.

Physiology.—Out of the maze of conflicting tenets, in point of fat digestion and assimilation, one is scarcely able to evolve a lucid picture of what really transpires during the hydrolysis of fat in the intestines.

Certain facts are proven beyond peradventure. A succinct recountation of them will be necessary, to a clear understanding of what is to follow.

Stomach Digestion.—Variations in the amount of fat exert a profound influence upon the motility of the stomach, a large amount delaying the evacuation of food from the stomach, and a small amount relatively hastening evacuation.

Cannon has demonstrated that the cardiac orifice will remain open as long as the reaction of the cardia is alkaline. As regards the py-

loric end of the stomach, he found the antitaxis obtained. Here, when the material in the antrum pylorici was acid, the pyloric valve opened, and *vice versa*.

Fat delays the secretion of hydrochloric acid, and in excessive amounts may inhibit it¹.

Reasoning *a priori*, we can explain the clinical phenomenon of regurgitation due to too much fat. When a milk rich in fat reaches the gastric mucosa, the inhibitive action of the fat on the secretion of hydrochloric acid keeps the cardiac sphincter open. During the patency of the cardiac sphincter, there is likelihood of the milk being pushed back into the œsophagus by peristaltic movements of the stomach.

If the amount of fat in the food is diminished, regurgitation stops. Presumably, this is because the normal amount of hydrochloric acid is again secreted, causing the entrance to the stomach to close, and the outlet to open at the proper time.

With this principle in mind, the expedient of giving one or two drops of dilute hydrochloric acid after each nursing, to regurgitant babies, has been practicalized at the Boston Floating Hospital, with splendid results.

Whether there is extant in the stomach contents of infants a ferment, capable of splitting fat analogous to the action of lipose in the intestines, is a mooted question. The consideration of arguments *pro* and *con*, in point of this question, would here be an impertinence, as we are interested in the physiology of fat metamorphosis only, as it has a clinical bearing.

Intestinal Digestion. — Certainly physiologists agree there is full justification for the statement that fat undergoes its most profound digestive changes in the intestines. Ample evidence has been adduced to show that fat, as taken *per oram*, that is, neutral fat, is not absorbed as such into the intestinal wall. Certain hydrolytic changes are necessary before it is capacitated for absorption. The tendency of recent work is to accredit this metamorphosing to a lipolytic enzyme (lipose), a component of the pancreatic secretion.

"When lipose from any source is added to neutral oils, its splitting action is readily recognized by the development of an acid reaction due to the formation of fatty acid."²

Neutral fat, that is, unsplit fat, on entering the intestine is split up by the pancreatic se-

cretion. The tendency of recent work has been to indicate that the fats are completely split up into fatty acids and glycerine before absorption. Some of the fatty acid, which is the sequel of the hydrolyzed neutral fat, combines with the alkaline salts present in the intestines to form soaps. "The water-soluble soaps can be absorbed by the intestinal epithelium as such."³

To recapitulate: The two products of the action of lipose, viz., glycerine and fatty acid, are absorbed by the epithelium. Soaps also may be absorbed by the intestinal epithelium.

Reasoning then *a priori*, if from any cause the hydrolysis of fat is prevented, then we will have appearing in the stools neutral fat. Moreover, if the hydrolysis be effected, still, on account of some status, the absorption of the hydrolyzed products (glycerine and fatty acid) be prevented, we will have appearing in the stools fatty acids. Further, though, the hydrolytic cleavage be normally accomplished, and the absorption of fatty acids be not interfered with, yet, if on account of an intolerant condition, the baby cannot assimilate the soaps, we will have appearing in the stool the unabsorbed soap, a recognition of which will oft-times clarify a doubtful diagnosis.

Symptomatology.—The symptom-complex of any species of indigestion in infants remains substantially the same. The symptoms that point to a gastric state are regurgitation, vomiting, gas in the stomach and hiccup.

The symptoms that relate to a disordered intestinal condition are colic, frequent stools, failure to gain in weight, or loss of weight, and general symptoms, such as irritability, with or without fever, sleeplessness, and so forth.

The above-mentioned syndrome may occur in any species of indigestion, be that fat, proteid, or carbohydrate. It is obvious that a diagnosis should not be attempted, for it cannot be made from the symptomatology. The proper classification of the digestive morbidity of the child can only be made by a clear understanding and proper interpretation of the nature of the vomitus and the dejecta.

If the indigestion be of fat origin, the vomitus will be creamy, and not of the nature of an acute carbohydrate, or acute proteid upset.

In an acute carbohydrate upset, the vomitus is watery and acid; the mother will often observe, that the child has been "spitting up

sour water." In a proteid upset, the vomitus will be in the form of large white curds semi-tough in consistency.

Stools: Macroscopic Appearance.—The evidence gleaned from a gross inspection of the stools is often in itself conclusive of the nature of the malady. Statements of mothers and nurses are proverbially untrustworthy. One should never rely upon maternal statements as to the earmarks of a stool. Precise and specific information can only be secured by personal observation.

If the upset be acute and of fat origin, the stool will have a number of soft, white curds, frequently associated with mucus. These curds lack consistency, and can be easily spread out like butter.

Fat curds should be easy of detection and differentiation from proteid curds. If, with a spatula, one tries to spread out a fat curd, no resistance will be encountered; in fact, it can be accomplished with as much facility as spreading out butter.

If the curd be of the proteid sort, the smoothing out can be performed only with great difficulty. In fact, so tough and hard is its consistency that it will require considerable effort even to break it up.

Now, if the condition be chronic, frequently no curds can be detected. From a gross examination of the stool, one will be unable to get at its significance. There are certain earmarks about a stool, incidental to chronic fat intolerance, which will arouse one's suspicion, and make a microscopic examination imperative.

The stool due to chronic fat indigestion is known as the soapy stool. It is very large in volume, closely resembling macroscopically, ordinary alkali washing soap. On spreading this stool out, and looking across it horizontally, a shiny glazed appearance will be observed, analogous to that perceived on spreading out, with a spatula, ordinary alkali washing soap. This glazed appearance is due to the large quantity of alkali present. This stool is always associated with constipation.

Given an infant suffering with constipation, with symptoms referable to the gastro-enteric track, a microscopic examination of the feces is indispensably requisite, and will oft-times reveal the fact that the child is suffering from chronic fat intolerance.

Microscopic Examination.—From inexpe-

rience, one may misinterpret the gross appearance of a stool. One cannot be vindicated, when he fails to make the diagnosis microscopically, for experience is unnecessary.

All that is required is trite, simple technique with possession of a few facts.

Technique.—Make a thin smear of the stool on a slide. Stain it with a saturated alcoholic solution of Soudan III. Apply cover slip and examine with low power. This stains neutral fats and fatty acids, but no soaps. The neutral fats and fatty acids are recognized by their globular form, being stained deep red in the case of neutral fats, and light red in the case of fatty acids. Fatty acids may be in the form of drops or crystals; the former always stain, and the latter sometimes stain. The total fat in the slide may now be estimated by raising the corner of the cover slip, dropping a few drops of glacial acetic acid on the stained slide, and warming it gently, until it begins to bubble. This changes soaps to fatty acids, which are red drops, as long as they remain hot, sometimes crystallizing out into the long needle-shaped forms on cooling. By re-heating, the crystals will again assume the red globular form.

To the novice it may be difficult at times to distinguish neutral fats from fatty acids in the stained specimen. To obviate this, make a smear as before mentioned, and, instead of staining with Soudan III, stain with carbol fuchsin. Carbol fuchsin does not stain neutral fats, but it does stain fatty acids and soaps, the former a brilliant red, and the latter a dull rose red.

By using two cover-glass preparations, staining one with Soudan III, and the other with carbol fuchsin, an estimate of the total amount of fat present is obtainable, as well as the relative amounts of neutral fat, fatty acids, and soaps.

Preface to Deductions.—It is necessary first to know how much fat may normally be found in a stool. There is comparatively a large amount of fat present in the first few days of life, and during the first two or three weeks. In fact, there is so much fat present in the stools that it is practically impossible to ascertain by simple microscopic examination whether there is an excess of fat or not.

In a young nursing infant, it is very important to remember that, though the stool

may show considerable microscopic fat, still the baby may show no symptoms of indigestion, and continue to thrive. Watchful waiting should be the shibboleth in this case, always remembering, that the moderate fat intolerance may be a precursor of fat diarrhoea, and eventually assume the clinical picture of infantile atrophy.

With a bottle-fed baby, the significance of microscopic fat, as well as soft fat, macroscopic curds, becomes paramount. If there are no symptoms of indigestion, and the baby is gaining and happy, it may not be necessary to lower the percentage of fat, but, nevertheless, their significance should always be remembered. If there are symptoms of indigestion, loss of weight, and soft fatty curds in the stools, reduction of the percentage of fat is indicated.

In the interpretation of the relative degrees of fat intolerance, some accepted criterion is necessary. I append the following standard, as taught at the Harvard Post-Graduate school. These criteria are based on a multiplicity of examinations, controlled by quantitative chemical analyses.

In absolute fat intolerance, we have neutral fats, fatty acids and soaps; the neutral fat predominating.

In fat intolerance of moderate degree, where there is good digestion but poor absorption, we have practically no neutral fat, but considerable fatty acids and soaps present.

The subjoined table is a verbatim rendering of the standard as utilized in the Harvard clinic:

1. Entire digestion of fat.—No fat in freshly stained specimen. One to three drops in field after acetic acid and heat.

2. Normal digestion.—No fat or five to eight neutral fat-drops in the entire cover glass in freshly stained specimen. Five to eight drops in a field after addition of acetic acid and heat.

3. Slight excess of fat.—No fat or two to four neutral fat drops in a field. Eight to a dozen drops in a field after acetic acid and heat.

4. Moderate excess of fat.—No fat or six to eight neutral fat-drops in a field. More than twelve large drops after addition of acetic acid and heat.

5. Large excess of fat.—No fat, or many fat drops in a field. Practically the whole slide

turns into fat-drops after acetic acid and heat.

Deductions.—I adjoin the following deductions. They are a transcript of the teachings inculcated at the Harvard Post-Graduate School, drawn from the findings of the above exemplified standard.

1. Entire digestion of fat.—It is always safe to increase the amount of fat in the food if so desired.

2. Normal digestion.—It is usually safe to give more fat if necessary.

3. Slight excess of fat.—Without symptoms of indigestion it warns the observer to watch the fat more carefully. In case there are symptoms of indigestion, however, the microscope confirms our suspicions, and indicates the cause of the symptoms.

5. Large excess of fats.—This always means too much fat in the food, and even if there are no symptoms, it is safer to decrease the amount of fat and examine the stool again.

Summary.—Oft-times the gross appearance of the stool will manifest the diagnosis. Microscopic examination should be utilized whenever any doubt exists. It is a valuable control to inspection. The microscope can give information concerning the digestion of the various food components unobtainable elsewhere. The evidence gathered by the microscope is definite and accurate, not misleading like the symptoms obtained from the baby's supervisor.

The information, whether gleaned from macroscopic or microscopic empiricism, should be taken with reserve, always making careful comparisons to a general standard, less interpretations be awry.

In childhood, when other foods than milk are taken, small amounts of microscopic fat are of the greatest significance. During the third year, there should be only a few drops on the whole slide in a normal digestion; more than this means perverted digestion.

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705 Church Street.

For the past six months, there has not been a death from typhoid fever in Richmond and for the last six months of 1914 there were only 12 deaths, which gives a death rate from this disease for the past twelve months of only 8.3 per 100,000.

Clinical Reports.

Analyses, Selections, Etc.

APPENDICITIS IN CHILDREN.*

By W. L. PEPLE, M. D., Richmond, Va.

My records show that in a total of 370 cases of appendicitis, 37, or 10 per cent., were in children under 12 years of age. They may be classified as follows: (1) Sub-acute, chronic, or interval, 7; (2) acute, not drained, 3; (3) acute, drained for safety, 1; (4) acute, drained for abscess, 15; (5) acute, drained for diffuse peritonitis, 11.

Twenty-seven, or 90 per cent., of the acute cases had to be drained. There were five deaths, all from diffuse peritonitis. I have never seen a child under five years of age operated upon for appendicitis and closed without a drain, and this has been the experience of men with far wider opportunities than my own.

In the diagnosis of appendicitis in young children we are just about where we were with adults eighteen years ago. We have advanced little, if at all. Appendicitis, as such, is very rarely diagnosed in the very young. It is the tympany and rigidity of peritonitis or the bulge of an abscess (terminal signs) that we first recognize in patients of this age.

Fortunately, appendicitis is relatively infrequent in children: unfortunately, the mortality in advanced cases is extremely high. Can not some one work out a proper symptomatology? There must be recognizable signs accompanying such grave, acute processes, were we only skilful enough to discern and interpret them.

At any rate, it is not the child's fault, and the child is not going to change. If there is to be improvement, and God knows it is needed, it has got to be in us. If we watch for it during and immediately following tonsillitis and the acute exanthemata, especially measles; if we strip all cases of gastro-intestinal disorders and examine the abdomen, it will, at least, be a beginning.

Finally, if we treat all cases before and immediately after an operation, with alkalis to guard against or counteract acidosis, we will have more recoveries and easier convalescences by removing a frequent dangerous factor in these cases.

"Articles of Faith" Concerning Cancer.

During the four-day Cancer Educational Campaign, held under the auspices of the Vermont State Medical Society, June 8-11, 1915, Dr. William Seaman Bainbridge, of New York City, presented a paper entitled "The Cancer Patient's Dilemma—A Plea for the Standardization of What the Public Should be Taught in the Campaign of Education Concerning Cancer" (*N. Y. Med. Jour.*, July 3, 1915), which concluded with the following twenty-one "Articles of Faith":—

1. That the hereditary and congenital acquirement of cancer are subjects which require much more study before any definite conclusions can be formed concerning them, and that, in the light of our present knowledge, they hold no special element of alarm.

2. That the contagiousness or infectiousness of cancer is far from proved, the evidence to support this theory being so incomplete and inconclusive that the public need have no concern regarding it.

3. That the communication of cancer from man to man is so rare, if it really occurs at all, that it may be practically disregarded.

4. That those members of the public in charge of or in contact with external manifestations, or discharges of any kind, need at most take the same precautionary measures as would be adopted in the care of any ulcer or open septic wound.

5. That in the case of patients with cancer there is much less danger to the attendant from any possible acquirement of cancer than there is of septic infection, or blood poisoning from pus organisms.

6. That in cancer, as in all other diseases, attention to diet, exercise and proper hygienic surroundings is of distinct value.

7. That, notwithstanding the possibility of underlying general factors, cancer may, for all practical purposes, be at present regarded as local in its beginning.

8. That, when accessible, it may, in its incipency, be removed so perfectly by radical operation that the chances are overwhelmingly in favor of its non-recurrence.

9. That, when once it has advanced beyond the stage of cure, suffering in many cases may

*Reported at a meeting of the Richmond Academy of Medicine and Surgery, March 23, 1915.

be palliated and life prolonged by surgical and other means.

10. That while other methods of treatment may, in some cases, offer hope for the cancer victim, the evidence is conclusive that surgery, for operable cases, affords the surest present means of cure.

11. That among the many advances in and additions to cancer treatment, the improvements in and extensions of surgical procedure surpass those in any other line, and fully maintain the pre-eminent position of surgical palliation and cure.

12. That there is strong reason to believe that the individual risk of cancer can be diminished by the eradication, where such exist, of certain conditions which have come to be regarded as pre-disposing factors in its production.

13. That some occupations, notably working in pitch, tar, paraffin, analin or soot, and with X-rays, if not safeguarded, are conducive to the production of cancer, presumably on account of the chronic irritation or inflammation caused.

14. That prominent among these predisposing factors, for which one should be on guard, are: general lowered nutrition; chronic irritation and inflammation; repeated acute trauma; cicatricial tissue, such as lupus and other scars, and burns; benign tumors—warts, moles, nevi (birth-marks), etc.: also that changes occurring in the character of such tumors and tissues, as well as the occurrence of any abnormal discharge from any part of the body, especially if blood stained, are to be regarded as suspicious.

15. That while there is some evidence that cancer is increasing, such evidence does not justify any present alarm.

16. That suggestions which are put forward from time to time regarding eugenic, dietetic and other means of limiting cancer, should not be accepted by the public until definitely endorsed by the consensus of expert opinion. Such consensus does not exist today.

17. That so far as we know there is nothing in the origin of cancer that calls for a feeling of shame or the necessity of concealment.

18. That it will be promotive of good results if members of the public who are anxious about their health and those who wish to preserve it will, on the one hand, avoid assuming

themselves to be sufferers from one or another dreadful disease, but, on the other hand, will submit themselves periodically to the family physician for a general overhauling.

19. That at all times and under all conditions there is much to be hoped for and nothing to be feared from living a normal and moderate life.

20. That the finding of any abnormal condition about the body should be taken as an indication for competent professional and not personal attention.

21. That watchwords for the public until "the day dawns" and the cancer problem is solved, are:—Alertness without apprehension, hope without neglect, early and efficient examination where there is doubt, early and efficient treatment when the doubt has been determined.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume III. No. 5. Octavo of 190 pages, 61 illustrations. Philadelphia and London: W. B. Saunders Company. 1914. Published bi-monthly. Price, per year: Paper, \$8; Cloth, \$12.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume III, No. 6. Octavo of 175 pages, 50 illustrations. Also contains index to Volume III. Philadelphia and London: W. B. Saunders Company. 1914. Published bi-monthly. Price per year: Paper, \$8; Cloth, \$12.

Editorial.

The Cancer Problem.

There is nothing now before the medical profession to which the word "problem" can be so appropriately applied as to cancer. Every important feature of cancer constitutes a problem within itself. From its etiology to its treatment and post-mortem findings, there is one long stretch of doubt, speculation and ignorance, interspersed with occasional proven

facts. For this reason it is a most interesting subject, touching, as it does, every branch of medicine and surgery. However, important facts have been discovered and elaborated and some few general principles have been demonstrated which, when followed, add materially to the efficiency of treatment.

There is a general impression among the medical profession, and it has been preached most earnestly by many teachers, that cancer is enormously on the increase. Roswell Park, for instance, in 1899, said, "If for the next ten years the relative death rates are maintained, we shall find that ten years from now, namely, 1909, there will be more deaths in New York State from cancer than from consumption, small-pox and typhoid fever combined." The statistics in 1899 showed that in New York State the total deaths from these three diseases were 15,037, whereas the deaths from cancer alone in the same year were 4,533. Ten years later, in 1909, the deaths from the three diseases mentioned were 15,315, and from cancer 7,060. When we take into consideration the more accurate diagnosis of cancer and the inclusion under this head of certain diseases, as deciduoma malignum, that were formerly rather vaguely classified, we can readily see that the increase has not been so real as it appears; certainly nothing like as great as Park prophesied. That cancer is on the increase to some extent is probably true, but the scientific study of a subject is not promoted by exaggerated statements and wild assertions, however necessary it may be to impress the profession and public with the seriousness of the disease.

The etiology of cancer is still a matter of dispute. Careful investigation of cancer houses and statistics concerning animal or vegetable diet are conflicting and are by no means convincing. Using the term "cancer" in its broad sense to include both sarcoma and carcinoma, we find that certain types of very malignant cancers approximate in appearance inflammation or granulomas that are known to be caused by bacteria. It is also true that certain sarcomas in dogs are definitely infectious. That cancer can be transplanted admits of no doubt. He would be rash who is willing to subscribe to an iron bound belief that cancer is not caused by any infectious or contagious organism, but so far as the present evidence

goes, there is not sufficient proof to convince that cancer is infectious in the same sense as tuberculosis or actinomycosis is infectious. The fact that it can be transplanted is no evidence of an infection. Transplantation of bone, blood-vessels, or skin is a well established procedure, yet surely infectious organisms do not play any part here. The tip of the finger may be transplanted to the nose and the same general biological laws that explain its growth in its new location can also explain the growth of cancer cells when separated from the parent tumor, taken up by the lymphatics, and converted into metastases.

Unfortunately, there is no pathognomonic sign or symptom of cancer. No reliable laboratory reaction has yet been adduced for its diagnosis. Probably the most important symptom of cancer is the negative one of *absence of pain*. Thousands of lives are sacrificed each year to this single fact that cancer is always painless in its early stages, unless located in such an area that it presses upon a nerve or creates great tension, as under the periosteum. It is most unfortunate for the human race that cancer is painless. It is very easy to bear philosophically something that does not hurt. If it gave one-fourth the agony of a joint felon or of a tooth-ache, the patient would quickly consult the physician or surgeon, and it would not be possible for any physician "to watch the tumor to see what it develops into"—a practice which happily is becoming less frequent and which is comparable to the man who watches his house when on fire to see how big a fire it will be before he attempts to put it out.

The earlier the diagnosis is made in cancer the more difficult it is, but at the same time the more chance there is for permanent cure of the patient. Cancer is always a local growth at first. The percentage of malignant tumors that spread rapidly and metastasize quickly is probably less than ten per cent. of those that should give a reasonable opportunity for complete local excision and cure. As Crile said some years ago, it is unfortunate that the words cachexia and glandular enlargement were ever described as symptoms of cancer, for if the patient waits until these develop, usually nothing can be done. It is like putting down an ante-mortem rise of temperature as part of the clinical picture of any disease.

While various remedies, plasters, pastes, serums and injections have been used, none has so far stood the test of time. It is the invariable rule that too great an enthusiast can observe favorable symptoms for a short time after any of the new remedies. Richard Weil, in an excellent article on chemo-therapy in tumors (*Journal American Medical Association*, April 17, 1915), called attention to these facts and exploded the claims of the colloidal solutions of vanadium, selenium, and other metals as well as various other chemical remedies that have for a time attracted attention. Hodenpyl's serum shows how fallacious observations over a short period of time sometimes are. In his patient multiple recurrences from a carcinoma of the breast apparently disappeared. The liver, which was quite large, became smaller and a large amount of chyloform ascites occurred. This ascitic material was injected into a number of advanced cancer patients with apparent benefit. Forty-seven cases were reported by Hodenpyl, who, however, died before the ultimate results were known. According to Ewing, all the cases treated by Hodenpyl died within a year, and the original patient who was supposed to have recovered also died of cancer.

The treatment of cancer depends upon the destruction of the growth while it is yet local. In certain instances of skin cancer where the penetration is not deep, X-ray or radium may be beneficial, or a paste may be used. It must be recalled that a cancer consists of an aggregation of abnormal cells, the cell being the unit of the cancer just as the soldier is the unit of the army. The destruction of the cancer depends upon the destruction of its individual cells. This can sometimes be done by other measures but, as a rule to which there are few exceptions, a local excision *en masse* by a competent surgeon is by far the quickest, the least painful, and the most effective cure for cancer.

It must be borne in mind that the earlier the diagnosis, the easier the cure, and a local excision intelligently done in the early stages is much more effective than a far more mutilating operation at a later stage. Other things being equal, the surgeon who has studied cancer in the laboratory and who can recognize under the microscope tumors which he removes

and who consequently can associate the microscopic appearance of the growth which he sees in the laboratory with its gross appearance on the operating table, is certainly more competent to deal with a cancer than the operator who is solely dependent upon a report from some one else and who does no laboratory work. Different types of cancer require different types of operation. It is almost as much the function of the surgeon to avoid unnecessary mutilation in a rather mild form of carcinoma as it is to go wide of the growth with an extensive block dissection in the more malignant type.

We may summarize our present knowledge of cancer as follows: Cancer is probably on the increase; it has not been proven that it is due to an infectious organism; it is always local in the early stages and almost always painless then; a local destruction, or preferably local excision, done in the early stages, will permanently cure a majority of all cancers; the earlier excision is done, the greater the percentage of cures.

J. SHELTON HORSLEY, M. D.

Cancer Issue.

The American Society for the Control of Cancer was definitely organized in New York City in May 1913, its membership including laymen as well as physicians. Its purpose was "To disseminate knowledge concerning the symptoms, diagnosis, treatment and prevention of cancer, to investigate the conditions under which cancer is found and to compile statistics in regard thereto."

The work undertaken by this Society has aroused the interest of many state associations and the Commission on Cancer of the Medical Society of Pennsylvania—one of the active component units of the American Society for the Control of Cancer.—through its secretary, Dr. J. M. Wainwright, has asked that the medical journals of the country during July, unite in a campaign, giving as much space as possible to the publication of articles bearing on the cancer problem. As in the early recognition and treatment of cancer lies its hope of cure, it is necessary for the physician to first educate himself and then his patient to fear the beginning of cancer and to always be on the watch for the early signs of the disease. The fact that cancer takes an annual toll in the

United States of about 75,000 people, should command the careful attention of the Government, the medical profession and the laity.

American Medical Association.

The sixty-fifth annual meeting of the Association was held in San Francisco the latter part of June with both the retiring president, Dr. Victor C. Vaughan, and the president-elect, Dr. Wm. L. Rodman, in attendance. About 250 papers were read in the various sections. It was announced that the fellowship of the Association on May 1, 1915, was 42,366. Among the questions which came up for discussion was the establishment of a national Board of Medical Examiners, which it was stated had been organized and would hold examinations in Washington, in October. The requirements are to be such that it is believed all States will agree to recognize its licentiates. The examinations will last for a longer time and the fee will be larger than that charged by the various states.

Officers of the Association elected at this meeting are:—President-elect, Surgeon Gen. Rupert Blue, U. S. P. H. S., Washington; vice-presidents, Drs. Albert Vander Veer, Albany, N. Y.; Geo. B. Evans, Dayton, O.; Donald Campbell, Butte, Mont., and Herbert C. Moffitt, San Francisco. Drs. Alex. R. Craig and Wm. A. Pusey, of Chicago, were re-elected to their offices as secretary and treasurer. Dr. J. Shelton Horsley, of Richmond, Va., was elected a member of the Council on Scientific Assembly.

Virginia State Board of Medical Examiners.

At the meeting in Richmond during June, 127 applicants presented themselves for examination to secure licenses to practice in this State. Several applicants were denied privilege of taking the examinations owing to insufficient qualifications to meet requirements of laws to practice in Virginia.

A physician who was tried on charges of being a drug fiend and for illegally prescribing habit-forming drugs was put on probation until the meeting of the Board in December, at which time final action will be taken on the question of revoking his license.

Upon request of the Board, the attorney-general of the State has submitted a written opinion that the Board alone has power to determine who shall practice medicine and sur-

gery in Virginia. This ruling will affect osteopaths wishing to practice in this State, as they do not require a knowledge of materia medica and the Board has ruled that a knowledge of materia medica is vitally essential to the practice of medicine.

Doctors at Military Camp.

Among the Virginia physicians at the medical officers' camp of instruction held at Tobyhanna, Pa., June 21-26 were Majors A. T. Finch, Chase City, Israel Brown, Norfolk, and J. Fulmer Bright, Richmond, Captains F. K. T. Warrick, Giles Cook and A. A. Marsteller, of Richmond and E. C. S. Tullaferrò, Norfolk; and Lieutenants H. Fitzhugh White, Fishersville, C. Mason Smith, Fredericksburg, C. Carroll Smith, Norfolk, and J. C. Bowman, East Radford. Surgeon General of the Virginia Volunteers, Lt. Col. Junius F. Lynch, of Norfolk, and Capt. H. Norton Mason, of Richmond, were excused from attending the camp.

Married—

Dr. Charles L. Bradshaw, Falmouth, Va., and Miss Frances Kimbrough, Richmond, June 29.

Dr. George T. Kilpstein, Alexandria, Va., and Miss Naomi Simmons, Charleston, W. Va., June 17.

Dr. James Cook Bardin, University, Va., and Miss Sallie Norvell Nelson, Charlottesville, Va., June 19.

Dr. Charles Morris Hawes, Huntington, W. Va., and Mrs. Emmie Thomas Pleasants, Richmond, Va., July 3.

Dr. Chas. E. Moore, Greensboro, N. C., and Miss Helen Smith, St. Louis, Mo., June 28.

Reappointments on State Board of Health.

Drs. L. T. Royster, Norfolk, A. G. Crockett, Max Meadows, and Reid White, Lexington, the three members of the Virginia State Board of Health whose terms of office expired June 30, have been reappointed to serve another term of four years, beginning July 1, 1915.

The North Carolina Medical Society,

Which met in Greensboro last month, elected the following officers for the ensuing year:—President, Dr. Marshall H. Fletcher, Asheville; vice-presidents, Drs. Jas. L. Nicholson, Richlands, L. N. Glenn, Gastonia, and W. H. Hardiston, Cresswell; secretary, Dr. Benj. K.

Hays, Oxford, and treasurer, Dr. Wm. M. Jones, Greensboro. The next meeting is to be held in April, 1916, at Durham.

The Association of Surgeons of the Southern Railway

Held their twentieth annual meeting in Asheville, N. C., June 2-5. Dr. H. T. Bahnson, of Winston-Salem, N. C., presiding. The prizes offered by *The International Journal of Surgery* for the best four papers were awarded to Drs. W. Earle Drennen, Birmingham, Ala., T. W. Davis, Winston-Salem, N. C., H. H. Briggs, Asheville, N. C., and E. P. Solomon, Birmingham, Ala.

The newly elected officers are: President, Dr. Lane Mullally, Charleston, S. C.; vice-presidents, Drs. B. M. Tittsworth, Jefferson City, Tenn.; Stephen Harusberger, Catlett, Va.; H. H. Briggs, Asheville, N. C., and W. H. Hutchinson, Childersburg, Ala., and secretary-treasurer, Dr. J. U. Ray, Woodstock, Ala. (re-elected). Chattanooga, Tenn., was selected as the next meeting place.

Dr. H. D. Gilmer,

Formerly of this State, but more recently of Hagerstown, Md., has recently been appointed oculist to the Norfolk & Western Railway at that place.

The Southwestern Virginia Medical Society

Held a two days' session in Wytheville, June 24 and 25, with a large attendance. It was decided to hold the next meeting in Bristol, the date to be decided upon later. Officers elected for the coming year are:—President, Dr. W. K. Vance, Bristol; vice-presidents, Drs. J. C. Motley, Abingdon, and G. G. Painter, Pulaski; secretary-treasurer, Dr. A. B. Greiner, Rural Retreat.

Dr. R. Lee Seward.

Of Isle of Wight, Va., was among the delegates from this State to the National Anti-Saloon League, which convened in Atlantic City, N. J., July 6.

Health Conditions in Europe.

With the depressing accounts received from several of the European countries as to health conditions and epidemics, it is cheering to note that France is in excellent health. We note that none of the epidemics dreaded with the

advent of hot weather have developed in France and that the epidemic of typhoid fever which it was feared in the winter would develop among the troops is abating. Spotted typhus fever has again broken out among the Armenians, and, with the lack of doctors and medical supplies, there seems little likelihood of checking the disease at this time. It is stated that in Armenia there is one physician for 40,000 persons and the people are begging for assistance. Conditions show some improvement in Serbia, but great distress prevails in Poland, where the death rate has increased among non-combatants. For the one week ending June 5, it was announced that 342 cases of typhus had been reported in Austria. In Asia Minor, it is stated that a large number of doctors have succumbed to typhoid fever, which is raging among both the troops and civilians.

Dr. M. D. Hoge, Jr.,

Of this city, has been re-elected a member of the board of trustees of the Childrens' Home Society of Virginia.

Dr. Ennion G. Williams,

State Health Commissioner of Virginia, was among the speakers before the Chautauqua Club in Crewe, Va., the latter part of June.

Dr. A. M. Sneed,

Recently of Hanover, Va., has located at Cornwall-on-the-Hudson, N. Y., where he is associated with Dr. Henry Lyle Winter.

Delegates to Convention.

Governor Stuart has named the following physicians as delegates from Virginia to the fourth annual convention of Alienists and Neurologists of the United States:—Drs. Jas. K. Hall, J. Allison Hodges, Beverley R. Tucker and Henry J. Hayes, from Richmond; J. C. King, Marion; J. S. DeJarnette, Staunton; G. W. Brown, Williamsburg, and Wm. F. Drewry, Petersburg. The meeting is to be held in Chicago July 13-16.

Capt. Francis K. T. Warrick,

Of Richmond, who is a member of the medical corps, Virginia Volunteers, has been detailed as sanitation officer of the State rifle range and camps of instruction. He will be on duty at Virginia Beach from July 7 to August 15.

The Shenandoah County (Va.) Medical Society

Held a meeting in Woodstock, June 30, with an attendance of sixteen fellows. Interesting papers were read by Drs. P. W. Boyd and E. C. Stuart, of Winchester, and P. W. Morehead, of New Market, and these were freely discussed. During the day the members and guests were entertained at luncheon at the Holtzman Hotel.

Dr. J. Raymond Gorman

Has been named chief interne at Virginia Hospital, this city, by the staff of that institution.

Dr. Chesley L. Carter,

Chatham, Va., was a recent visitor to Richmond.

Alcoholic Beverages Used in United States.

The Department of Health of New York City has published a table showing the average annual consumption of distilled spirits, wines and malt liquors in the United States from 1850 to 1914, from which we note that the number of gallons per capita of liquors and wines consumed in this country in 1850 was 4.08, since which there has been an almost steady increase to 22.50 for 1914. In only three years has the rate been higher than this—in 1907 and 1911, when it was 22.79 and in 1913, when the rate was 22.68.

Dr. Horace Taylor Hawkins,

Irvington, Va., has been visiting his parents at Highland Park, this city.

Dr. F. C. Pratt

Was acting health officer of Fredericksburg, Va., during the absence of Dr. C. Mason Smith, while at the camp of instruction of the medical reserve corps, U. S. A., at Tobyhanna, Pa.

The Pan-American Medical Congress,

Meeting in San Francisco in June, re-elected Dr. Chas. A. L. Reed, of Cincinnati, president, Dr. H. L. E. Johnson, Washington, D. C., was elected vice-president, and Dr. Ramon Guiteras, New York City, secretary. The next Congress will be held in Cuba, Venezuela or Argentine Republic, the place and date to be determined later.

Dr. S. B. Moon and Family.

Of Richmond, Va., have been spending some time at Virginia Beach.

Dr. M. Evelyn Brydon,

Resident physician at the State Normal School, Farmville, Va., is spending a portion of her vacation in Danville, Va., where she is co-operating with the Anti-Tuberculosis League in a campaign against tuberculosis being waged in that city.

Dr. W. G. Christian.

Of Hanover C. H., Va., visited Gordonsville the latter part of June.

Medical Students Abroad.

Among the medical students assisting in Red Cross work abroad are W. B. Blanton, son of Dr. C. A. Blanton, of this city, and Perrin Nicholson, son of a well-known physician in Atlanta, Ga. They will work for the summer in the American Hospital, in Paris, under Dr. Blake, and will return in the fall to their studies at the College of Physicians and Surgeons in New York City.

Dr. Susan Price,

Of Williamsburg, Va., late in June, motored with a party of friends to Philadelphia and points of interest in New Jersey.

Dr. R. C. Carnal,

Ballsville, Va., has been on a visit to Baltimore and New York.

The American Surgical Association,

At its annual meeting in Rochester, Minn., in June, elected Drs. Robt. G. LeConte and John H. Gibbon, both of Philadelphia, president and secretary respectively. The next annual meeting is to be held in Washington, D. C.

Dr. and Mrs. Armistead Wellford,

Of this city, recently spent a week in Lexington, Va.

Dr. Frank Hopkins and Family

Were recent visitors at Natural Bridge, motoring there from their home at Hot Springs, Virginia.

Tuberculosis Nurses.

Owing to the good results obtained in several of the larger cities by the employment of municipal visiting tuberculosis nurses, the city of Los Angeles at the city election in June, by

a vote of nearly two to one, passed an ordinance empowering the health commissioner of that city to employ municipal visiting tuberculosis nurses in the proportion of one nurse to every one hundred reported cases of tuberculosis. This ordinance was drawn and fathered by Dr. Geo. E. Malsbary, editor of *The Southern California Practitioner*.

Dr. Thomas N. Davis, Jr.,

Lynchburg, Va., has gone to Boston to study for a month.

Dr. Frank Scott,

Of Orange, Va., was a recent visitor to Staunton, Va.

The Norfolk, (Va.) Department of Health

Reported the lowest death rate in its history for the month of May, the rate for that month for deaths from all causes being 8.1 for white and 24.2 for colored, or a total rate of 14.2 per 1,000 population.

Dr. C. Shirley Carter

Has returned to his home in Warrenton, Va., after a short stay in Leesburg.

Dr. J. Fulmer Bright,

Of this city, has been elected commanding officer of the Richmond Grays, first battalion, first infantry, with the rank of major, to succeed Dr. L. T. Price, resigned.

Dr. McGuire Newton,

Professor of pediatrics, will conduct the clinic in pediatrics at the dispensary of the Medical College of Virginia during July.

The International Congress of Obstetrics and Gynecology,

Which was to have held its seventh meeting in September, has been postponed until September 1917.

Dr. Robert Whitehead,

Who was chief intern at Virginia Hospital, Richmond, during the past year, is now associated with Dr. Stuart Michaux, of this city.

Mr. Jorge Vivo,

Of Porto Rico, who would have been a member of next year's graduating class at the Medi-

cal College of Virginia, was lost when the Armenian was sunk while on her way to England. He was serving as ship's surgeon. Three men are thought to have been picked up by the submarine and a dispatch stated that there was a possibility that Mr. Vivo was one of these men.

Pellagra in Arkansas.

Dr. C. W. Garrison, of the Arkansas State Health Department, and Dr. Jos. Goldberger, of the U. S. Public Health Service, now have under charge 199 cases of pellagra in several towns in Arkansas where outbreaks of the disease have been reported. With the cases in other districts, it is estimated that there are about 400 cases of this disease in that State.

Obituary Record.

Dr. Wilbur B. Payne,

Covington, Va., one of the most beloved and prominent physicians in that section of the State, died June 24, after an illness of only three days with stomach trouble. He was born in Alleghany County, Va., in December 1867, and graduated in medicine from the University of Virginia in 1892 and Tulane University of Louisiana in 1893. He was a local surgeon of the C. & O. Ry., member of the Alleghany County Board of Health, member and one of the founders of the Alleghany County Medical Society, and a member of the Medical Society of Virginia. His wife and son survive him.

Dr. George H. Zimmerman

Died in his home at Pocahontas, Va., June 24, aged 58 years. He was born and reared in Wytheville, Va., and was well-known throughout southwestern Virginia. His wife and several children survive him. He was graduated in medicine from the Medical College of Virginia in 1880.

Dr. Powhatan Bledsoe,

For many years a practising physician of Hanover County, Va., died at his home at Hylas, June 25, at an advanced age. He was a graduate in medicine from the University of Maryland, School of Medicine in 1860.

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SOME FACTS AND PROBLEMS OF HEREDITY.*

By CHARLES MINOR BLACKFORD, M. D.,
Staanton, Va.

By the term "heredity," we mean the fact of common observation that the offspring of any organism will tend to reproduce more or less completely the physical, mental and moral peculiarities possessed by one or more of its ancestors. It will be seen from this very inexact definition that the subject is a difficult one to reduce to a strictly scientific basis, since the ancestral peculiarities are reproduced in varying degrees of perfection and the characteristics of either parent, of both parents, or of some remote forebear, are liable to appear. The ideal form for any scientific statement is that of a mathematical formula, but when every factor is liable to variation, it can be readily seen that a formula that will cover every case is almost unattainable.

That such a formula should be gotten is very important. We all recognize the fact that in nature there is no such thing as chance—that every effect is caused, and that what we style chance is but our ignorance of certain of the causes that produce the effect. As Huxley puts it, the very type of chance is the turn of a coin. Yet if we knew accurately the distance through which the spinning coin is to go, the velocity with which it moves, and its rate of rotation, we could predict with absolute certainty which side would fall uppermost; it is only our ignorance of these factors that makes the turn of the coin a matter of guesswork. In like manner, if we knew every hereditary weakness and strength, every hered-

itary taste and inclination, and the degree to which these factors would exert their influence, we could predict what a given individual would do under a given set of circumstances as accurately and as certainly as an astronomer can predict the movements of a heavenly body. For this reason it is highly important for the welfare of our race that the laws regulating the transmission of physical, mental and moral traits should be known thoroughly and accurately, for it is only by such knowledge that we will be able to proceed intelligently toward the elimination of hereditary weakness and the strengthening of hereditary virtues.

No doubt each of you has been asked whom a new-born child resembles as one of the first questions after the little one has come into the world. The small mouth, the large eyes, the pug nose, and other peculiarities of the features, are carefully observed and distributed among the various members of the family with more or less truth, but the fact that such peculiarities are transmissible and are transmitted is unquestionable. Certain families take pride in peculiar formations that are found in them. The Cicero and Lentulus families of ancient Rome derived their names from moles that nearly all of the members of those families possessed; the name Cicero coming from "cicer," a chick pea and Lentulus from "lentulus," a lentile. In the Rohan family of France a lock of white hair at the middle of the forehead persisted for several generations, and the high, arched nose of the Bourbons and the prognathic lip of the Hapsburgs are known at the present day. Indeed, there are few families that have not some generic peculiarity.

That such marks of race persist is somewhat remarkable because in most cases at least, one parent carries half of an hereditary element that is free from the peculiarity. To see this

*Read before the Post-Graduate Medical School of the Augusta County Medical Association, Inc., Staanton, Va.

physical trait in its greatest perfection, it must be sought in places or cases where inter-marriages take place constantly for several generations within a limited circle. In one of the remote valleys of the high Alps nearly all of the natives have an extra finger and toe, and the tendency toward the establishment of a distinct type is often seen among groups that keep themselves isolated from their neighbors. Thus the Polish Jews, who are not Hebrews but are descended from certain Slavonic tribes that were converted to Judaism during the tenth century of our era and were more or less ostracised by their brothers, the Polish Christians, have not only peculiar physical and mental characters that differ from those of the other Poles, but are especially disposed toward certain nervous diseases that are now almost confined to them. In like manner the Mohammedans of China, who are not immigrants but are of the pure Chinese stock, have a special type of feature: the Parsees of India, who are of the same strain as the Indo-European Brahmans, differ markedly from them. Let these conditions of isolation be changed, and the sub-species reverts to the original type. It is a matter of every-day observation that here in the United States the descendants of our immigrants lose their national or even their racial appearance within a very few generations. The American Jew, the Americanized Russian, Italian, German or Frenchman finds that his grandchildren have hardly a trace of the facial peculiarities that make up what we call the racial appearance, and the difference in appearance between the American negro and his fellow-raceman of the West Indies or of Africa, even where there has been no intermixture of blood, is most striking.

Intellectual traits are readily transmitted from generation to generation. The two Plinys (uncle and nephew), Alexandre Dumas (father and son), are among striking instances in the literary line; Erasmus and Robert Darwin, grandfather and father of the still more celebrated Charles Darwin, and the sons and grandsons of the latter, have all been noted naturalists, while among painters, mathematicians, musicians and others, the influence of a hereditary strain is readily perceived. In our own State University at the present time there is a professor whose father and grandfather were professors there before him, and

the son and nephew of another professor now hold chairs in the same institution. So common is this fact that it is only necessary to mention it.

Moral traits are equally transmitted. You all remember the Jukes family of Ireland that figures in most of the books on medical jurisprudence—a family in which for several generations all the members, male and female, were criminal or degenerate. Every book on heredity mentions a mendicant who arrived in America in the early days of the colonial period, and who, herself endowed with all the vices, a debauched drunkard and thief, had passed half of her life in prison. She had many children, and now looking over the civil archives of the State and those of the galleys and prisons, it is safe to say that out of several hundred of her descendants, four-fifths were guilty of misdeeds of some character for which they were punished, and a full dozen have been hanged. On the other hand, despite the popular saying to the contrary, about sixty per cent. of the clergy in the Protestant Episcopal Church are the sons of clergymen, and, although I have no statistics on the subject, I suspect that something like the same ratio will be found among the other non-Roman Catholic bodies.

The study of heredity received a great stimulus about the middle of the last century when, in 1850, a noted French savant, Professor Lucas, published a book entitled "De l'heredite,"—On Heredity. In this he claimed that the heredity of an organism is the resultant of two impulses, one (heredity), tending to bring about a resemblance between the offspring and its parents, and the other ("inneite"—inherency), tending to produce a dissimilarity. He claimed that it was on account of this latter tendency that we see in families certain members who show none of the family peculiarities, and on this tendency to vary from the typical form, Darwin and Cabell based a doctrine of evolution of species. Sir Francis Galton, a great English investigator, made an elaborate study of acts of heredity, and, with the aid of a number of co-operators, he united a large number of family trees by noting the physical, moral and intellectual characteristics of the members of the families that supplied the material. The results were worked out in a special laboratory which has been perpetuated

under the name of the Sir Francis Galton Eugenic Laboratory, and by applying the methods of higher mathematics to these results, Sir Francis and his pupils deduced an empiric law, the formula of which has changed since it was first laid down. As at first stated, Galton said that the father and mother controlled one-half of the heredity, each having one-fourth; then the four grand-parents are valued at one-fourth in this heredity, one-sixteenth for each, then the eight ancestors of the third generation, the great-grand-parents, come in for an eighth, i. e., a sixty-fourth each, and so on. Later a pupil of Galton, Dr. Pearson, saw that this rule did not cover all cases, and he inserted a corrective co-efficient which corresponded to Lucas' "inherent" influence, but though with this correction Galton's law applied in most cases, the formula became so complicated as to be unworkable. The same results are obtained much more simply by what are known as the laws of Mendel, and those laws underlie the study of heredity at the present time. Without wishing to detract from the fame of Mendel in the least, it should be remembered that his most important law had been discovered by the Frenchman Naudin about the middle of the last century in the course of some investigations into hybridization. Naudin, however, was deaf and was so isolated that he could not make the most of his works, and it is to Mendel that the fame of establishing the remarkable laws that now bear his name has fallen. His fame was posthumous. He was a monk in a convent near Brunn in Moravia, and in his leisure hours he devoted himself to natural history, especially in regard to the hybridization of plants, and while engaged in this pastime, he discovered the laws governing this act. He published them in 1868 in a little local scientific paper where they remained buried until 1900, when the Dutch naturalist de Vries brought them to the attention of the scientific world, but the discoverer died without knowing the fame that awaited him.

Mendel noticed the fact that if two varieties of plants that differ in one characteristic only, be crossed—for instance, a red flowering and a white flowering variety of the same species—in the first generation all the seeds obtained will bring forth plants that will bear

red flowers only; if these hybrid red plants are crossed with the white a varying proportion of white flowering and red flowering plants will be obtained. Mendel thought that the two characteristics, red and white, both exist in the first hybrids, but that the red dominates the white, or we may formularize these hybrids as R(B), the white characters, represented by the letter B in parenthesis, being latent. If these R (B) plants be crossed by another R(B) plant, the two sets of characteristics will disassociate in the pollen granules and in the ovules; half of the pollen grains containing only R and half containing only B. The ovules divide similarly, and the fifty per cent. pollen grains R unite half with ovules R and half with ovules B, giving as a formula half RR, or twenty-five per cent., and half R(B), or again twenty-five per cent. The total will be 25 RR, 50 R(B), and 25 BB. But the 50 R(B) are red and cannot be distinguished from the RR, so that there will be 75 per cent. of reds. Unite them, and these reds will still give in successive generations a certain proportion of whites, which can be calculated for each generation under the law of probabilities. On the contrary, it can be seen that constant union of the whites will produce whites; they do not contain, either obviously or in any latent manner, any red elements.

This, then, is Mendel's law, and it holds good with gray mice (the dominant), and white mice (the dominated). It holds with normal animals (the dominant), and abnormal animals (the dominated). It seems to hold with the *genus homo*, but as yet verification of the law has not been carried so far, though we believe that we are on the way to fuller light along this line.

A most striking illustration of the working of this law is seen in the development of the so-called Ancon or Otter sheep in this country during the early years of the last century. It appears from a paper written by Col. David Humphries, F. R. S., and published in the "*Philosophical Transactions*" for 1813, that Seth Wright, a farmer living on the banks of the Charles River in Massachusetts, had a flock of sheep. The sheep in New England had a disagreeable habit of jumping over fences and trespassing on neighboring farms, and, as a result, the neighbors were apt to get into quarrels. In 1791 a lamb was born in

Wright's flock, which, from no apparent reason, varied remarkably from the others. It had a long body and short, bandy legs, so that owing to this formation, it could not jump the fences. Whether or not the owner was more "cute" than his neighbors does not appear, but he saw the advantage that lay in this formation, and as soon as the lamb was of suitable age, he killed his old ram, and bred from the young one. In time it was noticed that lambs from the anomalous ram were either like their father or were ordinary sheep—there were no mixtures. It will be noticed that in this case the same phenomenon occurred that Mendel observed with his red and white flowers:—one strain completely dominated the other. Wright carefully segregated the anomalous sheep and inbred them. From time to time these Ancon or Otter sheep would produce a normal lamb, or, in other words, the anomalous form would produce an offspring that would revert to type, but in 1826, just as the new species was apparently becoming firmly established, the Merino sheep was introduced. These Merino sheep had the same inability to wander that had made the Ancon or Otter sheep of value, but in addition they were so much more valuable as wool producers that the Ancon strain was neglected and promptly disappeared—reverted to type, as the typical form was the dominant one.

Mendel's law accords well with the facts of reproduction as observed by the embryologist. We know that the essential point in reproduction is the fusion of two cells, one maternal and called the ovum, and the one paternal and called the spermatozoon. Now each of these cells is in turn derived from an antecedent pair of parents, and just before the germ cells unite to form the embryo, the nucleus of each divides, one-half of each nucleus moving to the pole of the cell where it forms what is called the polar globule, and is then expelled. Only one-half of each sexual or germ cell is left—at least so far as the nucleus is concerned, but it is this nucleus that is important in the transmission of hereditary traits. The proof of this is readily seen. The feminine cell is large, in some cases very large, as in the instance of an ostrich egg, but the masculine agent is very small, being usually a cell of microscopic size, and as we have just seen, it is but half of this tiny cell, yet paternal he-

redity is just as potent as is the maternal; the amount of protoplasm involved has but little weight from the standpoint of heredity; the origin of the germ cell is the thing that really counts.

Now, as the cell from which the embryo is to develop is formed by the union of the two half-germ-cells, it is readily seen how it can and does carry two hereditary characters at the same time, as Mendel states. The formulæ laid down by Mendel, RR, R(B), and BB, are therefore in exact accord with the primary stages of foetal development as revealed by the microscope.

It must always be remembered that the germ cells provided by the two parents are not simple bodies but are of the utmost complexity. The individuals supplying them are each in turn derived from two parents, and so the paternal germ cell, or half cell, consists of an element derived from the paternal grandfather and of an element from the paternal grandmother, one being latent or "dominated." In like manner the female cell consists of two elements derived from the maternal grandparents, one being dominant and the other dominated. As each germ cell expels a polar globule consisting of about half of its contents, some of these hereditary principles are thrown off, and which elements are expelled are governed by the laws of chance. Of course, there can be no development from hereditary elements that have been extruded in the polar globules.

Finally, the cellular egg permits of great variations. Half of it comes from the father and half from the mother, but half of the joint egg is latent. As the proportions proceeding from the grandparents are not fixed, but depend on the chances of the expulsion of the polar globules, it is only when a great number of cases are considered and analyzed that the law of Galton can be reached, for the matter of which each individual is compassed varies in every instance. Take the case of twins: All of us have seen cases in which twins resembled one another so closely as to be differentiated with great difficulty; and on the other hand cases in which the resemblance is no more marked than that between other children of the same parents. The first case is an instance of "univitellism," in which the ovum had divided into two parts, each of which became

fecundated and developed into a complete being; the other is a case of "bivitellism," in which two separate eggs became fecundated and developed side by side. Of course, in such a case there is no more identity than would be found between any other two children of the same parentage.

Now, what are the results of heredity on disease? This is a question of vast importance to the lay world as well as to the medical one, but we must admit that as yet the answer is far to seek. In some instances, especially in diseases of parasitic origin, there is a distinctly protective influence exerted. For instance, amongst us today measles is so trivial a disorder that a death from an uncomplicated case is almost unknown, yet in the Hudson Bay region and in the Fiji Islands, nearly one-fifth of the population was swept away when measles first made its appearance among those people who lacked the hereditary immunity to it. You will at once call to mind other diseases that are far from being so virulent at the present time as they are recorded as being a couple of centuries ago; but, on the other hand, there are certain diseases that are unquestionably transmitted from parent to offspring. As I mentioned above, there are some nervous affections that are practically restricted to definite localities and people, but before laying down any hard and fast dogma, there is room for much careful observation along this line. As recently as when the present writer was a medical student, it was thought that tuberculosis was an hereditary disease, but today one would go slowly in saying that the children of tuberculous parents inherit rather than contract the disease. If care be taken to avoid as far as possible, immediate contact with persons suffering from the disease, such children have good chance of escaping the disease. Of course this is difficult, as children are apt to be in close contact with their parents, but it is the association, not the heredity, that constitutes the danger.

There is one disease, however, that carries into effect the Biblical threat that the sins of the fathers shall be visited on the children unto the third and fourth generation, and that is syphilis. The precise method of this transmission is not thoroughly understood, but the micro-organism of syphilis has been found in the germ cell itself, and the growth of the

embryo *in utero* is handicapped by this infection. So thoroughly are the tissues impregnated with hereditary syphilis that, even where no new infection has occurred, a succeeding generation has been found to be infected, and so, several generations of pure living are needed to eliminate the plague. It is safe to say that when a person has become infected with this horrible malady, the patient owes it to the human race to remain in a state of celibacy.

The importance of a fuller knowledge of the laws of heredity is obvious, and great efforts are being made to attain it. Laboratories and societies are being founded with such research in view, and though the results are not yet encouraging, we can but hope that ultimately we may be able to lift in some degree the burden of congenital defects that now bears so heavily upon the human race.

TETANUS FOLLOWING AN OPERATION FOR HEMORRHOIDS.*

By WADE H. ATKINSON, M. D., Washington, D. C.

I am reporting this case because of its rarity, and with the hope that it may assist in preventing tetanus in post-operative hemorrhoidal cases. While there are many cases of post-operative tetanus, there are only six cases on record, that I am able to find, of tetanus following the operation for hemorrhoids, this one making the seventh.

Mr. W., aged 48, clerk, of excellent physique. Previous history unimportant, except that he suffered for years with large and painful hemorrhoids that always protruded when bowels moved, and were especially painful if he was at all constipated. He had been through the usual course of ointments, suppositories, pyramids, etc., without relief.

December 6th, patient was admitted to hospital having previously taken a cathartic preparatory for hemorrhoidal operation the following morning. Four hours before the time for the operation an enema was given followed shortly after by a second wash-out of the bowels. Morphine and atropine were given half an hour before ether anaesthesia was begun. All the usual technique was observed, myself and all assistants being properly gowned, capped, while rubber gloves were used. Iodine preparation was used after patient was on table,

*Read before the Medical and Surgical Society of the District of Columbia, February 4, 1915.

before operation was begun. The sphincter ani was dilated with thumb and fingers. Four hemorrhoids (one of which was rather large and long) were clamped. Stitches of No. 2 catgut were introduced beneath the clamp, the loops being pushed back; the tumor was cut with both knife and scissors and, as the assistant released and removed the clamp, the stitches were tightened and tied. Sterilized gauze wrapped around a sterile rubber tube was coated with vaseline and placed in rectum after local injection of quinine urea into the stumps of the ligated tumors. An opium suppository was placed in the rectum before the gauze plug was inserted. A dressing of dry gauze and T-bandage was applied. Nothing unusual occurred during operation except one suture broke while tying, another being introduced to secure the broken one. The catgut used was that selected in daily use in the hospital. A bacteriological examination of the catgut used in this institution was recently made by Dr. John B. Briggs, pathologist, and every test gave a negative result.

Patient suffered little pain after operation, having only one hypodermic of morphine, $\frac{1}{8}$ -grain to relieve pain the day of the operation. The temperature ran a very even course for seven days.—day of operation it reached 99° , second day it reached 99.2° , third day 99.2° , fourth, fifth and sixth days it did not go above normal. Patient reported comfortable and was up in chair on the sixth day. While there are no notes made on the chart of symptoms of stiffness of the muscles, the patient remarked that his jaws were a little tender late that evening. That makes our very first symptom noticeable on the sixth day. The morning of the seventh day the chart shows the patient very comfortable; however, at noon he was so uncomfortable that his neck was rubbed and massaged. Later in the afternoon he opened his mouth with difficulty. A diagnosis of tetanus was made, and Drs. Ellyson and W. C. Borden gave 3,000 units of tetanus antitoxin at 8:15 P. M., and 3,000 units more were given four hours later. On the eighth day 3,000 units were given at 9:45 A. M., 3,000 again at 11:30 A. M., 5,000 units given at 3:00 P. M., and an intra-spinal dose, 3,000 units, was given at 6 P. M. This made a total of 20,000 units. Morphine and chloretone were also given in

such doses as were necessary to relieve patient of pain and to control muscular spasm. The muscles affected were those of face, throat, jaws, neck and back, later the chest muscles, when breathing was difficult and patient was unable to turn in bed, head drawn back.

After the intra-spinal dose of 3,000 units following 17,000 units given subcutaneously, there was an arrest of further muscular invasion and the severe pains gradually subsided, the patient getting rest and sleep from morphine hypodermically and large doses of chloretone by rectum.

Relaxation of the muscles of the jaws and neck, back and chest enabled us to feed the patient with stomach tube on tenth day, or the fourth day after the first symptom of tetanus. The improvement was so marked on the ninth and tenth days that we were very much encouraged. The patient could open his jaws a little and felt that he could swallow, and tried frequently, but failed. Mentally, he was clear. Talking in a weak tone, he told me, "I thought I was gone on the second and third days after the tetanus symptoms first appeared." Our words of encouragement were gladly received and the patient co-operated in every instruction. Patient was catheterized; bowels moved with salt enemas.

On the thirteenth day after operation and seventh day after tetanus symptoms, the muscles of the neck, throat and face were stiff and occasional spasms were observed in these muscles and passing over body. Dr. W. C. Borden again did a lumbar puncture and 3,000 units of tetanus antitoxin injected. The spasm ceased, but the already failing mental condition continued, involuntary urine and feces told the tale of cellular destruction of the central nervous system, and our patient gradually sank from exhaustion and respiration ceased late on the eighth day of tetanus and fourteenth day after the hemorrhoids were removed.

I want to thank Drs. Ellyson and Borden for the prompt and efficient treatment they rendered my patient in my absence from the city, owing to sickness in my family. I left the city late on the fourth day after the operation. The rectal plug had been removed, and a cathartic and enema gave a good result. The wound was healing nicely, and patient's broth diet was increased to soft. I felt confi-

dent of a successful result, but upon my return found this most dreadful post-operative disease fastened upon him. I feel in no way responsible for this surgical calamity.

Dr. Rudolph Matas of New Orleans has written a most excellent article† on "The Fecal Origin of Some Forms of Post-Operative Tetanus and Its Prophylaxis by Proper Dietetic or Culinary Measures," a part of which I give in his own language, for he presents the subject in such a masterly way:

"The occasional post-operative deaths, which occur from time to time in the practice of competent and clean surgeons, clearly point to another source of danger which is not dependent upon defects of technique or contaminated material (e. g., imperfectly sterilized catgut), but to other sources of infection outside of, and apart from, the operative act itself which have not been adequately appreciated.

"This hitherto unrecognized or disregarded factor in the causation of post-operative tetanus—at least in regions liable to fecal contact—is the direct contamination of the alimentary canal and its contents with living tetanus bacilli and their spores, swallowed in raw, uncooked vegetables, berries, and other fruits which are cultivated in fertilized or manured, i. e., tetanized, soil.

"It may be a mere coincidence, but it is a fact that in all the cases of post-operative tetanus occurring after operation in regions liable to fecal contact which have been investigated by the author (two in his own practice) the patients had eaten copiously of uncooked vegetables within twenty-four and thirty-six hours before the operation, the vegetable menu in these cases corresponding with the laboratory findings in regard to the vegetables known to be most frequently contaminated with tetanus germs and spores, viz: celery, lettuce, chicory, water-cress, cabbage, radishes, turnips, carrots, tomatoes, and other green vegetables, strawberries, blackberries, and other berries and fruits which are grown in the soil or brought in contact with it, and which are largely consumed *raw* in an unavoidably contaminated state.

"The tetanus bacillus and its spores are known to survive the passage through the intestinal canal of the domesticated animals, especially the herbivorous horse and cow; and

the dung of these animals is a perpetual culture medium for the tetanic bacillus, swallowed constantly with the grass of the pasture and the hay of the stable. Not only are the bacilli ejected alive, but their virulence and activity are probably intensified by their temporary residence in the favorable conditions of the lower intestinal tract (Sormani). This survival of the tetanus germ in a virulent state is fully demonstrated by the experiments of Sormani, Sanchez Toledo, Veillon, Hoffmann, *et al.*, who demonstrated that the diluted excrement of the horse and cow, injected subcutaneously and otherwise, will kill rabbits in from five to six days with all the symptoms of this disease. These and other authors have fully demonstrated that the spores of the drumstick bacillus resist the action of the digestive juices; it has also been demonstrated that the tetanus-laden feces of the healthy horse and cow are capable of producing fatal tetanus when brought in contact with the wounded surfaces in these animals.

"In view also of the fact that 5 per cent. of all normal men harbor the tetanus bacillus or its spores in an active state in the intestinal canal, and that the percentage of contaminated individuals is increased to 20 per cent. in hostlers, stablemen, dairymen, drivers, etc. (Pizzini), the possibility of tetanus from fecal contact must always be kept in mind, especially when operating upon the anorectal region, perineum, and genito-urinary organs of both sexes in unprepared subjects.

"The author fully recognizes that the normal defences of the organism against intestinal infection are, in healthy individuals, usually sufficient to protect it, even if the living tetanus bacillus has been freely introduced into the alimentary canal with the ingested food. It is only through the salutary and preservative influence of the protective mechanism, which largely neutralizes the most virulent infections in the alimentary canal, that we can account for the great numbers who escape when operations are performed in the recognized tetanogenic regions. It is evident, however, that even if tetanus infection is a comparatively rare post-operative sequence, it is well worth the observance of the simple precautions required to avoid this deadly accident. Precautionary measures would be more than justified if only one in ten thousand operative

† Trans. Amer. Surg. Assn., Vol. XXVII., 1909, page 40.

cases could be saved from the almost certain death which follows when this form of inoculation occurs after operation.

"Whenever an operation is to be performed upon parts in which fecal contamination is unavoidable (hemorrhoids, fissure, fistula, stricture, perineoplasty, vaginal operations, etc.), I recommend this antitetanic preparation, which is very simple and consists in (a) purgation, three days before the operation; (b) the suppression of all *raw*, uncooked food, especially green vegetables, berries, and other fruit (for the same period of time before the operation). In emergencies, when dietetic preparation is impossible, 10 c.c. of tetanus antitoxin are injected subcutaneously at the time of the operation, while the patient is still under the anaesthetic.

"In conclusion, it will be noticed that what is asked of the surgeon as a preventive measure against tetanus infection is, in reality, very little; in fact, only a little more than any careful surgeon would prescribe in preparing patients for operations in the abdominal, ano-rectal, genital, and lower pelvic regions of both sexes. It is true that in the matter of preparation some operators are more careful and exigent than others, but surely the exclusion of all uncooked food, and especially green vegetables, berries, and raw fruit for three or at least two days before an operation is no hardship on the patient, when it is customary to prepare such patients by a limited dietary and preliminary purgation. When, for any reason, this simple dietetic and evacuant preparation is impracticable, as in emergency cases, the administration of a prophylactic dose of tetanus antitoxin at the close of the operation, whenever it is feared that fecal contamination of the wound is unavoidable, will impose no special hardship on the patient operated. This is particularly true at the present time, since it has become a well-recognized and general practice in progressive institutions to administer a prophylactic dose of tetanus antitoxin to all patients admitted with gunshot, railroad, or other crushed and lacerated wounds of the extremities which are especially liable to lockjaw on account of contamination with mud, dust, manure, or other known sources of tetanus infection."

Dr. H. C. Wood says: "The bacillus of tetanus is one of the most sturdy pathogenic

germs, its spores being capable of surviving a heat which kills the spores of all other known bacilli and it itself not being killed by a two-hours immersion in a one to one thousand solution of mercurial chloride."

Dr. Stuart, National Antitoxin Vaccine Institute says, "they may resist 10 to 15 minutes at boiling temperature."

I want to call attention to the significance of the very first symptom of tetanus (stiffness of the muscles of the jaws) and when this does occur, give a full dose of not less than 5,000 units tetanus antitoxin intra-spinously immediately, following it with intra-venous or sub-cutaneous injections as indicated. Remember that the tetanus germ develops only in an anaerobic wound, that is, in a closed, sealed wound (light and air excluded). The poison seems to have an affinity for the nerve tissue, which transmits the destructive elements to the central nervous cells, and their destruction is in before the first symptom is observed by either patient or physician.

I also want to remind you that nearly all writers on this subject agree that the earlier the development of symptoms of tetanus after its inoculation, the more fatal the disease, and that rarely, if ever, a recovery occurs, if it develops within ten days. Its incubation period varies from 3 to 60 days.

"Mrs. K., white, aged 37 years, a widow for six years, had been unwell for the past six months, and suffered from hemorrhoids. These were operated upon at her house by the clamp and cautery method. The wound healed promptly; but on the ninth day following operation, the patient noticed stiffness and soreness in the muscles of her throat, and later in the day experienced great difficulty in swallowing. There was also pain, which was paroxysmal in character, and the patient frequently asked to be raised up in bed in her effort to breathe and to swallow saliva. Next morning the power to swallow was completely lost, attempts producing spasms involving the whole respiratory tract."

Dr. H. C. Wood* saw patient during evening of second day. Patient was removed to hospital and 18 hours after admission to hospital, five million immunity units of antitoxin were injected into the buttock. This caused per-

* Wood—Cerebral Tetanus Following Operation for Hemorrhoids: Failure of Antitoxin, University Med. Mag., 1897-98, page 608.

ceptible alteration of the symptoms which continued to increase in severity until chloroform was necessary to relax the spasm of the muscles.

At the end of twenty-six hours after admission to hospital—or sixty hours from the first symptoms of the disease—the patient died of cramp asphyxia.

This case was operated on by a surgeon who had gone out of town when these symptoms of tetanus appeared. Dr. Wood believes the infection occurred from washing the wound with unboiled water from the noted Schuylkill River, the surgeon supposing he had sterilized the water with corrosive sublimate.

Dr. Wood did not comment at all on the possibility of infection from the alimentary tract.

C. Knox Shaw†, of London reports a rapidly fatal case of tetanus following a hemorrhoidal operation:

"Male, 20, shop assistant, operated Jan. 14th; 19th first symptom; died 43 hours.

Dr. Shaw said that he had not seen a case of tetanus in 20 years, and had come to look upon the disease as almost impossible to follow any simple operation; traumatism with infected earth was excluded, and idiopathic tetanus does not exist.

Two other operations (healed aseptically) were performed the same day, this being the last one. The surgeon used same instruments, silks, etc., boiling them between each operation. This was the first case that ever occurred in Buchanan Homeopathic Hospital.

In discussion of Dr. Matas' paper, Dr. Edmond Souchon, New Orleans, said: "I remember very distinctly in my practice having lost a case of a young girl upon whom I operated for hemorrhoids, the patient dying from tetanus on the eighth day.

"I also recall operating on a young colored boy, resecting the sacrum, and he died of tetanus* * * *"

Dr. F. H. Gerrish, Portland, Me., said: "Tetanus occurred in a private patient, in a distant country town, on whom I had operated by ligation for hemorrhoids."

He was unable to trace the cause. No circumstances or comments about the particulars of the case or operation were given.

Dr. C. B. de Nancrede, of Ann Arbor, said: "I have been impressed with the possibility of the intestinal origin of tetanus ever since I have reflected upon a case of hemorrhoids seen over forty years ago, which died from tetanus in which no catgut was used, as we had no catgut in those days; the patient was, however, said to have been exposed to a draft.

In Dr. Matas' paper, he referred to his second and last post-operative tetanus (perineoplasty and hemorrhoidal), so I draw the conclusion that Dr. Matas has actually had only one case of tetanus following hemorrhoidal operation. That would bring to notice only 7 cases of tetanus (6 others besides mine) following operations for hemorrhoids, as follows:

1. Dr. Rudolph Matas, of New Orleans. *Trans. Amer. Surg. Assn.*, 1909.

2. Dr. C. Knox Shaw, London, *Monthly Homeopathic Review*, 1899.

3. Dr. H. C. Wood, of Philadelphia, *University Magazine*, 1897-98.

4. Dr. Edmond Souchon, of New Orleans. Discussion Dr. Matas' paper, *Trans. Amer. Surg. Assn.*, 1909.

5. Dr. F. H. Gerrish, of Portland, Me. *Ibid.*

6. Dr. C. B. de Nancrede, of Ann Arbor, Mich. *Ibid.*

7. Dr. Wade H. Atkinson, of Washington, D. C.

Dr. W. G. Richardson, (*British Med. Jour.*, 1909; page 948) reports 21 cases of tetanus following operations as follows:

4 after ovarian cysts;

4 after removal of the uterus;

4 after radical cure of hernia;

3 after gall-stones;

1 after acute pancreatitis;

1 after acute appendicitis;

1 after ventral fixation of the uterus;

1 after carcinoma of the rectum;

1 after varicocele;

1 after scirrhus of the breast.

18 died.

None was noted following hemorrhoidal operation. All these cases were supposed to have been caused by the use of catgut. But Richardson does not believe they were caused by the catgut. He believes that the patient was at the time of the operation, the host of the bacillus.

† Shaw—A Rapidly Fatal Case of Tetanus Following an Operation for Hemorrhoids; *Monthly Homeopathic Review*, 1889, page 149.

REMARKS ON PHYSICODYNAMIC AGENCIES IN DIAGNOSIS AND TREATMENT.

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In a short paper one can only offer a few practical hints from personal experience calculated to direct attention to, and awaken interest in, a subject as yet not well systematized. It is my hope to present evidence to the effect that physiodynamic agencies already are, and can soon be made to become, of increasing value in every day clinical work for both diagnosis and treatment. These consist, broadly speaking, of any and every measure, device, procedure (other than drugs, medicines, bacteriologic products, sera and the like), capable of raising the index of vigor in and out of health. They include a varied group of agencies which, when carefully selected and applied, enhance inherent forces of the body viewed as a whole, as a living sentient machine.

By their use in conjunction with pharmacodynamic remedies, and often times alone, it is entirely possible to secure a fuller mastery over many forms of disease, and especially disease effects by mechanistic agencies, on simple yet fundamental principles, in regulating function and restoration to the norm. Biotic energy arises from the transformation of other forms of energy, of motion, heat, light, sound, gravity, etc., which react upon the transformer, the living substance. Conservation of function, the elements of harmonizing derangements of forces and structures, is to be achieved upon analogous principles of bio-physics—rest, support, compression, removal of undue compression, guidance and direction of forces in action and the like.

It is no part of my purpose to advocate one group of remedial agencies as superior to others, but solely to attest that each of our well tried, constantly improving methods of regulating disordered states has its place and that a most respectable and reliable place exists for the physiodynamic. Attention of the best masters in medicine is being directed this way increasingly, also experience is growing in their use, and findings have accumulated sufficiently to warrant the opinion that new and promising means are accruing whereby therapeutics is becoming more efficient.

A recent era of therapeutic nihilism, of "ex-

pectant treatment" seriously threatened the integrity of medical potential. This was followed by a wave of pseudo-religious, metaphysical and largely chimerical hyperoptimism. Now a saner phase of regulating bodily mechanisms has been reached.*

It is my desire that better men, more fundamentally equipped shall give the subject the attention it undoubtedly deserves. They should contribute according to their opportunities, to the solution of the more complex and baffling mechanistic forms and sources of human decrepitude.

I. The concepts and postulates which have guided my observations are, among others, these:

However much human energetics are dominated by bio-chemical factors which have received such elaborate degrees of investigation, placing this aspect of the subject on a secure basis, much however yet remains to be explored in the equally important field of biophysics.

Surgery, long regarded by the internist as more or less a thing apart, now has contributed so generously to the illumination of clinical problems both in physiology and the understanding of morbid phenomena that we must depend upon its proponents for further contributions both in diagnosis and means of treatment. The removal of obscuring structures by the knife places us in possession of priceless findings especially in the domain of biophysics. Similarly, visualization by means of the X-Ray enables us to know of a certainty much that heretofore must have remained inferential or unknowable.

Thus we are in a position to systematize findings chiefly of a physiodynamic nature.

II. In this connection let me allude briefly to a line of treatment which has long seemed to me of promising possibilities, but inasmuch as the surgical note was so dominant and so positively keyed to the tune of cutting, I have held my peace. Now, thanks to a surgeon (not an

*In a former paper the author sketched the general scope of remedial agencies based on the principles of bio-physics. A mere glance at this outline will show any one, who can be induced to take interest in the subject, that contemporaneous literature is enriched by a vast aggregation of scientifically founded, carefully scrutinized and well attested findings. Material which has accumulated in my own hands, a mere tithe of what is available, forms a surprisingly large and fascinating means of reliable information which it is my hope to analyze, arrange and to formulate reasonable deductions, sound inferences along with some acceptable conclusions.

internist) of Geneva, Dr. Bourcart, who has performed some gratifying cures on a number of acquaintances suffering from the effects of intestinal stasis, adhesions, kinks, angulations, enteroptosis and the like hindrances to function by manipulative procedures alone, I am encouraged to state that I, too, have obtained similar results and hope soon to report them.

My friend, Dr. John B. Deaver, tells me he is familiar with Dr. Bourcart's work and thinks highly of it, cordially admitting, also, that better results often can and should be secured by judicious hand work than by cutting.

Adhesive bands of certain kinds known, and of other kinds to be determined, tend to spontaneous subsidence and disappearance, as he has frequently observed, during secondary operations. Fortified by an X-ray study of organic interrelationships, morbid conditions, and proceeding cautiously, guided by sensory and other responses, I have already been able to secure gratifying results in conditions adjudged inoperable, and in others when operation has been declined whereas disabilities and distresses have been hitherto almost disabling.

III. In the past few years our knowledge of visceral neurology has made notable advances through the study of the so-called autonomic nervous system.

This again is subject to divergent effects due to the preponderance of the vagus or of the sympathetic nervous system.

Hence we are able to differentiate more precisely between varying states in function and derangement of function, to obtain clearer views on diagnosis and indications for treatment. This also is closely correlated with that fundamental group of auto-regulative mechanisms, the ductless glands, the hyper- or hypofunction of which offers solutions to hitherto inexplicable problems.

The autonomic nervous system, better termed the vegetative nervous system, is that system of efferent fibers arising from the sympathetic and related ganglia which supplies the organs of involuntary processes of the body and possesses a certain independence of the central nervous system. Its anatomy is too well known to be given here in detail. Briefly, it includes some of the cranial and sacral nerves and the sympathetic system proper. The latter is composed of a chain of ganglia lying on each side of the

vertebral column. One ganglion, as a rule, is present to each spinal nerve-root.

Langley has shown that each fiber of the sympathetic nervous system can be regarded as being made up of two sections: (1) a preganglionic fiber, which is medullated, arises in the central nervous system and passes down to a ganglion, and (2) a postganglionic fiber, usually non-medullated, which arises from the ganglion and continues to its peripheral distribution.

The fibers of the vegetative nervous system are not wholly equivalent in their functions. The heart beat, for example, is quickened by stimulation of the accelerators (sympathetic) and slowed by stimulation of the vagi (autonomic).

The functions of the vagus for the greater part of the gastro-intestinal canal are motor, while those of the splanchnics (sympathetic) are inhibitory. (J. M. Wolfsohn, *J. A. M. A.*, May 16, 1914). Thus it will be seen that an antagonism exists between the two sets of visceral fibers. The viscera also are for the most part innervated by both the cranio-sacral (autonomic) and also by the sympathetic nervous systems, with functions reciprocal to each other.

The functions of any one set of fibers for any one viscus are not yet sharply, but fairly well outlined.

IV. Stimuli capable of producing uniform, predicable effects through the visceral nervous system are of many kinds, among which are electrical, mechanical, chemical as well as emotional.

A study of available evidence will demonstrate that mechanical stimulation, similar to electrical, is capable of affording important practical results and can be made of constant use upon an adequate amount of study and clinical experience.

It is an enlarging field gaining steadily in confidence wherever it receives the same critical attention vouchsafed to other forms of awakening the normal responses.

Particularly do the autonomic, vagal or vegetative nervous mechanisms and their distributions, in connection with allied structures, afford significant grounds for determining the nature, forms, degrees and relievability of many abnormal phenomena.

While as yet we are on the outer edge only of this complex subject, it is already entirely prac-

licable even now to achieve excellent results and yet more by persistently feeling one's way along the lines indicated.

A vast amount of reliable knowledge obtainable in no other manner comes through instinctive awareness, sensitive tactile percepts, revealing variations in tissue tones. Subjective sensory reactions (sympathetic) are commonly present, especially in the paravertebral tissues, indicating the areas irritated. These areas of tenderness are of great importance in diagnosis, and disappear after local treatment.

"Perhaps the most constant result of vagotomy is the hypertonus in the musculature of the stomach and bowels. The bowels, chiefly the colon, remain in a more or less constant phase of over contraction——spastic constipation so frequently found in early and middle life." B. L. Spitzig, *J. A. M. A.*, Jan. 31, 1914). Much can be learned by practice in palpation, and many morbid conditions yield to manipulative procedures. This can be greatly amplified by elicitation of the spinal reflexes so ably explained by Albert Abrams.

V. Long ago I learned from John P. Arnold to appreciate the significance and therapeutic resources of the sympathetics, producing vaso-constriction, hence expedition of the ebb and flow of body fluids by manual stimulation through the vaso-motors.

The rules are so simple and their application so efficient it is a puzzle to me that clinicians have not learned to employ them more generally.

In brief, these are: gentle steady pressures on the paravertebral tissues induce reflexly vaso-dilation, affecting the visceromotor, and the arteries of the head, limbs and trunk, expediting drainage in these areas. Conversely, alternating pressures induce vaso-constriction, which is the more effective clinically. For practical purposes, this suffices to expedite not only blood flow but lymph propulsion. Sensory relief is also afforded.

To be sure this group of effects is of limited scope and utility, but when in cooperation with concussion on specified and clearly marked vertebral areas, according to Abrams, reflexes of contraction or dilatation in the visceral masses can be elicited whereby forceful effects can be induced going far toward controlling functional action and over-action. A sense organ is not stimulated unless there is a change of rate

in the transference of energy as Sherrington says. If a weak agent is to be stimulated, it must be abrupt.

Herein lies the key to most of the wonder workings of the extra-mural cults of back twisters, bone adjusters, and the like. They enunciate special rules of their own, elaborate and mystifying, but when all is told effects they achieve are reducible to these simple factors.

VI. Tissue tone, elasticity, states of density, spasm relaxation, rigidity and their various forms a fertile ground of simple yet efficacious control over a large group of distresses, "neurites," "algias," "rheumatic states," "fibromyosites," and the like. As illustration, take the much discussed conditions attributed to vascular hyper- or hypo-tension. At the last issue much of these can be reduced to a question of local nutrition, in the myocardium, the large vascular trunks as well as the lesser vessels: correlatively of the kidney, of the ductless glands, the "noble organs" and the like.

Vascular nutrition depends largely on the tonus of the vaso-vasorum. Given a normal action and reaction of these supply vessels and the equipoise of the vascular system can be assumed to be maintained.

The question of elasticity of skeletal structures, movements in muscular masses, here becomes an important factor. Densities, rigidities in gross structures, impede hydrostatic competence and must be modified or overcome; so of mobility, pliancy upon which hydrostatic efficiency depends, only to be conserved by adequate kinds and degrees of passive and active motion, kinesitherapy. Blood and lymph pumps must be set going and kept in motion by neuromuscular and gross respiratory acts.

Use of parts as they were designed to functionate is of equal importance for symmetrical functioning with any possible substitute. This use is called exercise and is held in disfavor by sedentary persons who can adduce some horrifying examples of over-athleticism but are absolutely incapable of disproving fundamental biologic principles.

Elasticity in structures which normally exhibit this quality is absolutely essential to harmonious integration. Mere locomotion may be sacrificed, mobility of arms and hands may seem unessential to some persons, but structures concerned in vegetative, circulatory, glandular, nervous and intellectual processes cannot be so

philosophically neglected. Elasticity subsides at almost any age beyond early youth.

For example, let me briefly cite the desirability of maintaining or regaining flexibility and elasticity of the structures of the special senses. The entire blood, lymph and nerve supply to the head passes through the tissues of the neck. These frequently become dense, rigid and interfere mechanically with ebb and flow of vital fluids. It has been my privilege repeatedly to restore relative functional competence to organs of special sense, to eye, ear, nose and throat by mobilizing tissues of the neck, often in those in whom the best efforts of specialists had proved of no effect. This statement can be readily verified by any one who will take the trouble to do likewise.

Vegetative functions, notably of the thorax, so commonly contracted; also of the abdominal organs, usually water-logged as middle age and sedentary life advances; and of interest likewise to the male, advancing prostatism, are all capable of gratifying improvements by the simple process of regaining structural elasticity.

Not only so, but by eliciting reflexes of contraction by concussion of certain vertebral areas (after the manner of Abrams), I have seen many instances of astonishing, almost unbelievable, betterment in myocardial and aortic structures as well as in functions of the vegetative organs.

VII. Turning for a moment to manotherapy, it is only possible to allude to personal convictions based on thirty years of observation. The human hand is admittedly the most perfect instrument possible to possess, always available and only requiring judgment in control and direction. The hand is the one instrument which most medical students are not taught to use or value in many of the fields of helpfulness where it can alone produce the best effects. In the absence of primary teaching it is difficult to impress the consciousness of practitioners with the enormous range of manual capabilities.

By wisely directed pressures on or near nerves in continuity or subcenters, a multitude of painful states can be readily controlled or even cured; also where diverse other disorders non-sensory or only subconsciously are manifested.

For example, take the vast group of miseries known as "rheumatics" which are really forms

of fibromyositis. These are now found to embrace pretty much the whole domain of "algias" and a great part of so-called neuritis. A large proportion of diversely classified disorders, referred by colleagues or sufferers wandering to me in the weary round of searching for relief, prove, on careful analysis, to be due to fibromyositis. Often-times it is non-sensory, or rather the sensory states are unclear; have not risen above the threshold of consciousness as frank pains.

Treatment is simplicity itself. Reach down with the finger tips to, or around, the disturbed area, which is sometimes far removed in inches but correlated in structure, a dense, tender, boggy mass will be felt and easily dissipated by palpation.

Let me urge upon any one who desires to amplify both diagnostic and therapeutic efficiency to give attention to this one much neglected instrument, the hand, and focus energy on the diagnostic element and even here the effort will fully repay.

Much experience in clinical teaching, of late years (largely limited and particularized), forces on me an unceasing amazement at the extraordinary neglect of expert palpation. Surgeons are, many of them, wonders in manual diagnosis. Even though they often can and do perform exploits of certain kinds, there is much they do not search for and for which the internist must explore or omit to do his duty. Among experts in internal medicine, their incapacity, or maybe their unwillingness, to determine and interpret some very significant indications, puzzles me.

VIII. The psychomotor realm is one in which physiodynamic principles especially obtain. Fear, anxiety, dethronement of judgment, due to vitiation of feeling tones, leads to endless psychoses, psychasthenias, exhaustion states, insomnia, metabolic disorders, premature breakdown or senility.

There is not the slightest need to adopt any chimerical concept of the sex impulse as a point of origin or of departure for most confusion states.

The popular word "hysteria" must do duty to embrace a diverse group of disorders of disequilibrium in the psychomotor sphere. By keeping in the foreground of consciousness this principle of psychomotor perturbation, many disorders will fall into simple clinical group-

ings. Of course one should be ever alert to discover more serious, not deeper seated but graver pathologic causes.

Certain it is many bizarre and strangely suspicious "nervous diseases" come my way which yield readily to careful regulation of mind and body, through revising the conduct of life. "It is not the wind which God tempers to the shorn lamb, but the skin of the lamb to the wind. The changing play of wind, of light, of cold and of warmth it is which stimulates action and reaction of mind and body alike." (Leonard Hill).

Monotony, sedentary occupation, shut in conditions, benumbing effects of wearisome domestic routine, a changless atmosphere physical and mental, induces psychomotor revolt. Feeding on one's own fancies, unrelieved by absorbing interests, minor somatic disorders acting as stimuli to morbid selfconsciousness, the play of suppressed emotivity, of vitiated ideation, encourage fears, and there results an endless chain of wretchedness which constitutes the major part of all clinical clientele. Medication is futile. Here is the ground for skilled guidance in physiodynamic doings: education of the body as well as of the mind.

Many diseases called "nervous" do not primarily arise in the nervous system itself. Nutrition of nervous elements is impaired in consequence of derangement in some other tissue or organ.

For example, hemiplegia is the result not of any primary defect in nerve or brain structure but of interference with the nutrition of a part of the nervous system due to interruption of its vascular supply. The causes are chiefly, if not wholly, preventable. Precaution should be early outlined and enforced by education, by formation of habits of right living, constructive personal hygiene, which is the province of the clinician.

Living organisms express their activity in response to changes in the conditions of their surroundings. As of individuals in the mass, so of structures and cells, through irritability, conductivity, rhythmicity, tone, etc. Tubular mechanisms contract and with regularity relax; so do spherical organs. The nervous system is that part of the organism which responds most readily to external changes, to heat, cold, to impacts, also to sensory stimuli, pressure, or blow, especially in or near a center or subsidi-

ary center. Hence we may exert effects deliberately on bodily or mental processes affecting changes in functional actions in degree and kind, both in health and particularly where the organism is disturbed or diseased.

IX. This brings me to a most potent department of physiodynamics, too much neglected in medical schools, viz., "Constructive and Reconstructive Personal Hygiene."

By constructive personal hygiene is intended the training of a normal individual so that he or she shall attain a higher plane of vigor than would otherwise be possible, by rendering available latent powers. By reconstructive personal hygiene we may include all that can be done not only to elaborate and amplify inherent powers but so direct them as to overcome, as far as possible, acquired defects, residua of former derangements, depressive and diseased states.

Let me emphasize my conviction founded on a lifetime of experience that in this domain of economic endeavor so vast are the practicable achievements that the half may not as yet be conceived.

Ample ground exists for confidence in the reconstructive, regenerative, potentialities of the human body already shadowed forth in reputable clinical findings. More will follow by industry in scientific and clinical research.

It is my firm belief that another generation or two will come to appreciate the truth of this statement. It is in the air,—a world thought. Manifold forces are at work; warrantable hopefulneses have been expressed; the foundation for this confidence is well and permanently bulded.

The search for the elixir of life, the specific cure, will be near the finding when the medical profession comes to realize that within an originally sound organism there resides adequate potentialities, growth and repair forces, survival values, factors of safety, provided search is made how to conserve them, when to interfere, when to merely encourage, also when and how to apply the required transformers of energy.

1504 *Pine Street.*

Work has been commenced on a tuberculosis hospital for the State Prison, at Nashville, Tenn. It is to have accommodations for 250 patients.

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By EVERETT E. WATSON, M. D., Salem, Va.
Physician in Charge, Mt. Regis Sanatorium.

When selecting a subject for a paper to read at this meeting, I felt at first a hesitancy in choosing one concerning which so much has been written, but the fact that I am constantly seeing so many sad cases where patients go rapidly to their graves as a result of delayed diagnosis, prompts me to attempt to add something, however small, toward the prevention of such unfortunate occurrences. Frequently the delay in diagnosis is due to failure of the patient to seek medical aid until the disease is advanced, frequently to lack of co-operation on the part of the patient, but in many, many instances it is the result of either carelessness, of failure in interpreting certain symptoms as warranting a careful examination of chest, or lack of skill and knowledge on the part of the physician in the technique of making a thorough examination of lungs.

The first and most important aid is a careful detailed history, the value of which is in direct proportion to our ability to interpret it properly. The family history is often of much assistance, a history of direct contact with tuberculosis over a comparatively long period of time, especially during infancy and childhood, being worthy of careful consideration. Next we should take up the past life of the patient, going carefully into the general health, home environments, occupation, diseases, etc., always remembering the significance of a history of pneumonia, frequent attacks of grippe, bronchitis, "fever," malaria, and pleurisy. The present illness is next to be taken up in detail.

In the majority of cases the onset of tuberculosis is insidious, the first symptoms often being gastro-intestinal—i. e., poor or capricious appetite, frequent "bilious attacks," and sometimes indigestion: this is usually accompanied by loss of weight, languor, possibly a slight evening rise of temperature, a persistent tired feeling, which is often most noticeable in the early morning, and which seems unaffected by rest; in other words, the patient is, to use a very much used but indefinite term, "run-down." Next in order, there may appear as the disease advances the clearing of the throat,

a slight expectoration, irritability, nervousness, insomnia, a slight cough, usually most noticeable in the early morning, and a feeling of oppression in the chest.

In a vast number of cases the onset is catarrhal. The patient who has probably been somewhat "run-down" suddenly takes what is apparently influenza, with cough, expectoration, evening temperature, general malaise, anorexia, pain in chest, etc. The patient may or may not get a careful examination and a diagnosis of tuberculosis. If not, the acute symptoms gradually subside, but there is left a slight cough, the patient loses weight, other classical symptoms of tuberculosis appear and a diagnosis is made. Out of 84 cases admitted to Mt. Regis Sanatorium, there were this train of symptoms in 30 or 36 per cent., and in the majority of these cases, there was a delay of from two to eighteen months before a diagnosis was made. While I know that a majority of cases of repeated and frequent grippe or colds are not tuberculous, yet it seems to me that from the above statistics we are not only warranted in making a thorough examination of the chest, but we owe it to our patients to do so in all cases of apparent grippe with cough which hangs on unduly long, accompanied by the train of symptoms described above.

In nineteen, or 22.5 per cent., of the cases the first symptom was hemoptysis. In three of these there was a diagnosis of tuberculosis made immediately, i. e., within ten days; two went two months; eight went one year; four went three years; and two went five years before receiving a diagnosis of tuberculosis. In this age of medicine, with the advancing knowledge of the disease, and with increasing skill in making a thorough chest examination, combined with the invaluable help of tuberculin and the X-ray, I can think of absolutely no excuse for failure in making a diagnosis in the presence of hemoptysis. Every case of hemoptysis, even to the slightest streak, should be considered tuberculous until proven otherwise, and in the absence of kidney and heart lesions, tuberculosis in 99 per cent. of cases will be found to be the cause.

In 11, or 13 per cent., the initial symptom was pleurisy. In all of these the diagnosis was made from one to four years later, although the decline in health in practically every in-

*Read before the Roanoke Academy of Medicine, March 15, 1915.

stance dated from the attack of pleurisy. The same rule should apply to pleurisy as to hemoptysis, i. e., every case of so-called idiopathic pleurisy should be considered tuberculous. In fact, the majority of leading internists are advising sanatorium treatment in all such cases of pleurisy, even in the absence of positive lung findings.

In 3, or 3.5 per cent., of the cases the first symptom was an evening temperature. I believe that the rareness of such onset is due to the fact that the temperature goes unnoticed until other symptoms develop.

The above brief outline of the classical train of symptoms so often manifested in the onset of tuberculosis, brings our attention to the method of making a diagnosis after the symptoms have been sufficient to call attention to the lungs. First, there must be perfect confidence on the part of the patient, as it often takes from a few days to two weeks of careful watching, before we can make a definite decision. The natural tendency of all tuberculous patients to minimize their symptoms and, in many instances, to lie in order to conceal symptoms, combined with the popular idea of the layman that a superficial chest examination is all that is necessary, and that the doctor who takes time does not know his business, are frequent causes of mistakes in diagnosis.

To begin with, I usually take a two hour temperature record for several days (7 A. M. to 10 P. M.), noting particularly the effect of exercise on the temperature, a rise following which being very significant. Also, in an early case, a pulse which is normal at rest, will frequently go unusually high immediately following slight exertion. In the meantime the sputum should be examined repeatedly, if negative. In this connection, I will mention the fact that practically every layman will consider a negative sputum as meaning absence of tuberculosis; and, in fact, I have been amazed by the frequency of cases in which the disease has advanced for months and months before a diagnosis was obtained, because the *physician* hesitates to make the diagnosis in the absence of a positive sputum, even though the symptoms be advanced. Out of 62 far advanced cases admitted to Mt. Regis Sanatorium the sputum was positive in fifty-five, or 89 per cent.; out of ten moderately-advanced cases, the sputum was positive in three,

or 30 per cent.; out of twelve incipient, there were no positive sputums. This compares favorably with the findings of other sanatoria, and clearly shows the mistake of relying too much on the examination of sputum.

The next step is a careful painstaking examination of the chest with *stethoscope*, the patient being *stripped to the waist*. You may smile at the emphasis on the stethoscope and stripped patient. In fifteen cases, taken *ad seriatim*, in which symptoms were sufficient to demand a thorough examination of lungs, the methods used were as follows: In five cases the physician examined chest with his ear; in nine the examination was made through the clothes; and in only three was there an examination with stethoscope, the patient being stripped to the waist. This, of course, refers to the physician who saw the patient first, as the physician who referred the case for sanatorium treatment in nearly every instance made a thorough examination. The remaining technique of inspection, palpation, percussion, and auscultation is so well known and well described in books on physical diagnosis that I will merely mention two of the things which I find to be the greatest aid to me and of which such a vast majority of physicians fail to avail themselves. First, is light percussion, a heavy stroke being absolutely valueless in bringing out a slight impairment of resonance, such as we find in a mild infiltration. The second, which is by far the most valuable aid of all, and without which no lung examination is complete, is as follows: While you listen with stethoscope, have patient make a deep expiration, a slight cough, and a quick deep inspiration, the patient doing this each time you move the stethoscope, while you examine both lungs, front and back, from apex to base. I frequently examine lungs in which there is absolutely no sign of rales on the very deepest inspiration, but a shower of moist rales would easily be heard following the cough, expiration and quick inspiration.

If we are still in doubt, as we will certainly be in many cases, by no means turn the patient loose, as there may be a slight lesion deeply seated which we have been unable to find by physical examination. We have at our command the sub-cutaneous tuberculin test, which can be easily and safely given. A reaction of 10 mg. or less in every instance means that

there is a sufficiently active lesion to demand immediate treatment, while a negative reaction, with a few exceptions, as in moribund cases and those who have recently had measles, means the absence of clinical tuberculosis. It is hardly worth while for me to mention the X-ray in the diagnosis of tuberculosis, as it is so well known that it is an invaluable aid in the hands of a man skilled in its use.

In conclusion, I would emphasize the following points and suggest the following routine as an aid for diagnosis in cases of suspected pulmonary tuberculosis:

I. A careful history, remembering particularly (1) that a history of exposure to tuberculosis during childhood is very significant; (2) that gastro-intestinal symptoms are frequently the first to appear; (3) to watch colds and grippe, following which the cough hangs on unduly; (4) that a *history of hemoptysis, no matter how slight, means tuberculosis until proven otherwise*; (5) that *all so-called idiopathic pleurisies are tuberculous*.

II. A two hour temperature and pulse record for five days, noting carefully the effect of exercise on each.

III. Examination of sputum, keeping in mind that the sputum is negative in the vast majority of incipient cases, in half the moderately advanced cases, and in many far advanced cases.

IV. A careful and painstaking examination of the chest with stethoscope, the patient being stripped to the waist, keeping in mind the value of light percussion, and remembering that moisture is best heard by having patient exhale deeply, cough, and then take a quick deep inspiration.

V. The sub-cutaneous tuberculin test.

VI. The X-ray.

THE TREATMENT OF SYPHILIS WITH SALVARSAN.*

By THOS. V. WILLIAMSON, M. D., Norfolk, Va.
Genito-Urinary Surgeon to the Protestant Hospital.

The treatment of syphilis is summed up in three words—mercury, iodides, salvarsan. We know no more about the use and manner of employment of mercury and the iodides than we did ten years ago, but the advent of Professor Ehrlich's salvarsan has forced us to relearn our lesson about syphilis. I use the word

relearn in a restricted sense for we have not learned that lesson yet. We are in the middle of the study and we have much to do before it is finished.

This intelligent, experimental investigation in which syphilographers are engaged is wonderfully fascinating. It is experimental, as yet, but experimental along sane, rational lines characterized by the working out of tenable theories and the perfection of the preparation and administration of the salvarsan itself.

The civilized world joyously heard the first glowing reports of salvarsan from Professor Ehrlich's clinic and the medical profession, trusting in the authority behind it, almost as a unit accepted the report at its face value. Nor was the profession deceived.

Since then medical history records two distinct phases or epochs in salvarsan development:

First,—*Intra-muscular injections*. Pain, local reaction, abscess formation, sloughing at the site of injection, encystment, and slow, incomplete absorption forced the abandonment of injections. This procedure seems barbarous to us now, but let us remember that there must be a beginning to all real, lasting reforms and, when we consider the final result, these beginnings are usually crude and rough. Injections served their purpose wonderfully well in that they led up to and brought about the truly humane, scientific method of intra-venous administration.

Intra-venous medication, quickly following, marks the second stage, and today is the universal vogue wherever genuine enlightenment prevails. When this change was first made, unfamiliarity with its use, numerous contra-indications, difficulty of preparation and cumbersome apparatus caused the giving of a dose of salvarsan to be viewed with almost as much trepidation as a major operation. But time has accustomed the doctor to its use, favorable experience has removed most of the dread, refinement of technique and increased facility in administration lead him to regard salvarsan therapy as simple and safe. And, broadly speaking, it is simple and safe. There are almost no contra-indications to its use today and, when the enormous dose of this chemical preparation is considered, the mortality rate is exceedingly low. Now and then we hear of a death following the use of salvarsan; but, until

*Read before the Norfolk County Medical Society.

considerable more light has been shed upon this perplexing question, salvarsan should not be too bitterly condemned as the causative agent.

Familiarity with medical literature fully convinces us that there is an element of danger in the use of salvarsan and death must be credited to it now and then. Whether this is due to cumulative or toxic action or to faulty elimination, we are unable to say. But, reflecting upon the gross benefit salvarsan has brought to syphilitic humanity, an occasional fatality should not give the drug a sinister reputation. The same thing is true of anaesthetics or any modern surgical operation. Anaesthetics and operations are sometimes given credit for death which they do not produce, for, not infrequently, if thorough search were made, the cause could be traced to other sources. I believe in reserving judgment in every fatal case until proof is absolute.

The men who are having the ripest experience with salvarsan see fewer contra-indications to it every day and dread fatal results less and less as time goes on. Although there may be more, I know of only one death in the city of Norfolk which is directly credited to salvarsan. Has any other drug of like importance as powerful a defence?

When the technique of intra-venous administration was first adopted, it was the usual practice to "cut down" on the vein. "Cutting down" was very objectionable for many reasons, the chief of which was that it was unnecessary except in very young children, in fat people, and with those in whom the veins were undeveloped. As we became more expert in intra-venous medication, these instances were increasingly less frequent, and at present it is only necessary to resort to it occasionally. The incision left a tell-tale scar which is just as odious to the syphilitic as the fleur-de-lis to the criminal of France. The vein was obliterated and, at times, the patient was compelled to stop work until the incision healed.

Venous puncture has almost entirely replaced "cutting down." The only objection to puncture in routine work is that, unless excessive care is taken to introduce the needle well into the lumen of the vein, some of the salvarsanized product might be forced into the surrounding tissues, thereby producing an inflammatory reaction. In careful hands this possibility is very remote and then the mistake can be cor-

rected before enough of the solution has escaped to cause serious trouble.

At present, the large capacity syringe is rapidly growing in favor at the expense of the gravity method. It will only be a short time until the syringe is in current use. Ease, quickness and simplicity of manipulation, minimization of danger from air emboli, smaller needles doing less damage to the venous walls, and freedom from clotting of blood in the needle makes this the method of choice.

There is no comparison between the syringe and gravity when we consider that it is entirely safe to reduce the amount of fluid in which the salvarsan is prepared from 250 cc. to 50 cc. This reduction is a big step in the refinement of technique. It takes less time to administer a dose of salvarsan and, if we adhere to the general belief that severe constitutional reactions are caused by the introduction of extraneous substances in the fluid rather than by the drug itself, the chances for such reaction are reduced about four-fifths.

Granting that reactions are due to other influences than irritating chemical action of salvarsan or the liberation of toxins by it, it stands to reason that there will be less reaction from 50 cc. than from 250 cc.

When the amount of fluid was first diminished anxiety was felt lest the concentrated solution set up a phlebitis near the point of entry. This fear proved groundless because the salvarsanized medium mixes with the blood with what we might almost call selective rapidity. The blood stream quickly carries the mixtures away, thereby permitting little or no contact of irritating material with the intima of the vessel. In the course of a few minutes the drug is disseminated throughout the circulation and, if we take five minutes to inject the solution, at the end of that time it is about equally mingled with the entire blood content. However, it is important to guard against pressure on the vein below the needle by the hand or the syringe. If the free circulation of the blood is interfered with, allowing the raw, concentrated solution to remain temporarily stationary, it might very readily set up an inflammation.

Saline solution made from freshly distilled water seems to be the best medium for "making up" salvarsan. Distilled water contains very little organic or mineral residue—certainly much less than ordinary sterile water and for

this reason, constitutional reactions should be made less severe by employing it.

The operation of "making up" salvarsan may be considerably speeded by having one flask of very hot and one of cold saline. The drug is emptied into the mixing flask and 20cc. of the hot solution added. Vigorous shaking for a moment or two will give a perfectly clear solution. Occasionally the salvarsan rolls up into a gummy cottony mass. This may be broken up without delay by stirring with a glass rod. Cold water is then added to make up the required amount. The important point to remember is that salvarsan is readily soluble in hot water, while it takes some time to dissolve in cold water.

Too much alkalinity injures the vein used for injection; too little alkalinity causes blood coagulation and leads to thrombosis. Lengthy shaking of the solution and exposure to air, oxidizes the drug, rendering it more toxic since the oxide of arsenic is formed. We may very effectively guard against this contingency by remembering that it takes approximately twenty-three drops of 10 per cent. sodium hydroxide solution to produce the proper degree of neutralization. Therefore, we may safely add twenty drops quickly and then go slow on the last few.

Just what place salvarsan will eventually take in the therapy of syphilis we cannot authoritatively state at present. We know that it is a wonderful remedial agent which has achieved many startling and brilliant results.

We know that one dose will not cure the disease. We know that in some cases, fifteen doses will not bring about a negative Wassermann reaction. But we do know, that in thousands of cases from three to six doses will so eradicate the syphilitic organisms that no clinical or laboratory tests can demonstrate their presence. But we must reserve final judgment until we measure out more years of experience against the eternal truth.

Hospital at Hopewell.

It is expected to have a hospital ready for occupancy at Hopewell, Va., by August 1. This will relieve the congestion at the Petersburg Hospital, where the sick and injured from the recently opened up Du Pont Powder Works have been treated. The new hospital, besides wards, will have 21 private rooms.

Clinical Reports.

A CASE OF DOUBLE CONGENITAL HYDRO-NEPHROSIS.*

By M. E. NUCHOLS, M. D., Richmond, Va.

A male infant, aged 4 months, breast-fed, delivered normally, and now weighing 18 pounds, had never been sick previous to this illness. On September 11, 1914, he cried almost constantly as though suffering severely, and had frequent greenish, mucous stools and high fever. Examination showed an unusually well-nourished infant whose lungs, throat and heart were normal, and no involvement of the middle ear. The abdomen was somewhat distended and tender, and temperature 103° F. A diagnosis of probable intestinal infection was made, and the child treated accordingly.

On September 12th, there was no improvement, there being increased abdominal distention and tenderness with slight rigidity, especially on the right side. Appendicitis was considered, but doubtfully. The condition being still unimproved on the two days following, the diagnosis of intestinal infection was discarded.

At this time, examination of the urine was as follows: Acid; a trace of albumen; no sugar; no casts; abundant pus; renal epithelium, and a small amount of blood. The diagnosis was changed to pyelitis, and of the right side because of the rigidity and tenderness on that side. From September 14th to 30th, the temperature ranged from 101° to 103° F., gradually receding to normal with general improvement in other symptoms except the amount of pus, which seemed to increase. At no time was there the slightest difficulty or pain in voiding.

From this time until October 24th the temperature remained practically normal and the child gained in weight and color, though the urine still contained an abundance of pus. On October 25th, fever and other symptoms returned, but the temperature never ran as high as during the previous attack. Emaciation was more marked and rapid.

Bacteriologic examination of the urine showed streptococci in pure culture, and upon consultation it was determined to use streptococcic bacterin. Accordingly, three injections

*Reported at a meeting of the Richmond Academy of Medicine and Surgery, March 9, 1915.

of stock vaccine were given at three-day intervals. After this the temperature never rose above 99° F., but the urine did not improve and emaciation continued.

On November 7th, a large mass was discovered just above and to the right of the symphysis pubis. It was visible, slightly movable, horse-shoe shaped, and had a doughy feel when examined per rectum. At this time emaciation was very pronounced and mucus was still present in the stools; and because of these and the weakened and relaxed condition of the infant, intussusception was considered and an exploratory operation advised. Upon its performance on November 10th, the tumor was found not to be intussusception; but while looking further to determine its origin, the child died. Further examination showed the mass to be the right ureter which was very tortuous and, in its lower half, much larger than the colon. The lumen was an inch and a half in diameter, the caliber gradually diminishing as the kidney was approached. Both the ureter and kidney were filled with pus. The walls of the ureter and bladder were much hypertrophied, the opening between them not admitting a small probe. The left ureter was a half-inch in diameter, much thickened, and contained pus.

Conclusion: A case of double, congenital hydronephrosis due to obstruction of the ureters at their entrance into the bladder, with secondary streptococcic infection and double pyonephrosis.

Proceedings of Societies, Etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Reported by LEWIS C. ECKER, M. D.

This Society met February 4, 1915, Dr. John Dunlop presiding. The first order of scientific business was the presentation of

Case Reports.

Dr. H. P. Parker reported a case of diabetes in a patient of 38. Under observation for 3 years. Showed 3 per cent. sugar on a general diet. On diet brought it down to sugar free. At no time showed diacetic acid. Recently had not been in good health, and while coming home on a street car was taken acutely ill. Vomited all the way home. When

seen was extremely nervous and complained of oppression across the chest. Had typical Kussmaul breathing. Put on soda and oatmeal diet. Urine showed diacetic acid. Went rapidly into coma in spite of strenuous treatment. That night was given 5 per cent. soda intravenously. Seemed to revive slightly, but soon the coma deepened and the patient died the next night.

Dr. Fremont Smith opened the discussion, stating that he had two patients over 50, both sugar free on diet, but slightest indiscretion shows sugar.

Dr. Ecker said the appearance of Kussmaul breathing seems to offer a hopeless prognosis.

Dr. Parker, in closing, said he had seen one case come out of a coma and die of an intercurrent affection three weeks later.

Dr. Copeland reported that since the last meeting he had seen a very severe case of pyelitis in a six-months' infant. Acute onset with very high temperature. Onset simulated a gastro-intestinal condition. Specimen of urine showed many pus cells. Temperature ran 104° to 105° for 5 days. This case was not put on the mixed treatment. Given soda citrate, 30 grains a day. Temperature terminated by crisis, the temperature curve being much like a pneumonia.

Dr. Hagner, discussing the case, said that in the past year it had been proven that urotropin had no effect on pyelitis. No formalin was produced except in acid urine and when urine remained in the bladder for some time. The speaker seemed to think that any beneficial effect was due to urotropin in itself.

Dr. Fremont Smith thought that nearly all these cases recover, though sometimes presenting a very alarming condition. The suddenness with which the temperature rises and terminates is much like lobar pneumonia. He mentioned a case in a child followed by the same condition in the mother. The mother cleared up on treatment only to relapse following a long walk just after getting out. The relapse commenced with chill and temperature which reached 107°. This cleared up as had the original attack, and she has been free of the condition since.

Dr. Copeland said, in closing, he did not approve of the urotropin treatment. The mixed treatment seemed the best. Alkalinity should be maintained and urotropin used when the

urine is returning to normal acidity. He wished to emphasize the frequency of pyelitis in female infants and suggested the examination of urine in all obscure cases.

Dr. Kerr reported a case of fracture of the head of the humerus without impaction. It was a fracture of the greater tuberosity and not of the anatomical or of the surgical neck. These cases should be treated operatively—Open incision, split the rectus but do not open the joint. Kangaroo tendon is used to fix the joint. Pictures taken before and after treatment were shown to the Society. *Dr. Kerr* said the patient, who was 74 years old, had fallen directly on the shoulder. The fracture was in three pieces. There was a rotation inward and backward of the head of the bones.

Dr. Atkinson reported a case of tetanus following operation for hemorrhoids.

Dr. Kerr, who opened the discussion, said this is an extremely rare complication. It is a surprising fact that the normal human intestinal tract can harbor the tetanus bacillus. A report shows that 5 per cent. have virulent tetanus bacilli, and there is 20 per cent. in those working under favorable conditions. This shows the need of prophylaxis before operation. There is a possibility that the so-called post-operative tetanus due to catgut may be from rectal contamination. The speaker had one case occurring in a man following a plastic operation on the hand in which no catgut was used. This developed on the eighth day. Saved by large doses of antitoxin. This case received the serum subcutaneously, and frequently. On the second day developed an anaphylactic reaction. The make of serum was changed so as to get a different strain. This was done several times. A piece of wood was used to show the degree of relaxation, the plug being forced between the teeth and noting whether it could be forced in farther the following day. Has been demonstrated that the bacilli reach the central nervous system through the nerves, but recently the bacilli have been isolated from the inguinal glands, thus showing there may be a septicaemia. The treatment is to use the serum and to cauterize the wound. The latter prevents further infection. Has seen 4 cases recover after enormous doses of the serum. In the extremities, nerve blocking with the serum has been tried. In recent German literature is an article by a man who advocated

division of the nerves. After accidental infection of hand by a culture of tetanus all the nerves of the arm were cut. He recovered.

Dr. Borden felt that it was rather curious that more infections have not occurred. After this case the speaker thinks that a very careful prophylaxis should be carried out, both as to diet and the use of a prophylactic dose of the serum. Had seen 11 cases of tetanus. Had never seen one of this nature. All his cases were accidental; 4 followed gunshot wounds. The speaker saw this case on the evening of the seventh day following the operation. The symptoms appeared on the sixth day. Began subcutaneous injection of the serum with little hope. In judging the value of the serum one is hampered by the results. Some get well without the serum and some die with it. There is no certain way of saying what cures the patient. The patient gets well who outlives the poison, for the symptoms are evidences of a fixation in the nerve cells, and once there the serum can do no good. It only prevents further formation. This man never had very violent spasms. There was fixation of the jaw, but at first none of the neck. On the second day of the tetanus infection there was some rigidity of the neck muscles with a mild degree of opisthotonos, followed by paralytic symptoms, disappearance of the patella reflex and incontinence of urine and feces. The speaker suggested the possibility that the injection of the serum into the cord may have caused the paralytic symptoms. The division into acute and chronic cases is entirely arbitrary. Has seen a case develop on the eleventh day, die in 48 hours. The speaker is skeptical as to the treatment with antitoxin. The treatment is prophylactic, not curative. Practically no results after the appearance of symptoms.

Dr. Eliot said more cases of tetanus are seen in military than in civil practice. They are more frequently seen after battles fought upon agricultural fields. The wound must not necessarily be large or ragged. The rusty nail is a bugaboo. Tetanus following operation about the rectum is a very infrequent occurrence; he has never seen it follow any of the scores of operations he has performed upon this part of the body. In addition to the cases cited by *Dr. Atkinson*, he added one by *Hardenbrook* when crystals of nitrate of silver had been applied; tetanus developed followed

by death. The doctor was accused of poisoning the patient with strychnine, but although much notoriety was the result, the charge could not be proven. Fayrer operated upon a case of chronic prolapsus of the rectum; tetanus developed and the patient died on the thirteenth day. The longer the period of incubation the better are the chances for recovery. Dr. Atkinson should be commended for making public the report of his case as we too frequently report only successful cases.

Dr. Fremont Smith spoke of a paper written about 50 years ago on tetanus neonatorum. Proven in that paper that under similar conditions some develop it and die and others would not. Thus arose the question of individual predisposition.

Dr. Hagner said it is the spore that produces the infection.

Dr. Copeland has seen many cases at the Children's Hospital. The so-called idiopathic cases may have come from some wound near the intestinal tract. The serum when introduced intra-spinally must be re-absorbed before it reaches the central nervous system. Therefore, why not put it directly in the vein? Serum seems to simply neutralize the poisons being elaborated.

Dr. Hickling had seen about 8 cases at the Washington Asylum, all in cases of ulcers or contusions about the legs and feet. He had never seen a post-operative case, and the preparation for operation had been very crude at times.

Dr. Dunlop said that in the war zone the men had been instructed to suck the wounds and sponge with their saliva with the possibility of their forming an antitoxin.

Dr. Atkinson, in closing, said he knew of no work done to determine the life of the spore in the intestines.

Editorial.

Prevalence of Malaria.

That malaria is a disease far too prevalent and much to be dreaded in many localities is manifest from reports received by the U. S. Public Health Service authorities in response to cards mailed in 1914. Cards were sent to physicians in Alabama, Arkansas, Florida, Kentucky, Louisiana, North Carolina, South

Carolina and Tennessee. Responses received gave 81,055 cases of malaria, all states reporting for the full year except Kentucky and Louisiana, which gave returns for only 6 and 8 months, respectively. In addition to the requests made of the states named, reports were collected by the State Boards of Health of Virginia and Mississippi. In these, 7,008 cases were given for Virginia in 6 months, and 116,788 cases for Mississippi for the whole year of 1914. In Mississippi, which reported much the largest number of cases, over 6 per cent. of the population of the State suffered with malaria. In many of the central and northern states the disease is comparatively rare or does not appear at all, so that it has not been made a notifiable disease. In a few, it is thought not to occur except when imported.

The above would seem to demonstrate that malaria is a disease especially indigenous to the South Atlantic States and those along the lower half of the Mississippi River. Much study has been given by government officials to the prevention of the disease and it behooves the afflicted states to expend a larger amount annually in this phase of public health work that they may safeguard their people against this enervating plague. It would be impossible to estimate the latent possibilities of the many sufferers from this one disease in the Southern states, who drag out their existence day by day.

Trachoma Hospital at Coeburn.

A free hospital was opened July 1st, at Coeburn, Va., at which the State and U. S. Public Health Service are co-operating in their activities for the treatment and prevention of trachoma. Dr. John McMullen, of the Public Health Service, is in direct charge and the U. S. Government, State and town of Coeburn, which supplied the building, are sharing the expenses. Trachoma is wide-spread in certain localities of the Alleghany Mountains, and hospitals have already been working in Kentucky for some time.

The Annual Report of the Richmond Health Department.

Recently issued by Dr. E. C. Levy, chief health officer, gave a death rate for the year ending December 31, 1914, of 19.7 per 1,000 inhabitants, including non-residents. This is the lowest rate on record for this city, which

is also true of the death rate for typhoid fever, diphtheria and infantile diarrhea. In only one year, 1913, was the death rate from consumption lower. Whooping cough was by far the most fatal of all acute contagious diseases in this city in 1914, there having been 61 deaths in 302 reported cases of this disease. The average age at time of death was 36 years, 5 months and 16 days, the average age of white decedents being about 43 1-3 years, while that of the colored was a little less than 30 years. There were 3,155 births reported, there being a larger number of males than females among both white and colored.

The Corinna Borden Keen Research Fellowship

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

Medical Library Association.

Founded in 1898, this Association enters upon its eighteenth year with 52 library members and 46 individual members, all of the older large libraries being affiliated with the Association. The object of the Association is to foster medical libraries and maintain a system for exchange of medical literature among them. Any medical society, association, university or college having a fixed home and a library of at least 500 volumes, with a librarian or other attendant in charge, or any individual interested in medical literature or libraries is eligible to membership. The membership fees and expenses are kept at the lowest possible amount consistent with the service rendered. The list of presidents of the Association includes a list of men prominent in the profession. At this time, Lt. Col. C. C. McCulloch, Jr., of the library of the Surgeon-

General's office, Washington, D. C., is president, and Dr. John Ruhrah, of Baltimore, is secretary-treasurer.

Lynchburg and Campbell County Medical Society.

The former Lynchburg, Va., Academy of Medicine has been changed as above, with Drs. F. M. Perrow and Robert W. Lemmon, both of Lynchburg, as president and secretary, respectively. Meetings are held monthly on first Mondays.

The Price of Public Health.

Illinois Health News, which is now the name of the official organ of the Illinois State Board of Health, states that "Pennsylvania expends 25 cents per capita for public health purposes; Montana, scarcely emancipated from territorial existence, spends 9 cents;" Massachusetts, New Jersey and New York spend about 5 cents, while Maryland, Minnesota, Indiana, California and Louisiana exceed Illinois in per capita expenditures, the latter bidding two cents per capita a year for health.

Dr. Fletcher R. Harris,

Henderson, N. C., has been appointed to fill the vacancy on the N. C. State Board of Health caused by the retirement last winter of Dr. A. A. Kent, of Lenoir, the latter having been elected to legislature.

Pellagra Deemed Communicable.

The Shreveport, La., Board of Health has designated pellagra as a communicable disease and passed an ordinance requiring all cases of pellagra to be reported to the Board of Health and all houses where the disease exists to be placarded. People afflicted with pellagra are prohibited from attending school or other places of public meeting.

Dr. Harry B. Justice

Has moved from Lowmoor, Va., to Covington, and has taken the offices of the late Dr. W. B. Payne.

Dr. H. Grant Lind,

Recently of Jordan Mines, Va., is now located at Low Moor, Va.

Prof. Chas. W. Stiles,

Of the U. S. Public Health Service, has had conferred upon him the honorary degree of doctor of science, by Yale University.

Higher Requirements for Medical Students.

New Hampshire has so advanced her requirements for medical students that all matriculants expecting to graduate in 1919 or later shall have had a two year preliminary college course.

Dr. Griffin W. Holland,

Of Eastville, Va., has been appointed by Governor Stuart as one of the delegates from Virginia to the fifth annual Drainage Congress, which is to be held in San Francisco, September 17-21.

Dr. C. E. C. Peyton,

For many years a practising physician in Pulaski, Va., has been appointed an assistant surgeon at the National Soldiers' Home, Dayton, Ohio, and has already entered upon his duties there.

Dr. Stuart McGuire

Has been elected president of the Civic Association of Richmond, to succeed Mr. E. L. Bemiss, resigned. It is the purpose of this organization to work in a business-like way to obtain an improved charter for this city.

Hospital News

Has recently been acquired by a number of Washington physicians and Drs. W. M. Barton and Walter A. Wells are editors-in-chief with a large staff of associate editors.

Visiting Parents.

Dr. and Mrs. J. N. Upshur, of this city, have recently had with them their sons, Capt. Alfred P. Upshur, of the Medical Corps, U. S. Army, and Capt. Wm. P. Upshur, of the U. S. Marine Corps. The former stopped for a short visit while on his way to Canal Zone where he has been assigned to duty. The latter, who has been stationed for five years in the East and more recently at Mare Island, has been detached and ordered to Philadelphia.

Assistant State Health Commissioner.

The appointment of Dr. Roy K. Flannagan as assistant health commissioner of Virginia was confirmed by the State Board of Health, at its meeting in this city, early in July. Upon appointment of Dr. E. G. Williams, Dr. Flannagan has been serving in this position since the resignation of Dr. Allen W. Freeman, in the early Spring.

Dr. Roshier Miller,

Of Barton Heights, this city, and his wife, are on a motor trip through the northern part of Pennsylvania and New York.

The N. C. State Health Officers' Association,

Which met in Greensboro, last month, elected the following officers: President, Dr. D. E. Sevier, Asheville; vice-president, Dr. Chas. T. Nesbitt, Wilmington, and secretary-treasurer, Dr. Geo. M. Cooper, Clinton.

Dr. C. S. Webb

Has returned to his home in Bowling Green, Va., after a visit to Orange County, Va.

Dr. Paul W. Howle

And family returned to their home in this city, about the middle of July, after an extended motor trip through the Valley of Virginia and other places of interest.

Dr. R. J. Wilkinson,

Who has been associated with Dr. C. C. Coleman of this city, for the past two years, has left Richmond. After a short stay at his home in Campbell County, Virginia, he will spend several months at the Mayo Clinic before locating permanently for the practice of surgery.

Dr. J. M. Emmett, of Oxford, N. C., will succeed Dr. Wilkinson as associate to Dr. Coleman.

Dr. C. M. Hazen

Was elected vice-president of the Bon Air, Va., Citizens' Association, at its meeting held July 12.

Dr. Roswell E. Flack,

Of Spray, N. C., after special laboratory study in Baltimore, this summer, will take up his duties as professor of pathology and bacteriology in Wake Forest College, North Carolina. He succeeds Dr. Herbert D. Taylor, who resigned to accept a position with the Rockefeller Institute, New York City.

Dr. and Mrs. F. M. Perrow,

Of Lynchburg, Va., are visiting at Ocean View.

Dr. S. L. Jepson,

Of Wheeling, editor of the West Virginia Medical Journal, will move to Charleston, W.

Va., about the first of August, his position as State Health Commissioner requiring him to be located at the capital.

Married—

Dr. Benjamin B. Warriner, surgeon in the U. S. Army, stationed at Ft. Huachuca, Ariz., and Miss Adelaide Royall Acree, Lynchburg, Va., July 15. Dr. Warriner, who is a native of this State, graduated from the University College of Medicine, Richmond, in 1896.

Dr. C. P. Sanders,

Of Elkhorn City, Ky., has been appointed by Dr. W. T. Oppenheimer, Chief Surgeon of the C. & O. Ry., a surgeon for the C. & O. at his home town. Dr. Sanders was a visitor in this city, the middle of July.

Registry for Wet Nurses.

The Department of Health of New York City has established a registry for the names and addresses of women willing to give wet nurse care. Only those who are apparently in a healthy condition will be registered.

Dr. J. Whitridge Williams,

Of Baltimore, is spending his vacation with his family at Watch Hill, R. I. He will return to Baltimore about the middle of September.

Dr. C. C. Coleman,

Of this city, while on a recent motor trip, visited his former home, Buena Vista, Va.

The National Association for the Study and Prevention of Tuberculosis,

Which met in Seattle, Wash., last month, elected Dr. Theodore B. Sachs, of Chicago, president, and Dr. Henry Barton Jacobs, of Baltimore, secretary.

Dr. Charles M. Scott.

Bluefield, W. Va., has been appointed a member of the State Board of Examination and Registration of Nurses of West Virginia.

The American Academy of Medicine

Held its annual meeting in San Francisco, in June, at which time it was decided to convene in 1916 in Detroit. Dr. Geo. A. Hare, Fresno, Cal., was elected president, Dr. Helen C. Putnam, Providence, R. I., secretary, and Dr. Chas. McIntyre, Easton, Pa., treasurer.

Dr. H. Sheridan Baketel,

Of Brooklyn, N. Y., has been elected head of the department of hygiene and public

health, at the Long Island College Hospital, *vice* Dr. Joseph H. Raymond, deceased.

Dr. T. H. Massey,

Formerly of Iron Gate, Va., has moved to 227 Prospect St., Covington, Va.

Dr. W. W. Bennett,

Of Cologne, Va., was among those from this State attending the National Anti-Saloon League in Atlantic City, early this month.

Dr. R. Lester Hudgins,

Of Farmville, Va., has been visiting at the home of his father in Buckingham County, Va.

Dr. H. B. Sanford,

Of this city, who has been quite sick with typhoid fever, is recuperating.

Dr. Ralph W. Stoneburner,

Of Edinburg, Va., a recent graduate of the Medical College of Virginia, is at present located in Ashland, Va., as assistant to Dr. A. C. Ray.

Dr. James W. Kincaid,

Of Catlettsburg, Ky., is among the visitors at the Old Sweet Springs, W. Va.

New Members of Maryland Board of Examiners.

Drs. John L. Riley, Snow Hill, and Lewis A. Griffith, Upper Marlboro, are the new members of the State Board of Medical Examiners of Maryland, elected at the last meeting of the Medical and Chirurgical Faculty.

Dr. A. A. Barron.

Of Charlotte, N. C., will shortly move to Richmond, to accept work with the Life Insurance Company of Virginia.

The American Ophthalmological Society,

At its annual meeting in New London, Conn., July 6-7, elected Dr. G. E. de Schweinitz, of Philadelphia, president, and Dr. Wm. M. Sweet, of Philadelphia, secretary-treasurer. Drs. Wm. H. Wilmer, Washington, D. C., and Wm. Zentmayer, Philadelphia, were among the newly elected members of the council.

The Medical Society of New Jersey,

At its meeting late in June, elected Dr. William J. Chandler, South Orange, president and Dr. T. N. Gray, of Newark, recording secretary.

Dr. D. W. Draper,

Of Williamsburg, Va., is spending some time in Philadelphia and other places in the North.

The Southern Medical Journal

Now has its editorial and business offices in Birmingham, Ala., having moved to that city from Mobile, the first of this month.

Dr. J. M. Russell,

Of Canton, N. C., has been commissioned lieutenant of the medical corps, *vice* Dr. J. R. McCracken, of Waynesville, resigned.

Dr. I. Keith Briggs,

Of South Boston, Va., has been elected one of the directors of the Country Club of Halifax, for the ensuing year.

Dr. David A. Christian,

Of Vera, Appomattox County, Va., has been on a visit to his parents in Highland Park, Richmond.

Dr. G. C. Godwin

Has tendered his resignation as interne at the Virginia Hospital, this city, to take effect September the 1st. It has been referred to the visiting staff for its report and recommendation.

The Virginia Pharmaceutical Association,

At its annual meeting held at Natural Bridge, elected the following officers: President, Mr. John F. Bauer, Richmond; vice-presidents, Messrs. T. R. Taylor, Norfolk, and C. H. Goldsboro, Culpeper; treasurer, Mr. J. M. Walyer, Staunton, and secretary, Mr. E. L. Brandis, Richmond, re-elected. The next meeting is to be held in Staunton, July 12, 1916.

Dr. Lewis Coleman Morris.

Of Birmingham, Ala., has opened his country home near Montpelier, Va., for the first time in several years and will spend much time there this season.

Dr. Clifton M. Miller,

Richmond, is a member of the recently organized branch of the Navy League, in this city.

The American Hospital Association,

At its annual meeting in San Francisco, in June, elected Dr. Winford H. Smith, of Johns Hopkins Hospital, Baltimore, president. Mr. Asa Bacon, of the Presbyterian Hospital, Chicago, was re-elected treasurer.

Dr. Samuel Glover

Has been ill with typhoid fever at Manteo, in Buckingham County, Va.

Dr. H. C. Beckett,

Of Scottsburg, Va., is resident physician at Craig Healing Springs, this season.

Dr. Robert McC. Glass,

Of Winchester, Va., left Baltimore, with a party, the middle of July, for a sea trip of several weeks, to points in New England.

Dr. Hugh W. McCain

Has been elected city physician of High Point, N. C. to succeed Dr. D. A. Stanton, resigned.

Western Medical Times.

Beginning with July, the above named journal enters upon its first volume, incorporating the *Denver Medical Times*, *Utah Medical Journal* and *Nevada Medicine*. Though it will continue to be published in Denver, Dr. Geo. L. Servoss, of Reno, Nevada, is editor. He will be assisted by a large number of collaborators.

The Wisconsin Medical Recorder,

Janesville, Wis., was merged July 1st, with the *Physician's Drug News*, Newark, N. J.

Obituary Record.

Dr. Thomas Sparrow Burbank

Died at his home in Wilmington, N. C., July 12, after a lingering illness, aged 61 years. He obtained his medical degree from Bellevue Hospital Medical College of New York in 1886. Dr. Burbank was prominent in medical circles and was at one time a member of the N. C. State Board of Medical Examiners.

Mrs. Mary John Eliot.

The many friends of Drs. Llewellyn and Johnson Eliot, of Washington, D. C., will regret to learn of the death of their mother, at her home in that city, July 2. Mrs. Eliot, who was in her 80th year, was the widow of the late Dr. John Eliot, a distinguished physician of the capital city.

Mrs. W. W. Mayo,

Widow of Dr. W. W. Mayo, founder of the Mayo Surgical and Clinical Institute, died July 15, at the home of her daughter in Rochester, Minn., aged ninety. She was the mother of the present surgeons in charge of St. Mary's Hospital, Drs. W. J. and Chas. H. Mayo.

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SHOCK, ANOCI-ASSOCIATION AND ANAESTHESIA.*

By A. M. FAUNTLEROY, M. D., Washington, D. C.
Surgeon, U. S. Navy.

Shock, that insidious symptom-complex of exhaustion, has long been regarded as the most formidable condition in major operative work and has occupied the attention of the best surgical minds for several decades. It was not, however, until the publication of the classical work of Crile and his associates that we have had presented a clean-cut and scientific understanding of the causes and pathology of shock, its prophylaxis and its treatment.

The co-called kinetic theory of shock would seem to be correct, in view of the many scientific and conclusive experiments which have been conducted in the laboratory and tried out in the crucible of the clinic. The elaboration of this theory calls for the recognition of several different kinds of shock which have received the names of the different prominent causes leading up to this condition. Thus we have *traumatic* or surgical shock, *emotional* shock, *toxic* or foreign proteid shock, *drug* shock and the shock due to *insomnia*. Each and all give rise to the same pathological findings, differing only in degree, and are the result of the excessive conversion of potential, or stored-up, energy in response to adequate stimuli. Stimuli of sufficient number or intensity inevitably cause exhaustion, and these stimuli are received and transmitted to our consciousness through the medium of various forms of nerve endings to which Crile has given the name of *nociceptors*, or ceptors which are activated by any noxious or harmful in-

fluences. These *nociceptors* may be the simple contact ceptors located in the skin, or they may be specialized ceptors to be found in the special sense organs or situated in any cavity or tissue from which, on account of our evolutionary environment, we are in the habit of receiving notification as to the presence of injurious agencies or processes. Thus, an environment or association which might result in injury to our health or life would be a noxious association and the converse of this condition, in which no harmful influences are present, has been given the name of *anoci-association* by Crile, which indicates a freedom from all injurious factors.

The harmful stimuli, which are received and transmitted by the ceptors, are immediately recorded in various cells of the brain which latter reflexly activate the cells of certain other tissues, with the idea of combating or otherwise offsetting the presence of the particular harmful condition or association. This response to the presence of some injurious agency is usually manifested in the form of muscular activity, since it is through our muscular system that we are able to escape from situations or conditions which the prolonged evolution of the race recognizes as harmful. Thus, should we suddenly come in contact with a red-hot iron, or a sharp piece of metal, we immediately call into action certain muscles which bring about the movement necessary to rid us of the painful, and therefore harmful, influence. These responses to stimuli, and the resultant action, call for the expenditure of energy, or the vital force represented by a certain chemical compound, which is stored up in the cells of the brain, liver, suprarenals and muscles. When this expenditure of vital force is prolonged or excessive, an exhaustion of these cell-storehouses or magazines is bound to occur and

*Read before the Augusta County Medical Association, Inc., at Staunton, Va., February, 1915.

this exhaustion, whether physical, emotional or otherwise, we designate as "shock."

All forms of shock stimuli cause physical alterations in the cells of the brain, suprarenals and liver by reason of their activity, and these physical changes in the cells are identical, whatever the cause of stimuli, and they may become so altered that they cannot be restored but go on to annihilation. Traumatic or surgical shock, which results from a physical injury, is the particular kind of shock in which we, as surgeons, are most interested, although we cannot ignore the other forms of shock which, in many instances, add their effect to complicate the picture or accentuate the condition of exhaustion. When a sudden violent injury occurs the stimuli are overwhelmingly intense and the *kinetic system*, represented by the organs named,—especially the brain—is profoundly exhausted or even permanently injured, by reason of the sudden discharge of a large amount of stored-up energy in the futile and involuntary effort to bring about a correction of the condition causing the injury. This sudden exhaustion of the *kinetic system*, such as has occurred in prolonged operations, we call *acute shock* but, if the stimuli extend over a period of time, and are not so intense as to cause an immediate breakdown, there may be a gradual exhaustion of the *kinetic system*, which, though chronically induced, is to be regarded as shock. In other words, the activation of the *kinetic system* to the point of exhaustion, whether due to sudden or prolonged injury, is represented by the term "surgical" or "traumatic" shock. The changes leading up to this condition may be started by emotion, carried a step further by muscular exertion, another step by physical injury, another by hemorrhage and so on until destroyed; or all the factors acting simultaneously may produce the same disastrous result.

The symptoms of shock are chiefly manifested by the phenomenon of lowered blood pressure: and the well recognized apathetic and pinched facies, cold and clammy skin rapid respiration and heart action, and the entire symptom-complex, are all referable to this fall in the tone of the circulatory apparatus. The recognition of this fact, which is abundantly borne out by laboratory and clinical evidence, together with the now well rec-

ognized pathology, gives us the key to the treatment in our effort to combat this condition. This treatment resolves itself into (1) the prevention of further shock and (2) the support of the circulation.

To accomplish this the surgeon must first check all hemorrhage, which in itself causes a special brain cell deterioration besides accentuation of lowered blood pressure; and after this attention must be directed toward the relief of pain and the removal of anxiety and distress. Opinions differ as to the use of stimulating drugs in shock treatment. Crile maintains that they actually do harm and he has demonstrated that shock can be produced by the administration of strychnine alone. DaCosta is firmly of the opinion that atropin is of great value in shock, especially when sweating occurs, while others strongly recommend repeated hypodermic injections of sterile camphorated oil. Although the infusion of salt solution into a vein gives but transient help in lowered blood pressure, it is a remedy of great value in emergencies, especially where there has been considerable loss of blood. DaCosta recommends the addition of adrenalin to the salt solution (one teaspoonful of a 1 to 1000 adrenalin chloride solution to one liter of salt solution). Crile has undoubtedly established the fact that, in grave shock, the only remedy which affords permanent relief and brings about a stable reaction is the transfusion of human blood. He maintains that it is the one and only logical treatment of shock and substantiates his claim by many and convincing proofs. There can be no doubt as to the value of transfusion and it should always be resorted to when it is possible to accomplish it.

There are certain time-honored procedures which are also of undoubted value in the conservation of the patient's vital forces, such as covering with warm blankets to prevent the escape of bodily heat: the use of the hot water bottles or hot bricks in the bed to make up for the loss of the heat; bandaging the extremities, or auto-transfusion as it is called, with the idea of increasing peripheral resistance and enabling the heart to utilize to the best advantage the actual or relatively small amount of circulating blood, thus carrying more blood to the brain where it will main-

tain the activity of the vital centers of respiration and circulation; proctoclysis and hypodermoclysis are also among the palliative procedures and may aid in tiding over the patient. Besides the stimulating drugs already mentioned, the use of hypodermic doses of brandy and ether in beginning collapse has many advocates. While it is believed that there is a distinct indication in emergency work for certain of the stimulating drugs, particularly in certain cardiac cases, it is also the consensus of opinion that it is most unwise to advocate their indiscriminate use. In regard to the use of morphine there is quite a divergence of opinion. Crile lauds the use of this drug not only to relieve pain and apprehension when present, but also for its sedative action in limiting the expenditure of energy and thereby aiding in its conservation.

The term *collapse* is used by some to designate a severe condition of shock and by others to indicate a functional depression of the vasomotor center due to mental disturbance and cardiac failure rather than to a physical injury. Crile regards *collapse* as an inhibition of the vasomotor centers in contrast to *shock* which is an exhaustion of the center. Concealed hemorrhage may present some difficulty to differentiate from shock, and this for the reason that shock and hemorrhage are often associated. Prolonged bleeding causes impairment of vision, frequent yawning, irregular tossing, great thirst, nausea and sometimes convulsions or recurrent attacks of syncope. In pure shock these symptoms are not present. It has been demonstrated conclusively that severe hemorrhage always produces a special deteriorating effect of its own upon the cells of the brain, and, when this effect on the cells is added to the exhaustion of the same cells through shock, the gravity of the latter condition is greatly increased.

As regards the prophylactic treatment of shock, the application of the *kinetic theory* toward the prevention of cell exhaustion, especially of the brain, resolves itself into doing away with, or blocking off, all *noci-stimuli*, both traumatic and psychic, thus approaching as near as possible that condition of complete freedom from all harmful and depressive stimuli known as *anoci-association*.

Unless a patient is of a very phlegmatic type the contemplation of an operation is always

accompanied by a more or less natural fear which may vary all the way from slight nervousness to a condition of abject terror. Such emotional stimuli cause a varying discharge of nervous energy, the exhaustive effect of which is in direct proportion to the degree of fear. After fear, anger is probably the emotion which causes most damage to the kinetic system. That combination of fear and anger, known as worry, has a chronic depleting action upon vital resistance, the exhaustive and disastrous effects of which depend upon the degree of intensity. It represents, in the language of Crile, a state of bodily depression brought about by prolonged efforts to escape some threatening evil or futile attempts to combat the cause of some anticipated disaster. Thus, this condition is responsible for grave digestive and metabolic disturbances which are well known to all.

In combating the effects of these shock producing emotional stimuli our duty is plain. From the moment the patient is admitted he should be surrounded by an atmosphere of cheerfulness and kindness, which will do more to dispel his fears than all else. The avoidance of any factor that might cause irritation, such as an ungracious reception at the hospital, must always be borne in mind; and the patient should be made to feel that he is to be well cared for and that he will suffer no unpleasant experiences. The entire hospital organization, including surgeons, nurses and attendants, in fact, all who come in contact with the patient, must be made to realize the importance of carrying out this detail of warding off all depressive and consequently exhausting, stimuli. When this routine is followed the patient's vitality is conserved from the very start and he does not finally come to operation in a state of lowered resistance which would be super-added to the shock producing stimuli of the operation itself. The pre-operative treatment, such as cleaning out the alimentary canal, respiratory exercises, and certain restrictions as regards diet and rest, is one of the steps to forestall and prevent certain disagreeable, and therefore exhaustive, stimuli from occurring as a result of the anesthetic or operative procedure. This also includes the administration of morphia about one hour before operation, causing a mental and physical relaxation, which not only allays

apprehension and softens the effect of any subsequent shock producing stimuli, but has a decided influence in lessening the quantity of the anesthetic used or necessary to completely narcotize the patient, thus bringing about the reduction of a shock producing agent. The patient should always be spared the sight of any operating instruments or paraphernalia and, at the same time, the sounds incident to the preparation for operation are to be excluded. In this way the patient sees and hears nothing that might cause apprehensive thoughts, and beginning his anesthetic under circumstances entirely removed from all suggestive depressing stimuli, he passes unconsciously from the condition of calm repose induced by the morphia to a state of surgical anesthesia.

Having arrived at the point where the operation is about to begin, the final phase in the anociation of the patient is started by cocainizing the nerve ends throughout the line of incision, and from this time on every division of a sensitive tissue—that is, of a tissue supplied with nociceptors—is preceded by infiltrating with a solution of cocaine or novocaine. Although the patient is completely under the general anesthetic and can make no voluntary movements, unless the tissues are thus anesthetized locally the *nociceptors* are still as capable as ever of receiving and transmitting to the brain traumatic stimuli. The brain cells being activated by these stimuli, there is a corresponding discharge of nervous energy in the unconscious effort to protect the body from further injury. The voluntary muscles being unable to act, the nervous discharge of energy expends itself on the cells of the suprarenals and liver, which latter organs are the only ones beside the brain to show structural cell changes. Thus, when there is no regional anesthesia, and the operation is prolonged and also accompanied by considerable traumatism of the parts, there is brought about gradually a tremendous discharge of energy from the brain, with consequent cell deterioration and ultimate cell exhaustion in the organs named, especially the brain. When this condition is reached the patient is said to be “shocked” and, if the condition is allowed to continue, profound exhaustion ensues and the manifestations of grave traumatic shock are apparent.

With the exception of the shock producing stimuli from the anesthetic itself, this condition can be completely obviated, and all traumatic stimuli cut off from the brain, by the use of regional anesthesia, which consists of blocking off completely the reception of stimuli by the *nociceptors*. For this purpose Crile uses a one to four hundred solution of novocaine in all parts of the body, in all ages and under all conditions. Mitchell's tablets of cocaine, gr. $\frac{3}{4}$ and adrenalin, 1 to 400, are also used for the same purpose in solution of two strengths. The stronger solution, which consists of one tablet to 50 c.c. of sterile water, is used in infiltrating the more sensitive parts, such as the skin; while the weaker solution, one tablet in 100 c.c., is used for less sensitive tissues, such as muscles and fascias. Which ever one is used, the infiltration is started by inserting the needle between the superficial and deep layers of the skin (not under but *in* the skin) in such a manner as to cause, when the solution is injected, a pig-skin appearance or the production of small wheals in the skin. The needle is pushed along, parallel with the surface while making the injection, until the syringe is emptied, and it is repeated until the line of the proposed incision is completely covered with the small wheals. These solutions should be most carefully prepared and sterilized before using and, in addition to their use with a general anesthetic, operations of considerable magnitude can be safely and painlessly performed under local anesthesia alone. Just before completing the operation, Crile injects *at a distance* from the wound a $\frac{1}{4}$ per cent. solution of quinin and urea hydrochloride to minimize the post-operative discomfort in the wound, especially in abdominal operations, and this local anesthesia lasts for several days. During the operation the tissues should be subjected to the least amount of trauma, such as gentle manipulations, clean-cut dissections, with the minimum of pulling, stretching, tearing and crushing.

The post-operative care in general is directed toward making the patient as comfortable as possible in bed; prompt relief of pain and restlessness with small doses of morphia; and rectal tap-water by the drop method, containing sodium bicarbonate and glucose, one ounce of each to the quart. An enema is given on the second day and always resorted to

whenever there is flatulence and, unless especially contra-indicated, the nourishment is rapidly increased both in quantity and quality, except in gastric cases, until the patient receives a fairly liberal diet about the fourth day. When stimulants are necessary in certain cardiac cases Crile gives camphorated oil and digitalis.

(Continued in next issue.)

ACIDOSIS.*

By ST. GEO. T. GRINNAN, M. D., Richmond, Va.

There are certain disturbances associated with decreased alkalinity of the blood and changes in the urine resulting in acid intoxication. The intoxication is of the nature of a chemical poison and is capable of producing severe symptoms and even coma and death. The term acidosis has been applied to this condition. Acidosis varies widely in degree. There is a close association between carbohydrates and fats in body metabolism. The carbohydrates in the body are partly converted into fats.

Beta-oxybutyric acid is formed in the metabolism of fats, and in health is quickly oxidized so that no accumulation takes place.

In acidosis, oxidation fails to occur, probably because of the non-combustion of carbohydrates. The beta-oxybutyric acid and its derivatives, acetone and diacetic acid, accumulate in the blood, being eliminated by the urine. Acetone is also eliminated by the breath.

Among the causes to provoke an attack of acid intoxication may be mentioned adenoids, chronically inflamed tonsils, fat indigestion, lack of carbohydrates, continuous profuse vomiting, chronic pain interfering with digestion, eye-strain, headache, kidney disturbances, and diabetes. While no age is exempt, children are frequent sufferers from such disturbances.

A cause frequently overlooked is eye-strain, but indiscretion in diet is the most common cause. Repeated attacks materially aid in the diagnosis.

Children suffering from acidosis usually have loss of appetite, nausea and vomiting, headache, pallor, great restlessness, and some increase in body temperature. In the severer forms of acidosis, abdominal pain (especially

in the region of the appendix), dizziness, intense thirst and shortness of breath are well established symptoms.

The coma of diabetes, while usually due to acidosis, may be due to uræmia or other causes.

The diminished alkalinity of the blood in acidosis is unfavorable to diuresis, and acetone therefore, may not be properly excreted. For this reason acetone bodies may only moderately appear in the urine of a patient who has severe acid intoxication.

Analysis of the blood is of great importance when we realize that the accumulation of acetone in the blood and its excretion in the urine does not always conform to any fixed parallel (W. McK. Marriott, *J. A. M. A.*, Aug. 1, 1914).

The estimation of the degree of acidosis can be easily worked out at the bedside. "Five c.c. of urine is mixed with 2 or 3 drops of glacial acetic acid and 1 c.c. of a 0.5 per cent. solution of starch. Then 6 drops of 1 per cent. tincture of iodine is added. Normal urine turns blue. When no blue tint is apparent—not even for a minute,—the presence of diacetic acid is revealed. By graduating the tint in a set of test tubes it is possible to estimate the degree of acidosis" (Steensma and Kopmann, *J. A. M. A.*, Aug. 8, 1914, page 520).

Another simple method of estimating the degree of acidosis has been pointed out by Dr. Yandell Henderson of Yale (*J. A. M. A.*, July 25, 1914, p. 318). He finds that the time that the breath can be held is an index of the degree of acidosis. Research work along this line is being made now. This method is especially valuable when considering an anæsthetic. If the individual with acidosis cannot hold the breath for twenty seconds, general anæsthesia is contra-indicated.

In noting the effects of acidosis C. Coombs (*British Med. Jour.*, June 6, 1914) reported two cases of acidosis terminating chronic myocardial disease. This is especially interesting, giving some indication of the far-reaching effect of this trouble.

That acidosis, unless properly treated, may become chronic, is evidenced by cases of cyclic vomiting and cyclic diarrhoea, lasting for years, occurring at fixed periods with efforts at self elimination.

Dr. Henry E. Hale has reported a case of acidosis and death in a girl aged nineteen months (*Archiv. Pediat.*, April, 1909). In

*Read before the Richmond Academy of Medicine and Surgery, May 25, 1915.

cases of diabetes, some patients on a carbohydrate free diet run the risk of acidosis and con.a. The long withdrawal of carbohydrates is not without danger and, as noted by Dr. David Reisman (*Forchheimer*, Vol. II, page 735), "acts as a double edged sword in diabetes; it lessens the hyperglycemia but favors acidosis." In order to meet this situation Von Noorden introduced the oatmeal treatment of which so much has been written.

Von Noorden thinks oatmeal has a specific effect on carbohydrate metabolism of the liver. Dr. Reisman thinks the oatmeal treatment is applicable to all cases of acidosis, especially those in which the exclusion of carbohydrates fails to render the urine sugar free. If on a restricted carbohydrate diet a strong ferric chloride reaction is given, alternate oatmeal days and vegetable are needed. In severe cases it is possible by the oatmeal treatment to render the urine sugar free and thus relieve acidosis of diabetics.

In the acidosis of children butter milk poor in fat is good. Butyric acid which is present in butter and cream distinctly increases the ketone bodies in the urine. As both butter and cream are so valuable in child life, it is an easy matter to have both butter and cream washed for cases of recurring or present acidosis.

Regarding the alkaline treatment of acidosis, it must be noted that the quantity of sodium bicarbonate to be prescribed, though large in comparison with the usual custom, is at times almost insignificant in relation to the acidity to be neutralized. As much as 3,000 grains has been given daily to a youth of sixteen years for a week. In the severe cases, "every available channel of introduction—by mouth, intravenously, sub-cutaneously, and rectal,—are called for, with heroic doses. Grains of bicarbonate must be replaced by drams." (Editor *J. A. M. A.*, Dec. 26, 1914, page 2297).

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DISCUSSION.

Dr. McGuire Newton said that acidosis is prevalent among children, that cyclic vomiting is one of its expressions, and that it was brought particularly to his attention as affecting children who had been anaesthetized, the attack assuming a grave aspect, some of the children dying. Every child that is to be anaesthetized should be prepared for its possi-

bility by the administration of an alkali, as milk of magnesia or bicarbonate of sodium, immediately upon its recovery from the anaesthetic, and some carbohydrate, as milk-sugar. Attacks may be precipitated by children eating when tired, and these attacks are not prevented by restrictions in diet prior to their occurrence. It is well to anticipate an attack. There is some one symptom that is a forerunner, e. g., bed-wetting occurring two or three days previous, or light stools, or ravenous eating, and this symptom should be sought. Investigations he set on foot several years ago showed him that there was always indicanuria preceding a marked increase in acetone in the urine. Taking this as an index for treatment, attacks were successfully prevented when advice was followed. A case in point was reported, the attack occurring every four weeks. Observations showed increased indican on the twenty-first day. A peculiarity in the case was the subnormal temperature.

The treatment consists in the employment of alkalies over a long period of time. He uses the carbonates of lithium and potassium, fifteen grains of each in a pint of water to be administered every day.

Dr. H. H. Levy asked the name of the acid producing acidosis, and, also, if elevation of temperature during an attack is not an ordinary symptom of that condition.

Acidosis is nothing new, but merely something well-known with a cumbersome and ugly name.

Dr. J. S. Horsley observed that acidosis is rather common in the cases of children who have been anaesthetized, but he thinks it due more to the starvation preceding and following the administration of the anaesthetic than to the latter itself. To prevent this condition, he gives glucose, such as corn syrup, in salt and soda solution by the rectum, and sweet chocolate by the mouth.

Dr. Newton, replying to a question of Dr. Levy, said, that high temperature is usual; low temperature is not.

Dr. Grinnan, closing the discussion, said that the primary substance responsible for acidosis is beta-oxybutyric acid, a product of the metabolism of carbohydrates and fats, due to a lack of oxidation in the body and having two derivatives, viz., acetone and diacetic acid. It acts

as a poison, producing cyclic vomiting and diarrhoea.

Of course, the condition known as acidosis is not a new thing; but we have learned more about it and, as a consequence, are in a better way to prevent and treat it than previously.

SANITATION vs. TYPHOID VACCINATION.

By EMORY WM. REISINGER, M. D., Washington, D. C. Associate Professor of Anatomy, Georgetown University; Member of the National Committee of Mental Hygiene.

The question of the prevention of disease is one which ever stimulates the medical mind. In considering this subject, I have personally been ever deeply interested, going through, as I have, all the stages of the development of bacteriology and sanitation.

The dawn of the wonderful results made possible by the microscopist and bacteriologist has ever been of the greatest interest and received the deepest consideration by all professional men, and I want it distinctly understood that in presenting this matter, no attempt is made to question the great achievements laid open by modern research and investigation, but simply to present this all-important subject from its many view points. The reduction in typhoid fever morbidity is one of the greatest blessings of the present age; and, while it is doubtless due to some extent to vaccination, I firmly believe sanitary measures—by that I mean, cleanliness, boiled water, pasteurized milk, the awakening of the public to the infection from uncooked foods, and the realization that this terrible malady may be controlled by a little care, and, besides the suffering and danger from death caused by this scourge, that a large amount of money, can be saved both to the individual and the community—are producing results beyond our wildest dreams. In presenting this idea, I wish to commend most highly the wonderful results obtained by our Army and Navy, and the wonderful advantages to the enlisted men procured by vaccination; but we of the general medical profession have even greater problems to consider in the handling of typhoid fever, as the following facts show:

First—We specialists in internal medicine, handle a much greater number of individuals.

Second—Each individual is a *free agent*, open to the acceptance or rejection of prophylactic advice,—the fact that it is *not* compulsory

to submit to any medical attention must be considered.

Third—The great expense in handling such large communities.

In both the Army and the Navy the order from headquarters is absolute authority, as was well shown in the Civil War by a Colonel who, on learning that some prominent divine had baptized fifty men, ordered his whole regiment the next morning to report to his chaplain for baptism. Now, in the services, the word of the Commanding Officer is sufficient. With us, our results have to be obtained by logic and the conviction of the individual, that the advice given is reasonable and proper.

In going into the matter, careful consideration is given of the reports of the Surgeon-Generals of the Army and Navy, handling, as they do, about 160,000 men; also the wonderful results of the Japanese army, kindly explained by members of the Embassy located here, and surgeons of the Navy who have lived in Japan. Now, these observations are supplemented by a rather extensive personal experience, having had under my care during the last twenty years over 2,000 families, with an average membership of four, that is, I have had under my personal observation over 8,000 individuals, on whom the result of the suggestion, shortly to be outlined, has been absolutely positive—that is, free from typhoid infection.

In handling these 8,000 individuals, I have obtained a complete absence of typhoid, covering the long period of twenty years, simply by insisting on all drinking water being *boiled*, and all milk sterilized, years ago, —now *pasteurized*. There has been no reduction or restriction of any article or diet, oysters and raw vegetables being used freely, and in every case there has been perfect freedom from the bacillus of Eberth. Hence, I feel that the above experience gives me a right, as a member of the medical profession, to express my opinion in connection with this matter, because the personal experience is a great deal larger than that of a surgeon of the Army or Navy.

Now, we must consider another point in this matter:

First—We must obtain consent for vaccination from the head of the family. This is frequently exceptionally hard to obtain, especially with the knowledge that the immunity secured is only, according to the best of authori-

ties, from *two to four* years, and that the vaccine produces little or no result on the progress of the disease if the person is already infected.

Second—We must secure from the younger members of the unit of the Nation,—the family—the willingness to submit to the treatment.

Third—It is necessary to purchase three tubes to produce immunity for protection against a condition which is problematic. Typhoid fever in the District of Columbia in the last ten years averaged about one case in 600 people. Immunity is admitted to be sometimes questionable, as is proven by the death of a patient from typhoid 4 months after vaccination, as also by the last report of the Surgeon-General of the Navy in which a case of typhoid fever developed after inoculation. It must also be borne in mind that all of the men in the service, receptive of the vaccine, are selected specimens, each man having undergone a most thorough physical examination before his acceptance into the service, and that each man as a member thereof is protected from all forms of contamination by every known means of medical science today. Now, compare the wonderful results obtained in the service with the comparatively small number of cases in any community, compare the average sanitation and health of the *picked physical unit* of the Army or Navy, with the questionable and even degenerate condition coming to us in the mass of a city, and you can readily see that your statistics of the service are of doubtful efficiency when applied to the everyday life of the everyday individual.

I have gone over the excellent statistics and reports of the Japanese army and our own services most carefully, and I find the results wonderful, but I must feel that we are more justified in urging the housewife to inspect her kitchen, to boil her water, to see that her milk is sanitary and pasteurized, than we are in trying to convince her to submit her offspring to vaccination,—ever remembering that we are dealing with the free mind of a free people. In the last ten years the number of cases of typhoid fever in the District of Columbia has dropped from 1,097 in 1905 to 341 in 1914. Now, this is a large reduction, practically one-third as many cases in 1914, and we, of the District, feel that it is due to our *filtration* of the water supply,—that it is due to water purification only, and only *partial* puri-

cation. How much more can we expect when we are able to get the proper co-operation from our milkman, our groceryman, our housewives, and our farmers, and last and far from least, sanitary measures in our kitchen and amongst our own domestic help!

Now, remember the population of the District of Columbia in 1913 was 353,297, almost three times the strength of the U. S. Army and Navy during the same period. The Army had 22 cases of typhoid fever—remember, in an almost *perfect* physical organization; multiplying this by 3½ we get 77 cases. Now, in the same time, the District of Columbia had 461 cases, apparently a great increase against the District, but again I must call your attention to the fact that the services are composed of the best of the civilian population. The services do not have the poor, neither the old nor the young, the poorly fed or the poorly clothed, the inhabitants of the alley, or eaters of refuse food, the poor beggar on the street, or the debased criminal; but, gentlemen, your statistics are from our elite,—a national organization.

Now, let us consider vaccination from an economic viewpoint. Remember, it is ever the dollars and cents that appeal to the average man, and, in fact, almost to the greatest minds of the day. Remember that Napoleon said: "War is money, more money, and victory is most money." If that is true in the Army, how true it is to the poor struggling man or woman to whom the five cents, more or less, means a loaf of bread or a hungry stomach! Now, at the present cost of vaccine of typhoid fever, that is \$2.00, and with its three administrations,—the cost of each vaccination series is \$8.00. There are 353,297 souls in the District of Columbia, at \$8.00 apiece, and this presents an outlay of \$2,826,376,—a figure to be considered. For what? Accept, for the argument, that the contentions of the Surgeon-Generals of the Navy and Army are accurate for two or four years' protection of a community, providing the community will submit to such protection, which is doubtful. We secure freedom from typhoid fever for this interval, and this expenditure represents only the saving of about 300 morbidity in such a vast concourse and has to be repeated every four years. Is this not rather a high figure to pay for what

can be done by a little care in the proper regulation of the daily food?

Another thing which we have to consider in connection with this disease,—all ships and stations in the tropics are now ordered screened, and the fly, which I really believe is one of the most frequent carriers of all forms of micro-organisms, is eliminated. This is impossible to secure in many parts of a community. Is it not more to the point to produce cleanliness and thereby eradicate not only typhoid, but all other forms of micro-organisms, as is shown by the wonderful results in handling typhus fever in Servia? Great assistance is secured by frequent bathing, absolute cleanliness of hands, the eradication of all roaches, bed bugs, fleas, etc., simply by having our house clean, our garbage cans emptied and scalded, our toilets sanitary, our kitchen and dining room refuse disposed of properly, having our children and ourselves absolutely cleanly. We should also see that our servants handle our food **supply with the care which** means safety, and render the food non-infective by a most thorough cooking.

Here, I submit two tables that at a glance show the relative status of the services and the People:

SERVICES.	GENERAL POPULATION.
Selected physically.	All types.
Properly housed.	All types dwellings.
Properly clothed.	All types clothing.
Proper water.	All types water.
Pasteurized or inspected milk.	All types milk, often bad.
Screened against flies.	Screened and un-screened houses.
No poor.	Poor of all types.
Not contaminated by outsiders.	Open to contamination always, visitors, etc.
Typhoid carriers isolated and treated.	No perfect guard against carriers.
Best of medical attention.	All types of medical service.
Cases quarantined and disinfected according to the most advanced views.	Cases not quarantined, and disinfection left to family, hence, poorly done.

So, it is no wonder that the Services have such a small number of typhoid cases, or the absence of the same,—no wonder from these facts *alone*,—and I think all of these matters should be considered and mentioned in reporting statistics, for, otherwise, the real result might be obscured. Now, no severe cases of gastro-intestinal diseases in 8,000 people, for a period of over twenty years, is accomplished by sanitation. Cannot this be fairly compared

with the statistics of the Services? Ever remember, I am not against typhoid vaccine, but simply wish this malady considered from all points.

Not only does the boiling of water and the pasteurizing of milk protect against typhoid, but also against all other forms of gastro-intestinal diseases, as has been so well demonstrated with infants. For years cholera morbus and entero-colitis were the bugbears of the profession during the Summer months; these have been relegated to the past, almost solely, I believe, by the care and handling of infant foods.

In conclusion, I respectfully call attention to the following facts:

First—That the boiling of water and the pasteurizing of milk does all that vaccine can do, and when the habit is acquired, it soon becomes a part of the daily routine of domestic life,—my personal drinking water has been boiled for 22 years.

Second—There is no comparison in the cost to the community.

Third—When the habit is acquired, the immunity engendered lasts forever, while vaccine only extends over two or four years. That it can be acquired is clearly demonstrated by the wonderful absence of typhoid from Asia-tics, and the boiling of water and the pasteurizing of milk are protections against any forms of micro-organisms so conveyed, and are recognized by all.

Fourth—The value of cleanliness is beyond question.

Fifth—The proper handling of milk and water are now so easily taught, and are so evident as the chief source of infection, and the cleaning of houses is so essential and so well understood, that it will be an easier matter to eradicate a community from typhoid along this line than any other.

In closing these remarks, I wish to express my thanks for the courtesy extended to me by the Surgeon General, and the Assistant Surgeon General of the Navy, the Surgeon General of the Army, the members of the Japanese Embassy, the Bureau of Entomology of the Department of Agriculture, and to our local Health Department, for their co-operation, and for placing at my disposal this excellent data in regard to typhoid and its propagation.

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OBSERVATION ON VARICOSE VEINS.

By L. SEXTON, B. S., M. D., New Orleans, La.
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Varicose veins are thickened, lengthened, enlarged and tortuous veins. Anything that causes an obstruction to the return flow of the blood from the extremities promotes the dilatation of these veins. One-thirteenth of the body weight is blood and the weight supported by the venous column tends to cause dilatation of the veins. The veins in the extremities are also varicosed by negative blood pressure on some vein. If the heart and muscles do not force the blood along, the elasticity of the muscular fibers of the vein is overcome, the blood sagging back causes the veins to stretch, dilate and become elongated and tortuous. Pregnancy or intra-abdominal pressure from ovarian tumors, aneurysm, liver or kidney disease, may cause the veins to become enlarged and tortuous. Tight lacing and garters, weak heart, and standing occupations, as motormen, salesmen, barbers, sedentary habits, constipation and thrombosis, all tend to produce varicose veins.

The valve of the vein becomes incompetent from pressure, stoppage in the blood current, hypertrophy takes place in the walls and perivascular tissue. The vein opposite the valve dilates, causing lengthening and tortuosity of the vessel. Pouching of the vessel walls causes knotting of the vein. Inflammatory changes take place in and around the vein, proliferating cells tissue. Phlebitis and perivascular changes occur from this inflammation. Sclerosis of the vein, or dilation from pressure may cause the vein to rupture, thus starting the venous hemorrhage and varicose ulcer. The skin is blue and pigmented about the vein. Lack of nutrition in the skin over the vein, thinning of the vein wall by dilatation, leads to rupture of the vein and production of ulcer.

Symptoms.—These enlarged veins are usually found on the inner aspect of the thigh and anterior surface of the leg. They are larger and more tortuous after standing all day; the tortuous veins are soft and fluctuating, but may give rise to pain and hardness if phlebitis begins. A large varix of the internal saphenous vein at the saphenous opening may be mistaken for femoral hernia as it recedes like the hernia does in the recumbent posture.

Pressure over the opening prevents the hernia from returning but not the varix.

Treatment is first palliative, removing, if possible, the cause of the pressure on the veins, as tight lacing, garters, tumors, etc. Mild catharsis should be given to unload an over-distended rectum. Standing employment should be given up, and the limbs should be elevated when sitting down. Rest in recumbent position in the open air is very beneficial to these cases. If the skin is inflamed or eczematous, ichthyol or zinc oxide ointment are soothing. Elastic bandage pressure from toe to the knee is necessary when standing if the veins are to be held in check. It is useless to operate when the leg is edematous and both the external and internal saphenous are involved and enlarged. Such cases should sleep with limbs elevated at an angle of 25 degrees or more. If the venous load is thus relieved half the time, and a suitable elastic stocking is applied before getting up, the day may be passed in comparative comfort. These stockings should be fitted snugly after several days' rest in bed; it is also best to remain in bed a day or two when becoming accustomed to wearing them. Silk elastic stockings worn continuously in cool weather do a great deal of good. All bandages or stockings should be applied before getting up in the morning, to be removed when the patient retires at night. The knit rubber bandage is not so heating as the solid rubber ones, hence should be given preference. An ambulating treatment which is often successful is accomplished by applying the Unna-paste cast, which is flexible after it dries. It is important to cleanse the leg well before applying the dressing. Eight thicknesses of gauze bandage are applied around the leg and toes to protect the skin and toes from contact with the paste, which is composed of four parts of gelatin to ten parts of water, left standing over night; put on water bath, keep constantly stirring, add ten parts of glycerine while hot, also four parts of oxide zinc powder. The paste (while hot) is applied to these dressings with ordinary brush while six roller bandages are smoothly put on the limb from toe to knee.

Cases treated by this method pursue their vocation in comparative comfort for years, but only palliative results are to be promised these patients. The veins require surgical interference if a radical cure is expected.

The amateur surgeon, before recommending an operation, should remember that thrombosis, embolism, infection and phlebitis, may follow surgical interference, causing a mortality of one or two per cent.

The Schede incision may be modified by making an oblique incision about the middle of the leg with a two-inch skin flap left intact over the tibia and behind the leg where no varicose veins are found. The veins and lymphatics under this band of skin are divided by the knife, subcutaneously, cutting edge downward.

Before any incision is made, an Esmarch bandage or constrictor is applied so as to prevent losing any blood while the vein is being dissected, or divided and tied. It is not necessary in the oblique incision to ligate any but the larger veins, as a snug bandage is applied at once and the leg elevated at 25 degrees and constrictor not removed until the patient is put in bed from the operating table, so all risk of hemorrhage is avoided in this way.

To excise a portion of the saphenous vein, the limb should be kept elevated for some time to relieve the pressure on veins before operating. There should be perfect asepsis of the skin by washing, shaving and applying benzine and iodine, 1 per cent. An Esmarch constrictor is applied to upper portion of thigh, the vein is exposed by careful dissection, when the entire vein or four or more inches is removed after ligating the vein at upper and lower end of the incision. A large gauze dressing is then applied. After suturing and closing the incision, the patient is removed to the bed with his leg kept elevated on an inclined plane for one week, and gradually lowered some each day for the succeeding week, when a snug fitting bandage or elastic stocking is to be worn for some time succeeding the operation. After removing three or four inches of the main trunk of the vein near the saphenous opening, ligatures may be tied about other prominent dilated veins under cocaine and small incisions made, causing the vessels to thrombose, contract and become fibrous cords and obliterated as result.

Dr. Mayo's method is to string the vein on curet, taking it out in sections subcutaneously. Another method is to insert a uterine sound, with ligature attached, down the vein for a foot or more, cut down on end of sound, tie the ligature over the vein at this point, when

by forcibly jerking the string a segment of the vein is inverted and removed. Buck's long probe with olive point is extended down the entire length of the vein from below Poupart's ligament to the ankle where the vein is opened, secured tightly around the olive point of the instrument, when by a quick jerk the entire vein is stripped out tearing off the collateral branches. The after-treatment is the same as when a dissection is made, viz., asepsis, large dressing, bandage entire limb, and keep elevated to 25 degrees.

All of these operations should be followed by bandages, or elastic stockings, rest and elevation of leg on inclined plane at night for some time in order to relieve the deep veins of as much pressure as possible.

Subcutaneous ligation of several veins has relieved a few mild cases when followed by bandaging, but the practice is not usually successful. Schede's method of dividing all the veins and lymphatics by incision entirely around, down to the muscle, has relieved about one-third of the cases so operated. The bad results from the procedure have been edema from dividing the lymphatics, parasthesia from dividing the nerves, as well as trophic changes that follow, and, as said before, it only helps one-third of the cases. If such a division of the vessel as in Schede's method is contemplated, accomplish it by a spiral incision instead of circular, avoiding the lymphatics where possible. Ligating the long saphenous above the knee has been recommended by Trendelenburg. It is of service if the main trunk alone and not the collaterals are involved. Seventy-five per cent. of these cases have been either cured or benefited by the Trendelenburg operation. We have recently had four successful cases by this method, and when an operation has to be made, we prefer this plan to the others above mentioned.

Medical Building.

OBSERVATIONS ON THE TREATMENT OF TETANUS.*

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Realizing, as a general practitioner, the extreme difficulty of preparing a paper which

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would be of interest to a society of specialists, I have chosen the above subject for several reasons.

In my professional experience, I have been closely associated with a number of cases of acute tetanus, the more or less unsuccessful treatment of which has given rise in my mind, to a number of theories based on close observation. Several of these theories I shall dwell upon in detail, hoping for a liberal discussion from the members of the society as to their respective values.

Again, at the present time, tetanus is the greatest military scourge of Europe. In the German army alone its victims have reached the proportion of almost nine per thousand, several times higher than in any past war. This is due to the *humane?* method of modern fighting. It is a war of artillery with its lacerated shell and mangled shrapnel wounds. The soldiers are compelled to live in dirty trenches amid human and animal excrement, and when wounded are packed like sardines into unclean transport cars, sometimes lying for hours before receiving proper medical attention. Their wounds are filled with mud impregnated with the tetanus bacillus, so prolific in the well fertilized fields of the warring countries. Clinical material for experimental therapy is plentiful, and I believe the close of the war will bring us many valuable aids in the treatment of this fatal malady.

It is necessary to review briefly its pathogenesis in order to understand clearly the treatment. Tetanus is essentially a disease of the spinal cord and medulla. The brain is never affected except in the experimental form known as "cerebral tetanus." The bacillus gains access to the tissues through a wound or abrasion of the skin and mucous membranes, inflicted by a contaminated object. Owing to the many cases in which absolutely no history of such an injury can be obtained, some authorities hold that the disease may be acquired by the ingestion of new vegetables or even through the air, and that this may account for the cases of obscure origin. In order that the anaerobic bacillus may flourish, the wound must be of such a character as to prohibit the easy access of air, or its entrance must be accompanied by some aerobic micro-organism which will rapidly absorb all the oxygen contained in the tissues. The tetanus bacillus is

non-pyogenic and causes little reaction in the wound: hence, suppuration is the result of a mixed infection. (It is remarkable what fatal cases can often develop from the most trivial and unnoticed lesions). The toxin, or toxalbumin, generated in the wound is taken up by the axis-cylinders of the motor nerves and transmitted to the spinal cord. It has been conclusively proven that neither the sensory nerves nor the blood or lymph channels are instrumental in carrying the poison. When it reaches the cord it puts the motor cells of the anterior horn in a condition of hyperexcitability so that they are more easily aroused by the stimuli constantly pouring in through the sensory nerves, and a tonic contraction of the muscles results. Later the sensory ganglia are affected, resulting in a condition of great reflex excitability, so that a clonic convulsion may be produced by the slightest peripheral irritation.

The symptoms of tetanus are too well known to dwell upon except to bring out the necessity for prompt prophylactic treatment. Do not wait for the diagnosis; when that can be positively made the patient is not beginning to have tetanus, but is beginning to *die* from tetanus. There are no prodromes; the worst cases come on without warning. The earliest symptoms are a mask-like appearance of the face, pain and stiffness in the posterior cervical muscles, sometimes local spasms of the affected extremity, and slight difficulty in speech and swallowing. Later, rigidity of the masseter muscles occurs with gradual involvement of the entire muscular system.

The prophylactic treatment of tetanus is local and general. All wounds, no matter how trivial, should be regarded as likely breeding places for tetanus bacilli; especially is this true of crushing wounds from machinery, gunshot wounds and those that contain dirt from roads, streets, barnyards, gardens, etc. A culture should be made from the wound as soon as possible: the bacillus is frequently found and hence the treatment simplified. Next, a thorough disinfection of the wound must be carried out, and to be effectual this must be radical. If necessary, use a general anaesthetic. The wound should be opened throughout its entire length (sometimes it is wise to completely excise it), all dirt and necrotic tissues removed and the wound surface con-

tinuously irrigated with antiseptic solutions. Of these the most effective are a two per cent. solution carbolic acid; one per cent. iodine—trichloride solution; and twenty-five per cent. hydrogen dioxide solution. For the subsequent dressings iodoform gauze, lightly applied, is to be recommended because of its iodine content; or better still, the liberal use of tetanus antitoxin in the form of a dry powder dusted on the wound. This powder is now available on the market and is very effective in neutralizing directly the toxins elaborated in the wound. The wound should not be cauterized either by the actual cautery or powerful local escharotics, such as pure carbolic acid and tincture of iodine, for the reason that these produce a slough over the wound surface and prevent the easy access of the oxygen in the air, thus supplying a better field for the growth of the micro-organism.

If the culture is positive some authorities advocate immediate amputation of the part affected, or at least a section of the nerve leading from the part, thus blocking the transmission of the toxins to the cord. In any suspicious wound the immediate administration of an immunizing dose of tetanus antitoxin is indicated. The average immunizing dose is 1500 units, and it is best given intravenously, owing to its very slow absorption when injected subcutaneously. It also is effective when injected intramuscularly into the immediate neighborhood of the wound. This dose should be repeated before the end of the first week and at the end of the second week, in order to prevent the possible development of a late tetanus. The antitoxin should be given daily for two weeks when the bacillus is found in cultures from the wound.

Curative:—The curative treatment of tetanus has been a disappointment; in fact, the disease should be considered a self-limited one. Therefore, we have a wide field for experimentation. Up to the present time the therapeutic methods which have found most favor are Bacelli's carbolic acid treatment; subdural injections of magnesium sulphate; injections of brain emulsion, and serum therapy.

The carbolic acid treatment consists in the subcutaneous injection of a one per cent. solution of phenol until eighty grains are given to an adult in twenty-four hours. Its use is based on the assumption that it acts as a tis-

sue antiseptic and also diminishes the reflex excitability of the cord. Outside of Italy, where this method originated, the results reported are not at all convincing.

The subdural injections of magnesium sulphate into the lumbar spinal canal have produced promising results in some cases, but the effects are so uncertain and often dangerous that its routine use is not to be advocated. I have seen one case of sudden respiratory failure result from its administration.

A very popular treatment in Russia at the present time is the subcutaneous injection of an emulsion made from the fresh brain of a rabbit or sheep. It is based on the principle that brain tissue has a special affinity for tetanus toxin. Favorable results from its use have been recently reported.

Perhaps the most universal method of treatment, however, is the use of tetanus antitoxin, in spite of the fact that as a curative agent it has been most disappointing. This is explained by the fact that the cells of the spinal cord have a great affinity for the toxin but are unable to take up the antitoxin. Also the many failures are due in great part to errors in administration. It has been shown that when injected subcutaneously, intravenously, or even by ordinary lumbar puncture into the subarachnoid space, the antitoxin does not reach the cells of the spinal cord and can therefore neutralize only the toxins circulating in the tissues. To counteract the effect of the toxins on the spinal cord the injections must be made into the nerves leading to the cord, or directly into the cord itself. This has been done by Rogers in a series of cases with convincing results. His method of administration is as follows:—

(1) Ten to twenty c.c. should be injected into the tissues about the wound; (2) ten to twenty c.c. should be injected intravenously and intramuscularly in order to neutralize the toxins circulating; (3) five to twenty minims into the nerves of the axillary plexus if the wound is in the upper extremities, or into the crural or sciatic nerve if the wound is in the lower extremities; (4) ten to twenty c.c. into the nerves of the cauda equina. It should always be remembered that the antitoxin is absolutely harmless and a maximum amount should be given as soon as possible and repeated frequently. Reports from the European battle-fields indicate more or less use of all these dif-

ferent methods with varying results, favorable and unfavorable.

The narcotic drugs, particularly morphine, chloral, bromides, and chloretone, hold an important place in controlling the severe convulsions of the disease, and should be freely used, keeping in mind, however, their depressing effect on the circulation.

At this point, I should like to suggest the possibility of treating these cases with attenuated solutions of the spinal cords of animals affected with tetanus in much the same manner as is done in rabies. The pathology of both diseases is very similar and I should like to obtain an opinion from the pathologists present as to its feasibility.

It has also occurred to me that the agonizing convulsions characteristic of the disease could be easily controlled by producing spinal anaesthesia through lumbar puncture just as is done in surgical operations. This would inhibit temporarily the great reflex excitability of the cord and give the patient much needed rest. It is absolutely safe in competent hands and seems to me practical and physiological.

Again, I observed in my cases that most of the respiratory difficulty present was caused by contraction and fixation of the diaphragm resulting in cessation of respiration. I suggested at the time, to the surgeon in charge, the possibility of overcoming this trouble by paralyzing the phrenic nerve on one or both sides by injecting with alcohol or even cutting, but he considered it too radical. I have seen in a recent article of foreign war news that this operation has been performed by a military surgeon on several cases with very promising results. The phrenic nerve can be reached without difficulty, and under a local anaesthetic, beneath the anterior border of the sterno-mastoid muscle as it crosses the posterior belly of the omo-hyoid. This same surgeon has also performed several tracheotomies for the respiratory convulsions, with marked relief resulting.

In closing, I wish to bring out strongly one point in the nursing treatment of tetanus which I fail to find mentioned with sufficient emphasis in the literature, and that is *absolute watchfulness*. In the great majority of cases death is caused by contraction and rigidity of the muscles of respiration, and spasm of the laryngeal muscles so that the patient

literally chokes himself to death. Just at that period where he loses consciousness the muscles of the jaws relax; the mouth can then be forced open and artificial respiration performed with revival of the patient in almost every case. The heart seldom fails first. Hence, it is important that the patient should not be left alone one moment but should have the constant attendance of a physician or someone thoroughly trained in the use of artificial respiration. A pulmotor, screw mouth gag, tongue forceps, and pearls of amyl nitrite should be kept in easy reach of the bedside. I have had to employ artificial respiration on one case as many as ten times in one day, but the outcome was successful and I believe more cases can be saved by close attention to that one point than by all the therapeutic measures available.

Case Reports:—I have here ten case charts taken from the records of Children's Hospital and covering a period of the last five years. Of the seven cases of acute tetanus, six were fatal. The three cases of chronic tetanus all recovered.

Two of the cases of acute tetanus I had personal charge of. One of them received 95,000 units of antitoxin subcutaneously and recovered. I will state, however, that he would have died at least twenty times but for the use of artificial respiration. The other case was similar in many respects as regards frequency and severity of convulsions; he received 15,000 units of antitoxin and did not recover. This I attribute to lack of experience on the part of the attendant nurse who failed to notify me promptly enough for artificial respiration to be of value.

I present these two cases particularly to bring out the futility of subcutaneous injections only of antitoxin, and to emphasize the necessity for constant watchfulness.

The other cases illustrate how often no history of injury can be obtained, and the trivial nature of some causative wounds.

1219 Connecticut Avenue, N. W.

DISCUSSION.

Dr. Larkin: I have had 3 cases, of which 2 died. They were of interest principally from an etiologic standpoint. In one case a tooth had been removed and the patient ate celery, infecting the open wound. In the second the

infection came from a punctured wound of the intestines during an exploratory laparotomy. The third case was a child with an extensive burn, in whom a skin-graft was followed by tetanus in 4 days.

Dr. Rogers: I like iodine solution as prophylactic. If tetanus develops within ten days it is always fatal. I recall a valuable race horse which got tetanus and recovered after use of antitoxin.

Dr. Verbrycke: If, as has been claimed, tetanus bacilli are present in the stools of 5 per cent. of all individuals, it seems surprising, in view of the large number of ulcers of the stomach and duodenum, fissures of the rectum, etc., that more cases of "idiopathic" tetanus should not develop.

THE BANEFUL EFFECT OF IGNORANT PREACHERS ON NEUROTICS.

By A. B. GRUBB, M. D., Cripple Creek, Va.

All rural communities and even cities have a great class of ignorant men who, in an unfortunate hour, have a "call" to preach.

They do preach when the "call" comes, and they have a wide following. They appeal to the emotions of their hearers only, and always have for their themes such weird and grotesque subjects as the end of time, floods, eclipses of the sun, hell-fire, the weeping and wailing and gnashing of teeth, death, the unpardonable sin, ghosts, witchery, and other things which strike terror to the hearts of their hearers. The louder they can exclaim, the more cases of hysteria they produce, and the more successful has the meeting been.

Now, happily for us, we have evolved from that age when witches (innocent women) were burned at the stake, and we have passed the age of persecution, when holes were burned through the ears and tongue, stoning and whipping were practised, and all because of different religious faith; but even yet religious hysteria is holding back the progress of communities, is sending people to the asylum, is producing violent forms of hysteria and is simply making common neurasthenics.

While this is more common in the negro race, yet the white race has large proportions. For instance, the "Holy Rollers" and "Holy Jumpers" have gained a foot-hold in many communities. They are strange sects, who work their victims up to a high degree when

they assume during their "trance" positions of opisthotonus, passionate, and other typical attitudes, all the plain French forms of hysteria. Their chief doctrine is that when the "spirit" comes upon them they speak in strange tongues and lie prostrate on the floor in a trance and even see the Saviour while in this trance.

It is our duty to explain to these people that the trance is psychological, and that we can break this trance ourselves.

During their meetings when they had reached the climax of ultra-emotionalism, a member told me that one of them, when the "spirit" was on, could be cut to pieces and never know it. I told him that I could break the hysteria ("spirit") myself within two minutes, and that if I failed I would join their number. The challenge was never accepted, and it threw a great damper on their meeting. They began one by one to lose interest and, in fact, have just about given up their foolish ideas. I doubt if all other things are producing as much hysteria as are these poor misguided preachers.

But let us see about neurasthenia. Many a poor, nervous woman is so excited by the fear of the end of time, of death, of "spirits," etc., that she does not sleep at night. She has every variety of phobia, fear of dropping dead, fear of forests, fear of unpardonable sin, etc., until she just simply becomes not only a neurasthenic, but even becomes insane. For instance, a preacher of my acquaintance said, "the earth is not round; the earth does not turn over; and any man who says it does is getting a 'heap smarter' than his God, and will be punished in hell forever for trying to get 'smarter' than his God."

Such a statement as this would be very soothing to a mother whose son is a believer in the earth being round.

We should always tactfully explain our views of trances, of hysteria, and of psychology. No matter how ignorant a person is, he or she can always see the reasonable side of a question.

The greatest antidote for ignorance is just a little patience and explanation. People will absorb ideas. "An invasion of armies can be resisted, but an invasion of ideas cannot be resisted."

Explain to an ignorant man that Mrs. Blank

had a fit of hysteria at church, and the next day got angry with her husband and had the same fit, and he will see the similarity almost as quickly as the University President.

When you explain that you can break the fit in both instances by supra-orbital pressure, cold effusions, matches, hot irons, etc., you have made another irresistible invasion of ideas.

So let us use prophylactic measures against all germs, micro-and macro-in size.

THE EFFECTS OF TEMPERATURE AND SEASONS UPON NUTRITION—OUR FOOD SHOULD BE REGULATED ACCORDING TO THE SEASONS.

By THEODORE WILLIAM SCHAEFER, M. D.,
Kansas City, Mo.

"The destiny of nations depends solely upon their nutrition," says Brillat-Savarin, the great epicure and talented author of the once famous book on gastronomy, entitled "Physiologie du gout" (Physiology of the Taste), which was published in 1825. This sentence, of course, contains a considerable grain of truth, but is certainly somewhat overdrawn, because nutrition does not do it all, neither in the case of a single person, nor in the multitude.

The united influence of temperature and nutrition, however, have a great effect on tissue metabolism. Speaking of the influence of temperature upon tissue changes, it is a fact that man as well as the warm-blooded animals inhale more oxygen and exhale more carbon dioxid in a surrounding cold atmosphere than one that is warm. The inspiratory movements are deeper and more numerous in cold air, in consequence of which there is a greater inflow of oxygen, which enhances an increased tissue change. In connection with this fact, it is apparent that we partake of a greater quantity of food in winter which is richer in fats than the one we partake of in summer; for this reason the form or mode of nutrition of the Northerner and Southerner undergoes a correspondingly great variation. The nutriment of the Eskimo, rich in fatty substances, differs in every particular from that of the inhabitants of the tropics. We, who dwell in a temperate climate, do not share the same mode of living peculiar to the inhabitants of the extreme north, nor those of the inhabitants of the equatorial regions.

The tissue metabolism of the Southerner is

characterized by giving off a less amount of heat to the surrounding air and is also less in amount than that of the Northerner; the chief article of food in the case of the Southerner consists in carbohydrates, with a large oxygen content, such as sweet southern fruits, rich in fruity acids. (D. J. Konig, *Die menschlichen Nahrungs- und Genussmittel*, Zweiter Band 1904, p. 364.

The food of the Japanese is essentially different from that of the Anglo-Saxon. This is also the case of the Italian, whose food differs very much from that of the Russian. It is obvious that the mode of nutrition of the Northerner and Southerner must be different in every particular. The most powerful protection against cold is food.

The carnivorous animal can subsist for a short or long time exclusively on pure muscular meat. That cannot be done in a similar manner by man. Man expressly, at least civilized man, whose digestive apparatus is adapted for a *mixed diet*, is not able to consume the excessive quantities of meat that would be necessary for his complete nourishment. When subsisting upon an exclusive meat diet it is absolutely necessary that fat be introduced into the body at the same time. In cold regions man requires such food as not only supplies him with the necessary nutriment, but also with heat: as oil, fat and meat in which the carbonaceous content (richer in carbon) predominates.

With meat alone man cannot completely nourish himself: he requires a *mixed diet*, which, besides protein, contains a requisite quantity of fat. Even those people who do not subsist upon vegetables, but live on an exclusive animal alimentation, consume besides the pure muscular flesh, very much fat, and know very well how to appreciate it. In the absence of vegetables, man is compelled to eat moss as a vegetable food. The Eskimos, who live almost exclusively on the meat of fish, drink much blubber or train oil, the fat of the liver of fishes. Other people of the extreme north who subsist on an exclusive animal diet esteem highly the meat that is rich in fat and keep a supply as their very first and best delicacy.

THE SAME DIET THE ENTIRE YEAR.

Man living in the temperate zones should regulate his diet according to the seasons, for there are various gradations in which the con-

stituents of the diet bear a very direct relation to the prevailing temperature. There are many persons who subsist in summer upon a diet which is wholly adapted for winter. Enormous quantities of meat are partaken of during the hot summer months. It is perfectly rational that the food should harmonize with the changing seasons.

In warm countries the most essential condition to the nutrition of the body is that the food should be as little heating as possible, that is in carbohydrates rich in oxygen, requiring but comparatively little energy to maintain the bodily equilibrium. The free and liberal ingestion of water is of supreme importance.

It is an admitted fact that the body can be much better supplied with food in winter than in summer. Indeed, it is a difficult problem to feed the body during the hot summer days. From a climatological point of view the colder zones have relative advantages over the extremes of the tropics as far as proper alimentation is concerned.

The real trouble lies, if we wish to comprehend the question correctly, in an entirely different direction:—*It consists of a lack of fresh vegetables and fruit, especially during the summer months, that are rich in basic mineral constituents!* There is probably no other cause so fruitful in producing gastric and intestinal diseases of which the American people are in a peculiar degree the victims, as the neglect of a change in a rational diet in harmony with the time of the year. *The so-called beneficial excess of proteid food is an unknown quantity!* The luxus consumption of proteid food has a limit and too great an excess of proteids causes troubles of digestion and of the general nutrition.

514 Grand Ave. Temple.

ROENTGEN RAY THERAPY IN LARGE MEASURED DOSES.*

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Roentgen ray therapy has deservedly fallen into disfavor in many quarters because of three facts: first, the majority of operators were not good pathologists; second, because they measured neither the quantity nor the quality of the

ray that they were using; third, because they did not study the resistance of the tissues through which the ray must pass. In other words, this powerful form of treatment has been used blindly by the vast majority of men.

This paper will deal only with the second point,—the technique of giving proper doses. At the onset it should be stated that certain diseases require large doses and that others require small doses. In some instances a ray of great penetration must be employed, while in exceptional instances a comparatively low tube should be used.

There are two methods of using the X-ray in therapeutics,—the repeated fractional dose method, and the massive dose method. The former is in general use in America, the latter in Europe. According to the method in vogue in this country, X-ray exposures are repeated until the desired results are obtained or until a burn results. This method is long drawn out, expensive and absolutely unscientific, inasmuch as the operator has no idea as to how much ray he is using, for a tube may vary greatly from day to day. As a result of long continued exposures the pathological condition either acquires an immunity to the rays, or a condition of atrophy may result that later leads to cancerous changes. It is evident then that a few larger exposures must take the place of many smaller ones. In order to do this one must have some means of measuring his dose. This can be done in two ways,—by the direct, and by the indirect methods. According to the former way, the operator judges of the amount of current that the patient receives by noting the amount that passes through the milliamperemeter, by the distance of the tube, and by a previous experience with the tube in question. It is probable that with the new Coolidge tube, which can be regulated to operate in any desired way, this means of measuring will prove eminently satisfactory. However, with ordinary tubes it is absolutely essential to have some means of accurately measuring both the quality and quantity of the ray used. The former can be satisfactorily estimated by means of the Benoist penetrometer, and the latter by the Sabouraud-Noire pastilles in conjunction with the Holzkecht radiometer.

The technique, while exacting, is not difficult. After the patient is put in position and

*Original abstract of a paper read before the Medical and Surgical Society of the District of Columbia, March 4, 1915.

For discussion, see page 226.

the tube, preferably a water cooled one, adjusted, a pastille is placed upon the skin of the patient. It is better to place the pastille upon the skin rather than at half distance, because many patients will move, the half-distance arrangement is always bunglesome, and the tube can be placed much closer, thus giving a shorter exposure and prolonging the life of the tube. From time to time readings are made upon the radiometer. It should be understood that exposure to the ray causes the pastille to become darker, and this exposed pastille is matched up against another pastille that slides up and down beneath a colored piece of celluloid. The exposure should always be made in a darkened room, inasmuch as light, either natural or artificial, will cause a pastille to return to its original color with considerable promptness.

The choice of a tube is important. A hard tube will burn far less readily than a soft one, especially if a filter is interposed between the tube and the patient: it should always be remembered that even a hard tube emanates many soft rays. Much more latitude can be given an exposure if a filter is used. For instance, 4 Holz knecht units of a soft unfiltered ray will frequently produce a dermatitis, whereas 7 units of a hard filtered ray may usually be given with impunity. For filtration, one may use from 1 to 3 millimeters of aluminum or from 5 to 24 layers of chamois, or either leather or wood.

The question as to the idiosyncrasy of the patient is an important one. Will one patient be affected from a dose that will not affect another one? MacKee, who has had the most experience with this mode of treatment, thinks not, if certain general rules are borne in mind. He gives the following table of doses that will produce the maximum effect without burning:

Children—face 1 H. U.; head and joints 2 H. U.; body 3 H. U.

Middle aged adults—face 2 H. U.; head and joints 3 H. U.; body 4 H. U.

Aged persons—face 3 H. U.; head and joints 4 H. U.; body 5 H. U.

In our own work we have found that a black negro will tolerate, with the formation of considerable pigment, doses that will cause a severe burn in a white skin. It must also be remembered that certain inflammatory diseases of the skin, such as psoriasis, lichen planus,

and some cases of eczema, as well as various conditions, will not tolerate a large dose of the rays without a considerable reaction.

To note a few conditions in which we have found this form of treatment useful I may mention—chronic thickened eczema, psoriasis (?), lichen planus, a very few selected cases of skin cancer, for we believe that cancer is primarily a surgical disease, tinea tonsurans, keloid, and tuberculous glands of the neck. At the Freedmen's Hospital our results with the latter have been very happy.

Proceedings of Societies, Etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Reported by L. C. ECKER, M. D.

The Society met March 4, 1915, Dr. John Dunlop presiding. The first order of scientific business was the presentation of **Pathologic Specimens.**

Dr. Eliot exhibited a piece of bone swallowed in soup by a boy 15 years old. He felt the bone going down; was given mashed potatoes and bread and on the following day castor oil with active results. Three days later had pain in posterior part of rectum. Palpation revealed the bone which was removed with forceps under a general anesthetic.

Dr. H. H. Hazen read the essay of the evening entitled: *Roentgen Ray Therapy in Large Measured Doses.**

DISCUSSION.

Dr. Groover said the methods used today are very different from those in vogue a few years ago. Then the practice was to give small doses at intervals until the desired result was obtained or a dermatitis resulted. The latter was often worse than the primary condition. Now the single massive dose is used. This is made possible by instruments for measuring the dosage. The speaker uses the technique as outlined by Dr. Hazen. He finds the Coolidge tube more suitable in his work. It seems to simplify and his results have been much more encouraging. He depends a great deal on the spark from the Coolidge tube as to the penetration. Agrees with Dr. Hazen as to the selection of cases. It is excellent for post-operative treatment, and is used in nearly all his

*For Dr. Hazen's paper, see page 225.

cases. Believes that, properly administered, this is excellent for tuberculous glands, also uterine myomas.

Dr. Van Sweringen has had more experience with tuberculous glands, in which the results have been most pleasing. The speaker mentioned the following cases to illustrate the results obtained:

1. Boy, aged 10. Left anterior cervical glands. Three treatments were given, two of which were one week apart; then after one month, one more. Benoist penetration 5 to 6. Holtzknecht 3-7 and 4, respectively; milliamperes $2\frac{1}{2}$ -5 and 4 respectively; leather filter. Result, cure. Gland converted into fibrous tissue. Considerable pigmentation.

2. Girl, 17 years. Right cervical gland. Four treatments. The first three were given one week apart and the fourth two weeks after the third. This was followed by considerable pigmentation and some tenderness to touch. The gland is no longer palpable. The treatment consisted in Benoist 6-7; Holtzknecht 3-5, 3-8, respectively; leather filter.

3. Case spleno-myelogenous leukaemia. Two treatments one week apart. The spleen disappeared. The rays were used first over both knees, then over each elbow. Used Benoist 4; Holtzknecht 5. This case left the hospital and unable to discover his whereabouts.

4. Case of psoriasis; four treatments two days apart were given to different parts of the body,—first, both shins, then right arm, followed by left; then both buttocks and posterior thigh; No filter used. Benoist 5; Holtzknecht 4-5-7-5 respectively. Improved. No itching and few scales.

5. L. K. Left anterior cervical glands. First treatment on November 18, 1914. Gave Benoist penetration 5 and Holtzknecht 8, with a leather filter. On November 27, administered the same excepting Holtzknecht 6. No further treatment until January 27, 1915, when there presented a small area with a scab which was not inclined to heal. Given Benoist penetration 5 and Holtzknecht 6.

6. Gland in sublingual region. On November 20, 1914, given Benoist 5 and Holtzknecht 5, using a leather filter. Repeated on November 30 and on December 26, given Benoist 7 and Holtzknecht 4.

7. Right axillary and posterior cervical. November 23, 1914, Benoist penetration 8 and

Holtzknecht 4 with a leather filter. On December 28, given Benoist 7 and Holtzknecht 5. This case showed a local alopecia about 8 days after second treatment. This is now showing a new growth of hair.

The above glandular cases all seem apparent cures, the enlargement disappearing, and where the glands were broken down is probably replaced by fibrous tissues.

8. Sinus in left axilla existing for one and one-half years. Two operations without results, combined with medical treatment. Numerous discharging sinuses. Treatments as follows: December 7, 1914, Holtzknecht 5 and Benoist 7; December 14, Benoist 7 and Holtzknecht 5; January 6, 1915, Benoist 7 and Holtzknecht 3; February 1, Benoist 5, Holtzknecht 6. On this latter date the patient showed marked improvement; all the glands were much reduced in size, hard and fibrous, nothing remaining except sinus in axilla which is nearly closed and not discharging.

In addition to the above, *Dr. Van Sweringen* mentioned numerous keloids with which he had excellent results, using no filter and a low tube with Holtzknecht 7 to 12. Had several cases of eczema in which small doses relieved the itching very promptly. It is also useful in ring worm.

Dr. Hazen, in closing, said that, in speaking of the Sabourand-Noire pastille, he had two sets. In one of these the color returned without any difficulty, and in the other the degree varied. There must be a difference in the various makes. Great care must be taken with them. Should be kept in a humidor and out of the sun. There are two distinct types of skin cancer—the basal cell, found around the eye, and the prickle cell cancer, which appears on the tongue, lips, penis, and lower extremities. This is the malignant form. These should be treated surgically, and when in doubt as to the type the entire growth should be removed. The speaker is convinced that one can do as well with the X-ray as with radium; also, the dose of radium cannot be measured. In the past the mistake was made in using too soft a ray, and there was always the danger of not having sufficient penetration, in which case the skin may heal over with a rapidly growing cancer beneath.

Dr. Walsh reported the histories of cases of *Acute Indigestion*.

DISCUSSION.

Dr. Fremont-Smith said myocardial involvement is responsible for most of the sudden deaths occurring in such cases after 55 years, the additional strain which may be thrown upon the heart proving too much. It is not easy to make a diagnosis. At times the blood-pressure, the electrocardiogram tracings, all prove of no aid. If these cases were very carefully autopsied, and microscopic examinations made, in all probability they would show some myocardial change.

Dr. Kober thinks there is considerable foundation for the supposition advanced by *Dr. Walsh* in that toxins and ptomaines are capable of producing sudden death. The speaker mentioned the condition at Annapolis at the Naval Academy due to a poor milk. There were 1,500 cases of gastric disease; this was reduced to 200 with proper milk supply. The effects of this poison resembled very much that produced by the alkaloidal poisons. It might be useful in cases of sudden death to have the stomach and contents examined by a competent chemist.

Dr. Walsh, in closing, remarked that he was puzzled to account for the death in these cases apparently after they had recovered from the more violent symptoms.

Dr. Hickling read a paper entitled, *Some of the Mental Conditions Underlying Psychoneuroses and Psychoses*.

Dr. E. L. Morgan, in discussing this latter subject, remarked that hobbies prove a great source of entertainment and relaxation. Personally, anthropology is his hobby. It is so by inheritance.

AMERICAN PROCTOLOGIC SOCIETY.

Reported by A. J. ZOBEL, M. D., Sanfrancisco, Calif.

(Continued from page 98.)

Crude and Careless Diagnostic Methods, and Results of Same, in Some Recto-Colonic Conditions.

By JNO. L. JELKS, M. D., Memphis, Tenn.

The author criticises the busy doctor and surgeon who too hastily yield to a conclusion and treat recto-colonic diseases without sufficient investigation to warrant or obtain a correct diagnosis.

Reference is made to cases operated on for appendicitis, which diseases may be an exten-

sion of an infection and inflammation originating in the rectum or colon.

Cases are cited to show the frequency and at all times the liability of mistaking a condition for an infection or ulceration of the colon, specific in character, when a coloptosis or pericolic membranes, or both, were the true etiologic factors. Stress is laid on the importance of urinalysis, microscopic examinations and the X-Ray in recto-colonic cases.

A harder nodular calcareous degeneration of the outer zone of the mamina has been observed as a sequence of coloptosis and defective drainage. In another case, in which was found a cecum cradled in pericolic membranes, and a coloptosis, a duodenal ulcer was diagnosed. In this case the urinalysis, the history, and general toxic appearance of the patient, pointed to true etiology.

Case reports are given in which diarrhoea was the dominant symptom, though impactions, pericolic membranes, and ptosis were the true etiology.

The author calls attention to his prior reference to, and work of establishing the importance of conserving the ileo-cecal valve; also to the syphonage of a ptosed colon after short circuiting operations, which he accomplished by a second anastomosis between the blind colon and the sigmoid or rectum below the first anastomosis.

Importance is claimed for a microscopic examination of the intestinal contents of patients who suffer from attacks of appendicitis, and of the contents of the removed appendix; and the author insists that in the event that pathogenic amebæ are found appendico-cecostomy should be performed instead of appendectomy.

The author refers to his observation of quite marked congestion of blood in the visceral vessels themselves in these cases of ptosis and defective intestinal drainage.

The author refers to the frequency with which he encounters cases of inoperable cancers of the rectum and intestines, the neglect of which is most often due to the fear of examination of those suffering with symptoms in the regions referred to.

Reference is made to the operation of appendico-cecostomy as being practically free of danger to life. In his opinion this operation would save almost every life that is to-day caused by the ravages of amebic colitis.

Abnormalities of the Colon, as Seen with the Roentgen Ray; Lantern Slide Demonstration.

By W. I. LeFEVRE, M. D., Cleveland, Ohio.

The entire alimentary tract can now be successfully examined with the X-Ray, some parts more readily and successfully than others, according to the degree of satisfaction, arranging themselves in the following order: Colon, Stomach, Oesophagus, Small Intestine. Two methods of examination are used. First, Roentgenoscopy, which is the examination with the fluoroscope. Second, Roentgenography, the making of X-Ray plates. The Colon is also accessible from either end, that is it can be examined by following the bismuth meal through from the stomach, or by giving an opaque enema of barium sulphate. In the former method the motor phenomena of the colon can be observed, in the latter the size, position and contour can be seen.

The action of atropin, adrenalin, pilocarpin and physostigmine as affecting the action of the bowel is briefly discussed.

The normal colon is described in detail, with radiographs showing different types. Many vary from the "ideal" type and still are normal for that individual.

Abnormalities of the colon may be produced by congenital defects, disease or injury to the bowel proper, from pressure, constriction or relaxation of other organs in close proximity. Coloptosis, owing to its frequency and importance, is first discussed with radiographs showing these conditions. Other abnormalities consist of stenosis, malignant growths, tuberculosis, kinks, twisting, hernias, diverticula, and megacolon or Hirschsprung's disease. All these conditions can be recognized by aid of the X-Ray.

Abscess Originating in a Pilo-Nidal Sinus.

By LOUIS J. KROUSE, M. D., Cincinnati, Ohio.

The writer states that a pilo-nidal sinus is a congenital defect due to a faulty development of the fetus. It is usually located in the median line over the coccyx or the sacrum. Inflammation developing in the sinus is followed by burrowing of pus into the neighboring tissue. Inflammation of this sinus must be differentiated from necrosis affecting the sacral or coccygeal bone; from abscess originating in the sebaceous gland of this organ;

and from true fistula-in-ano. The treatment consists in the complete obliteration of the walls of the sinus.

Editorial.

Old Age.

Do we as doctors take the same interest in people who are beginning to approach old age as we ought to? There are a few reasons why we "hang back" but more why we, as family doctors, should press forward.

In the first place we are rather shy about obtruding ourselves on people who do not ask for advice. Again, we do not wish to alarm our friends by suggesting that they undergo a physical examination: and finally, if we find something of a chronic nature present we may be somewhat perturbed as to the best manner of overcoming the defect.

Some life insurance companies have already taught us the importance of a careful examination from time to time of policy holders. But, aside from that, we as conservers of the individual and public health of the people should go more thoroughly into the mode of living, the method of work, and the usual manner of the life of all of our patients past 40 years of age.

What, then, constitutes "old age?" Surely it is not the actual years that a person has lived on this earth, but it is rather his aptitude and capacity, both physical and mental, for performing his usual work. Without going into an extensive discussion of the various symptoms, we may say that loss of memory for recent events, disinclination for physical work and a perverted or rather an increased appetite, are the leading signs. Some men and women show this at 40 years of age while others are pointed out with pride who preserve their "faculties" till seventy or over. It behooves every person past 50 years of age to go to his physician once each year, as he does a dentist if he has any teeth left, and undergo a careful examination. First, as to his kidneys, regarding the quantity of urine passed in 24 hours, the presence of albumin or sugar or other abnormalities. Then the digestive system, as to the quantity and character of food taken. We need less meat and more starchy food as we grow older—and finally a

skin examination for cutaneous cancers and other conditions. It has been my custom for a long time to reason with all persons who show symptoms of advancing age to submit once each year to a thorough physical examination. By this means incipient diseases have been discovered and in many instances corrected.

M. D. HOGE, M. D.

The Medical Examining Board of Virginia.

With the 113 applicants appearing before the Board at its June examinations, there has been a total of 4,892 applicants to appear before the Virginia Board for license to practise in this State, since its organization January 1, 1885. The following is a list of those obtaining licenses to practise in Virginia at the last examinations:

Drs. Jas. Brent Anderson, Roseland; L. Davis Arbuckle, Richmond; Thos. N. Barnett, Richmond; Annie W. Bell, Wilburn; R. V. Blackwell, Kenbridge; Edgar A. Bocoock, Richmond; Geo. W. Botts, Appalachia; Jas. C. Braswell, Richmond; Benj. F. Brugh, Troutville; Jas. S. Burger, Farmville; Calvin H. Childress, Richmond; Edwin M. Corns, Gate City; C. Byrd Courtney, Richmond; Eugene P. Cox, Wood; Richard B. Davis, Richmond; Paul Davis, Roanoke; B. A. Doggett, Richmond; Hunter McGuire Doles, Ivor; Jno. M. Dunnington, Farmville; Jno. M. Emmett, Richmond; Ralph S. Faris, Richmond; Marion S. Fitchett, Cape Charles; F. P. Fletcher, Jr., Richmond; Jno. W. Fowlkes, Jr., Washington, D. C.; Louis Friedman, Berkley; Bud Friel Fulks, Lambsburg; R. Finley Gayle, Jr., Richmond; Chas. G. Giddings, Jr., New York, N. Y.; S. G. Giel, Petersburg; Archie E. Gordin, University; David W. Grant, Richmond; H. Lee Gregory, Chicago, Ill.; Russell L. Haden, Crozet; Chas. N. Harper, Trenton, N. J.; Henry J. Hayes, Richmond; Saml. M. Hodes, Richmond; Jno. H. Hoskins, Dunnsville; Chas. R. Irving, Richmond; Julian D. Jackson, Richmond; George G. Junkin, Richmond; William Karp, Richmond; Fred. J. Kellam, Richmond; Edw. Kilby, Detroit, Mich.; Thos. Allen Lamb, Port Republic; J. Jas. Ligon, Lynchburg; Alex. G. Low, Welcome; B. R. Lyon, New York, N. Y.; Jas. A. Martin, Richmond; Robt. L. Mason, Bridgewater; Edw. G. Maupin, Portsmouth; Geo. Wm. Maxfield, Malcom, Iowa; R. Benj. McArthur, Bristol, Tenn.; Wm. W. McChes-

ney, Abingdon; R. H. McCutcheon, Franklin; Jno. McGuire, Cedar Bluff; Wallace Mercer, Richmond; E. B. Miller, Elkton; J. C. Moxley, Ennice, N. C.; Benj. L. Naiman, Baltimore, Md.; Hugh W. Neel, Cass, W. Va.; W. J. Otis, Richmond; R. H. Peake, Richmond; C. Bernard Ransone, Richmond; Elton A. Ratcliffe, Eccles, W. Va.; Jas. E. Rawlings, Daytona, Fla.; Wm. A. Reese, Richmond; Geo. G. Rhudy, Elk Creek; Saml. B. Riggs, Jersey City, N. J.; Geo. S. Riggins, Tabb; E. M. Riley, Hoges Store; Edw. S. Roane, Richmond; Wm. H. Roberts, Lynchburg; A. W. Saunders, Chicago, Ill.; Geo. Wm. Scheneck, Norfolk; F. X. Schuller, Winchester; C. Iredel Sease, Richmond; Jas. T. Shelburne, Christiansburg; H. G. Sherman, Chester, N. J.; J. A. Shuler, Baileyton, Tenn.; Saml. C. Smith, Benge, Ky.; Saml. L. Stallard, Roaring Fork; Lewis B. Staton, Richmond; Ralph W. Stoneburner, Edinburg; A. M. Stonesifer, Limestone; Jno. Thos. Stringer, Portsmouth; Jas. L. Stringfellow, Batna; L. E. Stubbs, Belroi; E. D. Supplee, City Point; Wm. B. Trower, Richmond; Chas. D. Underhill, Manakin; Manville T. Vaden, Richmond; Jno. B. Vaiden, Jr., New Kent; Wm. L. Varn, Walkerton; J. C. Vaughan, Richmond; Chas. W. Waters, Jr., Crewe; O. M. Whitmore, Roanoke; Claiborne Wilcox, Waltham, Mass.; Frank L. Wysor, Clifton Forge; Joash I. Yohannan, Richmond.

Board of Pharmacy of Virginia.

At the examination held in Richmond, July 20-21, there were 32 applicants for examination as registered pharmacist. Of this number the following were successful:

Norvell Taliaferro, Ullainee, Va.; J. LeG. Johnson, Baltimore, Md.; W. R. Smith, Cape Charles, Va.; G. C. Vaughan, Petersburg, Va.; L. C. Riggins, Odd, Va.; H. W. Zirkle, Forestville, Va.; A. R. Warner, Millwood, Va.; C. H. Lewis, (col.) Washington, D. C.

The following were given the registered assistant certificate:

R. P. Bendall, Norfolk; H. E. Newman, Norfolk; H. L. Arnold, Alexandria; A. V. Winfield, (col.) Petersburg.

There were 19 applicants for examination as registered assistant pharmacist and the following were successful:

G. A. Zirkle, Charlottesville; V. E. Sisson, Richmond; W. H. Hoover, Richmond; D. R. Armentrout, University; W. B. Hopkins, Rich-

mond; B. D. Brown, Meadow View; W. E. Cole, Church Road.

The following were registered by reciprocity:

J. A. Hart, Norfolk, from Maryland; C. E. Rowe, Petersburg, from Tennessee; J. G. McIndoe, Roanoke, from Maryland; A. M. Foshee, Charlottesville, from Alabama; C. A. Francis, Norfolk, from Georgia.

Examinations are held by this Board in Richmond on the third (3rd) Tuesday of January, April, July and October. All applications shall be filed with the Secretary, Mr. T. A. Miller, Richmond, at least ten (10) days prior to examination date.

Shock, Anoci-Association and Anesthesia

Is the title of a very interesting and valuable paper by Dr. A. M. Fauntleroy, which, beginning with this issue, will be continued in the next two or three issues of the *Semi-Monthly*. The author considers his subject from all standpoints, without evidence of bias, and we believe our readers will feel well repaid by following his careful presentation of this important subject. We regret that the length of the article prohibits its use entire in one number. The paper was read before the Augusta County (Va.) Medical Association, though, as a medical officer of the U. S. Navy, publication is also made in a bulletin of his department.

Vaccines for Whooping Cough.

As a result of investigations carried on by the Research Laboratory of the Department of Health of New York City, pertussis stock vaccines as prepared by the Bureau of Laboratories seem to have a prophylactic value when given in high doses and they seem to shorten the duration and severity of the paroxysmal stage. For the purpose of making a more thorough test of the vaccines, the Department has offered to furnish the necessary quantity of vaccines, directions for administration and a history card to any New York City practitioner who promises to report the results obtained.

The Isle of Wight (Va.) Medical Society,

At its annual meeting, elected Dr. S. A. Riddick, of Smithfield, president; Dr. Gavin Rawls, of Carrsville, vice-president, and re-elected Dr. R. Lee Seward, of Isle of Wight,

secretary-treasurer. The next meeting will be held September the first.

The Inter-Hospital Medical Conference,

Composed of superintendents and assistant physicians of the Virginia hospitals for insane and the epileptic colony, had its second semi-annual meeting at Central State Hospital, Petersburg, July 20 and 21, Drs. W. F. Drewry, Henry and Brent being hosts. Papers were read by Drs. J. S. DeJarnette, of Staunton; Hugh Henry, Petersburg; Geo. A. Hankins, Williamsburg, and W. F. Drewry, Petersburg. The aim of these conferences is to create and foster a co-operative and scientific spirit with a view to attaining the highest degree of medical proficiency in caring for and treating the patients under the care of the members and of making a study of the best means of prevention of mental diseases, epilepsy and deficiency.

The next meeting of the Conference will be held at the Western State Hospital, in Staunton.

The Petersburg Hospital.

Of Petersburg, Va., has been the recipient of a gift of \$500 from the DuPont Powder Company at City Point, as an appreciation by the company of the work done by the Hospital in caring for their sick and injured until the opening of the City Point Hospital.

Many Physicians Fail to Pay Registration Fee.

In spite of notices sent out by the Collector of Internal Revenue and repeated warnings given through the press, it has been announced that to the 28th of July, 285 physicians and druggists residing in the second district of Virginia had failed to pay their registration fee of \$1 in compliance with the Harrison anti-narcotic law. We presume registration in the first district of Virginia has been no better. There is a penalty attached for the non-payment of this fee and the collector has no alternative in the enforcement of the law.

Dr. John C. Hemmeter.

Baltimore, who has been ill with appendicitis, is much improved.

The Greensboro (N. C.) Surgical Society

Was organized in July with fifteen members. Drs. John W. Long and Parran Jarboe were elected president and secretary-treasurer respectively.

Dr. Thomas W. Murrell,

Of Richmond, early in August, visited relatives in Amherst, Va.

Dr. Seale Harris,

Secretary of the Southern Medical Association, has been spending his vacation with his family in Asheville, N. C.

Transactions of the Medical Society of Virginia

Have been issued since the publication of our last number and any member who has failed to receive his copy should notify the secretary, Dr. Paulus A. Irving, Farmville, Va. The transactions are smaller this time than for many years past, which is due to absence of the biographical sketch of each member, this having been found to add greatly to the expense of their publication.

Dr. Lewis G. Richards,

Of the Shenandoah Hospital, Roanoke, Va., has been spending several weeks in Chicago, attending the Murphy Clinics. On his return the latter part of this month, he will also spend a while in New York.

Dr. and Mrs. Henry L. Segar

Have returned to their home in Warsaw, Va., after a short stay in this city.

The Association of Surgeons of the Chesapeake and Ohio Railway Company

Will convene for its second annual meeting at "The Greenbrier," White Sulphur Springs, W. Va., September 3rd. In addition to furnishing free railroad transportation for members of the families of surgeons, Dr. W. T. Oppenheimer, chief surgeon, announces that the Company has decided to pay the hotel bills of the surgeons (not their families), for the one day of meeting. A large meeting is anticipated.

Dr. S. Westray Battle.

For many years surgeon general of North Carolina, has been retired with the rank of brigadier general.

Hospital for Colored People.

The colored people of Petersburg, Va., have purchased the property formerly known as the Birdville Sanatorium, and used as a local tuberculosis camp, and intend to establish there a hospital for the care and treatment of the sick of their race. There is a building on the

grounds and the location is admirably adapted for hospital purposes.

The Augusta County (Va.) Medical Association

Will have Dr. Paul White, of Boston, Mass., lecture before its Post-Graduate School, about the middle of August.

First Aid to Injured Rules to be Taught in Public Schools.

At the 1914 session of the Virginia General Assembly, a bill was passed making it compulsory to give instruction in the public schools on the prevention of accidents and first aid to the injured. The State Board of Health and Department of Public Instruction have therefore jointly prepared a manual to be used in the schools next year, which has a quick reference index. Copies of this manual will be sent private citizens who request it.

Dr. and Mrs. A. Murat Willis

Have returned from their bridal trip in the West, and have taken an apartment at Gresham Court, this city.

Dr. Benjamin R. White

Has been designated by Governor Stuart to conduct the physical examinations of recruits for Company E, Second Regiment Infantry, stationed at Strasburg, Va.

The Association of Seaboard Air Line Railway Surgeons

Will hold their annual meeting at Wrightsville Beach, N. C., August 17 and 18, under the presidency of Dr. M. L. Wood, of Montgomery, Ala. Dr. Joseph M. Burke, of Petersburg, Va., is chief surgeon of this road.

A sad incident in connection with this meeting is the fact that Drs. M. M. Caldwell and Charles T. Harper, who were surgeons for the Road and had planned to entertain the members in Wilmington, have died in the past few days. Dr. Caldwell with a party of friends was drowned when a boat in which they were on a pleasure trip capsized and Dr. Harper died the next day following an operation.

Typhus Epidemic in Serbia Under Control.

Late in July, the American vice-consul at Belgrade, reported that the typhus epidemic in Serbia and Montenegro was under control and that other infectious diseases are steadily decreasing. In April there were registered in Serbia 82,013 cases of typhus, while in June the number had decreased to 16,052. It is an-

nounced also that on October 1st, the American Red Cross will withdraw work from all European countries except Belgium, where it is believed there is the greatest need for help.

Surgery of the Blood Vessels.

An editorial in the *Southern Medical Journal* for July pays a gratifying and deserving tribute to Dr. J. Shelton Horsley, one of our Associate Editors, in commenting on his recently issued monograph on Surgery of the Blood Vessels, which is also reviewed in the same issue. We quote in part as follows:

"The work along this line that has been developed by Matas, Crile, Halstead, Murphy, Guthrie and Carrel, and others, constitutes one of the brightest pages in the history of American surgery, and the author of this book, Dr. J. Shelton Horsley, is fully entitled to a position in that notable group of advanced thinkers and workers. Furthermore, the fact that he is a Southern man, and the field of his work is in Richmond, a Southern city, and that he is an officer in the Southern Medical Association, makes it all the more pleasant for the *Journal* to do him honor.

"In this work simplicity of statement marks its sentences with true scholarship and the book has every quality of a true classic."

Dr. W. F. R. Phillips,

Who has been professor of anatomy at the University of Alabama, Mobile, has been appointed to the same chair in the University of South Carolina, at Charleston.

Dr. J. W. Dillard

Has returned to his home in Lynchburg, Va., after a short stay at Natural Bridge.

Dr. and Mrs. W. Lowndes Peple

Have returned to their home in Richmond after a month's stay at Nimrod Hall, this State.

Dr. Charles A. Brown,

Of Dillwyn, Va., was a recent visitor at Harrisonburg, Va.

Appointments in Medical Corps, Va. Volunteers.

Dr. Charles Carroll Smith, of Norfolk, Va., has received his appointment as captain in the medical corps, Virginia Volunteers.

Dr. James Warren Knepp, of Roanoke, Va., has been appointed a first lieutenant in the medical corps, Virginia Volunteers, and has been assigned to duty with the Second Regiment.

Dr. Giles B. Cook, Richmond, has been promoted to the rank of major of the medical corps and is connected with the first infantry.

The Irvin Memorial Hospital,

Mt. Airy, N. C., has recently changed hands and is now being run under direction of Dr. Moir Martin, son of Dr. R. S. Martin, Stuart, Va.

Dr. William S. Thayer,

Professor of clinical medicine at Johns Hopkins Medical School, has been nominated for one of the five vacancies on the board of overseers of Harvard University.

Dr. W. J. Young,

Formerly of Williamsburg, this State, but later of Grove City, Pa., is now located at 10 Ransom Court, Boston, Mass.

New Consultants for City Home Staff, Richmond.

Upon the recommendation of Dr. Leslie B. Wiggs, chief of staff at the City Home, Richmond, the Administrative Board, early this month, approved the appointment of the following physicians as additional members of the staff of consultants: Dr. Beverley R. Tucker, in neurology; Dr. Lawrence T. Price, in genito-urinary surgery; Dr. Frank M. Reade, in obstetrics; Dr. William T. Graham, in orthopedic surgery; Dr. B. C. Willis, in general surgery; Dr. Carroll H. Fowlkes, in eye, ear, nose and throat diseases; Dr. Robert S. Preston, in pediatrics, and Dr. Frank S. Johns, associate consultant in general surgery. All of the appointees have agreed to serve without remuneration.

Dr. Alvin Bagby

And family of Petersburg, Va., have been visiting at the home of Dr. B. B. Bagby in West Point, Va.

Dr. Ramon D. Garcin

Has been made a member of the board of directors of the Civic Association of Richmond.

Dr. James Fulton Williams

Has been elected surgeon of the Charlottesville, Va., fire department, one of the largest volunteer fire departments in this State.

Dr. Stuart Michaux

Has returned to his home in this city after a visit to Nimrod Hall, Va.

Dr. Samuel Lile,

Of Lynchburg, Va., tendered the resignation of his commission as a member of the medical reserve corps, U. S. Army, and same was accepted by the President and became effective July 15, 1915.

Dr. E. C. Levy,

Chief health officer of Richmond, has returned from a brief vacation spent at Mountain Lake, Va.

Dr. J. A. Keck,

Of Richmond, was a recent visitor in New York City.

Dr. Josiah Leake,

Of Deans, Va., visited his father in Ashland, Va., early this month.

Dr. S. S. Goldwater,

Who so efficiently served at the head of the New York City Health Department, has resigned to take up his duties as superintendent of Mount Sinai Hospital, in accordance with a previous agreement.

Dr. R. A. Martin,

Health officer of Petersburg, Va., and his wife were recent visitors at Penland, N. C.

Dr. Donald McPhail,

Of Randolph, Va., visited Dr. H. S. Belt of South Boston, Va., the latter part of July.

Dr. and Mrs. D. A. Kuyk,

Of this city, have been on a motor trip of a month in New York and Pennsylvania.

Dr. W. A. Lucas,

Who has been away from Virginia for some time, has returned to the State and is now located at Pulaski.

Dr. Judd Miller

Has returned to his home in Norfolk, Va., after a short stay near Culpeper, Va.

Dr. John W. Turman

Has returned to Richmond after a visit to his old home in Carroll County, Va.

Obituary Record.

Dr. Robert Hugh Mackay Dawbarn,

Prominent as surgeon, medical teacher and writer, died at his home in New York City, July 18, aged 66 years. A native of New York State, he obtained his M. D. degree from the College of Physicians and Surgeons of New

York City, in 1881, and became instructor in minor surgery in his alma mater in 1885. He was later connected with the Fordham University Medical School, having been professor of surgery for many years. In 1902 the Philadelphia Academy of Medicine awarded him the Samuel E. Gross prize for the best original work in surgery during the previous six years. His widow and several children survive him.

Surgeon R. M. Woodward,

Of the U. S. Public Health Service, died at St. Mary's Hospital, Rochester, Minn., July 16, 1915, aged 53 years. A native of Indiana, he was graduated in medicine from the University of Cincinnati in 1887 and was commissioned assistant surgeon in the service the same year. He had been in command of hospitals at Boston, Baltimore, Chicago and, when taken with his final illness, was in charge of the marine hospital at San Francisco as well as of the Panama-Pacific Exposition Emergency Hospital.

Dr. Francis Delafield,

Of New York City, died from apoplexy, near Stamford, Conn., July 17. He was born in New York City August 3, 1841. He studied medicine at the N. Y. College of Physicians and Surgeons, graduating in 1863, and, after studying abroad, returned to New York, where he had since made his home. Dr. Delafield was for some time professor of pathology and of the practice of medicine in the N. Y. College of Physicians and Surgeons and was one of the founders of the Association of American Physicians, in 1886, and its first president. He was distinguished as a medical writer as well as a practising physician. He is survived by several children.

Dr. David Streett,

Dean of the Baltimore Medical College from 1888 to its amalgamation with the University of Maryland Medical School a couple of years ago, since which time he has been connected with the faculty of the last named school, died at a Baltimore hospital, July 30, after an illness with intestinal trouble. He was 60 years of age. Dr. Streett received his medical diploma from the College of Physicians and Surgeons of Baltimore in 1878, and had for many years been actively identified with hospital work. He was also a member of numerous medical associations.

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HEREDITY.*

By J. N. BARNEY, A. M., M. D., Fredericksburg, Va.
Secretary-Treasurer, Medical Examining Board
of Virginia.

By heredity we mean the organic tendency for like to produce like. Ever since the publication of the "Origin of Species," there have been recognized by science two great factions in organic change; heredity and environment.

From this fact there have sprung up two views of genetic development,—one claiming the preponderance of inherited tendencies as the limiting factor in evolution, the other holding to the effect of subsequent conditions as far superior to embryonic impress.

From the discussion there have come several interesting and important lines of facts, and among other things, the re-discovery of the long-buried work of Mendel, whose laws of reproduction, carefully worked out in his monastery, are now forming the basis of successful breeding, both in zoologic and botanic lines.

The Cosmic processes undoubtedly give rise to the view that individuals, as such, contain the essential distinguishing elements of one or both parents.

How the great differences between the white and colored races, marked as they are, can be impressed upon the small mass of cells, called the ovum, in such a manner that one ovum should develop into a mulatto and another ovum extruded from its Fallopian tube a few hours later, bring forth a full-blooded negro, is mysterious, but such cases are known to medical literature.

The pure evolutionist will say that natural selection has produced skin color changes, from inability otherwise to withstand tropic

heat. The biologist goes further, says that every animal and plant in its pollen and ovum, in its ovum and semen, bears with and brings to the physiologic result the changes, tendencies, features of countless generations, imprinted upon it and engrafted, so that, while microscopic search reveals no distinctions, it already has the almost limitless possibilities of a future, in man with his spiritual and mental make-up, of no uncertain value. While the laws of heredity are by no means well defined, we think it profitable to consider the subject from three viewpoints:

1. Physiologic or Biologic;
2. Psychologic;
3. Social Heredity.

The earliest examination and recognition of protoplasm detected certain facts which are the basis of cell growth. This simple granular nucleated albumin must *to exist* have certain fundamental powers, which enable it when organized to live. It must contract, for thus it moves; it must have irritability, for so it puts itself in connection with its surroundings; it must assimilate food, for so it continues its adjustment, and finally it must reproduce, or the preceding three facts amount to naught.

"*Omnia ex ovo*," wrote Von Baer in 1827, and the exact nature of protoplasm came in 1835.

While we know now far more about the behavior of this simple cell substance, cells are not life. They manifest life by means of the four qualities named above, but they do not originate it.

Even an essential dissimilarity, such as sex, cannot be controlled or influenced by any known or certain means. Late theories hold that the union of the male germ and the ovum, is dual in possibility, and that sex is determined at the actual time of union. If this be so, how much more difficult will lesser points of diver-

*Read before the Spotsylvania County, Virginia, Medical Society.

gence, such as color, form, size, etc., be in detection or control?

The fertilized ovum is with some nations the symbol of eternity and so it might be considered as it gives continuity to the successive generations of plants and animals, with the potencies of the past in form, organ and species.

Physiologic heredity bears the lesson of youth, for the separated cell, in place of undergoing the fate of the other organized cells, and growing old, dies, is eternally young again and gives the power of a separate independent life, to be passed on, if the environment allows.

Biologic differences are shown very early in form, but are often more imaginary than real. It is of no value to the young robin whether or not its beak can use grain or worms, because it is not yet dependent upon itself. Later on, it must adapt its organization to the surroundings, or perish.

Johann Mendel was an Austrian Monk who died in 1884. He performed and recorded many experiments in crossing plants and animals and producing hybrids. His work, unknown at the time, has attracted wide attention since. He used large numbers of individuals in his

experiments, and thus the results are average and important. Burbank, in later years, has pursued a similar course.

One of the most striking tests was made with what we now call sweet peas.

He crossed peas with red flowers and white flowers. The first generation gave all red. The second generation gave in 1,000 plants, 670 red and 330 white. Those white flowered produced white and white only indefinitely, while of those 670 red, one third produced red and red alone, while the other two thirds produced red and white in the ratio of 3:1.

As a result of this work and many other similar tests, Mendel announced that all plants and animals had two tendencies in biologic inheritance, a dominant (i. e., red, as above), and a recessive (i. e., white); and each germ carried with it not a dual but a single protoplasmic gamete, or sexular cell. Out of four individuals then produced by crossing distinct species, one will reproduce one type represented by one parent, one will reproduce the other parental type, and the other two will produce both types and hybrids. Say from white and black chickens the outline below will represent the results for three generations:

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The applications of Mendel's Laws to breeding are important and are in practical use at experiment stations and breeding establishments.

It has been found possible to produce new breeds of chickens in about 5 years, and other animals in a longer time.

With respect to man, its applications are not so evident, nor under control, but are unquestioned.

An example would be the iris color in eyes.

Dark colors are dominant, and those with dark pigment, may or may not have light color recessive.

If both parents have light colored eyes, the children have the same almost invariably, but if either parent, or both, have dark eyes, the children may have either color. And, strange to say, sometimes the child will have a darker color than either parent, dominant.

The results of crossing for one quality are fairly fixed, but when an attempt is made to combine the qualities of several kinds, the results are contradictory and confusing.

Mendel crossed peas one foot high with a variety six feet in height, and obtained some vines seven feet high, but the type was recessive, and could not be held at that figure, but produced an intermediate second generation.

Experiments conducted by Bateson, Doncaster and others tend to show that inherited sex limitations are undoubted. According to Bateson, 4 per cent. of males in Europe are color blind, and only .5 per cent. of females.

In other words, color blindness is dominant in males and recessive in females.

In cats, nearly all orange colored cats are males, and tortoise shell, females. Black and orange would produce tortoise shell, but the dominance is not complete in females, hence the tortoise shell.

Polydactylism has two interesting cases reported by Dr. Gordon in the *Virginia Medical Semi-Monthly*:

1. A girl was presented for treatment who had six fingers on each hand. The family history was investigated as follows:

Great grand parents both normal.

Grandfather, six fingers on right hand. His brother had six on each hand.

Grandmother, normal.

Father, six fingers on each hand. Three of his sisters—all six fingers on each hand.

Mother, normal.

Of girl's sisters, four had six fingers on both hands and two had six fingers on right hand. Brothers normal.

In this case, polydactylism was dominant and the female branches of the family seemed to present the larger number of abnormal individuals.

2. An imbecile boy, with supernumerary toes on both feet.

Grandfather with six toes on right foot.

Grandmother, normal.

Father, six toes on each foot. Two of his brothers had six toes on each foot and one sister had six toes on right foot.

Mother, normal.

Two of boy's brothers affected in both feet and two in right foot.

In this case, also, polydactylism is dominant, and through the male line.

There is strong presumptive evidence of the existence in the parent germ cell of a definite factor which possesses the power of transmitting certain characteristic units. While it is difficult to say what this factor is, no individual can transmit to the offspring a character unit which he or she does not possess. Differences in individuals and species are limited to these factors and hereditary variations seem to follow the Mendelian laws as well as the normal factors.

An interesting instance of reversion has been lately brought to my attention by Mr. Geo. Purvis, who had been for forty years, a breeder of Shorthorn cattle in England, Canada and Virginia.

Inheritance of the "Shorthorns": Of all breeds of cattle the Shorthorn excels in length of lineage, tracing back for centuries and occasionally exhibiting marked characteristics of its progenitors. "The wild, white cattle of Northumbria:" the Anglian kingdom of Bernicia, of which the county of Northumberland, England, formed only a part and, I mention it at the risk of appearing pedantic, in explanation of the name given to the original native cattle of Great Britain, the last and only herd of which is in Chillingham Park, the ancient domain and residence of the Earls of Tankerville in the county of Northumberland; indeed, historians agree that wild cattle existed in Britain in the days of the Druids and long before history made any record. The park embraces an area of many miles of woodland and pasture, hill and dale and running streams; an immense preserve, undisturbed by the hunter for ages, except by a shooting party invited by the Lord of Chillingham, at long distant periods, to reduce the number of the herd and it is understood that money cannot buy any of the animals.

Shorthorn cattle breeders point with pride to the fact that sometimes, although rarely, the descent of the shorthorn from the ancient cattle of Britain is shown when a calf is born possessing all the attributes of the wild race of Chillingham: color, style and conformation; pure white without a spot, dark blue eyes, curly forehead, sharp muzzle, great activity.

The writer visited a herd of registered short-horns at Little Whim, Fredericksburg, Virginia, and was informed by the owner that, for more than thirty years, he had attempted, by crossing with animals of long pedigree, to obtain a calf, showing some of the points of the ancient lineage; and at last came the climax of success! This spring arrived the hope deferred but long expected Chillingham calf, bred from dark-colored stock;—a handsome heifer calf which he names "The Rose of Sharon" and which is in color the whitest white, a duplicate in every feature of the ancient race. It is a well established fact that, for a hundred years the chief aim of Shorthorn breeders has been to develop a wide, deep, lengthy and thickly fleshed animal and year by year the Shorthorn has, as stated in a recent bulletin of the U. S. Department of Agriculture, become celebrated for "the milking qualities, combined with the high standard as a beef animal, and the gentle disposition, has caused the Shorthorn to be termed the farmers' cow." The Rose of Sharon, however, shows more of the activity of the wild gazelle, than the gentle bovine race from which it springs. It is pretty as any picture and exhibits every point, conformation and color of the ancient race, "The Wild Cattle of Northumbria."

The doctrine of Weismann, that a child born of a parent or both parents, who had been trained in some art, as music, would have no greater likelihood of becoming a musician, than an older child, born to the same parents before they received their musical training, is an interesting one.

This is debatable, but as either parent may have possessed the atavistic musical capacity, it is difficult to say with certainty, with so few facts. Acquired characteristics are certainly transmitted with difficulty, if at all, and yet this doctrine, pushed to its logical consequence, would put each generation at a new beginning.

Heredity in the human animal has so many and diverse characteristics, that we could hardly expect to give any connected theory unless we knew the parents and two or three generations of grand-parents, with their mental, physical, and moral make-up; and then prediction would be uncertain. The Jews are the

only thoroughbred and inbred race with a literature and a history.

The doctrine of natural selection, widely treated by Wallace and Darwin, leads to the biologic result of importance. Without this factor, not only would progress cease, but reversion occurs.

Take pigeons, for example: it is natural that fantails will prefer to mate with fantails, carriers with carriers, etc.

If numerous crosses occur, by necessity or by man's design, the type will revert to the common ancestor of all pigeons, the Blue Rock, wild pigeon of Europe.

While the survival of the fittest is inexorable, looking at results, it is economic. The necessitated struggle tends to call out the best and most valuable qualities. And these are the heritage of succeeding generations, and thus progress ensues.

Progress is not rational in the true sense; man would hardly evolve a scheme like the above, but would prefer quantitative results. Pure reason always is *a priori* and Kant treats of God, Freedom and Immortality.

The highest rewards of our modern society go to those who by the keenest wits, the most inflexible wills and far-seeing plans, have by a natural selection, largely hereditary, proved themselves most apt in overcoming the adverse conditions around them, or have been most adaptable and plastic in their dealing with rivals. Energy, determination, the ruthless power of capital—these answer the same purposes now as the spear and the cross-bow in the middle ages. The very highest motives now differ in mode from those of the 15th Century, but they each have in common, the placing of one's self on the high peaks of emulative success. The weak dropped out or off, and the strong "inherited the earth."

And thus man paraphrases nature and thrusts aside all he can in his push to a place in the sun, as the pine tree represents the successful effort to crowd out a numerous company of unfit brothers and sisters, with the crowding of many peoples and civilization, we can not rationally expect any lessing of the process, but rather an increase.

2. *Psychologic Heredity*: Of necessity, Biologic heredity, as being palpable and evident,

is far more susceptible of demonstration than the second mode of examination.

The plasticity of protoplasm has no analogue in the subject matter of mind, nor can there be any easy method of laying down the laws of heredity as applied to mind itself.

Yet it must be said, dissenting from the views of Weismann, as above, that mentally we come with impress, with potentialities, if not with potencies. "As a man thinks, so is he," and we often see similarities of thought processes and views in children whose parents were dead before they could have exerted any influence by the imitative instinct or otherwise.

It seems to me that we should be mentally bankrupt, did we not inherit those plasticities of mind and spirit, which are so often shown in the distinguished careers of members of the same family in succeeding generations. What may be called the "family view" is often shown too plainly to be lightly cast aside as accidental.

Spencer holds that the lower part of the mind by experience alone evolves mental improvement, but this, while accounting in a fairly satisfactory manner, for those unfortunate mental stultics, which take the world as it is, has no imagination nor sense of humor: it would fall down utterly in explaining the mental outfit of a Poe or a Tennyson.

The sudden flashes of what we denominate genius, the wide departures from the ordinary, the flights of fancy, these cannot be from experience, they are creative, and I like to think of them as a spiritual inheritance, unquenched in this world, eternal in the next, a legacy from the great "I am."

From the mentally alert, the sound judgment, the calm right thinking mind, may justly be expected similar traits in succeeding generations. "The fathers have eaten sour grapes, and the children's teeth are on edge," bears out the contention, that mysteriously, often inexplicably the child bears the mental hallmark of his progenitors.

It should be recognized in eugenics.

3. *Social Heredity*:—To what extent and by what means are men collectively influenced by a common heredity?

Are there conceptions of pleasure, duty, social and constitutional laws which bear upon masses of men with force enough to be recog-

nized and dealt with? Was the Renaissance the result of autogenetic causes, or was it an accidental and fortuitous event?

To understand common events, one must look to similar causes and preceding the summit of civilization of Rome, Greece and Egypt, we would probably find a common heritage of ideals, life, action. Plato outlined the ideal state, and Rome carved out her own concept.

It seems certainly reasonable to conclude that such far-reaching results, such able exponents of philosophy, poetry and art, must be the products of a tribal inheritance, which they in turn enriched and passed on.

Their downfall was caused as ever, by the efforts of classes to live upon the work of the masses.—always suicidal and revolutionary.

At the present time the idealism of European progress rests inactive, but the time has been and the time will again be when the nations of the old world will again show to child nations those tribal communal heritages which are high and efficient.

When an enlightened Democracy shall control the destinies of government, we shall see the wonderful result of social heredity, with its rational regulation of the individual, the family and the State.

Equality of social position will not result, for men differ too radically for that, but equality of opportunity will solve many difficulties now left to legislation or warfare.

The central figure which typifies all that man can hope to reach by social heritage, is the idealism of the Man of Gallilee,—as Goethe says: "the deepest, nay the one theme of the world's history to which all others are subordinate." As the Christian Nirvana, it will bring the perfect fruition of man's best heritage—the mental, moral and spiritual uplift of God-fearing ancestors.

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APPENDICITIS IN PREGNANCY.*

By J. THOMAS KELLEY, M. D., Washington, D. C.

In an article on appendicitis in pregnancy by Dr. John B. Murphy, he quoted Wagner as giving the mortality in non-operative cases as 77 per cent., while in cases operated within the first forty-eight hours it is 6.7 per cent.

The seriousness of this condition impressed itself upon me some years ago.

A great many papers have been written and a great many cases reported, and yet there may be a great many that are not reported, especially in a condition where the diagnosis is frequently difficult to make, and autopsy frequently impossible.

To Munde is given the credit for first introducing the subject and reporting some cases.

Hancock in 1848 reported the first case of appendicitis complicating pregnancy. He incised a perityphlitic abscess ten days after labor; his patient recovered.

In 1885 Korn, and a little later Muller, reported cases in which the autopsy showed death due to appendicitis. Wiggins in 1892 reported the first case in which a diagnosis was made before autopsy. First, shortly after Munde, treated a case surgically, before premature birth had occurred.

Munde in 1894 reported the first case in which operation was performed. The patient aborted at the third month and five days later an operation was performed and the patient recovered. Munde said that as far as he knew there was no case of appendicitis in pregnancy reported, but he could see no reason why such a condition should not occur. He thought that the infrequency in diagnosing appendicitis in women in the ante-operating days was because everything at that time was attributed to pelvic disorders or peritonitis from other causes, and the women either died and no post-mortem was held, or the abscess fortunately emptied into the bowel and the patient recovered.

Abrahams, in 1897, found in the literature only seventeen cases; Boige, in 1901, seventy cases; after this time the literature is more abundant.

In speaking of the frequency of appendicitis, a few authors claim that appendicitis is more frequent in the pregnant than in the non-

pregnant; in other words, that pregnancy exerts a deleterious effect upon the appendix. The majority of the authorities believe that appendicitis occurs with no greater frequency in pregnancy. Schauta in 34,000 cases of pregnancy found only four cases of appendicitis. Treves, reporting 1,000 cases of appendicitis operated upon, 319 of whom were women, found only six pregnancies.

Kronig says that pregnancy has no influence in the primary appendicitis, but it does influence the chronic cases unfavorably.

Constipation is spoken of as a cause of appendicitis in the non-pregnant; if this is true, it would be doubly so in pregnancy. The nearness of the appendix to an inflamed tube or ovary and adhesions between these organs caused by some old inflammatory trouble may be a cause. That the pressure of a pregnant uterus upon the appendix might be a source of irritation is admitted by most authorities, but it is probable that the appendix was inflamed before the pregnancy, and then I believe the pregnant uterus would be a factor in rekindling the old inflammation.

Palmer Findley says the explanation for recurrent attacks in pregnancy lies in the vascular engorgement of the appendix, in the constipation which is so commonly associated with pregnancy, in the toxemias of pregnancy, in the encroachment of the uterus in the early months of pregnancy and in the puerperium, and, finally, in the uterus and its appendages. While these factors doubtless tend to excite a recurrent attack of appendicitis, they cannot be said to create a primary attack.

The anatomic and pathologic conditions that contribute to the mortality are: as the uterus enlarges during pregnancy, it removes from the appendix the omentum and intestines which are its natural protectors, thus allowing a rapid spread of infection throughout the abdomen.

Joseph B. DeLee says many pregnant women complain of pain in the region of the appendix and it is possible that the rising uterus draws on complicating peritoneal adhesions. Women who have appendix operations almost always complain of dragging pains, especially from the fifth to the eighth months. Perforation and suppurative peritonitis are very much more serious than outside of pregnancy, because, first, protective adhesions are less

*Read before the Medical and Surgical Society of the District of Columbia, April 1, 1915.

For discussion, see page 255.

likely to be formed; second, the inflammation is more stormy, owing to the intense vascularity of the parts; third, thrombosis and phlebitis are commoner; fourth, suppuration takes place higher in the abdomen, which portion is recognized to be less resistant; fifth, drainage is less free, owing to the large uterus near by, and the abscess burrows deeply in all directions; sixth, tympany compromises the respiration sooner; seventh, obstruction symptoms arise earlier.

The effects of perforative appendicitis on the pregnancy are also marked, causing abortion, premature labor, infection of the uterine contents, and death to the new-born child. This might all be forestalled by early operative removal of the infective focus. Labor is very painful: the shock of it is greater, and because of the diseased uterine muscle (contiguous to an abscess) weak pains result in all three stages. The relics of appendectomy may anchor the uterus in an unfavorable position, may occlude the tube, producing sterility or favoring ectopic gestation. He believes that tubal infections cause appendicitis.

Dr. J. Clarence Webster says the occurrence of appendicitis soon after labor is in some cases undoubtedly due to the mechanical changes in the uterus and adnexa. Under these circumstances an appendix may be stretched, twisted or even ruptured, and a severe local or gynecological infective process may be started, and the wall of the uterus may be infected.

Delageniere says a certain number of cases of pernicious vomiting of pregnancy are caused by appendicitis. Appendectomy brings about a cure. He believes that the majority of cases of pernicious vomiting are caused by some irritation of the peritoneum.

While the effect of perforative appendicitis upon the mother is so grave, yet that is not all the condition, for the mortality of the unborn is even greater, for the attack will usually result in the interruption of pregnancy and not infrequently in the death of the fetus *in utero*. The infection probably extends to the uterus through the fallopian tubes or by way of the broad ligament and the wall of the uterus to the placenta. It is possible that the colon bacillus is thus conveyed to the placenta and the fetus.

With very little chance for the appendix to

be protected by the omentum or intestines, a fulminant peritonitis is liable to develop very rapidly, the infection spreading rapidly through the uterus and placenta to the child and producing abortion or premature labor. By this time the blood is overwhelmed by micro-organisms and the patient is in a state of septicemia. An infection of the placental site in the uterus develops and a fatal termination is the usual consequence.

The earlier authorities thought that the uterus was infected and abortion ensued only when the appendiceal abscess was in contact with the uterine wall, that is, when the wall of the uterus formed a part of the wall of the abscess. There can be no doubt that the infection would travel to the inside of the uterus through the lymph and blood vessels along the appendiculo-ovarian ligament. If the abscess should be rather large (if an abscess had formed) and uterine contractions begin with the expulsion of the fetus, the abscess is almost always ruptured because one of its walls (the uterus) has been pulled away. This is one of the reasons why death takes place so soon after the birth of the child.

Paddock says that a threatened abortion or a tubal pregnancy might be mistaken for appendicitis. Ovarian cyst, nephrolithiasis, hydronephrosis, floating kidney, kidney tumors and right-sided pyelitis are to be differentiated, as they frequently disguise the diagnosis,—the latter condition especially, as it more nearly simulates the symptoms found in appendicitis. The majority of cases which in recent years have been sent to the clinics with the diagnosis of appendicitis in pregnancy have proven to be cases of right-sided pyelitis.

Cholelithiasis and cholecystitis and diseases of the liver and gall bladder must also be excluded. In the second half of pregnancy the painful point is almost identical with those of hepatic origin, but icterus is usually absent.

An appendicular abscess may be mistaken for the symptoms produced by compression of the right ureter. Vomiting of pregnancy and gastroenteritis are often taken for mild cases of appendicitis.

Symptoms coming on after the birth of the fetus are probably mistaken for puerperal fever which is quite usual for the clinical picture would naturally be the same. There may be other conditions causing peritonitis, but it

is not so necessary to make an exact diagnosis, for all these conditions require operation. I have seen several cases of pyelitis in pregnancy and had no trouble in making the diagnosis. The same symptoms which govern appendicitis in the non-pregnant pertain in pregnancy—of which muscle rigidity is the most important. The confusion of the pain of appendicitis with labor pains and after-pains is easy.

Zweifel claims that in early pregnancy and the puerperium the pain is more often referred to the region of the liver, and perhaps to the left side rather than to the region of the appendix.

Fraenkel suggests that the patient be put upon the left side so as to allow the abdominal contents including the uterus to drop away from the region of the appendix, whereby the abscess could be palpated.

Paddock thinks this a dangerous procedure as the weight of the uterus might tear away one of the walls of the abscess.

Appendiceal colics post-partum are often mistaken for after-pains.

Pinard says that the appendix should be regarded as the offending organ in all cases where the pain is on the right side, and no other cause can be found for it.

I have read somewhere that 80 per cent. of ordinary cases of appendicitis will get well by the so-called expectant treatment, and that 20 per cent. will die. If Wagner is correct that appendicitis in pregnancy gives a mortality of 77 per cent., we readily see what a very dangerous condition this complication is. Murphy says with appendicitis in pregnancy there is a colossal mortality percentage, and, again, pregnancy in appendicitis is one of the most dangerous conditions that occurs in the lower abdomen. He likens duodenal perforation to this condition and says it does not begin to have the mortality.

Abrahams says, with reference to the mother, there is the melancholy picture of seven deaths out of a total of ten suppurative cases, or a mortality of 70 per cent.: all but one were operated on. All the instances of catarrhal appendicitis recovered, or the mortality is nil. On the other hand, taking all the cases considered, eight of the fifteen recovered and seven died, a mortality of $46 \frac{2}{3}$ per cent. Either way you shift the facts the situation remains

pretty gloomy. As to the children, only one child in all the operative cases survived; all the rest perished either before or after operation.

Appendicitis occurring in pregnancy may run one of a number of courses; some are unusual, just as those occurring without pregnancy; some do not present any alarming symptoms and go on to a quick recovery; possibly some of these cases may be overlooked. Just as in the non-pregnant, the appendix may rupture quickly (I saw a case last summer that ruptured in twenty-four hours) and abortion takes place quickly with a rapidly fatal termination, or, if an abscess is formed and the pregnancy well-advanced, the intermittent contractions of the uterus, just as intestinal peristalsis, may rupture the new forming adhesions, and with the oncoming labor the abdomen is flooded with pus and the patient usually loses her life as well as that of the child. Again, we are puzzled by many cases which do not begin with any threatening symptoms: these frequently lead to abortion, after which there is a rapid inflammatory process and a fatal peritonitis.

The mortality as given by different observers varies greatly, probably depending upon the character of cases collected by the writer.

Myer collected 143 cases of these: 69 were operated upon during pregnancy—53 not operated. There were 22 operative and non-operative cases during puerperium. Of the 69 cases operated, a gangrenous appendix or abscess was noted in 49 cases—71 per cent. The attack was observed before the fifth month in 58 per cent. of the cases, and 25 per cent. after the fifth month. In this list of 143 cases there were 17 with chronic catarrhal appendicitis operated, with no interference with pregnancy.

Thirty-seven per cent. of those operated upon for abscess aborted, and in 11 cases, or 10 per cent., abortion occurred before operation.

Boige, in 31 cases operated, found a mortality of 41 per cent., and pregnancy interrupted 58 per cent.

Myer says there is a maternal mortality of 32 per cent. in cases of appendiceal abscess operated upon.

Paddock says there are cases which from the very beginning pursue such a rapid and se-

vere course that death occurs before the fetus is expelled.

Findley, quoting Babler, says the mortality of appendicitis complicating pregnancy is the mortality of delay. And, again, the evidence is convincing that appendicitis runs a more rapid and destructive course when complicating pregnancy and the puerperium, and, therefore, demands prompt consideration at the hands of the surgeon.

Murphy, in speaking of the so-called expectant treatment for appendicitis, says that he knows no word evil enough to call the expectant treatment; the nearest he can come is *expectans mortua*, for, truly, according to the statistics, it seems that we are expecting death.

In Huxley's essay on "Social Diseases," he says, "I was once talking to a very eminent physician, the late Sir W. Gull, about the *vis medicatrix naturae*." "Stuff," said he: "nine times out of ten nature does not want to cure the man; she wants to put him in the coffin."

Abrahams says delayed interference means a mortality of 70 per cent.; early interference, as is attested by the statements of many authorities, means a mortality of a fraction of a per cent.

Munde's dictum is, "Treat the disease early, regardless of the pregnancy."

Abrahams again says, "In case of doubt the operation is better than waiting."

If a general peritonitis is present at the time of first seeing the patient, delivery should be done, followed by abdominal section if the patient is near the end of pregnancy.

Paddock says, "When the diagnosis is once made, I believe the treatment should be immediate appendectomy. We do not know how long a mild case is going to remain one. It must be accepted as a fact that appendicitis complicating pregnancy and the puerperium is more rapid in its course than in the non-gravid condition, and waiting for a better time to operate is only giving the abscess more time to locate itself upon the uterine wall, to destroy by infection the fetus, and to start up labor. Labor invariably ruptures the adhesions."

"It has been mentioned that habitual abortion, to which no cause can be assigned, may and has been traced to a chronic appendicitis."

"The earlier in the course of both preg-

nancy and appendicitis the operation is performed the better will be the results. After the operation opiates are indicated."

Pankow says, "In an acute attack the stand to take is a surgical one, and in all cases we are to carry out the operation without disturbing the gravid uterus."

Plummer says, "I make it a rule to operate promptly on all cases of appendicitis seen in the early months of pregnancy. I invariably have good results in these cases, no interference with the pregnancy resulting. The same rule should apply in cases far advanced in pregnancy."

J. Clarence Webster says, "Every non-pregnant woman who is likely to become pregnant and in whom a definite attack of appendicitis has once occurred, should have her appendix removed before pregnancy is allowed to take place. When an attack of appendicitis occurs during labor, operative interference should be carried out very soon after delivery."

Murphy again says, "When one sees an appendicitis in pregnancy, the urgency of the case is even greater." than in duodenal perforation. "Do not wait for such an appendix to get ripe; take it out."

Quoting Munde again, "If labor is in progress there should be even less delay than usual in operating, since the uterine contractions might mechanically produce traction on the appendiceal adhesions and consequent rupture of the abscess."

I have taken the liberty of quoting freely from articles written upon this subject, all written by men of great experience in abdominal surgery or obstetrics. The consensus of opinion seems to be that it is very much less dangerous to the mother and to the child to operate upon all cases as soon as a diagnosis can be made, and that if all cases could be operated upon within the first twenty-four hours the mortality would be a fraction of one per cent. The great danger to the mother and the loss of the fetus is due to abortion through the infection. Operations of all kind may be done upon pregnant women with little fear of abortion, if there is no infection present. I have operated upon several cases of ovarian cyst, large pedunculated fibroids, done a myomectomy, and in one case removed gall stones in a pregnant woman, and in one patient four months pregnant, I even removed

a kidney which weighed six pounds, and none of these women aborted.

Mrs. A., aged 33; patient of Dr. Muncaster. She had had three children, and was then six months pregnant. I could get no history of a previous attack of appendicitis. She had been ill four days when I saw her. Temperature 103°; pulse 130; respiration 32. I concluded from the history that the appendix had ruptured twenty-four hours previously. She was immediately removed to the Sibley Hospital, where she was operated upon without delay. I found the whole right side of the abdomen flooded with pus. I was unable to tell because of the large size of the uterus if the peritonitis was general or not. The appendix was gangrenous and perforated and contained two large concretions. It was easily found and quickly removed. A drainage tube was put down toward the pelvis, and one up toward the liver, and the incision packed with gauze without closure. The patient went into labor in about six hours and died in about twenty-four hours after the operation. This was in 1909.

Mrs. B., aged 28; two children. She was three months pregnant. I found her suffering with pain over the whole abdomen. Careful questioning convinced me that she had not attempted abortion. Her temperature was 101°, and pulse 110. The pregnancy only being three months advanced, I was able to make a diagnosis of acute appendicitis. She was operated upon without delay at the Sibley Hospital and recovered without abortion. There was no drainage in this case. She was operated upon within the first twenty-four hours.

Mrs. C., aged 25; no children; had been ill for two days. The temperature was 101° the evening before. When I saw her two days after the beginning of the attack her temperature was 99°. The leucocyte count was 12,000; that evening the temperature was normal. She was moved to the hospital and operated upon early the next day. The appendix was found very much inflamed, was easily found and easily removed. No drainage was used. She made an uninterrupted recovery.

Mrs. D., aged 36; primipara patient of Dr. Walters. Had been ill two days when I was called. Her temperature was 103°; pulse 120. She was five months pregnant. She entered the Providence Hospital. I had had such a

bad result with my first case of appendicitis in pregnancy when the patient seemed so ill that I waited until the next day before operating, and it is yet upon my conscience. The appendix perforated during the night and, although she was operated upon early the next morning, abortion took place, a very rapid sepsis following, and she died two days after the operation.

A great deal has been said about the difficulty of diagnosis and finding of the appendix at the operation. I had no difficulty in either of these four cases. There is some difference of opinion as to whether the fetus should be delivered if it is near term before operation is done; I think this would be good practice, the appendix being removed immediately after. Possibly it might be better to do a Porro operation, thereby taking away the immense uterus with its large placental surface ready for immediate germ invasion. A Porro operation is quickly done, the child, if alive, is saved, and the stump of the uterus can be easily covered with peritoneum, thereby minimizing the amount of raw and absorbing surface. With the large opening in the abdomen, the appendix is easily taken care of.

Hirst says that, "if it is necessary to deliver the uterus from the abdominal covering after the seventh month, it should be emptied by Caesarean section before replacing it to the abdomen." I believe that Porro would be better.

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SHOCK, ANOCI-ASSOCIATION AND ANESTHESIA.*

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(Continued from page 213.)

ANESTHESIA.

There is a wide difference of opinion among surgeons of high standing and large experience as to the anesthetic of choice. This diversity of opinion but accentuates the fact that the

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ideal anesthetic has yet to be discovered. To meet the requirements of modern surgery there are a number of factors to be considered if one is to nominate the qualities that this ideal anesthetic is to possess. Unfortunately the conditions which would allow for a determination of these qualities are not uniform in the practice of surgery, and the anesthetic of choice in a well equipped hospital might fall far short of satisfying the demands of the surgeon whose work calls for an anesthetic under conditions which are far from ideal. In this latter category would fall a great number of anesthetics that have to be conducted in general work which, for one reason or another, are administered outside of an ideal hospital and under circumstances by no means always advantageous. Particularly is this true in military and naval work, although the average civilian practitioner is oftentimes confronted by conditions equally as hard to meet.

Among the general anesthetics, ether, chloroform and nitrous oxid-oxygen are the ones in common use, and each of these has its adherents who present various substantial reasons for adopting one or the other as the anesthetic of choice. Aside from other important considerations, there is one factor, *the expert knowledge of administration*, which is often overlooked, or not mentioned, in discussing the merits of an anesthetic, and this factor alone is of prime importance as regards the selection of the one to be used. Whereas ether is justly regarded as safer than chloroform, and nitrous oxid-oxygen as probably safer than both, nevertheless, in *expert hands*, either one of these anesthetics, unless especially contra-indicated, can be used with practically equal safety. *An anesthetic which might be perfectly safe in the hands of one who understands thoroughly its administration, would be highly unsafe, in fact poisonous, in the hands of another who is not especially trained in its use.* This one fact alone should be the first consideration in determining the choice of an anesthetic, regardless of what might be the indications, for it would be most unwise to select an anesthetic, even when the others are apparently contra-indicated, if the anesthetist is not sufficiently familiar with the use of the one selected, thereby greatly jeopardizing the life of the patient or the results of the opera-

tion. In this connection, familiarity in the use of an anesthetic not only has a direct bearing on operating room statistics but no doubt accounts, in great measure, for the decided opinions which are expressed as to the relative safety of anesthetics. It is but natural for one to strongly advocate an anesthetic with which he is not only thoroughly familiar, but also with which he has obtained the best results through skillful administration.

The other factors that influence the choice of an anesthetic are those which have a direct bearing on the physiological action of the drug with reference to the vital functions of circulation and respiration, or an exhaustion of these functions known as "shock." The mechanism of shock, although entirely dependent upon the integrity of the above functions as controlled by the brain, is so important as to warrant it being considered apart and as a definite pathological entity. In addition to this, and as a corollary to considering the functions of circulation and respiration, the condition of the organs involved in the vital processes must not be overlooked in the choosing of an anesthetic, such as when cardiac, renal, and respiratory diseases are present. In view of these latter, certain indications and contra-indications have been advanced as regards the choice of an anesthetic, although it is to be recognized that these considerations are entirely relative and by no means always indicate the use of one or the other anesthetic. It must also be borne in mind that the views with reference to the indications are not always free from a certain biased attitude on the part of those who are strongly influenced one way or another, and hence the conflicting testimony to be found along this line in surgical literature.

A good many of the objections that are advanced with reference to this or that anesthetic, as regards relative safety or ease of administration, can be largely overcome by a better acquaintance with the particular anesthetic and a consequent improvement in technique. An anesthetic, or a certain technique may be condemned because of a lack of knowledge or training in the finer points of administration which, if more thoroughly understood or worked out, would always greatly improve the practical value of the anesthetic.

It can be readily understood that any state of induced general anesthesia is an abnormal condition and for this reason there will probably never be an anesthetic which will not cause, in some way, a certain degree of harm or lowered resistance as compared with the natural or normal state. Hence it is that those who are not accurately familiar with the use of an anesthetic will increase the deleterious effect on the patient in proportion to their lack of knowledge and their inability to master the details of correct administration.

Ether, as a surgical anesthetic, was first employed in 1842 by Doctor Long, of Jackson County, Georgia. Unfortunately he made no effort to acquaint the world at large of his discovery until Doctor Morton, of Boston, announced his successful administration of ether four years later, in 1846. Since that time many methods of giving ether have been brought forward in an effort to improve its administration and meet the special demands of surgical development. Thus we have the closed method, the open or drop method, the various ether sequence inhalation combinations, the intravenous method, the rectal method, the intratracheal insufflation method, and several other modifications.

The physiological action of ether in the production of inhalation anesthesia may be summed up as follows: It is a powerful stimulant to the respiratory system during the earlier stages of administration, and later on causes a slowing of respiratory movements and a decrease in depth, especially if pushed beyond the point of safety. Hence the rate and depth of breathing are the safest guides as to the degree of anesthesia, since the respiratory system is affected before the circulatory. It is a *direct heart stimulant* during the earlier stages of its administration, the pulse is accelerated and the blood pressure is slightly raised or remains constant. Only in the later stages of anesthesia, or when a toxic amount is employed, does ether become a circulatory depressant. Reports as to the effects of ether narcosis on the kidneys are somewhat conflicting, but would seem to indicate a mild irritant effect, although vascular renal stasis is induced by toxic doses. There is also a stimulating and irritant effect upon the mucous membrane of the air passages, producing a hyper-secretion of mucus which is of clin-

ical importance. The salivary glands are likewise affected and when the excessive secretion is swallowed postanesthetic vomiting is apt to occur. Ether is apt to excite an over-activity of the mucous glands of the stomach and intestines, causing retching and vomiting during and after the administration. Ether in connection with shock and other pathological conditions will be discussed later on.

In fatal ether toxemia, respiration fails before circulation. Hewitt points out that *the circulation at the moment when breathing ceases is sufficiently satisfactory for restorative measures to be almost invariably successful, and the heart is not likely to fail unless these measures are too long delayed*. While the heart may be arrested in diastole by ether, a fatal case of reflex inhibitory arrest has never been reported.

The effects of ether upon the nervous system, as observed clinically, are to be seen in connection with the four stages of anesthesia. The first effect is one of stimulation but with increasing dosage there is a progressive paralysis of the central nervous system, the phenomena affecting the centers in the following order: (1) The higher cerebral centers, involving the intellectual faculties; (2) the lower cerebral centers, involving sensation and motion; (3) the spinal cord, involving sensation and motion; (4) the medullary centers, involving vital functions.

When ether is administered according to the most modern technique, the subject, as a rule, passes quietly into the stage of surgical anesthesia. However, there may be individual variations, and should the anesthetic be clumsily given, without due regard to careful technique, the stages of anesthesia are quite well marked.

The *First Stage* usually lasts about two minutes. During this time the respiration is accelerated, blood pressure slightly increased and the pulse full and bounding. If the vapor is administered in too great concentration there may be a holding of the breath, swallowing, a feeling of suffocation, muscular rigidity, coughing, and turning the head from side to side. While these latter symptoms are indicative of a faulty technique in not providing more air, a super-sensitiveness to the drug may be obviated by preliminary inhalations of a 25 per cent. oil of bitter orange peel with 75

per cent. of alcohol. It is during this first stage of ether anesthesia that there is a varying and transient period in which minor operative procedures can be carried out, such as pulling a tooth or opening an abscess, but it must be understood that only work of a momentary character is to be undertaken at this time.

The *Second Stage*, or *Stage of Excitement*, is only apparent, as far as excitement is concerned, when the anesthetic is not smoothly given with reference to the individual case and modern technique. In any event, during this stage, there is a loss of consciousness with consequent interference with memory, volition and intelligence. The subject in this stage responds to stimuli and may give evidence of apparent consciousness, while incoherent talk, crying or laughing, singing or shouting, and struggling may initiate a typical stage of excitement. When excitement supervenes there usually follows a train of symptoms in sympathy with a too rapid stimulation of the lower medullary centers, such as irregular respiration or even apnea, the so-called "ether tremor," mucus and saliva are frequently secreted and perspiration appears over the face and other parts of the body. As the anesthetic deepens, rigidity of the muscles becomes marked with clonic and tonic contractions of certain muscles, notably those of the jaw and larynx. The pupils are dilated but mobile, pulse full and bounding, and the face is flushed. Cyanosis occurring at this time points to some obstruction to the passage of air, while vomiting would occur only during the transition from the second to the third stage.

The *Third Stage*, or *Stage of Surgical Anesthesia*, is important to recognize as it is the stage in which the patient is to be kept during the operation. Here the respirations are full, regular and generally audible. A soft stertor may be considered normal but if the breathing becomes strongly stertorons it is an indication of some obstruction in the air passage. The respirations are the principal guide as to the depth of narcosis. Regular automatic breathing should be regarded as standard, and a decrease in depth and amplitude of respiration indicates a return to consciousness while a marked stertor calls for changing the position of the lower jaw or head and, if continued, an investigation of the pharynx. While the face may be more flushed than normal, cyanosis

should not be present. The heart action is accelerated and the pulse full, bounding and regular. The pupils, if not affected by preliminary medication, may be slightly dilated though reacting to light, while the eye-balls are generally fixed. There is now a relaxation of all the muscles and this condition is maintained depending on the general conduct of the operation.

While the indications of returning consciousness are, in general, a retrograde transition to the second stage, marked by the return of reflexes, the *Fourth Stage*, or *Stage of Overdose*, is marked by general weakness and irregularity as regards the respirations and heart action. The pupils become markedly dilated and do not react to light. Cyanosis is present and blood pressure rapidly falls. The first indications of the onset of this stage are quiet feeble respirations and irregular pulse. After this the eye-lids become separated, with the eye-balls fixed and dry; the muscles are flaccid and continued drenching with ether will shortly bring about paralysis of respiration followed quickly by cardiac failure.

In general, ether is indicated whenever deep anesthesia is desired, as for amputations, dislocations, genito-urinary operations, laparotomies, and is far more suitable in all conditions of shock and collapse than chloroform. While Kocher maintains that respiratory disturbances, particularly with dyspnea, are contra-indications to the use of ether, Rovsing and others have demonstrated that not only will careful administration obviate any harmful effects but in most cases the condition is improved as a result. Unless the kidneys are badly damaged ether will cause no more harm than other general anesthetics. Ether has been condemned by some writers for brain and neck work on account of the venous engorgement, while others of large experience in the same localities, notably the Mayos, prefer ether, by the open method, to all other anesthetics. In any condition with high blood pressure, and in aneurism and atheroma, ether is contra-indicated. Elderly people, drunkards and heavy smokers do not usually take ether well and, according to Mortimer, infants and young children are also unfavorable subjects. Local anesthesia is beginning to play an important role in the cases where it

seems advisable not to administer ether or any other inhalation anesthetic.

From a practical standpoint, the administration of ether resolves itself into two methods, the open and the closed, with various modifications to suit individual cases and the operator's preference. While it would be folly to condemn any one method, well founded objections have been raised from time to time in connection with the unrestricted use of any particular procedure. This has led not only to improvement in technique but also to progress in the direction of overcoming difficulties and increasing the margin of safety until, as Gwathmey says, the indications for ether almost parallel the indications for operation, except for very short surgical interventions. Other things being equal, the method to adopt is the one with which the anesthetist is most familiar, thereby insuring greater safety to the patient. DaCosta emphasizes the fact that the administration should never be intrusted to a novice, and for some years, in the larger surgical centers, there has been a growing realization of the importance of developing experts.

In the *open* or *drop* method the mask may be any one of a number of useful inhalers, such as the Ferguson, Gwathmey, or Allis, and, having made suitable preparation to meet all emergencies, the induction of anesthesia is begun. This, according to Davis, is as follows: "Place a piece of rubber protector over the patient's eyes to shield them from the ether vapor. Protect the face with a moist towel or gauze which extends over the rubber tissue and around the chin. Use a wire frame mask similar to the Esmarch chloroform inhaler, only larger, in order to give more space under the inhaler for the admixture of air and ether. Cover the wire frame with one or two layers of stockinet or several layers of gauze. The gauze should be thrown away and the wire frame boiled after each administration.

"Apply the mask to the patient's face and administer the ether drop by drop, very slowly at first, then gradually increasing as the patient is able to take the stronger vapor. When the patient cannot respond to questions, a moist towel or gauze is wrapped snugly around the mask, leaving a small area in the center for the free passage of air through the gauze.

By this method the air is prevented from escaping around the edges of the mask, and is made to pass through the ether-laden gauze. The ether should not be dropped down faster than the patient can comfortably breathe it in. Never be in a hurry to put the patient to sleep. Do not let an impatient operator worry or hurry you on, as the welfare of the patient depends upon the slow and gradual ratio of the increasing concentration of ether vapor. The patient will become unconscious in two or three minutes, and should be ready for the operator in ten minutes. After the patient has become completely anesthetized very little ether, dropped slowly but continuously, will suffice to maintain the proper condition. Having reached surgical anesthesia, the further efforts of the anesthetist should be directed to observing the respirations, pulse and pupils, and the patient's general condition, and to prevent him from passing into that dread stage of respiratory paralysis. The respiration should be quiet, with perhaps a slight snore. Panting and rapid breathing, or irregular or stertorous breathing, indicate that the patient needs more air."

The use of oxygen with ether is often advantageous, particularly in diseases of the respiratory tract, as in empyema and emphysema. Whenever cyanosis tends to occur oxygen should be given with the ether, even though it tends to prolong the process of anesthetization. It may be given by inserting beneath the inhaler the tube attached to a reservoir of oxygen.

The early objection to the drop method was that it not only caused great refrigeration, which was harmful in many ways, but it prolonged considerably the earlier stages of anesthesia, particularly in robust subjects and alcoholics. When the technique of surrounding the mask with a towel is followed, as noted above, these objections are largely done away with, in that the patient does not blow the vapor into the air and he does not get the cold vapor that sinks through the mask with consequent refrigeration. In this connection, Davis has perfected a heater for warming not only ether but other anesthetics.

Gwathmey and Baskerville lay down the following rules with reference to emergencies during anesthesia: When respiration ceases the first thing to do is to give the patient a

quick, hard slap on the chest. If this does not start the respiration, the next movement is to place the hands upon the side walls of the chest and press very hard several times in succession. If the patient does not begin to breath immediately the following procedures must be carried out quickly: (1) Insert a mouth gag and pull the tongue well forward. (2) Lower the head, and while this is being done pressure upon the side walls of the chest must be continued. As soon as the Trendelenburg position is reached Sylvester's method of artificial respiration is begun. At the same time one assistant dilates the sphincter ani and another vigorously massages the praecordial region. If these procedures are not effective in two minutes the pulmotor is to be used or the Lewis pendulum swing should be attempted. Care should be exercised that the accumulations of mucus and saliva in the upper air passages are swabbed out or withdrawn by suction.

If the fourth stage is brought on by hemorrhage or shock, the anesthetic is not only stopped but the Trendelenburg position is maintained, with bandaging of the lower limbs to force the blood to the trunk, and an intravenous saline infusion with adrenalin is begun. Sometimes a hot rectal saline infusion or hypodermoclysis is very useful in anticipating the fourth stage. In addition to this hot blankets and bottles must surround the patient, and, in extreme cases of syncope, DaCosta not only gives hypodermic injections of atropin but also ether and even ammonia. Direct massage of the heart by opening the chest is a very doubtful procedure, but subdiaphragmatic massage through an already open abdominal wound has been reported several times as a success.

There are several *semi-closed* methods of which the so-called handkerchief method has probably given the best results. The cone is made by arranging a towel or handkerchief over several layers of stiff paper with either a thick diaphragm of wadded gauze at the top, or the latter may be closed in. It is not to be recommended as routine but as a handy expedient in an emergency. The ether is either poured into the cone from time to time or it may be dropped continuously upon the diaphragm of gauze.

The *closed* method of ether administration was the immediate precursor of the gas-ether

sequence and consisted of an inhaler with an attached rubber bag for the ether vapor, which latter was rebreathed, causing it to be warmed and refrigeration thus prevented. Although popular in England it never became so in America where little notice was taken of it until an adaptation of the method, in the form of a nitrous oxid gas-ether sequence, was developed. This latter method consists of giving one or two bags full of gas and, while the patient is unconscious, gradually turning on the ether. It was claimed to be a much pleasanter and shorter method of giving ether and it has had many advocates in this country. A number of excellent, though somewhat complicated, gas-ether-air inhalers are in use, such as the Bennett, Gwathmey and Davis inhalers, some of which have other ether sequences, such as chloroform, ethyl chlorid, and oxygen in combinations. On account of the more or less complicated apparatus, requiring usually a specially trained anesthetist, and on account of the difficulties in connection with emergency work, this method is not regarded with favor by the majority of surgeons. It may be looked upon as one of the refinements of anesthesia to be used in specially indicated cases where ether alone, for one reason or another, is not borne well. In a well-equipped hospital one of these inhalers should be on hand to be used when indicated by necessity.

The *Intratracheal Insufflation* method has been developed in connection with intrathoracic operations to prevent collapse of the lungs. The patient is first anesthetized in the usual way and, when unconscious, a flexible elastic tube is carried down almost to the tracheal bifurcation, under the guidance of the eye and by means of a direct laryngoscope. It is claimed by this method that there is less shock and post-operative vomiting, particularly if given as a nitrous oxid-oxygen-ether sequence. In operations about the head, mouth, neck, to keep the anesthetist out of the operator's way, and in goiter operations it is a safeguard against sudden suffocation. It is a method that requires considerable skill and experience to administer without injury to the patient and with satisfaction to the surgeon.

Rectal etherization is another method to prevent the anesthetist from interfering with the operator in operations upon the face tongue, pharynx and larynx. This method not only takes much longer, but is regarded as much

more dangerous than the inhalation method. It usually has many distressing sequelae and has been entirely supplanted by the intratracheal insufflation method.

Intravenous etherization is still on trial. In this method a seven and one-half per cent. of ether in normal salt solution is usually employed. Morphine, atropin and scopolamin are given beforehand. A vein is isolated in the usual way and from one-half to a pint of the warm solution is allowed to run in. Complete anesthesia is secured in from three to five minutes and is maintained by a constant succession of drops into a fresh salt solution slowly introduced. This method not only keeps the anesthetist out of the way but it is claimed that the dose of the anesthetic can be much more accurately measured than by the inhalation method. The same precautions are necessary as in respiratory anesthesia. *Hedonal* is also being used for intravenous anesthesia in a seven and one-half per cent. solution in normal salt solution and given continuously. It is too early to pass final judgment upon the intravenous method as it has received recognition only in certain European centers, notably Petrograd, Russia.

(To be continued in next issue.)

SAFETY FIRST.*

By P. H. KILLEY, M. D., Vivian, W. Va.

It affords me very great pleasure to be with you at this, our eighth annual meeting, and it is needless to say I have fully appreciated the compliment the Association conferred on me last year, in choosing me as the one to preside over this intelligent body, feeling eminently conscious of the fact that there were many others among our number so much better qualified than myself to fill this office.

A few weeks ago a conference of our Executive Committee was called to meet in the city of Roanoke to select the time and place for this meeting. There were only one or two of the members of the Committee present, but the valuable administrative talent of some of our Roanoke surgeons was called in to aid in the deliberations of the Committee. It was unanimously decreed by those present that there should be fewer papers read at this meeting

than on former occasions. The consensus of opinion seemed to be that the Association would prefer a complete recreation, the principal feature to be a social gathering rather than too much scientific research, so the number of papers on this program is limited to a very few as you will see. At our meeting last year there were so many papers, some of which were quite lengthy, but all of which were indeed valuable, that it took a great deal of time to get through with them,—in fact some of them were not reached for want of time. I myself had one which I very graciously withheld, and on account of the audience being tired and worn out, they doubtless felt thankful and relieved for having at least some of the readings left out, but I will not undertake to tell you how much you missed by not hearing my paper.

It truly seems to me that the time and place for our assemblage is decidedly auspicious—the time, the month of June, when all nature has donned its grandest attire; every tree and shrub fully and elaborately clothed in green—the most restful color to the retina;—every rose bush laden down with blossoms filling the air, not with the scent of hospital dressings, or any unpleasant odors, which too often greet our olfactories, but with that delicious perfume, peculiar only to the rose.

Our rendezvous is one of the beautiful, and I might say hallowed, spots with which the Old Dominion is replete. I feel sure that every individual within the sound of my voice is delighted to visit Old Point again, the place selected by our Executive Committee.

The members here who claim Virginia as their home are proud and happy to welcome you to this grand old Commonwealth. In the language of the Bard of Stratford-on-Avon, it could be well said of her, "This blessed plot! this realm! this Virginia! this nurse," not of kings, as Shakespeare would have it, but of statesmen and presidents; beginning with the immortal Washington and running down the list of names enrolled in the hall of fame, here and there asserting her rights to an illustrious son; and she still makes her title a valid one, claiming the present incumbent, our own honored and beloved Wilson.

The members from West Virginia might well feel a thrill of joy to pay their respects

*Address of President, delivered before the eighth annual meeting of the Association of Surgeons of the Norfolk and Western Railway, at Old Point, Va., June 10-11, 1915.

by their presence to the State from which the territory forming its bounds was derived, and for its motto and noble sentiment "mountaineers are always free," whose hills are covered with virgin forests, and concealed within its bosom untold quantities of oil and the greatest coal the world has ever produced.

Our brethren from the Buckeye State will duly appreciate the fact that their own thriving cities and progressive section of the country were once a part of the Old Dominion. And there are also some members of this Association present this evening from the State of Maryland, an own dear sister Commonwealth of Virginia. These gentlemen should, and doubtless do feel quite at home on these hospitable shores.

Then, again, we have with us some surgeons from North Carolina, who I am sure rejoice to be within the confines of their bordering State. Their tribulations were so insolubly welded with the fortunes of Virginia in the Civil War that the two governments have had a great deal in common since that unhappy epoch in the history of this country. North Carolina has ever honored Virginia and has prided herself on being her close neighbor, while, on the other hand, Virginia has always considered it a feather in her cap to border on the State which produced men who were "First at Bethel, furthest at Gettysburg, and last at Appomattox."

I have called your attention to the fact that technical and scientific papers are not to be expected. I also wish to call your attention to my difficulty in preparing this paper upon any other subject. My life has been spent in the practice of medicine, and any medical subject is of the greatest interest to me. For that reason I am going to violate my instructions and give you a paper which will not be too technical, and which will not be too scientific, but which I must confess, will border thereon. In order that I may apparently carry out my instructions and bow to the superior wisdom of the Executive Committee, I take for my subject the theme, "Safety First," and desire to call to the attention of those present that there is nothing either too technical or too scientific in those words, and hope that they will bear forgiveness if I violate the rule to which I have referred.

I have been a railroad surgeon for 35 years, and in my practice have encountered all sorts of difficulties and accidents. The changes which have taken place in railroad life in that length of time are certainly most remarkable, but nowhere are they more remarkable than in the life of the surgeon, nor is there anyone more competent to draw the comparison.

Originally a freight train consisted of cars, the brakes upon which were set by hand and coupled with link and pin. Today we see the same trains, heavier cars, and greater loads, but we see thereon the Janney coupler, and the Westinghouse air brake, and where formerly there were men with mutilated hands, we find few in that condition. The engines they used in those days burned wood. Today they have the celebrated Mallet engine, which does away with much of the firing, while a still further development are the electric motors upon the Pocahontas Division. We are returning to first principles. An old engineer would tell you how he used to wear a white shirt with wood-burning engines, but how he could not do it with a coal burner, and I expect that before long we will see the engineers in charge of the motors arrayed in dress suits and crush hats.

At this time there are very few signals of any character upon the railroad, and the orders today seem weird and wonderful, but what do you think of an electric signal system, and a train running from one end of the division to the other without any orders at all? This is what has taken place in the last thirty-five years, and to what is it due? I can only reply that it is due to the two words, "Safety First,"—safety not only to the passengers upon the trains, not only to stock running at large upon the track, not only to the crews upon the freight trains, but to each and all; a saving to those who work for our needs and welfare upon trains, of fingers that were formerly lost, and of arms and legs that were frequently removed, and, further than this, of life to those who were formerly deprived of that great gift of God. Safety First—are there any better words in the English language? The fact that every man upon a railroad is bent on making things safer and more secure for those who use it and for whom it is used. Safety First!

When we look from the train upon the track,

we realize that Safety First is still in being. Instead of wooden rails with a ribbon of iron thereon, or steel rails, 30 pounds to the foot, fastened with fish plates, we see 80-pound rail, fastened with bonzano joint. No more stub switches, but needle switches, which are constantly being improved and perfected. Under the old method, if a car or train ran off a stub switch it landed, where? And there was sure to be a wreck, but that state of affairs has now ceased. We now have automatic signals, and, last but not least, double track with stone ballast. The saving of life and limb has been just as great in proportion among passengers as employees, and now we find the telephone is being used to move trains. Safety First!

It will be shown by reference to our monthly bulletin, which sets forth the fact that the number of accidents is diminishing every month in a wonderful ratio, and the number of lives saved is certainly most remarkable. Think, my brethren, that the Norfolk and Western Railway Company was the first railway to adopt the motto, "Safety First;" the first to put it into practice, and the first to reap the benefits to be derived therefrom, and I can add that in no case is the credit due to anything more than the increasing attention paid by the surgical forces of the Norfolk and Western Railway, under the direction and guidance of that grand old man, the Chief Surgeon, Dr. Joseph A. Gale. I always honor his reputation and in that I am not alone in honoring so great and good a man, and, while they are not members of the medical profession, I do not think too much credit can be given to the aid and assistance he is rendered at all times by the various officers of the Norfolk and Western Railway Company. They are certainly not in the old category where railroad men were supposed to have hearts of iron and nerves of steel, but today people appreciate the fact that they are human and there are none too great to do justice and render aid to the various employees and passengers.

Now, brethren, I have told you the story of Safety First, although I regret that my inability as a speaker, and the length of time to which I have been limited have not allowed me to go any deeper into the question. However, I hope that if this paper is too technical that you will believe that it is a mistake of the

head and not of the heart, for I assure you that it is a need that affects us all very deeply.

Since the last meeting two members of the Association have been called from their earthly labors to realms of rest, both of whom happened to be from my section of the country, and both died tragic deaths.

Dr. W. B. Amick, of Glen Alum, West Virginia, was ruthlessly murdered by a band of Italian outlaws on the 14th day of August, 1914. Together with officers of the coal company with which he was associated, he was going from the main line of the railroad to the coal mine on a motor truck, when all were shot to death for the purpose of robbery, as they were carrying the money for the pay-roll for men at the mines.

Dr. J. M. Shepherd, of Falls Mills, Virginia, was found dead in his yard on the morning of November 20, 1914.

The time has now come for me to yield to my successor the gavel, and I wish to thank this assemblage for having allowed me to serve as your President during the past year. Time rolls on and we do not appreciate its flight; there are many things which we could have done, which we have not done and there are many things we have done that we should not have done; but I hope that on looking over my career my mistakes will not be considered to be of a serious nature, but that you will believe my heart was in the work and that I have done the best I could. I will hand down to my descendents the proud record of having been the President of this Association for a year, and will endeavor to implant in them an appreciation of the honor of holding this office.

And now that I have finished, I most sincerely hope that you will have a thoroughly enjoyable time. I am a firm believer in the maxim that "all work and no play makes Jack a dull boy," and I do not think there is any profession which is more entitled to relaxation from its labors and a thoroughly enjoyable time, free from professional cares, than that of the Doctor, and most especially the Railroad Surgeon. We are here with our wives, sisters and daughters, and I very much hope that the recollection of this occasion may last long in their memories as one of the most pleasant recollections of a long and happy life.

Clinical Reports.

NEURALGIA OF THE RECTUM.*

By LLEWELLIN ELIOT, M. D., Washington, D. C.

Some individuals will be affected by neuralgia of the rectum the same as others will be affected by neuralgia in other parts of the body; at the same time, when we speak of neuralgia, we usually associate it with the nerves of the face or of the chest.

The rectum is well supplied with blood vessels and nerves. The arterial supply comprises the superior hemorrhoidal, a branch of the inferior mesenteric; the middle hemorrhoidal, a branch of the internal iliac; and the inferior hemorrhoidal, a branch of the pudic.

The venous supply is maintained by a plexus and there is a free communication between the portal and the systemic systems.

The nerve supply is derived from the sympathetic system and the inferior hemorrhoidal. The inferior hemorrhoidal nerve may come from the sacral plexus or it may come from the pudic nerve: it communicates with the superficial perineal and the inferior pudendal, and in this way it is distributed to the rectum, the perineum, and the genitals.

Neuralgia of the rectum will be caused by anything which will produce a congestion of the rectum or anus. Impacted feces, constipation, straining at stool and sexual excitement will be active causes, while tumors, foreign bodies, enlarged prostate, varicose veins, hemorrhoids, varicocele, ulcer of the rectum and pressure from a pregnant uterus by interference with the circulation will be predisposing causes.

An attack of neuralgia of the rectum will be of sudden onset and may occur at any time. The pain will be most intense in the rectum and anus; this soon extends to the perineum, testicles, penis, labia or clitoris; in some instances it will extend to the coccyx. So great is the agony the sufferer will sometimes toss about the bed, roll on the floor and apply cold and pressure to the anus and perineum; he will sometimes attempt to dilate the anus by passing the fingers up as far as possible and then separate them to further dilate it. Some-

times profuse sweating occurs, also vertigo and fainting. At the expiration of from half an hour to three or four hours the pain will cease, to return at a future time. A movement from the bowels may give relief.

In treating these cases, always discover the cause if possible. Where ulcer, hemorrhoids, varicocele or varicose veins are found, operation is necessary for a cure. Foreign bodies, tumors, impacted feces, must be removed. Enlargement of the prostate will require appropriate treatment. In many instances no visible cause can be discovered and it is these cases that give the most unsatisfactory results.

A single dose of opium or morphia in many cases will give relief, but only temporarily, and the fear of inducing a habit must deter us from adopting this as a regular method of treatment; should opium in any of its forms be given, the suppository is best. Monobromate of camphor may be of service, still I have never seen any benefit derived from this preparation in any diseases. Hydrotherapy is indicated, and Tucker has suggested a stream of water under thirty pounds pressure be thrown against the perineum as a probable means of relief. All the preparations of valerian, asafetida, the bromides, every nerve sedative, have been used. Dilatation of the anus and rectum to the point of endurance; ointments and various suppositories have been tried, in some cases to be followed by a cure. Mathews has even gone so far as to excise the lower portion of the gut, and has reported a success in this. The patient had previously been treated with dilatation and application of carbolic acid. From what has been said, one may see to what extremes we are put to relieve our patients.

The case here related resulted in a cure, if we may consider two years freedom from suffering a cure, and the treatment was based upon analogy; other forms of neuralgia had yielded to it, so it was thought worthy of trial.

A. B., white, male, aged 35 years, married, good habits. No history of injury, hemorrhoids, or other rectal trouble; no enlargement of the prostate; no history of neuralgia or rheumatism. First seen July 20, 1913, when he was found suffering excruciating pains in the rectum; these pains passed high up in the

*Read before the Medical and Surgical Society of the District of Columbia, April 1, 1915.

rectum, down upon and around the anus, and radiated over the perineum. He had been given whiskey, and ice water cloths had been applied. An enema of soap water with one ounce of glycerine was given him and a hypodermic of morphia sulphate. An examination of the rectum did not show any cause for the pains, so a diagnosis of neuralgia was made. The bowels moved very soon and he fell asleep. In the morning he was quite well and so continued until about the middle of August when he had another attack: he had another in September. At this time he was given a suppository of opium. On the following day, a thorough examination of the rectum was made, using the finger, the rectal speculum, and then a proctoscope. I could not detect eczema, hemorrhoids, ulcer, or spasm of the sphincter: there was, however, a mild proctitis. As no cause could be assigned for his pains he was given a placebo. Later in the day while on the street car he had another attack and came to my office. The bowels were immediately moved and a solution of one per cent. quinine and urea hydrochloride injected just within the anus and the surrounding skin. In twenty minutes he experienced some relief. The effect of the quinine and urea hydrochloride lasted for three days: this was proven by his not feeling the point of the needle when another injection was given. Ten days afterwards the injection was repeated; three weeks after this another was given. At the end of two months another injection was given. At the end of six months there had been no return of his trouble, nor had there been at the end of two years. I have, therefore, recorded this case as a cure and offer the treatment for your consideration and trial.

Proceedings of Societies, Etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Reported by L. C. ECKER, M. D.

This Society met April 1, 1915, Dr. John Dunlop presiding. The first order of scientific business was:

Report of Cases.

Dr. Hazen reported a case of *favus*, a virulent type of ring-worm. X-ray caused the

hair to fall out with improvement. His attention had been drawn to a method used in Persia in treatment of these cases. A certain combination of pitch in an ointment was smeared on scalp and allowed to harden for two or three days and then forcibly removed, taking hair and skin with it. Recently he had seen two cases of indurated pustular eczema treated with vaccines in excessive dosage, with marked aggravation in the condition. He wished to draw the attention of the Society to the care which must be taken in use of vaccines.

Dr. Reichelderfer, in discussing the case, mentioned the danger of overdoses vaccines. Small doses frequently seem much better. He referred to a case of enormous ring-worm of the scalp which had resisted all treatment, only to respond to X-ray.

Dr. Hazen, in reply to various questions, said he considered intestinal stasis a predisposing factor. The appearance of acne in adolescence is due to the sebaceous glands increasing in size at this time, thus offering an excellent site for organisms of all kinds to grow. Is unable to explain why so many cases clear up on the face only to persist on chest and back. Acne occurs in about the same percentage in negroes as in whites, but boils are not as common.

Dr. Fremont-Smith said he had been called hurriedly to see a patient who, for the past two weeks, had pain across the chest. Had been leading a very active life previous to this, —traveling, climbing mountains, irregular food. Never had any symptoms referable to the heart. The patient vomited directly after he reached him. The vomitus contained food eaten the previous night (24 hours). The pulse was rapid and weak, and was not palpable. Patient was given morphine gr. $\frac{1}{4}$, and nitroglycerine gr. $\frac{1}{100}$, with directions left to repeat in one hour. Consultation held. The patient quieted down and slept. At 5 A. M. he was again called, the patient being in great pain. Died soon after. Examination of the heart was very difficult because of the feeble action. It was apparently a case of *angina pectoris* in the first attack. There could be no doubt that he had myocardial disturbance.

Dr. Eliot reported a case of

Neuralgia of the Rectum*

Dr. Kelley read the essay of the evening, entitled:

Appendicitis Complicating Pregnancy. †

DISCUSSION.

Dr. Reichelderfer, in opening the discussion, said he had enjoyed the paper exceedingly. Had two cases referred early in which the operation was done without difficulty. It is very dangerous to delay. A delayed appendix in the average adult may not prove a serious affair, but in pregnancy is extremely dangerous. It can be operated on safely. There has been too much stress laid on the possibility of terminating pregnancy. A year ago the speaker presented a case before this Society of an ovarian cyst removed at five months. This was on the right side and the symptoms were those of acute appendix. The pedicle of this cyst was twisted, but only partially so; no gangrene had resulted. The choice of an anaesthetic is very important in these cases. The speaker thinks that nitrous oxide and oxygen reduces the danger. Less anaesthetic is used, thus saving the kidneys. The parts should be handled very carefully to avoid abortion. Delay in these cases is extremely dangerous.

Dr. Fremont-Smith said the paper had brought out two points. The differential diagnosis between appendicitis and right pyelitis is not easily made in some cases. This is especially so if the kidney is not excreting pus at the time of catheterization. One feature which does differentiate is the character of the fever. In pyelitis, patients nearly always have a heavy chill, with high temperature, sweating, followed by subnormal temperature. The treatment for this complication in severe cases is to empty the uterus, or to remove the kidney. This latter could never be replaced and it would seem should not be considered. Early in his medical career he had seen a case at six months, beginning with severe chill, sweats and abnormal temperature, with pus in the urine. No consultation was available, and after much consideration of the case, it was advised to empty the uterus. This was done after a long delay, and in three months the urine was clear of pus.

Dr. Hagner said lavage of the kidney pelvis in pyelitis of pregnancy is indicated. If there is much retention, there is no relief. In one case of double pyelitis abortion was induced. Had seen a case of pneumonia complicating pregnancy, in which there developed general peritonitis. Culture from the peritoneum showed a growth of pure pneumococci.

Dr. Hickling discussed the expectant plan of Ochsner, and the immediate plan of Murphy.

Dr. H. P. Parker thinks the bad results obtained in acute abdominal conditions can be laid to the medical man. Thinks the proper time to operate is early—in six, twelve, or twenty-four hours. With such a procedure there would be little trouble. Many deaths are due to medical neglect in delaying opportunity for surgical interference.

Dr. Kerr mentioned that at a recent medical meeting where the Ochsner and the Murphy method came under discussion, Ochsner said, "I have forgotten the expectant treatment."

Dr. Kober thought it would be extremely interesting to know how many bacteriological examinations were made of removed appendices. Some years ago he had found a large number of inflamed appendices in typhoids. Many cases may be caused by bacilli carriers.

Dr. Adami, of Montreal, in speaking of the bacteriology of appendicitis, said that the streptococcus and rheumatoid group of organisms would be proven to be the cause of appendicitis. Not due to infection from within, but the infection was hematogenous; for instance, in gastric ulcer the supposition had been advanced that the infection here was hematogenous with blocking by emboli of small groups of organisms and resulting lesions. Only recently a pure growth of streptococci had been isolated from a gastric ulcer.

Dr. Kelley, in closing, said that, personally, he had never thought of draining a pyelitis. Agrees with Dr. Parker in early operation, and cited several instances to show fatal results of delay and improper use of morphine and castor oil.

Asiatic Cholera in Austria.

According to dispatches received August 23, the Austrian minister of the interior announced that there were 1,566 cases of Asiatic cholera in Austria on August 14th.

*For Dr. Elliot's paper, see page 253.

†For Dr. Kelley's paper, see page 240.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

Compend of Obstetrics—Especially Adapted to the Use of Medical Students and Physicians. By Henry G. Landis, A. M., M. D., late Professor of Obstetrics and Diseases of Women, Starling Medical College. Revised and edited by William H. Wells, M. D., Assistant Professor of Obstetrics, Jefferson Medical College. Quiz Compend Series. Ninth edition. 1915. Illustrated. Philadelphia: P. Blakiston's Son & Co. 12 mo. 261 pages. Cloth. Price, \$1 net.

This compend contains the essence of obstetric practice as it obtains today, and will present much to commend it where hurried reference is desired. We are surprised, however, that no mention, so far as we can discover, is made of "twilight sleep," even though it were referred to only to condemn it as a routine.

Editorial.

The Effects of Asphyxiating Gases.

During the past several months of the European war, much has been noted in the daily press about the use by the German army of asphyxiating gases when assaulting the positions of their enemy. The terrible effect of these gases is not described in such dispatches, so that we simply read of an inhuman warfare, without fully appreciating how, and to what extent, injury is done individual soldiers. Judging, however, from a description of the conditions resulting, those surviving would probably in a large percentage of cases, have their lives wrecked by permanently impaired health. Of those who have been wounded by shot and shell, and who receive hospital treatment, the results apparently are far more hopeful, for it is said that the majority—approximately 90 per cent.—recover and can again enter the services.

As throwing some light on the character of suffering produced, we quote from an interesting editorial, appearing in the *N. Y. Medical Journal* for August 14, 1915:

"R. Dujarric de la Riviere and J. Leclercq, owing to their favorable situation at Calais,

were able recently to examine 112 soldiers injured by asphyxiating bombs at Langemarek. In *Presse medicale* for July 15, 1915, they present a paper on this subject, which may be summarized as follows: The gases used were mainly bromides and chlorides and the principal phenomena noted were bronchial or pneumonic, although hepatic or renal symptoms were not infrequent and occasionally dominated the clinical picture. A few cases were of slight importance, but the majority presented pulmonary symptoms of great gravity, bronchopneumonia, pneumonia, and pulmonary gangrene, which the observers were able to follow in its entire evolution. Two patients presented cases of hemolytic jaundice and a third had for several days hemoglobin in the urine. The urine of the majority of patients was highly colored and contained abundant biliary pigment. Albuminuria of a persistent nature characterized a few cases. Histochemical and bacteriological study of the expectoration showed the pulmonary manifestations to begin with a discharge of desquamative debris and a few polynuclears, a picture soon modified into one of congestion and occasionally necrosis of the lung. At first the bacterial flora was insignificant, but the sputum sometimes contained anaerobes, particularly *Bacillus perfringens*. When gangrene supervened, anaerobes became abundant. An autopsy on a subject dead of pneumonia corroborated the findings of both clinic and laboratory.

"In the same issue of *Presse medicale*, Fernand Levy writes of the respiratory syndrome which follows inspiration of the asphyxiating gases. The first victim he examined, twenty-four hours after exposure, had been obliged to retire after an attack of burning in the throat, lachrymation, headache, apnea, and vomiting. He could hardly stand erect, the face was cyanosed, the lips were violet, and he coughed constantly, emitting a sputum streaked slightly with blood. From time to time he vomited; the axillary temperature was 101.3° F., the pulse weak and almost imperceptible at 145. Examination of the thorax disclosed an intense tachypnea; percussion showed no diminution of resonance, but auscultation revealed all over the lungs subcrepitant sounds, well nigh drowned in bronchial sibilance and sonorous rales. This man, who was lost sight of, is supposed to have succumbed within twenty-

four hours. Other patients showed, beside the symptoms already given, a heavily coated tongue, a dyspnea closely resembling that of uremia, a pulse of about 100, slight hemoptysis, vomiting, constipation, subicteroid symptoms, anuria, sometimes hematuria, and transient albuminuria. In autopsies on two Canadian soldiers, dead from asphyxia, the lesions were those of acute bronchitis and pulmonary edema; spectroscopic examination of the blood showed absence of all pigment. In Levy's opinion the gas used was undoubtedly chlorine. Within forty-eight hours the French soldiers were provided with a mask of several layers of gauze impregnated with a glycerinated solution of sodium hypophosphite; at the first sign of an attack they were to wet this mask with water and adjust it over the face."

Medical Society of Virginia.

The time is fast approaching for the forty-sixth annual meeting of the Society in Richmond, the dates being October 26-29. Headquarters, as in the past, will be at the Jefferson Hotel, this hotel with several other excellent hostelries in the city, being adequate to care for those who can leave the humdrum of daily life long enough to attend. In addition to the subject for general discussion—Diseases of the Biliary Tract—the president, Dr. Samuel Lile, of Lynchburg, has arranged a symposium on Tuberculosis to be conducted by a man of international reputation, and is otherwise doing what he can to add to the success of the meeting. Other interesting features will be added to the scientific program and the local physicians hope as far as possible to fill in pleasantly the spare moments of the visitors. Dr. Thomas W. Murrell is chairman of the committee of arrangements. The secretary, Dr. Paulus A. Irving, Farmville, will also be glad to furnish any information requested.

The Association of Seaboard Air Line Railway Surgeons,

Which held its fourteenth annual convention at Wrightsville Beach, near Wilmington, N. C., August 17 and 18, selected Jacksonville, Fla., as the convention city for next year and elected the following officers: President, Dr. R. L. Harris, Jacksonville, Fla.; vice-presidents, Drs. Frank L. Eskridge, Atlanta, Ga., W. A. McPhaul, Lumberton, N. C., and L. J.

Picot, Littleton, N. C.; secretary-treasurer, Dr. J. W. Palmer, Ailey, Ga., re-elected.

Owing to the deaths of the Wilmington surgeons, Drs. Caldwell and Harper, a few days before the time of the meeting, some of the social features were eliminated. However, Dr. John C. Wessell, who was appointed to succeed Dr. Caldwell, acted as chairman of the committee of arrangements. At the concluding session held on a trip down Cape Fear River to Ft. Caswell, Dr. Joseph M. Burke, of Petersburg, Va., who this year celebrated the tenth anniversary of his election as chief surgeon of this road, was presented by the Association with a diamond pin as a token of esteem.

Swimming Lessons as Part of School Curriculum.

Since the Eastland disaster, the subject of making swimming lessons a part of the public school curriculum in Chicago, has been much discussed. It is estimated that this would cost Chicago \$1,000,000 a year.

We note that Philadelphia has inaugurated such classes and that the public school swimming centers completed their first term after having instructed nearly 1,000 children in this feat. Three thousand were enrolled during the first term.

This matter is a subject worthy the attention of other school authorities.

New Antiseptic.

Drs. Alexis Carrel and Henry D. Dakin, after experimenting at the Compiègne Military Hospital in France, believe they have discovered an ideal antiseptic preparation for the treatment of infected wounds and have already obtained some wonderful results. This is a mixture of hypochlorite of lime with the addition of carbonate of lime and boric acid, the two latter constituents apparently overcoming the injurious effects of hypochlorite of lime to the tissues and enabling it to keep better.

The King William County (Va.) Medical Society,

At its meeting in West Point this month, elected the following officers: President, Dr. Alvah S. Hudson, West Point; vice-president, Dr. Hawes Campbell, Enfield; secretary-treasurer, Dr. B. B. Bagby, West Point.

Married—

Dr. Alexander W. Williams and Miss Florence H. Light, both of Washington, D. C., on August 12th. They will shortly sail for the Philippines, where Dr. Williams, who is a first lieutenant in the medical corps, U. S. Army, is to be stationed. Dr. Williams graduated from Johns Hopkins Medical School in 1912.

Dr. Thomas Dwight Sloan and Miss Margaret Bell Dunnington, University Va., at Seoul, Korea, July 29. They will be at home after October 1st at Nanking, China, where Dr. Sloan goes as a medical missionary.

Dr. Edwin L. Kendig,

Victoria, Va., was unanimously re-elected chairman of the Democratic county committee at its meeting at Lunenburg Courthouse, this month.

The American Electro-Therapeutic Association

Is scheduled to meet in Atlantic City, N. J., September 14-16, with headquarters at the Chalfonte Hotel. Dr. John W. Torbett, Marlin, Texas, is president, and Dr. J. Willard Travell, New York City, secretary.

Dr. Blue Honored.

Trustees of the American Medicine Gold Medal Award have unanimously selected Surgeon-General Rupert Blue, of the U. S. Public Health Service, as the American physician who did most for humanity in the domain of medicine during 1914, and have therefore awarded him the 1914 gold medal for his work in national health and sanitation.

The Federated Societies for Community Betterment

In Loudoun County, this State, named Dr. Harvey W. Wiley, the famous pure food expert, as their president. At the Purcellville meeting, Dr. Wiley made an address and aroused profound interest in the plan of the Loudoun County Society to employ a rural nurse. More than \$800 was raised for this purpose and it is expected the additional funds will shortly be in hand. In places where rural visiting nurses have been employed they have been found to greatly aid in bringing the fundamental truths of prevention home to the individual family.

Dr. J. W. Wallace

Has been elected by the town council of

Covington, Va., to succeed the late Dr. W. B. Payne as secretary of the local board of health.

Tennessee Barber Shops to be Registered.

A law has been passed in Tennessee whereby all barber shops must be registered with the health department by September the first. Among the regulations are the following: no barber with a communicable disease is to be allowed in the shop, a freshly laundered towel is to be used for each customer, the styp-tic stick is to be abolished, and customers with any breaking-out on the skin can be shaved only when they furnish their own shaving cups and brushes.

Dr. William M. Randolph,

Formerly of Charlottesville, Va., is now located at Tombstone, Arizona, where he is in charge of the hospital at that place conducted by the Copper Queen Consolidated Mining Company for the care of their employees.

The American Public Health Association

Will meet in Rochester, N. Y., with headquarters at the Mechanics' Institute, September 7-10, Prof. Wm. T. Sedgwick, of the Massachusetts Institute of Technology, presiding. Prof. S. M. Gunn, 755 Boylston St., Boston, Mass., is secretary.

Dr. G. T. Collins,

Of Highland Springs, Va., accompanied by his family, went early this month by automobile for a visit to relatives in Madison County, this State.

Anti-Typhoid Treatment Popular.

The anti-typhoid treatment, which is being given free by the State of North Carolina, was taken by 2,235 people in Weldon on August 9th. Four doctors were kept busy from 8 A. M., until long after closing hours of the dispensary.

Dr. and Mrs. I. Keith Briggs

Have returned to their home in South Boston, Va., after a motor trip to Washington and the Berryville Horse Show. On their return they stopped in Roanoke, Va., for a visit to Dr. and Mrs. John O. Boyd.

The American Proctologic Society,

At its seventeenth annual meeting in San Francisco, June 21-22, Dr. Louis J. Krouse, of Cincinnati, presiding, elected the following officers: President, Dr. T. Chittenden Hill, Boston; vice-president, Dr. Frank C. Yeo-

mans, New York City, and secretary-treasurer, Dr. Alfred J. Zobel, San Francisco. The place of meeting in 1916 will be Detroit.

Dr. and Mrs. W. A. Shepherd

Are on a motor trip in the western portion of Virginia and will return to their home in this city, the first week in September.

Jefferson Medical College.

Philadelphia, is to receive \$100,000 for its endowment fund, according to the will of the late Josephine Lewis, conditional upon the raising of a like amount by its alumni.

Dr. and Mrs. M. W. Peyser,

Of this city, have been motoring for the past ten days through the western section of this State.

The Virginia Tuberculosis Commission,

At its recent meeting at Catawba Sanatorium, determined that it is necessary for this State to begin a more active campaign for the prevention of tuberculosis and that, for this purpose, educational work is the first essential. From statistics furnished by the State Anti-Tuberculosis Association, it was somewhat a surprise to the members of the Commission to note the large proportion of young mothers who succumb to the white plague.

Dr. Waller Nelson Mercer,

Who graduated from the Medical College of Virginia in 1914 and received an appointment to Gouverneur Hospital, New York City, will locate in Richmond about September the 1st at 114 East Franklin Street.

The American Association of Obstetricians and Gynecologists

Is to hold its annual meeting in Pittsburgh, Pa., September 14-16, under the presidency of Dr. Charles L. Bonifield, of Cincinnati. Dr. E. Gustav Zinke, also of Cincinnati, is secretary.

Changes in Virginia of U. S. Army Medical Officers.

Captain Mahlon Ashford, M. C., upon being relieved at Fort Hunt, Va., by Lt. E. W. Patterson, M. R. C., will proceed to Ft. Sam Houston, Texas.

Capt. Thomas C. Austin, M. C., has been ordered to Ft. Monroe, Va., relieving Capt.

Henry C. Pillsbury, M. C., the latter having been ordered to the Walter Reed General Hospital, D. C., for duty.

Pellagra Colony in South Carolina.

We note that \$4,000 has been appropriated for the maintenance of a pellagra colony in Spartanburg County, South Carolina.

Dr. Leslie B. Wiggs

Was on August 12th, designated by the Administrative Board of this city as chief in charge of the volunteer medical staff of the City Home.

Dr. D. Mott Robertson,

Of Spout Spring, Va., was nominated to oppose R. F. Burke as county treasurer of Appomattox, at a meeting at the courthouse on August 20th.

Tuberculosis Day.

An unique proclamation issued by the Governor of Michigan was to have August 20th known as Tuberculosis Day. Upon this day it was suggested that "any person in Michigan desiring a medical examination whereby he may ascertain whether he has any of the symptoms of tuberculosis, may have such examination and advice by asking a physician for it." All physicians engaged in the practice of medicine were requested by the Governor as well as by the Tuberculosis Committee of the Michigan State Medical Society to render this service without charge on that day.

Dr. and Mrs. J. W. Henson,

Richmond, Va., have returned from a visit to Lewisburg, W. Va.

The Tucker Sanatorium,

The private sanatorium of Dr. Beverley R. Tucker, of this city, for the treatment of nervous diseases, is shortly to be moved from its present quarters to 212 West Franklin Street. The residence on this property is being remodeled for modern sanatorium purposes and an addition of twenty-eight rooms is being constructed.

The Southside Virginia Medical Association

Is to hold its next quarterly meeting in Lawrenceville, September 14, Dr. E. R. Hart, of Suffolk, presiding. Dr. E. F. Reese, Courtland, is secretary.

Dr. Otis Marshall

Was in what came near being a fatal accident on the evening of the 11th instant, while returning to his home in Culpeper, Va. In passing a vehicle, his automobile turned turtle catching him under it. When extricated, he was found to be suffering with a number of bruises and a broken shoulder.

Dr. N. Thomas Ennett

Has returned to his home in this city, after spending the month of July in Boston

Campaign Against Alcoholism.

Apparently following the initiative of other warring nations, a dispatch from Milan, Italy, states that licenses have been withdrawn from 1,800 sellers of alcoholic drinks, thereby closing many places and inaugurating a campaign against alcoholism.

Dr. A. S. Harrison

Has retired from the office of superintendent of public schools of Enfield, N. C., after a service of fourteen years.

Dr. and Mrs. R. S. Fitzgerald,

Of this city, visited South Boston, Va., this month.

Decrease in Birth Rate in Germany.

It is stated that the birth rate has greatly decreased in the German Empire as compared with this time last year, there being a decrease of almost 1,000 monthly since January in Berlin alone.

Dr. Robert Whitehead,

Of Norfolk, Va., visited Amherst, Va., the middle of this month.

Remedy for Meningitis.

It is announced that Dr. Bull, of the Melbourne, Australia, University, claims that eucalyptus is a specific remedy for epidemic cerebro-spinal meningitis. We are not informed as to its mode of administration, etc.

Dr. W. S. Beazley

Has returned to his home in this city, after a motor trip with his family through the Blue Ridge Mountains and Valley of Virginia.

Surgeon John F. Anderson,

Of the U. S. Public Health Service, was sent to Norfolk, Va., early this month for diagnosis of a suspected case of plague.

Dr. H. Gilbert Leigh,

Of Petersburg, Va., was a recent visitor to Baltimore.

Dr. J. F. May,

Of Waverly, Va., with a party of friends went on a several days' fishing trip down James River on the 10th of this month.

The Association of Military Surgeons of the U. S.

Will hold its twenty-fourth annual session in Washington, September 13-15, and there is every promise of an unusually interesting meeting. Col. J. R. Kean, M. C., U. S. A., Ft. Leavenworth, Kan., is president, and Brig. Gen. Sam'l. C. Stanton, M. C., Ill. Nat. Guard, Chicago, secretary.

Dr. Charles Moncure,

Of Orange, Va., has returned from a visit to Asheville, N. C.

Dr. and Mrs. B. A. Hord

Have returned to their home in this city after an extended visit in Seattle and San Francisco.

Obituary Record

Dr. Paul Ehrlich,

The discoverer of salvarsan, and one of the most noted and honored of German scientists, died suddenly of heart disease on August 20th, aged 61 years. Half of the Nobel prize for medicine was awarded him in 1908 and he was honored by the German Emperor and Edinburgh University in 1914. At the time of his death Dr. Ehrlich was chief of the German government's institute at Frankfurt.

Dr. C. J. Finley

Died at his home in Havana, Cuba, August 20th, aged 82 years. It was in 1881 that Dr. Finley pointed out that yellow fever is transmitted through the agency of the mosquito, though it remained for Reed and his co-workers, of the U. S. Army Commission, "to furnish incontestable experimental proof that yellow fever is a mosquito-borne affection."

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PERICOLIC ADHESIONS.*

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Washington, D. C.

Professor of Surgery, George Washington University;
Surgeon-in-Chief, George Washington University
Hospital.

When I was honored by the request to read a paper before this Society, I was at first somewhat at a loss as to what subject I should choose, but as I have been particularly interested of late in intra-abdominal adhesions, I have ventured to present this paper, not in any way as conclusive, but only as summarizing the result of my observations and with the hope that following its reading it will be freely discussed by the members.

The abnormal structures, veil or band-like in appearance and adhesional in character, overlying the colon, are now recognized as causative of many abdominal and general pathologic conditions. The obscurity of the etiology of many of these structures, the indeterminate symptoms they so often cause and the problems presented in their treatment, are bringing them forcibly to the attention of clinicians. The existence of these adventitious peritoneal structures has long been known. Jennesco described them as parietocolic folds and Treves called such investing covering of the colon the "bloodless fold." These, and in fact all intra-abdominal adhesions and bands, were, until comparatively recently, considered as of little moment unless they caused pain or intestinal obstruction.

The appendix, the gall bladder, the stomach and the duodenum have been considered the principal abdominal offenders. Lane aptly says regarding the appendix, "there is a remarkable tendency to ascribe to the appendix

any tenderness in or about a line which extends from the anterior superior spine of the right ilium to the umbilicus."

Gradually, in addition to pathologic conditions of the appendix and other intra-abdominal organs, intra-abdominal adhesions have come to be looked upon as primary or secondary to intestinal stasis with its following chain of evils; as secondary to certain acute, and sub-acute or chronic inflammatory conditions and as causative of a long list of chronic and some acute abdominal symptoms.

Lane has been particularly active in calling attention to the pathologic significance of intra-abdominal adhesions, always using the term "adhesion," in referring to adventitious structures overlying or attached to the intestines. These adhesional structures may occur in relation with almost any part of the large intestine but as those connected with the colon, especially with the caecum and ascending colon, are by far the most common and enter strongly as factors in complicating differential diagnosis in affections of the right abdominal region, particularly pathologic conditions of the appendix, gall bladder and duodenum, the writer will, in this paper, consider only those which are pericolic in situation.

With one type of pericolic structure, the well known Jackson's Membrane, the profession is quite familiar. Jackson's paper published in *Surgery, Gynecology and Obstetrics*, September 1909, contains the most careful description of this type of adhesion which the writer has been able to find in medical literature.

In regard to this form of pericolic investment, Jackson and all writers agree that this adhesion, veil or membrane connected with the caecum and ascending colon, arises in, and is continuous with the parietal peritoneum and thence sweeps over the colon.

The Jackson membrane type of pericolic

*Read before the Rochester (N. Y.) Pathological Society, April 22, 1915.

structure covering the caecum and ascending colon or both, is distinctly veil like and in places is separated entirely from the underlying colon and can be lifted from it without causing hemorrhage. On account of the ease with which these membranous adhesions in some cases can be lifted from the colon, and as they closely resemble thin peritoneal folds, some observers believe them to be actual folds of peritoneum enveloping the colon. Apparently on account of their peritoneal like appearance, William Mayo, in "Mayo's Clinics for 1910," advances the theory that these investments of the colon are due to the insinuation of the colon between layers of the peritoneum at the time the rotation of the large intestine occurs in embryo.

They are not, however, as many believe, an entirely distinct separate membranous investment of the colon, nor do they cover the colon entirely separated from it as a veil covers the face. On the contrary there is, especially at the outer and inner sides of the colon, distinct continuity of structure between the over-lying membrane and the peritoneal coat of the colon. In addition there are always many minute vascular and connective tissue attachments extending from the surface of the colon to the membrane. The writer has never seen a membranous adhesion or fold which could be lifted throughout its entire extent from the underlying colon without breaking through some of these fine adhesions.

The membrane described by Jackson belongs to the above type. It rises from the outer parietal wall, covers the whole of the free circumference of the colon and imperceptibly becomes lost in the inner side of the colon. It is this type of membrane which some observers believe to be a reflection of the peritoneum.

Where the "Jacksonian membrane" type of adhesion exists the colon may be but little compressed or immobilized or it may be more or less compressed, angulated, bound down and immobilized by the overlying adhesions. At the hepatic flexure excessive angulation and binding together the two arms of the angulated gut is not uncommon.

Another type of pericolic adhesion is of the type definitely described by Lane. This form arises from the parietal peritoneum and passes down over the ascending colon to merge into its inner wall. In the erect position, with the

intestines pulled downward these bands appear as though they were actually pulling up and supporting the intestines, preventing them from being displaced downward. The most prominent of these adhesions occurs at the hepatic flexure, has its origin close to the base of the gall bladder, is often more or less attached to the gall bladder, and thence passes down spread out fan like over the colon at the hepatic flexure.

Lane has described a similar band near the termination of the ileum (Lane's kink), which pulls the ileum upward and Mayo describes a form of Lane's kink in which the ileum is pulled downward instead of upward. Lane calls particular attention to a band at the beginning of the jejunum which causes a kink near the beginning of that part of the small intestine with consequent obstruction and dilatation of the duodenum. Lane considers all these and other adhesions of like character in the abdomen to be due to "crystallization along the lines of force" and believes them to be an attempt on the part of nature to prevent the downward displacement of the intestines which is favored by the erect position of the body in the higher vertebrates. He also holds that their formation is favored by irritational absorption from the large intestine due to intestinal stasis.

In the writer's opinion the theory of the production of these structures by insinuation of the large intestine between folds of the peritoneum during the embryo life is untenable. There is no such laxity in the peritoneum of the embryo or foetus as will allow a fold to be thrown over the colon at the time of intestinal rotation. Further, I have been informed by Dr. H. H. Kerr, one of the surgeons to the Providence Hospital, Washington, D. C., that he has observed a perfectly typical Jackson's membrane covering the colon in a case of non-rotation of the intestines found at operation.

In the writer's cases, these adhesional structures appear at those places in the intestines where there is the greatest liability to intestinal inflammation or stasis, most notably about the caecum and ascending colon, the terminal portion of the ileum, the beginning of the jejunum and at points along the colon where caecal stasis or inflammation can occur in loops or diverticuli of that gut.

In the writer's opinion, all these adhesions,

membranes or veils are caused either by a low or a high grade of inflammatory action. At the caecum and ascending colon they may arise in connection with an acute or chronic appendicitis; or independent of appendicial inflammation probably as Lane holds by irritational absorption from intestinal stasis or from localized colitis or pericolicitis. Bands at the hepatic flexure may arise and no doubt do arise from inflammatory activities in the gall bladder or duodenum or in the colon. The sagging and pouching of the walls of the large gut tend to stasis, absorption of irritants and consequent pericolic inflammatory processes.

Symptomatology: The symptomatology of uncomplicated cases of adhesions about the large intestine is rather indefinite except in those cases which have progressed to a point where intestinal obstruction of a greater or less degree becomes evident.

If complicated with inflammatory conditions on the right side of the abdomen, the symptomatology of the inflammatory conditions usually overshadows the effect of the adhesions and a diagnosis of appendicitis, gall bladder disease, or ulcer is usually made and the adhesion found only at operation.

These adhesions have been so often overlooked at operation that all authorities now recognize the fact that in many cases, unrelieved by operation for appendicitis, gall bladder disease, gastric or duodenal ulcers, the continued symptoms are due to unobserved and unrecovered colonic adhesions.

Uncomplicated cases, namely, those in which no pathological conditions, other than adhesions exist, present no definite or pathognomonic signs.

Patients so affected complain of more or less indefinite gastric and abdominal disturbances, such as discomfort after eating, eructations of gas, loss of appetite and constipation. They not infrequently, have gradually lost weight, are nervous, and do not well bear physical or mental strain. They often present a type known as neurasthenic, and as above stated, have had not infrequently abdominal surgical operation without relief. In these cases the use of bismuth meals or enemata with X-ray examination is the only clinical method which gives definite findings. By such examination it is often possible to determine alterations in the form of the caecum or ascending colon and

lack of mobility in that portion of the intestine, with consequent delayed onward movement of the contained bismuth. When adhesions extended over the hepatic flexure increased angulation for even a complete looping of the colon may be made out.

The following case is given as presenting the usual conditions when adhesions are uncomplicated with other pathologic conditions:

Case I. W. H., male, age 47 years. Referred to me for examination with suggestion that chronic appendicitis, gall bladder trouble, or ulcer of the stomach or duodenum existed.

All the usual tests for ulcer were made and were negative. Patient was somewhat tender over the right abdomen and complained of being habitually much constipated and had to be careful of what he ate. Suffered with occasional attacks of rather severe pain in the abdomen, particularly on the right side, which attacks were not accompanied with fever and were not characteristic of gall stone colic. His condition was generally below par. he had lost some weight, was somewhat neurasthenic and did his usual work under physical and mental protest. He had not had typhoid fever or other infectious disease. In other words, symptoms were of a vague general character which might be associated with chronic appendicitis, gall bladder infection, or ulcer of the stomach or duodenum. X-ray after bismuth was made and it was noted that the bismuth remained in the caecum and ascending colon for a considerably longer time than usual.

Presence of a pericolic membrane was thought possible but definite diagnosis was not made. Operation was recommended and patient was very desirous of having it done in order that some definite finding might be had and relief afforded.

The abdomen was opened with right rectus incision, the appendix, gall bladder, stomach and duodenum were found absolutely normal. A typical pericolic membrane was found extending over the middle two-thirds of the ascending colon, the hepatic flexure and caecum being free. This membrane had its outer attachment to the meso colon and its inner attachment to the same structure on the inner side. When the colon was held up at the hepatic and caecal end, the middle portion sagged down just as a clothesline does when heavy clothes are stretched across it. At places the

membrane was thicker, stronger and bound the colon more deeply downward than at others.

The membrane was separated from the colon by inserting the blunt end of the handle of a scalpel between the membrane and the colon. In many places separation was effected without bleeding while at other points the membrane was somewhat attached to the colon. The adhesion was divided throughout and the colon was entirely freed until it had none of the dragged down clothesline appearance, and bulged upward freely into the wound. The cut surfaces were smeared with sterile vaseline although but little bleeding and raw surfaces were presented.

Recovering was uneventful, patient has been entirely relieved of his constipation, bowels move regularly, but he still complains of occasional vague pains in the right side. He has gained several pounds in weight, has lost all of his feeling of lassitude and depression. States that aside from slight attacks of soreness he feels entirely well.

This is typical of those cases which are unconnected with appendicial or gall bladder inflammation and in which the pericolic membrane is apparently due either to a low grade of pericolic inflammation from stasis or to a localized pericolicitis.

Where pericolic adhesions have progressed until they somewhat obstruct the ascending colon, the patient is often conscious of gaseous disturbances in the right iliac region evidenced by gurgling, distention, and pain. When in addition to this or connected with these adhesions there is appendicial inflammation of a chronic character, it is usual to diagnose chronic appendicitis and determine the adhesions only upon operation.

The following case (2) is interesting in that it combined appendicial inflammation with adhesional obstruction, and displacement of the kidney.

Case II. M. T., white, unmarried, age 25 years, consulted me, stating that she was suffering from general debility, due, as she believed, to a floating kidney on the right side, the kidney conditions having been determined by another physician. She complained of a dragging pain on the right side, some tenderness in the right abdominal and lumbar region, a general feeling of fatigue and of being below par. She was somewhat constipated and did not

have quite as good an appetite as usual, but otherwise was in fair health. On examination, a movable kidney well down toward the pelvic brim was easily made out.

She had already had suggested to her that the kidney should be fixed in place as it was probably causative of her trouble. I agreed to this and did a fixation operation from which she recovered without incident.

The operation, however, failed to afford her any relief. She complained of the same pain and tenderness as before, declared that the kidney occasionally came down, and then gave her pain, that she could actually feel it and could push it back into place. She believed that the fixation operation was unsuccessful and stated that her symptoms were identical with those before the operation. Upon repeated examination I could never determine that the kidney was down. As she was a young woman of unusual intelligence, I was obliged to admit that there was something in the right abdominal region which she felt at times and I requested, should the tumor appear at any time, that she let me know in order that I could palpate it. She was, however, never able to get me at a time when the tumor presented itself. I therefore had a ureteral catheterization done, the pelvis of the kidney filled with argyrol and X-ray made. This showed the pelvis and kidney in normal position, but did not prove that the kidney could not or did not descend at times. Shortly afterwards, I was summoned to her residence and found her with all the symptoms of a mild attack of acute appendicitis. I thereupon stated that I believed all her trouble had been due to chronic appendicial inflammation with caecal stasis and recommended immediate operation. Consent was given and operation done within a few hours. A typical acute appendix was found and in addition a pericolic membrane was discovered spread locally over the caecum and more closely over the lower colon with a broad constricting band about one-third up from the lower end of the colon. This band reached across the colon and so bound the colon down as to reduce its lumen from one-third to one-half its usual calibre. This at once explained all the symptoms from which this patient had been suffering; namely, she had chronic appendicitis which had produced a pericolic membrane with an

obstruction band and proximal to this band, gas and fecal matter occasionally accumulated causing distention and pain. Pressure upon the tumor would express its contents; the whole simulating the descent and pushing upward of a displaced kidney.

The appendix and pericolic adhesions were removed and the raw surfaces covered. Recovery was uneventful and the patient has been entirely well since.

It is also of interest to note in this case that when the abdomen was open, careful examination as to the movability of the kidney was made by Dr. F. R. Hagner and myself and we found it absolutely firmly fixed in its normal position.

When bands exist at the hepatic flexure with some obstruction at this point, the case may be mistaken for a low grade of chronic cholecystitis or may so closely simulate a case of gall stones without colic as to make a differential diagnosis very difficult, if not impossible. The pain or tenderness is then over or just to the right of the gall bladder region, colicky pains often quite sharp in character are felt at this region and these, with indigestion and gaseous eructations from which these patients suffer, make it difficult to determine the exact condition until an exploratory laparotomy is done. The following case (3) is illustrative of this condition:

Case III. Miss E. G., white, 27 years of age, unmarried, was admitted to the George Washington University Hospital complaining of rather sharp pains in the upper part of the abdomen.

Temperature was 99.2°, pulse 98, leucocytosis 16,800. She had not been nauseated but had belched a great deal of gas and was still occasionally having eructations. She gave a history of having had similar attacks of pain at intervals but had never taken morphine for them or been confined to bed. Had been suffering with indigestion two or three years and five years before had had typhoid fever.

She was constipated and upon examination marked tenderness was elicited in the right upper quadrant. There was much gurgling upon manipulation over the ascending colon. Tenderness and pain was evident in the back just below the right kidney region. Her bowels moved well after enema. She was placed upon observation and her condition remained

practically unchanged for several days. As soon as possible an X-ray fluoroscope and photographic examination was made, but no very definite findings were had except that there was a moderate amount of colonic stasis. She was informed that she probably had either cholecystitis, due to gall stones, the result of typhoid fever, or adhesions about the large intestines, and operation was advised, to which she readily consented. Vertical incision was made through the outer edge of the right rectus, the gall bladder was found normal, but broad adhesions were found reaching down over the hepatic flexure, spreading out fan-like over the colon, immobilizing and constricting it. The adhesions were carefully separated, all surfaces reperitonized and the appendix removed. Upon slitting and examining the appendix, it was found to be normal and there were no adhesions about the caecum or lower colon. Recovery was uneventful and the patient has been relieved of all symptoms since operation.

In other cases evident symptoms of pronounced obstruction exist as shown in the following case:

Case IV. Miss J. C., white, unmarried, age 31 years, was taken ill one morning and I was called to see her two hours later. She complained of having right sided abdominal and lumbar pain, she had vomited several times and while she was habitually constipated, her bowels had moved that morning.

Her temperature was slightly sub-normal and her pulse varied from 86 to 92. Leucocytosis 8,750. In the presence of low leucocyte count, subnormal temperature, and continuous vomiting, I was inclined to believe that obstruction was present and enema was given with entire satisfaction; this was repeated at several intervals during the course of her illness and always with resulting passage of fecal matter and gas.

Her temperature remained sub-normal, pain in the right abdomen and lumbar region continued. There was some gurgling and the vomiting, while at irregular intervals, continued and was very annoying. The patient's general condition was not particularly good, the recurring vomiting being the most serious symptom. Finally, on the fourth day, her temperature rose to 99.5° and she gave a leucocyte count of 17,000. An operation was done

at once and a most typical pericolic adhesion of the Jackson type was found. Over about four inches of the mid-section of the ascending colon a veil-like membrane was spread which bound the colon quite firmly down to the posterior abdominal wall. The appendix and gall bladder were absolutely normal.

In this case the membrane was carefully separated between ligatures as it was in some places quite dense and bound the colon down more firmly than at others. It was removed with comparatively little bleeding, although in all cases in my experience, some fine blood vessels extend from the underlying colon to the overlying membranes.

When all the adhesions were separated the colon was entirely mobilized and bulged out of the wound in a most spectacular manner as compared with the way it was bound down in the abdomen before the removal of the membranes.

The appendix though normal was removed.

Following operation, recovery was uneventful, all pain and discomfort disappearing and the patient has been entirely well since.

I may here describe an operation appearance of these membranes present in the above case and which in many cases is very characteristic. After the abdomen has been opened, if the operator holds the colon above the adhesion with one hand and below it with the other and then makes tension upon it, at the same time attempting to lift it out of the abdominal cavity, the anterior longitudinal band will sag from being held downward by the overlying adhesion or veil and will closely resemble a clothesline upon which a very heavy wash has been hung. I have called this "the sagged-down clothesline appearance." It is indeed a most definite characteristic and shows the overlying and bound down membrane most definitely and clearly.

Treatment: The treatment of pericolic adhesions ranges all the way from simple division of the adhesions to the extreme of colectomy.

But, whatever surgical treatment has been adopted whether simple division or colectomy, the great post-operative trouble which has been encountered has been the reformation of adhesions. While entire relief after operation is at first experienced, this relief is not infrequently followed by a recurrence, or even

exaggeration of the original symptoms. There is probably no intra-abdominal trouble which requires more careful consideration by the surgeon, for, owing to the great diversity of conditions met with, the same operative procedure cannot be adopted in all cases and each case must be handled to the best of the operator's ability under the conditions which are present in the particular case. When slight or narrow bands, membranes or adhesions are present, they can usually be easily divided in sufficient amount to allow complete liberation of the underlying intestines and this with production of a comparatively small amount of raw surface. Small raw areas can usually be re-peritonized by infolding and suturing the peritoneal coat of the intestine over the raw areas and, even if there are multiple areas, provided they are separated from each other and a too large surface is not exposed, infolding and suturing can be repeated over each denuded surface and thereafter there will be no recurrence of the adhesions.

In fact, re-peritonization of the peritoneal surfaces is, in my opinion, the ideal procedure in all cases where it can be adopted.

Unfortunately, we sometimes have such large areas of denuded surface after removal of the overlying adhesions that re-peritonization is impossible.

Williams, in these cases, has suggested suturing the large intestine to the parietal peritoneum. His article, is published in January 1914, in the *Annals of Surgery*, but his cases so treated have been too few and the time elapsed has been too short to determine whether the method suggested by him will be effective. Personally, I have never practiced it and fear that the suturing of the intestine to the peritoneum would produce a condition perhaps no better than the one from which the patient had been suffering before operation, for the intestine will surely affix itself quite firmly to the immovable abdominal wall and so immobilize the gut.

Some operators have smeared the raw surfaces with sterile vaseline or other sterile oil. William Mayo reports treating cases in this manner but the concensus of opinion is that the use of these foreign substances in the abdomen is probably useless, so far as preventing post-operative adhesions is concerned.

In some cases where the great omentum is

sufficiently large and the peritonized surface too large for re-peritonization, fixation of the posterior surface of the omentum to the raw surface may, in my opinion, be practiced with good result as the omentum will not produce contraction or immobilization of the underlying intestine.

Undoubtedly a great majority of pericolic adhesions can be satisfactorily treated by re-peritonization or fixation to the overlying omentum, the use of the omentum being particularly efficacious where there is a folding together of two layers of the intestine or adhesions between two parts, as insertion and fixation of the omentum between the surfaces prevents a re-adhesion.

In regard to resection and short circuit operations, it may be said that they, at least with conservative surgeons, are as yet largely debatable. Some striking results have been obtained by these procedures but even in the hands of their greatest advocate, Lane, uniformity of good results is far from constant. In fact, one of the most serious objections to this operation is the post-operative formation of extensive adhesions involving the remaining intestines.

Lane, who has so enthusiastically advocated colectomy, said at a clinic last summer in London, at which the writer was present, that the only great obstacle to these operations which it has been found impossible to overcome, is the formation of intra-abdominal post-operative adhesions. As adhesional growths are in many cases the only cause of the symptoms, if their removal by colectomy is followed by recurrence of adhesions which cause as much trouble as the original adhesions, then colectomy for adhesions cannot be considered adequate surgery. Surgeons must guard themselves against the enthusiasm aroused by the apparent good results which immediately follow operations and carefully consider the less happy conditions which may later appear.

Lane, in a late paper, states that he has abandoned re-peritonization of the kink which bears his name, as this operation has been followed so frequently by no relief to the patient and wherever the kink in the ileum is sufficient to warrant operation he now does an ileosigmoidostomy, with immediate or later removal of the colon.

For the kink which bears Lane's name it is probable that the majority of surgeons will hesitate to follow Lee's radical example in treatment, at least until they can be sure that the patient will not suffer from post-operative ills equal to those for which he desires relief.

William Mayo, according to his last writing upon the subject of Lane's kink which the writer has found, used excision of the adhesion causing the kink and re-peritonization, an entirely conservative and it would seem safe and curative procedure, though Lane has found it ineffective.

Moynihan, in an authoritative paper on intestinal stasis read before the Clinical Congress of Surgeons of North America, in London, 1914, stated that he believed that in *serious* cases of intestinal stasis nothing short of colectomy offers a substantial chance of cure, but that, instead of removal of the entire colon, he prefers to do Friederich's operation of resection of the last part of the ileum, the caecum and ascending colon.

In cases where the peritoneal adhesions are so extensive and cover so much of the ascending colon as to make its re-peritonization impossible or where the denuded surfaces can not be suitably covered by overlying omentum, and in post-operative relapse cases, the operation of Friederich may be advocated as the best procedure to be adopted, particularly as this operation allows a very adequate peritonization of all denuded areas and closure of the gaps between the divided ends of the mesentery.

Possibly, even a more extended removal of the colon may be demanded in very bad cases, especially, probably, in relapse cases following conservative operations where, after removal of adhesions, veils or membranes there has been reformation of old or formation of new adhesions.

Careful consideration of all the facts in adhesion cases shows that their surgical treatment is by no means easy and that complete relief of our patients must depend upon the careful adaption of the operation to all the factors present in each case.

The procedure to be adopted will often be greatly aided by knowledge gained through careful X-ray findings made before the patient comes to the operating table, for these findings may show conditions which will enable

him after the abdomen has been opened to come more rapidly to a conclusion as to what operative procedure can best be followed.

PERNICIOUS PURGATION FOR ABDOMINAL PAIN.*

By G. P. LaROQUE, M. D., F. A. C. S., Richmond, Va.

The doubling-up bellyache of childhood was commonly relieved by the classical castor oil treatment, administered by mother upon the suggestion of "grandmother" or a sympathetic neighbor. In the days of our youth, especially during green apple season, castor oil, calomel, epsom salts and other nauseating medicines were administered doubtless to clean out the gastro-enteric canal, though many of us sometimes were inclined to believe that the purpose of punishment lurked in the motives of those whose duty it was to chastise us for disobedience of orders given to us as warning. Even in adult life, the colicky effects of lobster salad, mayonnaise, crabs and ice cream, call for swift purgation for the relief of the pernicious effects of the insult to our intestines inflicted by our palates.

Be it noted, however, that the colic of infancy, now called ileo-colitis; the bellyache and quick-step of green apples, now called cholera morbus; the abdominal knock-out due to an indiscreet mixture of certain irritating foods in hot weather, now called food or ptomaine poisoning, that all these affections are characterized by diarrhea in addition to colic; and that a swiftly acting purge is urgently called for to hasten relief.

On the other hand, practically all cases of severe abdominal pain in which the causes above mentioned are not immediately obvious, are commonly attended by bowel tightness or at least the absence of diarrhea and are attended or soon followed by nausea and vomiting. Appendicitis, bile tract disease with or without stone, pyloric inflammation and spasm with or without ulcer, pancreatitis, kidney colic, inflammation of the pelvic organs, extra-uterine pregnancy, twisted ovarian tumors, strangulated or incarcerated hernia, intestinal obstruction, peritonitis from any source, these are common causes of abdominal pain independent of obvious dietetic errors and com-

monly attended by constipation, never by diarrhea.

The monumental physiological treatment of peritonitis enunciated and so lucidly described and strongly emphasized by Ochsner, has caused us to view from the proper angle the treatment of all affections characterized by acute abdominal pain. The fundamental principle of physiologic rest to any structure the seat of inflammation, calls urgently for the rigid avoidance of foods and purgatives in the management of all colicky affections of the gastro-enteric canal save lead colic and those diarrheal affections due to food indiscretion. The clinical observation of surgeons that in appendicitis, purgation provokes peritonitis has caused us to reverse the teaching of fifteen years ago that calomel and castor oil exert a curative effect upon "certain cases of appendicitis." The belief in this teaching was with such difficulty surrendered by its adherents, that certain eminently qualified practitioners continue to administer the purge supported by paregoric, laudanum and other opiates for the purpose of preventing its purgative action and of alleviating pain. Now, however, since the teaching of Ochsner and others has spread into the remote corners of the profession, it is high time for us to urge upon the doctors, and especially the laity, that purgation in the presence of abdominal pain, except when the pain is accompanied by diarrhea, or is obviously that of lead colic, is dangerous practice, productive of peritonitis, antagonistic to the relief of pain, dangerous in causing the spread of the inflammatory disease and on the whole pernicious in effect. On the other hand, recognized standard practice, based upon the production and maintenance of physiologic rest of all abdominal organs, in the presence of colic, demands the withholding of food, and the application of local relaxing remedies such as hot water bags, ice bags, turpentine stupes, etc., and the additional use, when needful, of such remedies as paregoric and other opiates, with the usual carminatives. Complete splinting of peristalsis is called for and when this is violent, morphine is needful and should be administered hypodermically while preparation is made for a surgical operation.

Until only a few years ago we were taught that the "symptoms must not be masked by opi-

*Part of didactic lecture to third year students at the Medical College of Virginia.

ates." When it is borne in mind that save with lead colic, practically all affections of the abdomen characterized by abdominal pain, unless accompanied by diarrhea, or at least by a looseness of the bowels, are due to surgical pathology, and when it is remembered that most such affections are easily diagnosed at a single thorough examination, and since it is also recognized that to pacify peristalsis is perhaps the most important part of a preparatory treatment for operation, it will at once be conceded that it is much better to mask the symptoms by splinting the pathology than it is to intensify the pain and spread the pathology by stimulation of peristalsis through the administration of a purge. It is not universally agreed that the management of peritonitis and appendicitis or of any other abdominal pathology should be guided by the hands of the clock, but it cannot be doubted that standard principles in the treatment of non-diarrheal affections, characterized by abdominal pain call for the maintenance of physiologic rest through remedies directed to the pacification of peristalsis. It should be emphasized that purgation antagonizes recovery through spreading pathology and aids in making the diagnosis only through intensifying the symptoms and advancing the disease through the production of complications. Moreover, while drug cathartics administered by mouth are most harmful, an enema is also a persuader of peristalsis (and therefore a cathartic) and should also be scrupulously avoided save in rare instances just before operating or when it is certain that the advance of the pathology is completely arrested and resolution is well begun.

501 East Grace Street.

SHOCK, ANOCI-ASSOCIATION AND ANESTHESIA.*

By A. M. FAUNTLEROY, M. D., Washington, D. C.
Surgeon, U. S. Navy.

(Continued from page 250.)

Chloroform as a practical anesthetic was first made use of by the Edinburgh obstetrician, Doctor J. Y. Simpson, in 1847, as an effort to secure a more agreeable anesthetic than ether. It quickly supplanted ether for a while until reports began to show it a more danger-

ous anesthetic. There can be no doubt that on account of the insidious action of chloroform it is far more unsafe in unskilled hands than ether and, aside from the early sudden deaths that have been reported from its use, the symptoms of overdose come on so gradually, being much harder to recognize than ether, the patient is often practically dead before effective restorative measures can be brought to bear. It might be said that the symptoms of ether poisoning are so clumsily manifested as to call attention to their presence more quickly, whereas in chloroform poisoning there is so little warning that often there is not time to accomplish the emergency measures. Again, in keeping a patient in the surgical anesthetic state the zone of safety is not as broad with chloroform as with ether and this latitude of restricted usefulness in the third stage of chloroform anesthesia is such as to make it more liable for the patient to either come out from under the anesthetic or slip over into the fourth or paralytic stage. All this points to the fact that the chloroform anesthetist, as a rule, has to be much more attentive than the ether anesthetist, and that it requires much more skill and experience to administer chloroform safely than it does to administer ether safely. From this it can be seen that although chloroform may be administered with comparative safety by an expert, it is relatively more dangerous than ether.

Aside from its action on the higher cerebral centers, chloroform, in contrast to ether, affects the circulatory system primarily and the respiratory system secondarily. Even in this secondary action the effects are largely dependent upon the low arterial tension, although the respiratory system, even to the extent of complete cessation of breathing, is also affected through the action of chloroform on the nervous mechanism of respiration. In this latter action it is practically identical with ether and it also exerts, though in much milder degree than ether, the same general effects upon the respiratory system. According to Gwathmey, the vasomotor center is primarily stimulated by chloroform and does not become paralyzed by the direct action of the agent until the stage of deepening narcosis, when death is imminent.

Experimental evidence is very conflicting as to the exact reason why chloroform acts as a heart depressant, the question being whether the effects are produced directly upon the

*Read before the Augusta County Medical Association, Inc., at Staunton, Va., February, 1915.

cardiac muscle or whether through the inhibitory action of the vagus. That it does exert a specific depressant action on the heart all agree, but whether directly or indirectly is yet to be decided. There is abundant proof that chloroform tends to paralyze the neuromuscular mechanism of the blood vessels and, as Gwathmey says, it is now generally conceded by clinical observers that a dilatation of the entire cardiovascular system follows the inhalation of chloroform, and the fall of blood pressure is thus accounted for. Hewitt says that chloroform is a powerful protoplasmic poison with apparently no specific action on any particular center or organ. At the same time there is a great deal of experimental and clinical data that points to a reflex stimulation of the vagus, causing sudden inhibition of cardiac pulsation, which is responsible for the sudden death from cardiac syncope in the first stage of anesthesia. As regards the kidneys, it is generally believed that chloroform exerts a less harmful irritating effect on a damaged kidney than ether. There is also a well founded belief that chloroform does not stimulate the flow of mucus, in both the respiratory and digestive tracts, to the extent that ether does.

The effect of chloroform on the voluntary muscles has a direct bearing on the administration, particularly in the third or anesthetic stage. Muscular relaxation usually occurs at this stage, but not infrequently clonic spasms of certain muscles, particularly of the fingers (piano-playing movements), may be noted. There may also be slow co-ordinate movements, or jerky adductor movements, of the arms. Occurring at this stage an inexperienced anesthetist may ply the patient with more chloroform, thinking that there is a lapse to the second stage and thereby greatly endanger life, on account of the narrow margin that exists between the therapeutic and the toxic dose of chloroform. There is a decided tendency to tonic spasms, during the earlier stages of chloroform, in the muscles of the extremities, abdomen, chest, larynx, neck and jaws. On this account there may be spasmodic tongue retraction, giving rise to stertor and stridor from obstruction, while there is also a tendency later on to a falling back or "swallowing" of the tongue which also causes symptoms of obstruction.

The effect of chloroform upon the nervous system has already been foreshadowed by refer-

ence to the different stages of the anesthetic condition. Like ether, there is an arbitrary division into four stages of anesthesia, the general symptoms of which, with few exceptions, are practically the same for both drugs. This latter statement applies strictly to the higher cerebral functions. Attention is again invited to the physiological effects of chloroform to emphasize the important changes in the lower medullary and spinal cord centers. These changes are not the same for ether, and are to be noted in the primary cardiac and general circulatory depressant action of chloroform, with a secondary respiratory depressant action; in the sudden reflex cardiac inhibitory action occurring sometimes in the earliest stage of chloroform anesthesia; in the lessened irritant effects of chloroform on the mucous membranes; and in the more pronounced effect upon the voluntary muscles than ether. In addition to this it is usually more agreeable to the patient and is quicker in its action than ether. While the general preparation for, and the handling of, emergencies is practically the same for both drugs, it must be remembered that chloroform demands the undivided attention of the anesthetist and a prompter action on his part to counteract any harmful effects. In view of the apparent specific action of chloroform on the heart, the anesthetist must be prepared to exert prompt and powerful cardiac stimulation when sudden syncope occurs.

The *indications* for chloroform have been practically outlined under ether. They may be enumerated as follows: (1) Very young or very old people; (2) insane patients; (3) serious affections of the respiratory apparatus; (4) aneurism and atheromatous arteries; (5) operations in which the actual cautery is to be used close to the face; and (6) operations upon the brain. The *contraindications* are given as follows: (1) Very prolonged operations; (2) when low blood pressure or cyanosis is already present; (3) general septic conditions; (4) diabetic patients; (5) myocardial and valvular diseases; and (6) all operations where for any reason the patient has to be placed in a sitting posture.

The *drop* method of administering chloroform has long been considered the safest procedure when it is given alone. It is important that the patient should always be recumbent with the head on a line with the body. As

the vast majority of chloroform fatalities reported have occurred in the first few minutes of administration, the patient should always have preliminary medication and be reassured as to any harmful effects in order to offset any psychical element. The following is Gwathmey and Baskerville's method of induction: A few drops of Farina cologne are dropped upon the mask. This should be supplemented in one-half minute by one or two drops of aromatic spirits of ammonia, or preferably a few drops of an alcoholic solution of the oil of bitter orange peel. The first drop of chloroform can now be administered, and in thirty seconds the second drop, that is, two drops the first minute. This can be increased to six drops the second minute. The third minute, two drops may be given every ten seconds; the fourth minute, three or four drops every ten seconds; the fifth minute, five to ten drops every ten seconds. If the patient is not in full surgical anesthesia by this time, the administration may be continued as follows: Eight or ten drops every ten seconds for one or two minutes longer. No time is wasted by beginning the administration of chloroform very slowly. The mucous membranes are, in a measure, blunted and, if conducted methodically this way, the surgical stage will be ushered in by the automatic respirations of the patient, the first and second stages not being observed ordinarily. When the surgical stage is reached it is well for the anesthetist to continue dropping the maximum amount for one or two minutes and then go back to three drops every ten seconds for the next minute or so, and then to decrease this amount to two, or increase to three or four drops every ten seconds continuously, and after that depending upon the patient's reflexes. It usually requires from four to eight minutes to reach full surgical anesthesia and in this stage the pupil contracts to normal, the respirations become *regular and automatic*, the reflexes disappear, the pulse slows down or is normal, and, with chloroform alone, the face is usually pale. The patient must be kept in this stage as a lightening of the anesthesia may touch the vomiting center and trouble will immediately follow. It is best to be guided by the respiration, circulation, lid and color reflex, and amount of anesthetic given.

When chloroform is administered with oxygen the narcosis is improved and when the

anesthetic is warmed there is no reduction of body temperature. Several ingenious and useful inhalers have been constructed to admit of not only giving oxygen and warmed vapor, but also nitrous oxid gas. These methods, as with ether, have proven highly satisfactory in trained hands but the more complicated the method, the more the anesthetist will have to look after and, in consequence, the less attention he will be able to devote to the patient's condition.

(To be continued.)

THE SELECTION OF STANDARD INSURANCE RISKS.*

By M. J. PAYNE, M. D., Staunton, Va.

Abraham Lincoln replied, when asked how long a man's legs should be, that he thought "as long as necessary to reach from his body to the ground." And, I think, the length of life's expectancy of the insured should be as long as necessary for the Company to obtain sufficient returns from the premiums to profit thereby. An insurance company cannot exist unless it earns sufficient means to meet all its losses, and pay the cost of management. This is proven by the hordes of "assessment concerns" that have, and are, continually going to the wall. But, on the contrary, the life expectancy should not become a means for speculation to such an extent as to make a Life Insurance Company an excessively profitable venture, yielding large and ever-increasing returns, the stock of which is much sought after or held as splendid investment, thereby forming Life Insurance Trusts. In other words, although the benefits accruing to the stockholders from large returns held in life insurance is in one sense right, inasmuch as the profit is obtained from those who succeed and live, yet, to make money on the chance of one's living, or rather depending on one's living beyond the expectation in order to profit by the added premium, seems unwarranted. But can it be avoided? Can the actuaries so form a policy that will always yield a safe and exact return to the company? We all want safe insurance. The insurance usually goes to the "safe company" in this day, and, as I see it, scarcely any material difference exists today in companies commonly called old line. To avoid the accumu-

*Read before the Valley Underwriters Life Insurance Association, Staunton, Va., June 7th, 1915.

lation of large, unnecessary and, therefore, incorrectly obtained surplus, I am of the opinion that the proper safeguard is the mutualization of companies. For, in this way, automatically so to speak, the proper returns should and would be made to the policy holder, and would allow the distribution of a proper return to those who invest or capitalize the companies, and give to mankind opportunities for one of the wisest investments, and likewise return a suitable and profitable experience so far as the company is concerned. It is and should be the aim of all companies to give to the policy holders as great a return as is consistent with the investment the policy holder makes. Likewise, the company should be able to conduct its affairs safely for the policy-holders and at the same time obtain sufficient revenue for all expenses, and yield a fair rate of interest for the stock-holders,—the old adage of Hubbard's "each for all" and thereby "co-operate and live." A constant per cent. of profit should exist, in proportion to the amount of business done by the small and large companies alike.

But you ask what has this got to do with the rejected class? This is the class that not only concerns the agent, but the examiner and the Medical Director. The subject of selection then of a risk that will answer to the requirements of life expectation is the problem, alike difficult and important, and of vital interest. All have a right to be insured under the conditions that may be classed as normal. But what of the abnormal risk, the substandard risk? Let us for a matter of argument add another class, the supra-normal class, the better than average risk. It is just as possible for a company to be too careful, too exacting in the selection of a risk, as to be too careless. The exaggeration of certain, specific reasons for rejection leads to the selection of the supra-normal class, the above-standard class, while the neglect or failure to observe the proper selection allows the selection of the substandard risk. And, although the former may prove profitable to a considerable measure, yet it is not in accord with the proper selection of risks, inasmuch as it denies to an applicant, of the somewhat arbitrarily lessened standard, the benefit of a class of insurance in which the company should suffer no loss, and which should not be denied the applicant. The se-

lection of risks taken without medical examination will show a higher mortality in the cases classed as normal than in a class properly selected from the substandard group. In other words, a nearer approach can be made to the expected or standard risk by the proper selection in classes taken from the substandard group, than can be obtained by the average as taken from all lives, under all circumstances.

Time and again it has been shown that the best representatives from a poor or bad class of risks will have a more favorable mortality rate than the average of a much better class.

It then follows clearly that medical selection, if required, should be made carefully and exactly, leaving nothing for granted, and should be reduced to a standard, and all companies should conform to the same standard; indeed, it would be far better for all companies of the application blanks and medical examination were reduced to a standard and all companies would employ the same blank, and follow the same rule or method for the selection of risks. In this way an applicant refused insurance by one company would not find insurance elsewhere to the detriment of the company. And, likewise, all applicants would be extended the same method and rules of selection, therefore, treated fairly and alike.

We find now much interest in a consideration of the standard mortality table, the expected mortality table and the actual or experienced mortality. Upon the standard table of mortality must be based the calculation for the premium. The expected mortality may, and is often not found to agree with the actual mortality. For example, if the actual mortality shows 75 per cent. of the expected mortality, the class shows a mortality 25 per cent. more favorable than the standard. However, if the class shows a mortality of 125 per cent., then the actual mortality is 25 per cent. in excess of the expected, and, therefore, correspondingly unfavorable. Now, wisdom in selection should show only a slight departure from the standard table of mortality and, therefore, the expectation of life, the extension of the policy term agreeing.

How is it possible then to make the selection of applicants to meet the requirement laid down without medical examination, and how is it possible to meet the exacting conditions

without full, complete, careful and standard rules of medical selection? The mere fact that the company pays the examiner, and that the compensation for such services is in keeping with the work required and done should guarantee the examination to be both exact and searching. The selection then made by the company in determining the advisability or inadvisability of the risk depends upon the standard set by the company. This standard should neither be too exacting nor too lenient for reasons obviously plain, as the extremely exacting standard is unfavorable to the applicant, and more favorable to the company, while the reverse is likewise true.

Medical treatment of many diseases heretofore regarded by the Life Insurance Companies as uninsurable, have by reason of advanced and more perfected ideas of treatment and medical progress placed many of these cases in the safely insurable class.

It should be that syphilis, when properly treated and made a class for special selection, bearing in mind that the selection in each case is based on a known and admitted history of syphilis, and properly selected, should present a more nearly approach to the normal mortality rate, than a class not known or not admitting syphilis, for the sole reason that the prevalence, malignancy and improper treatment of this malady, of so great importance in selection is in some sections and territories practically of unipresence prevalence. The selection of the class in which tuberculosis occurs demands careful attention to the normal standard of physical health, weight and age. It is true that the proper selection here with regard to conditions and environment has proven to be a safe class.

Whenever a moral hazard is accepted, both the company and the general assured suffer in selection of this class. The acceptance of any from this class must of necessity act to increase the mortality and lower the earning of the company, and thereby either raise the premium or decrease the dividend. Extra hazardous risk by reason of certain occupations is slowly declining by reason of the "safety first," yet much education is required in this class. People will continue to take risks with steam cars, automobiles, and on the streets, as well as in submarine, subterrestrial, and on the

streets for the saving of a moment, and this class presents an unfavorable mortality rate.

Tobacco, excesses in eating, improper food, and bad habits, neglect of proper care of the teeth, and general health, the use of patent medicines, the selection or quack or irregular unscientific and harmful methods of personal treatment in cases of illness or injuries all form classes presenting special risks, and proving increasingly hazardous and difficult to select.

Alcoholism should be classed as a moral hazard, and so denied insurance if continued or indulged in for any time, either periodically or daily, for any period of more than a youthful discretion.

Certain diseases, and I mention by way of illustration, the diseases of the blood, blood vessels, and the heart, continue to show a high mortality rate—lead the medical director to be extremely exacting in the selection of any case showing either a hereditary or personal tendency to this group of diseases. Yet repeated experiences from this group of risks have shown the wisdom of careful selection in this class. Habits, environments, diet and occupation demand a careful consideration in the selection of any risk, but are of special importance in the selection of a risk from the sub-standard group.

Improved sanitation, better and purer water supplies for the cities, more intelligent knowledge of the infectious and contagious diseases, combined with health education and propaganda of boards of health, and physicians of the regular schools and some of the insurance companies, and the work of the visiting nurse will largely safeguard the risks from infectious and contagious diseases. Epidemics are things of the past, and we have only to fear pestilence or starvation arising from the wrecked nations of war.

It is well nigh impossible to safeguard the class known as the suicidal, for the reason that no mental test will at times reveal the later determination to take one's life.

In the selection of women, I am inclined to think that the rather unprofitable experience of the companies in this class is probably due to the difficulty of making a complete and exacting examination. Women forget and seek to hide their answers in embarrassment. I re-

call a case in which the only safeguard would have been a very searching physical examination which would have shown the presence of a cancer. Women, very readily remove the clothing when examined on account of their personal health, but are exceedingly loath to do so in the case of examination for insurance, and then the matter of offending and competition comes in to the detriment of examiner and the company. The only solution here is to include the examination of the female breast and pelvic organs for diseases showing an increasing morbidity and mortality.

The selection of cases applying for "large policies" presents an unusual condition, inasmuch as the experience of all companies in this class has not been uniform. It is practically sure, however, that the careful selection in this group will show the average of the class to be much better than the average of a class although taken from the group commonly called "first class risks," but carrying a smaller amount of insurance. The explanation is that the surroundings, the environments of those taking larger policies are better.

To sum up then:

Should the moral hazard be given insurance? No.

Should the alcoholic be given insurance, even at an increased premium, or with a lien? No, because this class shows a decrease of about two-thirds of the average expectation, and there is no rule to correctly estimate the morality or mortality in this group.

Should the deformed, lame, blind or deaf be insured? No, unless in very exceptional cases, as the risk to life in the present day is too great by reason of their disability.

Should the class exposed to special vocational hazard, as the soldier, be insured in time of peace or war? Yes, but only in companies organized, controlled and made up of risks of the class in question.

The companies want further to be cleared of untruthful and biased reports made by special advice. Likewise, the company should deal fairly and in a straightforward manner with all of its examiners.

The question, then, is, will the applicant live out the expectancy and will the mortality be in keeping with that expected? Can medical selection aid the companies in determining

whether one will probably live out the expectancy? Yes.

Can the selection from classes known to present certain specific conditions necessitating grouping under the "sub-standard class" be made to show a satisfactory mortality rate? Yes, for the experience of one of the most careful companies today, recently made public, shows that some of their substandard policy holders are now obtaining insurance at a lower cost than if they had taken the standard policy.

Will suitable medical treatment, and the willingness to submit to proper and regular medical treatment aid in the selection of a risk and safeguard the insured and the company by prolonging the expectation of life? Yes.

Will standard examination, uniform tests, and uniform rules of selection, prove fair to the applicant and to the companies alike? Yes, for the reason that all applicants will then be treated alike, and fairly. There can then be no inducement to try to place business with a company known to take a substandard risk declined by another and equally as good a company.

The problem then, is just how long a man's legs (life) should be, and just how long his legs are (expectancy).

PYELITIS.*

By B. M. ROSEBRO, M. D., Richmond, Va.

My excuse for presenting this subject to you is the fact that during the next few months we have frequent cases of what is probably the chief cause of this condition in early infancy, i. e., diarrhea. *Bacillus coli* is responsible for the majority of cases reported up to the present time.

Complete etiology of pyelitis would include infections, digestive disturbances, and food disorders, producing symptoms in the intestinal tract. Calculi, phimosis, infections of the throat and respiratory tract, and even bronchitis, otitis, and meningitis have borne the blame of causing this condition.

Thompson, in discussing the route traversed by the bacteria, says, "It is scarcely ever possible to decide in any individual case which route the bacilli take in passing from their original position to where they ultimately set

*Read before the Richmond Academy of Medicine and Surgery, June 8, 1915.

For discussion, see page 280.

up disease. It is, however, quite certain that they are sometimes carried by the blood stream, sometimes pass by the lymphatic channel, and sometimes ascend from outside by the lumen of the urinary tract." These different routes have their advocates, but I think a discussion of this useless at the present time, and we will leave this for future study to observe and decide. Girls are more frequently attacked than boys. During the first six months of life, the proportion of males is greater than at the later period. Wayman reported 65 cases, and gives the following proportion for the first two years: Boys, 37 per cent.; girls, 67 per cent. This seems to be the average of the cases that I have seen reported in literature. After the second year the predominance of female cases is from 80 to 90 per cent. The late summer months and early fall, that is, August, September and October, furnish more colon infections than at any other time of the year. This is natural when we remember the frequency of diarrheal conditions during the summer. Seven cases of pyelitis in older children have come under my observation this Spring, their ages varying from four to nine years, apparently following frequent or chronic throat infections, while streptococci were present in the urine. When we recollect that the different infections caused by the streptococcic group of bacteria—scarlet fever especially—are the greatest forerunners of nephritis, and that rheumatoid infections, such as follicular tonsillitis are not infrequently followed by heart conditions, it is easy to suppose that urinary infections may be more frequent than we realize, and that systematic urinalyses will disclose the fact that these conditions do occur as sequelae more frequently than is at present accepted.

Clinical Symptoms: Langstein has described several types which I will adopt for your discussion tonight:—1. Toxic; 2. Meningeal; 3. Pulmonary; and 4. Gastro-Intestinal.

1. Toxic.—This may be acute, with no specific symptom predominating, and may simulate other septic conditions, coming on with a chill and high temperature, or, second, they may be sub-acute, giving more the picture we have in typhoid or other fevers. This sub-acute condition usually occurs in older children.

To illustrate, I will give you the history of one of my cases:

Baby G., aged seven years, female, seen March 6, 1915; gives history of usual diseases of childhood. Has not had scarlet fever. In June, 1914, had an attack of "malaria," without chills, lasting about three weeks. Was sent to the country and improved. Had a second attack of typho-malaria in September. When seen in February, the child had a streptococcic infection of the throat which cleared up within three or four days. History was otherwise negative. Temperature ranged between 102° and 103°, coating of the tongue, anorexia, and slight enlargement of the spleen. Widal and malaria count negative. Leucocyte count 16,000. Polys. 75 per cent. Urinalysis; pus, with blood cells; trace of albumen. This child still shows pus and a few blood cells in the urine, but has had no clinical symptoms since in March.

2. Meningeal.—These cases strongly simulate meningitis. To illustrate this, I will give briefly the following history:

Baby F, aged 11 months, seen May 11th. History of frequent attacks of digestive disturbances and colds, and adenoids were removed the latter part of March by Dr. Miller. Had had no infectious diseases. May 11th and 12th, temperature ranged from 101° to 103°; persistent vomiting and irritability. Physical examination negative. May 14th, fontanelles became tense with stiffness of the muscles of the neck; vomiting persisted. Spinal puncture showed normal fluid, with possibly a slight increase of pressure. Urinalysis showed pus with blood cells. Blood count, white cells 29,000; polys., 65 per cent.; lymphs., 30.

Within a few days the toxic symptoms disappeared, and at present the child is apparently normal except as to the urinary findings which continue to show pus.

3. Pulmonary Tract.—This is usually *bronchitis*, *laryngitis*, or *pharyngitis*.

Baby P., female, five years old, seen February 5, 1915, with severe bronchitis. Temperature 103° or 104°. Bronchitis rapidly subsided, with complete relief of these symptoms in three or four days. Temperature continued. Urinalysis, pus and blood with few casts.

4. Gastro-Intestinal.

Baby M., infant female, 18 months. History

of recurring digestive disturbances. Marked constipation. Seen September 3, 1914. Presents symptoms of intestinal intoxication. Under the usual treatment these rapidly subsided, but the temperature continued. Urinalysis showed pus and blood. Has had one attack since. This gastro-intestinal type frequently simulates closely appendicitis,—abdominal pain, rigidity, and rapid pulse. One case was accompanied by severe jaundice. Urinalysis showed the characteristic finding of pus. Accompanying this we have bacteria, blood cells, and occasionally, when the kidneys are involved, casts. There are cases reported, which I have not seen, of the so-called hemorrhagic type, in which the urinary findings show red blood cells with an occasional pus cell.

Diagnosis—This condition has to be differentiated from calculi and tuberculosis of the kidneys.

Prognosis—The prognosis of these cases, if recognized early, is good. Langstein reports 90 per cent. of recoveries. Untreated pyelitis may continue from three to four years, resulting in recovery or secondary infection of the kidneys. The treatment of this condition should be continued until all evidences, especially pus and bacteria in the urine, are absent.

Treatment—The most important part of the treatment of pyelitis is the removal, if possible, of its cause. Chronic throat infections, such as chronic tonsillitis, digestive disturbances, phimosis, and calculus, should be carefully looked for and appropriate treatment instituted. Authorities agree only on one method of actively treating this condition and that is large quantities of water. Kerley, Langstein, and others, administer potassium citrate in appropriate doses of from ten to forty grains a day in order to render the urine alkaline, or alternate the administration of potassium citrate and sodium benzoate in order to render the urine, first alkaline and then acid. Hexamethylenamine is given chiefly by the German and some American physicians. Freeman advises beginning the dosage at from one-half to two grains several times a day, and rapidly increasing the dosage to from fifteen to forty grains a day, keeping a careful watch for irritation of the kidneys, and never administering the drug for longer than a week at a time.

After allowing a few days to intervene, the treatment is then repeated. Vaccines have not as yet been used sufficiently to arrive at a conclusion as to their efficacy. In severe cases which do not yield to other remedies the cautious use of autogenous vaccines would be justifiable. My own treatment is to restrict the diet to cereals and milk, administer water in as large quantities as possible, give potassium citrate in sufficient doses to keep the urine alkaline, and keep the patient at rest.

In two cases I have used sodium benzoate and hexamethylenamine, combining them for a week, then alternating with citrate of potash for a week.

CONCLUSIONS.

1. These cases are often overlooked.
2. The diagnosis is made chiefly from urinalysis, and, therefore, routine urinalyses should be made in children who have been affected with any of the conditions that may be looked upon as the forerunners of pyelitis.

At present the colon bacillus is more frequently at fault. Other bacilli may cause this condition. The route of entry, whether hematogenous by the lymphatic or by direct extension, is not proven.

2209 Monument Avenue.

Clinical Reports.

A CASE OF ANEURISM OF THE AORTA.*

By LEWIS C. ECKER, M. D., Washington, D. C.

G. D., colored, male, widowed; 38 years.—(Patient presented for examination).

Chief complaint, "Pain in left chest and left arm."

Family history—Mother died young, probably tuberculous. Father died at 70 years from strangulated hernia. One brother living and well. Two sisters living and well. Four brothers died in infancy, causes unknown. One sister died in infancy, cause unknown. His wife was killed at 39 years of age. She had a three-months' miscarriage 15 years ago. Three children died in infancy, living from 3 days to 2 months. This was about 10 to 12 years ago. The first child is living and well, and is 20 years of age.

Personal history—Cook for the past 20

*Read before the Medical and Surgical Society of the District of Columbia, May 6, 1915.

years. Up to 10 years ago drank excessively, drinking up to a quart of whiskey daily. During the past 10 years he has been drinking beer. In 1914, drank frequently to excess, but during the past six months has been very moderate. Has always taken coffee and tea in large quantities, frequently taking one and two quarts of tea with very little food. Had gonorrhoea at 16 years with a suppurating inguinal adenitis. Recurrence about 6 times, the last attack being about 3 years ago. Denies a chancre. No history of any secondary lesions. Had measles, pertussis, and mumps in childhood. In childhood had frequent attacks of tonsillitis; not in recent years. Attack of acute arthritis 12 years ago, and again 5 years ago. Both knees, hip and shoulder were affected. Not swollen, but painful, and only nightly, ceasing about 10 A. M. This lasted for several weeks. Was drinking heavily at the time, and can not state as to medication.

Sustained a fracture of rib and left clavicle 10 years ago. Excellent recovery.

Present condition—For the past 4 years has had shortness of breath on exertion. No edema. A physician said he had heart trouble, and he was relieved with treatment. This dyspnea was not constant, increasing slowly, and at times aggravated to such a degree he could not lie flat. About 3 years ago noticed pain in upper part of sternum, especially at night. He thought he had a chest cold, for with this there was slight cough. A few months later, noticed pain in left arm and shoulder. The pain was most noticeable at night, sometimes being so severe he could not sleep. There was no numbness, or constriction or fright associated with the pain. He continued working up to June, 1914, when he bruised his leg. This was obstinate in healing and he stopped work. During this period of enforced rest he had little or no dyspnea, but the pain seemed to be increasing. With the onset of cold weather, his cough, which had been slight, increased, but no dyspnea, though pain at night prevented his sleeping. He entered the hospital January 28, 1915, because of chest pain. This pain was slight during the day, but marked at night and especially if he assumed the recumbent position.

He gives no history of nocturnal urination, and no disturbance of digestion. Has been

slightly constipated. No hemorrhoids. No attacks of vertigo or headaches.

Urine is clear and acid. Specific gravity runs from 1.020 to 1.030. The presence of albumin varied from a faint trace to none at all; no sugar; occasional hyaline casts.

Blood pressure—Right arm, 105 mm. Hg. to 130. Left arm, 95 mm. Hg. to 125. Diastolic pressure, with systolic at 130 mm. Hg., runs 80 mm. Hg.

Two negative Wassermanns. On March 10, 1915, he gave a positive luetin reaction. He has since been on mercury and iodides and had 0.4 gms. neosalvarsan on April 1, 1915.

Physical Examination—Well developed man of small frame. Nutrition fair. Moderate musculature. Skin clean. Pupils are equal (not dilated or contracted). React to light and accommodation. Arcus senilis present. The teeth are in poor condition, showing a slight stomatitis. Pharynx is slightly injected. Neck shows no abnormal pulsations, nor is there any noticeable difference in size of vessels. A few glands, pea-sized, are palpable in anterior triangle; also posterior cervical and occipital glands.

The chest is well developed, with slight fullness over precordial region. Slight "lift" here also. The point of maximum impulse can be made out in the sixth interspace 5 inches from mid-sternal line. This is forcible and heaving in character. There is a slight diastolic rebound felt over the precordium just to the left of the sternum in the fourth and fifth interspaces. There is a well-marked "lift" to the whole chest with each pulsation. A distinct diastolic shock is palpable over upper sternum and slightly to the right in third and fourth interspaces. This shock can be felt slightly in left upper chest in the second and third interspaces just to left of sternal margin. No systolic retraction can be made out. The left margin of the heart percusses in sixth interspace 6 inches to left of mid-sternal line. The right margin of the heart percusses to right sternal margin. There is a distinct impairment in the first and second interspaces to the left of the sternum, with impairment over the upper sternum opposite these interspaces and running to the right second interspace. A faint soft systolic murmur can be heard at the apex. It is not transmitted. A rough systolic murmur can be heard along the sternum to the

left, as well as slightly to the right of the sternum in the fifth interspace. The second aortic sound is sharp, tapping in character. No murmur can be heard over the impaired area. No difference can be made out in the radials nor in the carotids. No tracheal tug can be made out.

CASE OF INTUSSUSCEPTION IN AN INFANT.*

By J. W. HENSON, M. D., Richmond, Va.

The following case is reported because it will likely prove of interest to others.

The patient, a girl, born in March, 1914, suffered with marked digestive disturbances from its birth. Taken from the breast, it did no better on artificial food, remaining acutely nervous, suffering pain, and crying frequently. In April, 1914, there was an attack of enterocolitis, with signs of meningeal irritation, from which it recovered. In November, there was an attack of illness which was concluded to be due to mastoiditis. No pus was found, but the child recovered, convalescence being delayed by another attack of acute indigestion with toxemia.

On March 12, 1915, I found the child very ill. Examination showed acute intussusception, Dr. Edward McGuire confirming the diagnosis. The attack had begun at 12 o'clock, noon. Operation revealed three or four inches of ileum invaginated in the cecum. Reduction was fairly easy; but succeeding it, the cecum would push itself over the ileum. This was found to be due to a short meso-appendix and an abnormal peritoneal band between the cecum and ileum just opposite the meso-appendix. These drew the cecum over the end of the ileum. This condition was probably the causative factor of the digestive disturbances.

After 24 to 36 hours, there was much gaseous distension of the intestines and acute dilatation of the stomach, due, I believe, to the local inflammatory condition about the ileum and cecum. The child recovered, and has become perfectly healthy, growing and fattening.

Perhaps we do not give infants the advantages of surgery they should have. They may be able to stand operation better than we think. All factors, of course, in adults apply also to children, except the psychic. The toxemia incident to the condition for which operation is done is probably more important in chil-

dren; therefore, we should operate at the earliest possible moment, for then the patient has a much better chance of recovery.

Proceedings of Societies, Etc.

MEDICAL AND SURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Reported by L. C. ECKER, M. D.

This society met May 6, 1915, Dr. John Dunlop presiding. The first order of scientific business was:

Pathological Specimens.

Dr. H. H. Hazen reported a case of *Leprosy*. Male, colored, native Mississippi. Case has been under observation for 4 years. Two years previously had chancre on penis followed by typical secondaries. When he came under observation he presented large nodules on the forehead, smaller ones along the eye-brows, and nodules on the fingers, these being fibrous tissue, and not bone. He received intensive treatment—frequent salvarsans with mercury by injections. Condition relapsed following neglect of treatment, and never able to notice further improvement. Leprosy was suspected and nodules were excised for examination, but proved negative. He returned recently to the clinic with a history of convulsions. Salvarsan and mercury were pushed with no improvement. He presented some thickening of the ulnar nerve and patches of anesthesia. The left ear presented a large number of hard nodules just under the skin. An acid-fast bacillus was found in the nasal discharges. His Wassermann had been strongly positive, and the spinal fluid showed increased cell count and increased globulin content. Luetin was positive. The diagnosis of syphilis with leprosy seems very certain.

Dr. Selby, in speaking of the X-ray pictures taken of the phalangeal nodes, said they looked like a syphilitic osteitis.

Dr. Reichelderfer presented a specimen of an extra-uterine pregnancy (abdominal) with no rupture of the tube. The case was under observation for two months. Had suffered from a salpingitis. Menstruated up to the time of rupture. A week previous to the operation the menses had been more severe than usual. On opening the abdomen a handful of blood clot presented, and there was found on the posterior surface of the broad ligament the

*Read before the Richmond Academy of Medicine and Surgery, June 8, 1915.

For discussion, see page 280.

placenta. The tube showed signs of the salpingitis, which is one of the predisposing factors.

The other specimen is a paraovarian cyst. The specimen consists of part of the tube and the fimbriated extremity with a normal ovary. The other ovary was cystic with beginning cystic degeneration of the paraovary. In speaking of the above extra-uterine pregnancy the speaker said, when the pregnancy is on the posterior surface of the broad ligament, it is usually interrupted.

Dr. Fremont-Smith reported a small epidemic of typhoid in his practice, due to eating oysters. At a dinner party of six, creamed oysters were served. In preparing the creamed oysters it is essential not to heat above a temperature which would kill the typhoid bacillus. This dinner was on March 29th. On April 16th the first frank case of typhoid appeared. On careful inquiry it was discovered that three had been ill with gastro-intestinal disturbance a few days following the dinner, but had cleared up with diet and purging. Three out of the six had typhoid.

Dr. Morgan spoke of a number of cases following a banquet where all escaped who did not eat oysters.

Dr. Kober said that such means of infection were rare, though instances had been reported in England and in this country. It is hard to decide the direct source of the infection, for about 2 to 3 per cent. of the cases are carriers. Mentioned an instance where an epidemic was caused by the ice in a champagne frappe being infected, those taking the frappe being ill, and those taking only the other wines and beer escaping.

Dr. Hagner mentioned the method of fattening oysters and the danger of their being contaminated in such a manner.

Dr. Dudley Morgan mentioned the epidemic at Atlantic City where it was shown that the hotel men were fattening the oysters in streams contaminated by the sewage.

Dr. Nichols had personally contracted typhoid at a luncheon where four others were made ill.

Dr. Selby showed X-ray pictures of metastatic carcinoma. This case had breast operation three years previous. The case returned with great tenderness throughout the body. Pictures show a moth-eaten appearance which is char-

acteristic. All the bones were examined and all the long bones, the sacrum, vertebrae, clavicles and phalanges showed involvement. These cases may come from breast and prostate lesions. One case presented pain in the spine with a suggestive picture and later carcinoma of breast developed.

Dr. Hagner said he had had a case which, six months after a breast operation, had general metastasis. The long bones are the ones most liable to be affected. He recently had a case of cancer of the prostate with hip involvement.

Dr. Sowers spoke of the late metastasis in the spine, one case occurring after five years, while at the present time he has a case presenting spinal pressure symptoms eight months after the breast amputation.

Dr. Selby said cases had been reported where the head of femur had been involved, but always the acetabulum is diseased. The spinal pressure symptoms depend on the position of the growth regarding the cord.

Dr. Nevitt presented the history of a case of acute articular rheumatism.

Dr. Gwynn opened the discussion and stated that the etiology comes under two heads—metabolic, and due to some organism. Some cases clear up with removal of tonsils or other source of infection, and others are not benefited in the least by such procedure. He had found vaccines helped in certain cases and failed absolutely in others.

Dr. Reisinger depended upon the salicylates.

Dr. Hickling related his personal experience, when he suffered for some time with multiple progressive arthritis. The joints would be intensely painful, in fact, morphine had to be used at times. Resisted all treatments—from vaccines, to going to the Hot Springs. Finally, his dentist discovered a tooth badly infected and containing considerable foul smelling pus, while another tooth with a gold cap concealed a pus pocket. Since these were cleaned up he has had no symptoms.

Dr. Shands mentioned a case of rheumatism where the infection was through the gall bladder. Fifty-two gall stones were removed and the bladder drained, since which time he has had no return of joint condition.

Dr. Dunlop divided the joint conditions into atrophic and infectious arthritis:

ATROPHIC.	INFECTIOUS.
Slow progress Swell with fluid (<i>villus arthritis</i>). Irregular, spindle shaped so that the joint is smaller than the other parts. There is atrophy of cartilage and bone, also the soft parts.	Rapid. Boggy, periarticular, with little joint fluid, and when this subsides there is little swelling. The cartilage is never affected unless the infection persists in the joint.

The diagnosis made by radiograph. The cause is in doubt, being either through the blood or due to a toxæmia. Origin of the infection is from the tonsils, teeth, intestines, ears, or genito-urinary tract.

Dr. Fremont-Smith read a paper entitled *mitral stenosis in process of development*.

Dr. Nichols, in discussion, said it had never been his fortune to see a case of mitral stenosis in course of development.

Dr. T. Lee thought the presence of the mitral leak might have made the appearance of the stenotic murmur a little easier to pick up. It is extremely common to have a mitral murmur due to muscle rather than valve.

Dr. Ecker mentioned the rareness of a mitral stenosis developing after 60 years.

THE RICHMOND ACADEMY OF MEDICINE AND SURGERY

Held its regular semi-monthly meeting June 8, 1915, *Dr. A. G. Brown*, President; *Dr. Mark W. Peyser*, Secretary.

Dr. J. W. Henson reported a case of—

Intussusception in an Infant.*

DISCUSSION.

Dr. W. T. Oppenheimer reported a similar case. The child, aged 4 months, had nausea and vomiting, and was passing blood. Dysentery was diagnosed, but a careful examination was not made. The next day it was worse, presenting a distinct enlargement over the region of the ileo-cecal valve. Upon operation the gut was found to be strangulated. The child died.

Dr. J. Shelton Horsley said that during a period of three or four months he saw four cases of intussusception in infants, the oldest patient being 4 or 5 years of age. In the first case the gut was purplish and thickened, and was reduced with difficulty. Resection was not

done. The child was intensely toxemic and died in 12 hours. The second child had a high temperature, but recovered. In the third case reduction was impossible, and a resection was done, the child making a satisfactory recovery. In the fourth case reduction was difficult; resection was performed after reduction and recovery ensued.

As pointed out by *Dr. Henson*, where there is much discoloration it is better to resect, and so prevent toxemia. We do not exactly know the cause of death: Whether the lesions of the mucous membrane permit the absorption of toxins in amounts sufficient to overwhelm the system, or whether the toxins are formed in the injured mucosa. Under either theory, removal of the injured segment of the bowel, when much damaged, is indicated.

In the case of an infant, about 3 years old, referred to him, there were nausea, vomiting, bloody and mucous stools, and a lump in the left side. Upon operation there was found a redundant sigmoid rolled up. The child died. The operation did not help, as it was a case of intense enterocolitis. It was difficult to make a better diagnosis than intussusception: but the point is to make the proper diagnosis and not to make it too late.

Dr. J. A. Hodges thinks that *Dr. Henson* is to be congratulated both on his diagnosis and the outcome of the case. As said by *Dr. Oppenheimer*, one cannot be too careful in making the diagnosis, and this instance shows the difference between the diagnosing surgeon and the operating surgeon.

Dr. Rosebro read a paper, the subject of which was—

Pyelitis. †

DISCUSSION.

Dr. McGuire Newton remarked that pyelitis occurs very frequently in children, and he believes that most often it is unrecognized. Malaria, so-called gastro-intestinal infection, etc., are, in the majority of instances, pyelitis. His experience with vaccine in the treatment of this affection has been more satisfactory than that reported by writers on the subject. Recently, he has seen four cases that did not yield to other measures, and were benefited by coli-vaccine.

Dr. Horsley, referring to the use of hexa-

*For *Dr. Henson's* paper, see page 278.

†For paper, see page 274.

methylenamine in these cases, said that water of course, flushes the kidneys, but too much lessens the antiseptic effect of hexamethylenamine. He believes that it is best to give only a small amount of water with the remedy for several days, then stop the latter for a few days, giving water in large amounts; then repeat the course, and so on.

Dr. Rosebro, closing the discussion, said, in answer to a question, that he obtained urine from boys by fastening the penis in a test-tube. For girls, the mothers apply the vessel whenever they think the urine is about to be passed.

Dr. Terrell read a paper entitled—

A Preliminary Report on a New Remedy in the Treatment of Hemorrhoids.†

DISCUSSION.

Dr. M. D. Hoge said that *Dr. Terrell* informed him several months ago of his experiments with bimuriate of quinine and urea in the treatment of hemorrhoids, and that since that time he has used a 5-per cent. solution successfully in two cases.

Dr. Hodges said that *Dr. Terrell* had discussed the treatment with him also. He asked *Dr. Terrell* if there is as much danger of thrombus from its use as from that of carbolic acid. Incidentally he spoke of good results following its injection in several cases of neuritis.

Dr. Horsley said that *Dr. Terrell's* work along this line is excellent and is founded on good pathology. He does not believe that bimuriate of quinine with urea is a good anaesthetic because it prevents good healing; but in 4- or 5-per cent. solution it produces fibrosis. It is not toxic because it is so often given for constitutional effects in malaria. This attribute of causing fibrosis makes it unique, and if *Dr. Terrell's* investigations bear it out, it would be an almost ideal remedy in the treatment of a certain class of hemorrhoids.

Dr. Terrell, closing the discussion, said that the strength of the solution should be varied according to certain indications. These he is trying to ascertain by further experimentation. So far, solutions of from 1 to 10 per cent., or stronger, have been used. His usual method is to inject one pile each succeeding day until all have been treated. Usually one treatment for each hemorrhoid is sufficient. Sometimes two

and, occasionally, three treatments may be necessary. The remedy should not be used in inflamed or strangulated hemorrhoids. It is best suited to the chronic variety that prolapse easily and have to be replaced. In ulcerating, bleeding hemorrhoids, this treatment controls the bleeding almost at once.

In about three days after a hemorrhoid is treated by this method it appears hard and fibrous. In ten days there is a marked diminution in size. In from three to four weeks it has usually disappeared altogether. *Dr. Terrell* has seen no unfavorable symptoms and prefers this form of treatment to operation, because the parts are left in a more natural state. Following operation, there remains a certain amount of scar-tissue which, contracting, narrows the lumen of the anus, interfering more or less with the natural function of the parts.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

DISEASES OF THE BRONCHI, LUNGS AND PLEURA.
By Frederick T. Lord, M. D., Visiting Physician, Massachusetts General Hospital and Channing Home for Consumptives; Instructor in Clinical Medicine, Harvard Medical School. Octavo, 605 pages. Illustrated with 93 engravings and 3 colored plates. Cloth, \$5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This book should prove of much value to the average physician in general practice, for the subjects treated engage his attention perhaps more than any others. The author presents current knowledge of the diseases of the respiratory organs as established by recognized authorities, and supplements this with a large personal experience. In a volume of this character, and with apparently a full discussion of practically every other disease of the bronchi, lungs, and pleura, we are, however, at a loss to understand why pulmonary tuberculosis is not considered in all its phases. Where mentioned at all it seems to be chiefly for purposes of differential diagnosis. The author is a fluent writer, and goes well into details of the subjects treated. The publishers have done their part in their usual good style.

†The paper here referred to by *Dr. Terrell* was published in the *Semi-Monthly* June 25, 1915.

Editorial.

Prevention of Typhoid Fever.

Much has been said and written on this subject since preventive medicine loomed into prominence, and yet there is still need for urging sanitary care and cleanliness. The Department of Health of Norfolk, Va., in its report for July 1915, announces that there were 7,400 cases of typhoid in Virginia alone last year, 707 of which proved fatal. The *U. S. Public Health Reports* state in a recent number that within the past ten years, few communities having as many as 2,000 people have remained free from typhoid for a period of twelve consecutive months. Being a preventable disease, this should be proof that there is gross neglect or carelessness somewhere.

As an aid to the prevention of typhoid fever, the U. S. Government has recently designated more than 150 stations where their 400,000 employees, scattered throughout the country, may receive anti-typhoid vaccination. Excellent results have already been obtained in the U. S. Army and Navy, and statistics from foreign fields for the past year show what an aid inoculation against typhoid has been in keeping down this disease. There is no doubt that this is a good precedent as far as it goes, but, it not yet being established that this inoculation is effective for more than two or three years at a time, the root of the evil should be eradicated.

Although in Virginia anti-typhoid vaccination may be obtained free when desired, the great reduction in the incidence of the disease has been due to improved sanitary conditions. In this matter the whole State may assist. In rural communities, especially, the cost of modern sanitary fixtures has been an obstacle to typhoid prevention. When impossible to install modern conveniences, however, much may be accomplished not only by cleanliness, but also by boiling drinking water, and the proper preparation of foodstuffs. In this field, the family physician as well as the sanitarian has his inning by instructing and co-operating with the people in his community and especially the property holders.

The Association of Surgeons of the Chesapeake and Ohio Railway

Held its second annual meeting at the Greenbrier White Sulphur Springs, W. Va., September 3, 1915, with an attendance of 91—representing five states—out of a total of 165 surgeons. A large number were accompanied by members of their families, thus adding materially to the enjoyment of the occasion. The surgeons themselves were guests of the Railway Company for the day. Following invocation by Dr. M. T. Sinrall, Mt. Sterling, Ky., Dr. W. T. Oppenheimer, Chief Surgeon of the C. & O. Railway, delivered an address which, in addition to matters strictly business, was characterized by his usual humor and wit. Mr. L. G. Bentley, Secretary-Treasurer of the Association, then read the minutes of the meeting for last year. The reading of papers on the program was the next order of business, each one of the six presented calling forth considerable discussion. The majority of these will appear in early issues of the *Semi-Monthly*. Succeeding the reading of a paper by Dr. J. M. Salmon, of Ashland, Ky., on "Hernia as a Cause of Action in Railway Damage Suits," a resolution, which was adopted, was offered by Dr. Geo. Ben. Johnston, of Richmond, endorsing the paper and expressing the unanimous opinion of the Association that hernia is never traumatic.

Election of officers for the ensuing year resulted as follows: President, Dr. Southgate Leigh, Norfolk; Vice-Presidents, Drs. E. H. Griswold, Peru, Ind., R. S. Griffith, Basic, Va., and A. O. Taylor, Maysville, Ky.; and new members of the Executive Committee, Drs. O. O. Cooper, Hinton, W. Va., and O. E. Bloch, Louisville, Ky. The Chamberlin Hotel, Old Point Comfort, Va., was selected as the next place of meeting, the time to be during August, 1916.

During the stay at White Sulphur, the management, through Dr. Capito, extended the privileges of the baths and pool to all members of the Association, while the visiting ladies were entertained at tea. Especially invited guests at the meeting were Drs. D. Z. Dunott, Chief Surgeon of the Western Maryland Railway, and Wm. M. Sweet, of Philadelphia. Mr. Wm. H. White, President of the Richmond, Fredericksburg and Potomac Rail-

way, of which Company Dr. W. T. Oppenheimer is likewise Chief Surgeon, was also present and made an informal talk.

The Augusta County Medical Association, Inc.,

Had Dr. Paul D. White, of Dr. R. C. Cabot's Clinic, Boston, to deliver a ten day course of lectures during August on Diseases of the Heart and Circulatory System. Two of these lectures were given daily, the one in the morning being clinical, while that in the evening was didactic. The innovation is, so far as we know, original with the Augusta County Medical Association, but the plan strikes us as filled with many possibilities for good, and no doubt it will in time be adopted by many medical societies.

Medical Society of Virginia.

Officers of the Society are busily engaged in arranging an attractive program for the coming meeting of the Society in Richmond, October 26-29, and present indications are that there will be a large attendance to enjoy the occasion. The scientific program should furnish something of interest to the general practitioner and specialist alike, and the City Council has made an appropriation to assist the local fraternity in looking after the social features. Make your plans to be with us. Richmond always likes a crowd.

The Profit and Loss Account of Modern Medicine and Other Papers

Is the unique title of an octavo volume of 312 pages just issued by Dr. Stuart McGuire, one of the most widely known surgeons of the South. The author states in his "Preface or Apology" that, having occasion to refer to a paper he had written several years ago, and being unable to find either a reprint or an issue of the journal in which it appeared, he was led to secure a copy of all articles he had published and to put the collection in shape for personal reference. This suggested the advisability of making it into a book, a desire so strong, as he states, that he determined to gratify it. He adds, "In indulging myself I have tried to show consideration for my prospective reader by not printing all I have written." In his characteristic style, Dr. McGuire concludes by saying: "While I have serious misgivings as to the merit of the volume, I have no doubts as to the extent of its circula-

tion, for it is intended for private distribution and will not be offered for sale."

The book is cloth bound and attractive, contains twenty-seven of Dr. McGuire's most important articles—which are invariably worth reading.—and, incidentally, we note with some satisfaction that one-third of the number were contributed to the *Semi-Monthly*.

The International Health Commission,

In its first annual report, states that the object of the Commission is the "promotion of public sanitation and the spread of the knowledge of scientific medicine," with the world as its field. Funds for its maintenance are provided by the Rockefeller Foundation, endowed by Mr. John D. Rockefeller with \$100,000,000, and chartered by the State of New York." Its initial efforts were directed to the work of relieving and controlling hookworm disease. From a statement of the work it may be interesting to note that as much as 90 per cent. of the population of some foreign countries were found infected with this disease. About 900,000,000 people live in countries where the infection is prevalent. As eradication of uncinariasis in any country would require the operation of permanent agencies operating over long periods of time, the International Health Commission is following in the foot-steps of the Rockefeller Sanitary Commission which cooperated with the Southern States in their fight against this disease. By an intensive educational campaign it assists in organizing and making effective agencies to relieve and control hookworm disease. During the year, the International Commission worked in eleven foreign countries.

The Rockefeller Sanitary Commission for the Eradication of Hookworm Disease

Completed the five-year period for which it was established in December, 1914, and the unfinished work in hand was assumed by the International Health Commission, which was also created by the Rockefeller Foundation for health work throughout the world. The work of demonstrating that hookworm disease was a reality, a serious menace to health and working efficiency, and that it could be cured and prevented, was undertaken in eleven Southern States. A survey was made in 596 counties of the eleven States, the total number of children between 6 and 18 years examined being

548,992. Of these, 39 per cent. were found to be infected. The amount of money expended by the Commission in this time was \$797,888.36. The work done by the Commission has done much to increase the sentiment favoring preventive measures through public health agencies and its effects for good will be felt for years to come.

Dr. and Mrs. H. Stuart MacLean,

Of this city, were recent visitors in Lynchburg, Va.

Married—

Dr. Samuel Downing, Lancaster, Va., and Miss Margaret Lucille Nelms, Newport News, Va., August 23d.

Dr. Marshall Tate Vaden, formerly of Gretna, Va., but now of Fairfield, Va., and Miss Ellen Byrd Pollard, of Walkerton, Va., August 26th.

Dr. W. B. Pettit,

Of New Canton Va., a prominent physician in that section of the State, left late in August for the European war zone, sailing on a ship carrying war supplies from Newport News for England. While abroad, he will visit relatives in Cornwall.

Virginia Men Take Examination.

Drs. Virgil Hope Carson, Richmond, and George Boyd Tyler, Ashland, both graduates of the Medical College of Virginia in 1914, were among the sixteen successful candidates taking examination in July for appointment as assistant surgeons in the Medical Reserve Corps. After a course at the Naval Medical School, these men will be eligible to examination and appointment in the Medical Corps of the Navy.

Dr. and Mrs. Edward McGuire,

Richmond, spent some time last month in visiting in Staunton and Clarke County, this State.

The American Medical Editors' Association

Will hold its annual meeting at McAlpin Hotel, New York City, October 18 and 19, Dr. H. Edwin Lewis, editor of *American Medicine*, presiding. Dr. J. MacDonald, Jr., editor of *American Journal of Surgery*, is secretary.

Dr. Thomas J. Pretlow,

Newport News, Va., who suffered an injury to one of his legs while diving at Buckroe Beach, was operated upon at St. Francis Hospital the last of August.

The Second International Conference on Race Betterment,

Held in San Francisco, August 4-8, was attended by a large number of men and women of scientific achievement. The Conference discussed race decadence, the possibilities of race improvement, and the agencies of race betterment. Luther Burbank, the plant wizard, discussed "Evolution and Variation with the Fundamental Significance of Sex;" and Paul B. Popenoe, editor of the *American Journal of Heredity*, "The Natural Selection of Man." Among the other speakers were Dr. J. H. Kellogg of Battle Creek Sanitarium, Dr. David Starr Jordan of the Leland Stanford University; Dr. Ernest B. Hoag of the Los Angeles Juvenile Court; Edgar L. Hewett, Director of the United States Bureau of Ethnology; Prof. Irving Fisher, of Yale University, and many others of equal prominence in sociological and scientific circles. The Conference was concluded with a Morality Masque, in which two hundred students of the University of California took part. This masque was a dramatic arraignment of disease and war.

Dr. Roy K. Flannagan,

Of the State Health Department, after a week spent in Colonial Beach, this State, examining the town as to sanitation, declared everything to be satisfactory.

Dr. Karl S. Blackwell,

Of Richmond, spent some time in New York in August.

Dr. C. Wilbur Mercer,

Of this city, announces that he has moved to 304 West Grace Street, where he will continue the practice of his specialty, orthopedics.

Dr. James W. Hunter,

Of Norfolk, Va., motored to White Sulphur Springs, W. Va., with a party of friends early this month.

Dr. J. S. DeJarnette,

Superintendent of the Western State Hospital, recently visited relatives in Orange, Va.

Dr. A. G. Brown, Jr.,

Has returned to his home in this city after several weeks' vacation with his family.

The American Association for Study and Prevention of Infant Mortality

Will hold its sixth annual meeting in Philadelphia, November 10-12, 1915. The subjects to be discussed include: eugenics; effect of the

economic standing of the family on infant mortality; infant welfare nursing in small cities, towns and rural districts; institutional mortality; midwifery conditions, and treatment and prevention of respiratory diseases.

The session on Economic Aspects of Infant Welfare will be a joint one with the Philadelphia County Medical Society and will be held at the College of Physicians. All other sessions will take place at the Bellevue-Stratford Hotel.

Mr. Homer Folks of New York is president of the Association, and Dr. S. McC. Hamill of Philadelphia, president-elect for 1916. Dr. Joseph Neff, 801 Weightman Building, Philadelphia, is chairman of the Committee on Local Arrangements.

Programs or other information in regard to the meeting can be secured from the Executive Secretary, Miss Gertrude B. Knipp, 1211 Cathedral St., Baltimore, Md.

Dr. J. H. Crouch

Has resigned as second district city physician for Richmond, his resignation being effective September 1st.

The National Committee for the Prevention of Blindness,

In its effort to reduce the amount of blindness, one of the greatest afflictions of mankind, is again urging that some concerted action be taken by medical organizations and relief agencies. When we stop to realize that it is estimated that 50 per cent. of all blindness is preventable, it seems that it is time that public addresses should be given under the auspices of the medical profession to warn the laity against the neglect of "sore" or "weak" eyes, especially after attacks of infectious diseases; the harm from progressive nearsightedness, eye-strain, inadequate lighting, wood alcohol, etc.

The Petersburg (Va.) Health Department

Announced 47 deaths—18 white and 29 colored—for July, and 62 births—37 white and 25 colored. The disparity in racial death rate is attributed principally to the high infantile mortality rate among the colored, over a third of the deaths among the race being those of infants under 2 years of age.

Dr. G. A. Ezekiel,

Of this city, returned home about the first

of this month after a three weeks' automobile trip in the Blue Ridge Mountains.

Dr. James C. Braswell,

Of Whitakers, N. C., has been elected full time health officer of Nash County, N. C., *vice* Dr. A. H. Kibler, resigned.

Certificates of Health for Restaurant Employees.

The New York City Department of Health has issued a notice requiring all employees assisting in the preparation and serving of food in restaurants and hotels of that city, to have certificates stating that they are free from infectious diseases. More than 100,000 persons are affected by this announcement. Proprietors employing persons without certificates will be subject to a fine or imprisonment.

Dr. Henry R. Carter

Has returned to his home in Ashland, Va., after a visit to Atlantic City.

Dr. Henry Wireman Cook,

Formerly of this city, but now of Minneapolis, has been elected president of the Minnesota Public Health Association.

Change in Wisconsin Eugenic Certificate.

The new eugenic marriage certificates in Wisconsin do not specify a clinical and laboratory test in the case of men applying for marriage certificates as formerly, but simply "a thorough examination" which would lead the physician to believe the applicant to be free from venereal diseases. The fee for the examination has been reduced from \$3 to \$2. Since the enforcement of this law, January 1, 1914, it is announced that nearly 250 couples from Milwaukee alone have evaded the law by being married in Illinois and later returning to Wisconsin.

Dr. McGuire Newton

Returned to his home in this city early in September after a trip to Boston, Nova Scotia and Thousand Islands.

The American Association of Clinical Research

Meets in Philadelphia, September 23-25, with headquarters at the Walton Hotel. The program promises more than 30 papers with a banquet on the last evening. Dr. Jefferson D. Gibson, Denver Col., is president, and Dr. Jas. Krauss, Boston, permanent secretary.

Dr. Joseph Bear,

Of this city, has moved to 304 East Grace Street.

The Richmond Health Department

Reported for August that there were 205 deaths—108 white and 97 colored—and 334 births—207 white and 127 colored. The chief causes of death were heart disease and consumption, there being nineteen deaths from each.

Dr. May Farinholt Jones,

After spending her vacation with her parents in West Point, Va., left the first of September, to resume her duties as resident physician in the State Normal College at Hattiesburg, Miss.

The Iowa Epileptic Colony,

To be located at Woodward, is to be composed of a group of 13 buildings, the cost of which is to be \$253,605.

The Charlotte Sanatorium,

Charlotte, N. C., has been rented and will be operated by the Charlotte Sanatorium Company, of which Dr. E. C. Register, of that city, is president. He will be assisted by an efficient staff in the various departments.

Dr. and Mrs. William H. Higgins,

Richmond, are home again after an absence of several weeks.

Medical Inspection of Schools in Florida.

An act providing medical inspection of school children and their subsequent medical treatment having passed the Florida Legislature, was signed by the Governor and became a law in that State June 4th.

Diphtheria Antitoxin at Low Rates.

The State Board of Health announces that exorbitant prices should not be paid for diphtheria antitoxin. If offered for sale at rates in excess of 50 cents per 1,000 units, residents of the State may order it direct from the State Board of Health, Richmond. The State rates range from 49 cents for 1,000 units to \$3.10 for 10,000 units, these wholesale rates having been arranged to make the antitoxin within reach of the rich and poor alike, where needed.

The Hospital for Colored People,

Located on the site of the former Birdville Sanatorium, Petersburg, Va., is to be opened October 1. The building is now being put in proper shape and conveniences are being added.

The United States Civil Service Commission

Announces an open competitive examination for sanitary bacteriologist, for both men and women between the ages of 20 and 35, on September 22, 1915, at various places in the different States. From the register of eligibles resulting from this examination certification will be made to fill several vacancies in this position in the Public Health Service, for duty in the Hygienic Laboratory, Washington, D. C., or for field service, at a salary of \$1,500 a year, and vacancies as they may occur in positions requiring similar qualifications.

The duties of this position will be to assist in the study of stream pollution, water supplies, and sewage disposal, and other public-health problems. Applicants should be competent to make the usual chemical and bacteriological examination of water and sewage. Graduation from a scientific course in a college or university of recognized standing or the degree of M. D. is a prerequisite for consideration for this position.

For full particulars apply to the above Commission, Washington, D. C.

Pellagra

Is apparently gaining much headway in many of the Southern States. During June, 197 cases were notified in Arkansas, 45 in Texas and 86 in Virginia. In July, 425 were reported for Louisiana and 104 for South Carolina. As indicating that it is not confined to the South, however, 13 cases were also reported during July in Massachusetts.

The American Academy of Ophthalmology and Oto-Laryngology

Is to hold its twentieth annual meeting in Chicago, October 5-7, under the presidency of Dr. Joseph C. Beck, of that city. Dr. Lee M. Francis, of Buffalo, N. Y., is secretary of the Academy.

A Model Hospital.

The new Cincinnati Hospital, recently opened, is possibly one of the most up-to-date at this time. Situated in a large park, it provides out-door sports for convalescing patients and the interior is complete in every detail even to having the children's wards supplied with toys. There are now about 900 beds in use.

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ACUTE DIFFUSE PULMONARY EDEMA.*

By J. LAWN THOMPSON, A. M., M. D.,
Washington, D. C.

Acute diffuse pulmonary edema, as a distinct clinical entity, must be differentiated from edema of the lungs noted as a terminal condition in many acute and chronic diseases. My attention was first called to this condition by coming in contact with a patient suffering from a series of unusual symptoms which, upon subsequent investigations, proved to be the basis for the title of this paper. Upon the recurrence of the attacks, which are characteristic, I determined to assure myself that the statement of numerous writers that "there are no text-book references to this condition" was true. I found that Osler disposes of the subject in a few lines. Abbott's System of Medicine, American Text-Book of the Theory and Practice of Medicine, Modern Clinical Medicine, 20th Century Practice of Medicine, Anders, and many others, do not refer to it at all. This, on the face of it, would suggest the fallacy of such a condition, but, fortunately, contemporary literature is pregnant with masterly articles by prominent men on acute diffuse pulmonary edema, *all*, without exception, remarking upon the absence of *text-book* references. Americans and English have reported many cases; Germans, according to Le Roy Crummer, are still silent; Riesman thinks that Laennec in 1819 was the first to discuss this condition, and *he* draws extensively from French literature in reporting his six cases: Dulafoy, Renaud, Huchard and Bouveret are his authorities.

Etiologically, many theories have been advanced, the mechano-angioneurotic, toxic, and mixed theories predominating. Sahli believes

it to be due to local spasm of the *heart* muscle. Neumeyer, in reporting three cases, thinks that over-exertion (one, whooping cough, boy six, one emotion, and one coitus) is the cause of immediate loss of nerve power in the intracardiac ganglion, or in the vagus, an increased and uncontrollable working force of the heart's action, giving an enormous pulmonary hypertension and sudden enfeeblement of the right ventricle, due to this hypertension. This back-pressure into the lungs causes a sero-sanguinous transudation into both lungs. Huchard, in his peri-aortitic theory, states that disturbances of the innervation of the cardio-pulmonary plexus by peri-aortitis causes considerable augmentation of the vascular tension in the small circulation, causing acute or rapid insufficiency of the right ventricle. Stengel thinks the syndrome due in all cases to cardiac, renal and arterial diseases. This may be partly true, as any one of the diseases named may cause acute pulmonary edema, but from the deductions of the writer, from papers read on the subject, it would seem that the cases would have to come to autopsy before such conclusions could be reached, as many reported cases showed no evidences of the above-mentioned conditions; conversely, very few of the above conditions showed the symptoms of the syndrome under consideration. Welch's theory of the inequality in the action of the two sides of the heart seems plausible, but is criticized by Grossman and Sahli, while Riesman and Stengel sustain him. Welch's theory, as described by Flexner in the *Louisville Journal of Medicine and Surgery*, is as follows: His work being done on rabbits, he found by ligating the thoracic aorta and subclavian in strong animals, there was promptly a rise in blood pressure in the pulmonary artery, and edema resulted, whereas in weakened animals, there was no rise in pressure and no edema. Again, he could produce edema by compressing the pulmonary artery or

*Read before the Therapeutic Society, at Washington, D. C.

left ventricle, reducing its output 75 per cent. All of these procedures caused a rise in the pulmonary artery, and he formulated his results by stating that mechanical edema is the result of a disproportion between the working power of the left ventricle and right ventricle of such a character that, resistance remaining the same, the left heart is unable to expel in a unit of time the same amount of blood as the right heart. Hewlett does not agree with Welch, but attributes the condition to the greatly increased permeability of the vessel walls at certain times. He argues that in ligating a healthy vessel, it would rupture before serum could escape. Of course, we find many cases of acute pulmonary edema, resulting from Bright's disease, arterio-sclerosis, angioneurotic edema, epilepsy, toxic conditions, etc., but what causes the special syndrome is still unsettled. It has been claimed that it is due to vaso-motor involvement, but physiologists differ as to the surety of there being a vaso-motor mechanism in the pulmonary circulation. Acute diffuse pulmonary edema has been produced experimentally by Sahli, Cohnheim, Chatlin, Guinard, Winckler, Welch, Bouchard, Claude and Meltzer, as each one acknowledges the condition: consequently there is no gainsaying it, but as to arrival at definite conclusions, we are still in the dark. There is no doubt, though, that all the patients have very high blood pressure at the time of the attack and during the early stages of it, and there is also, invariably, a toxic condition, whether due to auto-intoxication or non-oxygenation, we do not know. Age plays no role, as may be seen from Neumeyer's boy of six years, and my first case of seventy years. Sex seems equally divided. In all cases the symptoms were the same. It would seem that the syndrome may be produced by many different causes,—the more reason to recognize it. There is no doubt that patients are often allowed to die because the old enemy, pulmonary edema, a time-honored forerunner of death, manifests itself, and the task seems hopeless. I feel sure that many cases of so-called Bright's disease with pulmonary involvement, are acute edema in mild form: the same holds good with the many cases of so-called cardiac asthma. Coplin reports 2,030 autopsies, 405 of which were pulmonary edema. He concludes, in view of these numbers, that, in many instances, death is due to pulmonary edema and not that

they get pulmonary edema because they are dying. He states that pulmonary edema is absent in 80 per cent. of bodies examined post-mortem, and that many cases have been reported in apparently healthy individuals. The pathological conditions being found only at autopsies justifies a more thorough study and classification of the etiological factors of this clinical condition.

As far as the pathology is concerned, much could be written, for each individual case presents findings of its own. The heart, especially the left side, is frequently affected, but this is not strange when we consider the violent, tumultuous conditions which rage in the thorax. The heart, in an effort to combat the high blood pressure and apparent obstruction to the circulation fails in its effort. Chronic kidney involvement, liver and splenic enlargements, are noted individually and collectively. In quite a number of cases, no pathological condition was found of sufficiently advanced degree to warrant death. Humphrey's case showed only slight ecchymosis of the brain, though the patient died in the first attack, which was also her first illness. Cross's case, a man of fifty-six years, showed only slight enlargement of the heart. It is rather remarkable to note with what regularity cases are reported by those having recently read some other account. Lissamons's patient had 72 attacks, but it was only after reading Stevens's lecture and case report that he classified the diagnosis, though he was constantly talking his case over with his medical friends. Lumsden reports cases and quotes Leonard Williams Pearson; *London Lancet* reports cases, following Lumsden; Barr, Mothersol, Neumeyer and others following in quick succession. As the symptomatology in all cases is the same, and the pathological findings so varied, I must say with Riesman that acute pulmonary edema is, in many instances, without apparent cause.

As to the symptoms, all are agreed. The onset is terrifically sudden. The patient one moment may be apparently in the best of health; the next few minutes may find him in the most deplorable condition. Many cases occur in the midst of pleasure or sleep. Humphrey's patient was on her way to the theater when she was stricken with this malady, from which she died in a few hours. My patient was walking leisurely homeward when the onset manifested

itself. Without exception the cases reported occurred without premonitory symptoms. The breath seems suddenly to leave the patient, the respirations become very shallow and rapid, with a painful cough at the end of each expiration. There is an internal gripping pain in the chest; at each expiratory blast, frothy sputa is ejected, at first clear, rapidly becoming blood-tinged, pinkish and maybe bright red in color. The quantities of fluid patients eject during an attack is surprising. Neumeyer's patient ejected two litres. My patient, during his first attack, got rid of a very large quantity; I measured the amount during his second attack and found it to be five pints.

Rales of all descriptions are heard throughout the chest, the condition being so tumultuous that no definite lesion can be determined at the time; the face passes rapidly from mild cyanosis to a blue black; the pupils are dilated; a profuse, cold, clammy perspiration envelopes the entire body; the sphincters are at times relaxed; the urine, in my case, was involuntarily voided, which prevented my obtaining a specimen until several hours later. The pulse is at first full and bounding, the heart forcible in action, beating at first against the chest wall, but very rapidly becoming enfeebled to such an extent that the radials are often not palpable. From a state of terror the patient rapidly passes to a state of almost complete unconsciousness. The blood pressure is invariably high, from 190 m. m. to two hundred and thirty m. m. The urine may show many conditions, at first scant, but, when relaxation occurs, becoming very profuse. Examination of urine, in my case, granular, showed thirty per cent. albumen, hyalin and casts and numerous blood cells, all of which disappear in three or four days. This state of the urine has been remarked upon by many writers on this subject, and they were at first misled into believing that they were facing a grave kidney disease only to find the urine clear up in a very short time. These attacks almost always recur. My patient had four seizures. Cross's patient had 72, but most frequently there are only three or four attacks before the patient succumbs, enjoying good health between times, and, while they rarely survive the fourth seizure, they seldom die during the first, providing, of course, they receive proper treatment in time. The day after one

of these spells, the patient may suffer no discomfort other than a soreness in the chest and fatigue. I was surprised to find no physical signs of very marked degree. This, of course, does not always obtain, for the seizure may be the first intimation of a grave condition. The foregoing symptoms are classical and were marked in my case. The following examination made on my patient 24 hours after the attack is an example of those of a disconcerting nature found in many reported cases:

J. J., age 71, occupation, Government clerk, maternal and paternal grandparents dead. Paternal grandfather died of old age, over 80 years; paternal grandmother died (not known) 70 plus. Father dead, heart disease, 62 years; mother dead, old age, 84 plus. Previous history: Could remember no diseases of childhood; no venereal disease; enjoyed perfect health up to 32 years of age, when he had throat trouble lasting about two weeks, during which time he coughed up blood frequently. Was treated for tape-worm during same year, passing many feet of the cestode. Was supposed to have had a slight attack of paralysis during his 42nd year, from which he completely recovered. Was again perfectly well for succeeding twenty-two years. For past two years has suffered from shortness of breath at times, which he attributed to his increase in weight.

Present illness. January 5, 1911, patient says breath suddenly left him to be followed rapidly by the above-enumerated symptoms. Examination made: 5 ft. 5 inches, weight 190 lbs.; no external marks; teeth in fine condition; tongue coated; stomach and bowels negative; pupil reflexes normal. Lungs: Inspection, palpitation and percussion, negative. Auscultation.—harsh breath sounds on right side and a few scattered rales which disappeared in a few days. *Heart:* Apex $\frac{1}{2}$ inch below and to left of nipple; auscultation,—first sound forcible, second sound short and clicking; mitral murmur faintly transmitted to axilla. Hemoglobin, 100; blood pressure, 150. The urine as described above, cleared up in a few days and the patient was back at his work in a week's time, much against my wishes. He had three more attacks, ranging from three to six weeks apart. He died in his fourth seizure. I was away at the time of his death. Two physicians saw him, considered him dying, and displayed masterly inactivity. Whether or not his life could have

been prolonged is problematical. No autopsy was performed, for which I was truly sorry, for he certainly, so far as I could find, had no disease to which I could attribute his seizure, and necropsy in his case, as in so many others, would have been the only means of locating the true cause.

When thrown in contact with a case of this kind, at once give a hypodermic of morphine sulphate, gr. $\frac{1}{2}$, and atropine, gr. $\frac{1}{50}$, the atropine to be repeated in half an hour's time if rapid subsidence does not occur. As there is invariably high blood pressure, *phlebotomy should be at once performed, 12 to 14 ounces being withdrawn.* It is most gratifying to note the immediate change that manifests itself as soon as the blood begins to flow. (The blood is almost black and clots at once). I cannot lay too much stress upon this part of the treatment in all cases of high blood pressure. Do not postpone it, as you will be well satisfied with the results and you will have the gratitude of the patient and his friends. Some writers recommend phlebotomy in event of other measures failing, but in a well marked case there is no time for taking the blood pressure, and I think a sufficient number of cases have been collaborated to establish the fact that high blood pressure is the rule, and immediate venesection is the proper method to pursue. Catheterize the patient, examine the urine, though this may mislead one;—however, act according to the finding;—free purgation, hot water bottles and blankets complete the treatment during the attack. The patients are usually found in a sitting posture, gasping for breath. Put to bed as soon as he is able to assume a recumbent position. Nitroglycerine, gr. $\frac{1}{50}$, four times a day; atropine, gr. $\frac{1}{100}$, three times a day; a strong saline every other day to induce free watery stools; absolute rest, both mental and physical; careful diet will keep the patient in fairly good condition. Should the definite lesion causing the seizure be demonstrated, of course, one would treat accordingly.

In conclusion, I would state that no matter the cause, the condition presents a syndrome sufficiently characteristic to be dignified as a distinct clinical entity; that there is a marked constancy in the symptoms of all cases reported; that the blood pressure is invariably high; that some patients die from acute dif-

fuse pulmonary edema *alone*, no pathological conditions being found at autopsy sufficiently severe to have caused death; that Welch's obstruction theory seems most plausible, and that phlebotomy is by long odds the most effective remedy we have in warding off the fatal end.

The Cumberland.

HERNIA AS A CAUSE OF ACTION IN RAILWAY DAMAGE SUITS.*

By J. M. SALMON, M. D., Ashland, Ky.

The frequent allegation of hernia as a disability resulting from trauma and the not infrequent award of damages based upon the plausible testimony of witnesses, lay and professional, in support of this allegation, are matters of common experience in the courts and before the Industrial Commissions of the several states.

In Europe, and especially under the English law, the courts have commonly decided that hernia may be due to industrial accidents and are therefore subject to indemnity. Kaufmann, of Zurich, who has made a study of this question, arrives at the conclusion that, in order to be entitled to indemnity, hernia must (a) appear suddenly; (b) be accompanied by pain; (c) be of recent origin; (d) immediately follow an accident. There must be proof that the hernia did not exist prior to the accident. It will be noted that the value of these criteria is conditioned largely upon the honesty of the claimant. Moreover, the conclusions of Kaufmann constitute a virtual concession that the hernia may be due to external violence.

Under these circumstances it seems advisable that a careful investigation of this so-called "traumatic hernia" be made and that, based upon such investigation, a definite statement should be issued.

Unfortunately, the common term "rupture" and the misapprehension as to its nature and causation, support, in the popular mind, the contention that something has "broken loose," that, as the result of a "strain," a "twist," or a "jar," the abdomen has been torn open and the bowel has "burst out."

What is hernia? It may be defined as the protrusion, complete or partial, of an organ or viscus through an abnormal opening in the

*Read before the second annual meeting of the Association of Surgeons of the Chesapeake and Ohio Railway, at White Sulphur Springs, W. Va., September 3, 1915.

containing cavity. The term comes from the Greek word "ernos," an offshoot.

Inguinal hernia, to which this discussion is limited, is the protrusion of the bowel, omentum or other abdominal organ, with its peritoneal sac, into or through the inguinal canal. Anatomically, a hernia consists of the sac (which is the peritoneum), the covering of the sac and the contents of the sac. The sac, or peritoneal pouch, is an essential feature of every inguinal or femoral hernia.

It is well known that normally the peritoneal process, which invests the testis and cord in the male and the round ligament in the female, is obliterated before birth. Normally, the internal abdominal ring is only large enough to transmit the spermatic cord or the round ligament. Normally, there is no pouching or sacculation of the peritoneum opposite the internal ring. The contention that inguinal hernia results from sudden traumatism rests, therefore, upon the assumption that the traumatism has caused the *sudden* separation of the fibers of the abdominal muscles at the site of the abdominal rings, the *sudden* formation of a distinct peritoneal pouch large enough to contain the protruded viscus or viscera and the *sudden* forcing of this pouch with its contents into the inguinal canal, tearing asunder the filaments of the ilio-inguinal and ilio-hypogastric nerves and rupturing the network of overlying blood vessels. It is even contended that all this may occur with little or no inconvenience or pain, and that the victim may be able to walk a distance of five miles (as alleged in a recent case) after the occurrence of the "rupture."

To a reasonable mind, this contention must seem absurd. Men have fallen from great heights, from bridges, parachutes, stacks and aeroplanes and, while their bodies have been terribly mangled and many bones broken, I know of no instance where inguinal hernia has resulted from such accident. Yet we are asked to believe that hernia may result from a fall of two or three feet from the platform of a coach.

It is alleged that hernia occurs as the result of increased abdominal tension, as in heavy lifting, sudden muscular strain and the like. If this be true, why are not *all* ruptured who lift heavy weights,—*all* who fall from trains,

—*all* who are thrown violently down by the jar of a collision?

Clinical experience and scientific investigation have demonstrated the fact that in the absence of congenital defect, either in the form of a preformed sac, an open funicular process or an abnormal opening in the abdominal wall, inguinal hernia does not occur.

This view has been ably defended by R. Hamilton Russell, of Melbourne, in an exhaustive monograph, in which he proves by numerous dissections that every inguinal and femoral hernia is congenital, the pouch being preformed. W. B. Coley states that "the great increase in our knowledge as the result of the large number of operations for the radical cure of inguinal hernia that have been performed during the last two decades, has proved that, in the vast majority of cases, hernia is a disease rather than an accident." Again, the same author says that "of 4,780 cases of hernia in adult males over fifteen years of age, 3,102 stated that the rupture occurred without any known cause." There were, in other words, 3,102 potential damage suits which lacked only the co-incidence of a railway or industrial accident.

Tillmans says in this connection, "Traumatic hernia is not true hernia. The hernial sac, that is, the true hernia, is always developed gradually, although an injury may, of course, act as part of the exciting cause."

Sultan says: "In the critical examination of a casual relation between hernia and accidents, we must remember first of all, that a hernia, complete in all its parts, can never arise at the moment of an accident, or by a single augmentation of the intra-abdominal tension, be it ever so great."

What, then, shall we say of the casual relation between hernia and accidental injury? *Simply that, if the development of the hernia occurred co-incidentally with the accident, it is possible, but by no means certain, that the trauma may have supplied the last of a series of forces which resulted in the development of a hernia in the presence of pre-existing abnormal anatomical conditions.* The same thing might have occurred while the patient was lifting his suit case or when sneezing.

True hernia does not occur as the result of a single traumatism independently of other causes.

It may be of interest, in this connection, to note a recent decision of the California Industrial Accident Commission:

"W. O. Clary, *vs.* Standard Oil Co., (Case 61, Roseberry Act); While working for the defendant, applicant received an injury which resulted in an inguinal hernia * * * * * In awarding the applicant \$6.00 to reimburse him for the price of a certain truss prescribed for his use by the physician of the defendant company, and at the same time giving him the sum of \$23.40 as a compensation indemnity for temporary disability growing out of his injury, the Commission handed down the following opinion bearing upon the subject of hernia:

"The consensus of medical and surgical opinion runs to the effect that hernia is very rarely, in any proper sense, the result of an accidental injury; that the accident is at best no more than the occasion rather than the cause of the malady; that the origin of the difficulty is congenital and more in the nature of a disease than an injury; that every claim for compensation based upon an alleged rupture is to be viewed with suspicion."

In conformity with the principles already laid down, the following Ruling of the Chief Medical Advisor of the Nevada Industrial Commission, dated September 26, 1913, is submitted:

"Medical science teaches and has taught for the past twenty years that which is now accepted as a medical and scientific fact, corroborated as such by the foremost surgeons and anatomists of the world, that is, that hernia. (or so-called rupture) is a disease ordinarily developing gradually, and is very rarely the result of an accident."

With the object of treating the subject of hernia justly to both employer and employee, and in accordance with medical and scientific teaching and fact, the Commission rules as follows:

Rule 1. Real traumatic hernia is an injury to the abdominal (belly) wall of sufficient severity to puncture or tear asunder said wall and permit the exposure or protruding of the abdominal viscera or some part thereof. Such an injury will be compensated as a temporary total disability, and as a partial permanent disability depending upon the injured individual's earning capacity.

Rule 2. All other hernias, whenever occur-

ring or discovered, and whatsoever the cause, except as under *Rule 1*, are considered to be diseases causing incapacitating conditions or permanent partial disability; but the permanent partial disability and the causes of such are considered to be as shown by medical facts—to have either existed from birth, to have been years in formation and duration, or both, and are not compensatory except as provided under *Rule 3*.

Rule 3. All cases coming under *Rule 2*, in which it can be conclusively proved: First, that the immediate cause, which calls attention to the presence of the hernia, was sudden effort or severe strain or blow received while in the course of employment; second, that the descent of the hernia occurred immediately following the cause: third, that the cause was accompanied, or immediately followed, by severe pain in the hernial region; fourth, that the above facts were of such severity that the same were noticed by the claimant and communicated immediately to one or more persons, are considered to be aggravations of previous ailments or diseases and will be compensated as such for time loss only, depending on the nature of the proof submitted and the result of the local medical examination."

These rulings are important as, in conjunction with similar rulings in Ohio and Washington, they tend to settle correctly and finally the medico-legal status of hernia.

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THE TREATMENT OF OTITIS MEDIA ACUTE.*

By OSCAR WILKINSON, A. M., M. D., Washington, D. C.

The symptoms of this very common condition are so well marked and accurately located that as a rule the physician does not have to make his diagnosis; that has already been made before he appears on the scene. He is informed that the patient has ear-ache or a "bealing" in the ear by the time he reaches the front door.

For the sake of clearness, we will divide the

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treatment into three stages, depending on the conditions present when the case is first seen:

First, the pre-suppurative or pre-exudative stage.

Second, the suppurative or exudative stage, before the drum has given away.

Third, the stage after suppuration has taken place, either following incision or rupture of the drum-membrane.

First Stage.—Unfortunately the physician seldom sees cases in this stage. This is particularly true in the country. The average parent thinks little of an ear-ache until it has caused enough discomfort to the sufferer to arouse the household, and by this time the middle ear is filled with an exudate. In the city, after years of training, you can get a few families to bring in their child at the beginning of an attack. I often see cases with a very well marked congestion along the manubrium and about the annulus tympanicus, even before the drum-membrane has taken any particular part in the inflammation. At this stage a great deal can be done to prevent the further development of the process.

First, I give my patients something for relief of pain. I give hot drops of glycerine, atropine and a sedative containing either tincture of opium or morphia. These should be instilled *hot*. If they are not *hot*, very little will be accomplished by their use.

Local applications of heat of some kind are always graciously received and are to be commended. A hot salt or hot water-bag or a hot iron are convenient means of applying local heat, and they often bring relief. Here I want to warn against a pernicious habit which is too commonly practised—that is, of leaving the ear exposed after it has been subjected to some form of heat. I invariably tie up an ear after it has been aching and keep it tied up during the following night. I am certain that many ears are permitted to go on to suppuration from the neglect of this simple precaution. We have heated an ear and caused a local perspiration and then exposed it to the atmosphere and the ear aches again. In other words, we rest on our arms and permit the enemy to reload and come at us again.

Internal Medication.—Since a patient with acute otitis is usually suffering with a cold, means should at once be instituted for its relief. A calomel purge is indicated, followed with a saline or our good old remedy, castor

oil, and, aside from a personal dislike to the taste, I feel that it has, especially in children, a somewhat specific action in congestions of the nose and nasopharynx. I put my cases to bed with instructions for them to stay there till next day. The surest way of preventing the otitis from going on to suppuration is to keep the patient on light diet, with a liberal supply of water, and in bed for at least 24 hours.

In all cases, except very small children, sedatives are indicated where the pain is severe enough to justify them. Of these, I usually prefer aspirin and small doses of phenacetin with a little caffeine to prevent depression. They add to the comfort of the patient as well as tend to abate the attack. The other treatment in these cases in no wise differs from that of the treatment in the second and third classifications, which we will mention later. In some cases an opiate may become necessary, but as a rule they are contraindicated, as they mask the symptoms; besides, any case which is not relieved with the above remedies has advanced to suppuration and the drum should be incised.

Treatment of the Suppurative or Exudative Stage will depend entirely on the condition found. If the drum is not yet bulging and the pain not severe, I am inclined to follow out the treatment as given for the incipient cases above, i. e., hot drops, hot local applications, depletion with mercury and put to bed with ear tied up and wait 24 hours. If the case is going on to suppuration you will know it by this time; I am not one of those who believe that every red drum should be incised. I will admit that in some cases the drum will break within 24 hours after the onset, but this is the exception. The pain and temperature will naturally aid you in determining the severity of the case. If you have a bulging drum, there is no use to wait; make a rather liberal incision through the posterior portion of the drum; do not merely do a paracentesis, but make a large opening while you are about it. A paracentesis is often worse than nothing and the word ought not be known in aural surgery.

If the drum is cautiously painted once or twice with equal parts of menthol, carbolic acid and cocaine, it can be incised with but very little pain. You should have a good light. I think the electric light in the speculum enables the unaccustomed practitioner to see better

than the average head light. A middle ear cavity that is filled with secretions is sufficiently deep to permit of incising the drum without incising the mucous membrane of the inner wall of the cavity, which is exceedingly sensitive and is not anesthetized by local application on the drum membrane. I am sure this is often the cause of so much pain in opening the drum. In small children and some nervous subjects a general anesthetic is often necessary, nitrous oxide gas being the one I usually use. Some surgeons claim that to incise the mucous membrane is of benefit, but I fail to see its virtue, since drainage is the chief object in view. After the drum is incised, hot antiseptic drops are indicated. These may be composed of equal parts of carbolic acid, tincture of iodine, and glycerine, or of boracic acid, grs. xv, alcohol ʒi, rose water, q.s. ʒi. If a sedative is still needed morphine or tincture of opium can be added. The ear should still be protected from the cold by a bandage.

Ear-ache after the drum has been incised or after it has perforated shows one of two things: there is poor drainage or you have a rather severe infection. If the hole in the drum is too small, as seen after the canal has been irrigated with some hot solution (boracic acid is a good one), the opening should be made larger after anesthesia has been secured, as already indicated. You will save time, give comfort to your patient, and hasten his recovery by enlarging the opening. As a rule, it is best to make two incisions in these cases, making the first cut down from the perforation and the second one backwards, thus permitting the wound to gap and give drainage.

If the pain is due to severe infection, the general condition of the patient deserves attention. Laxatives should be ordered, and the patient should be put to bed and kept there as long as he has fever. The ear should be irrigated with some antiseptic non-irritating solution. Boracic acid solution, weak carbolic acid, or weak bichloride solution are efficient. I doubt the wisdom of using dioxygen in these cases. I have always felt that there was some possibility of extending the infection into the antrum by means of its use. The ear should be irrigated as often as every two hours in cases in which the discharge is free and acrid, i. e., when it causes the external canal to become sore. As the discharge decreases, longer inter-

vals should be allowed between the syringing. In this class of cases I have found *hot* drops of atropine, morphine and chloral of benefit. I often use the following prescription:

R̄

Morphine Sulph. grs. ij.
Atropine Sulph. grs. iij.
Chloral Hydrate grs. v.
Glycerine. q. s. ʒ ss.

Sig: Use five drops in ear *hot* every half hour until relieved.

Many aurists prefer the carbolic acid and glycerine drops, using from 1 to 5 per cent. solution, but I am prejudiced against these drops after the drum is opened, as I believe they have a tendency to cause the opening to close too soon.

Vaccine Therapy: Vaccine may be used with benefit in sub-acute cases in which a general septic condition is pending, but its influence is more apparent in chronic cases, where these discharges are profuse and patients look septic with occasional fever. The case gets well sooner from operative procedure. These are the cases of chronic mastoids. When vaccines are used, autogenous vaccines are to be preferred where the circumstances of the patient permit. If stock vaccines are used, a careful study of the bacteria present should be made and a stock vaccine from such organisms used.

There are several conditions which produce pain in the ear in which the ear itself is not involved. We often have a referred pain in the ear from a decayed tooth, especially of the lower jaw. I have recently seen a case in which a man's drum had been incised several times, when he had no ear trouble at all, but was suffering from toothache, which was relieved at once by his dentist. I would add that this case was not treated by a general practitioner, either, but by a specialist. By testing the ear of such a case by means of the watch, one could avoid such a mistake, as no ear full of secretions hears well. A chronically inflamed tonsil, either faucial or lingual and particularly the lingual, will often cause an earache. An inflammation of the posterior tonsillar pillars will often cause an earache. A good light and an accurate inspection of the drum will lead you to look further than the ear for the pain when the drum is not inflamed.

No discussion of the treatment of acute otitis

would be complete without considering the treatment of the nose, naso-pharynx, and pharynx. The discharging nose, the adenoids and tonsils, all come in for their share of attention. In the acute stage, mild alkaline washes in the nose, followed by applications of tincture of iodine and glycerine in varied strengths as the case may seem to need, are indicated. A favorite method of treatment in acute and sub-acute cases with me is, first, to use a saline wash, followed with an application of tincture of iodine, ʒi or ʒii , carbolic acid, grs. x to xx, glycerine q.s. ʒi . After this, I use an application of the compound tincture of benzoin to both the nose and naso-pharynx. This latter is rather sharp at first, but only stings for a moment. In sensitive subjects I always precede these applications with a weak solution of cocaine and adrenalin.

After the acute stage has passed and the patient is out, say from four to six weeks, if a child and he has adenoids and enlarged tonsils, these should be removed completely; if there is any deformity of the nose, it should be corrected at the same time.

Simple otitis media may get well in a couple of days, or it may lead to the very worst results. I had a case of brain abscess recently, following what was supposed to be a simple discharging ear. Too little attention is paid to these cases. I often see old suppurating cases which have never before even seen a physician. These cases are so grave that most life insurance companies now reject them. The general practitioner should educate the public to the seriousness of this condition. Much suffering as well as a great deal of inconvenience and annoyance and inability from chronic deafness and at times even death can thus be avoided.

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SHOCK, ANOCI-ASSOCIATION AND ANESTHESIA.*

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(Continued from page 271.)

Nitrous oxid gas was first introduced as an anesthetic in 1844, by Horace Wells, a dentist of Hartford, Connecticut, who had one of his own teeth extracted under it without pain. It has for many years been used in this connec-

tion and also for very minor surgical work. Gradually it was discovered that the admixture of a variable amount of atmospheric air aided greatly the smoothness of administration. In 1868 the first reports of its use with oxygen were published, and from that time on it was apparent that the combination could be made use of in major work. It was not until the beginning of the present century that serious notice was taken of its usefulness and a number of apparatuses were perfected to administer nitrous oxid gas with oxygen and, later on, in combination with ether or chloroform. A number of combinations and sequences of nitrous oxid and oxygen with other anesthetics have also been developed, but these additions have never been favorably received for various reasons, and, although a sequence with ether or chloroform is necessary in some cases, there are some who regard the two gases, nitrous oxid and oxygen, as a general anesthetic to be used on practically all occasions.

The physiological effects of nitrous oxid gas alone on the respiratory system is that it rapidly induces asphyxia by gradual paralysis of the respiratory center in consequence of the prolonged action of the increasingly deoxygenated, or venous, blood. The fact that there is a lessened amount of tissue change in nitrous oxid anesthesia, indicated by the decreased amount of carbon dioxide given off, points significantly to its practical use in shock. Nitrous oxid is a non-irritating gas and has no injurious effect upon the mucous membrane of the lungs or alimentary tract, nor does it irritate the kidneys. It enters into loose combination with the red cells and the liquor sanguinis of the blood and, according to Buxton, exerts a direct action upon the heart itself, having little or no effect upon the vasomotor centers of the brain. Blood pressure is always increased with nitrous oxid alone, but with the judicious use of air or oxygen the anesthesia may be prolonged without any appreciable change. There is convincing proof that nitrous oxid exerts a specific or selective action upon the central nervous system. In this connection, when first inhaled, there is a pleasurable exhilaration, and during this time the senses of the individual are rendered more acute; this is followed by analgesia and then by anesthesia, during which last the patient is profoundly unconscious and insensitive to pain. Hallucinations, frequently of an erotic nature, often

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mark the hyperesthetic stage which precedes anesthesia and these not infrequently persist after a return to consciousness. On the muscular system it is a well established fact that nitrous oxid alone does not usually induce the relaxation necessary for certain major operations. Death from nitrous oxid alone is always due to asphyxia and, according to Gwathmey, the heart continues to beat after respiration has ceased, which proves that death is not due to failure of circulation.

Inasmuch as it only takes from thirty seconds to one minute to reach surgical anesthesia by the use of nitrous oxid alone, the time is too short to admit of recognizing the different degrees of narcosis. Nitrous oxid, however, is very rarely given alone nowadays, but practically always in combination with air or oxygen, so that the anesthesia is prolonged and makes it possible to note definite stages just as is the case with other inhalation anesthetics.

Twenty to thirty seconds is the average duration of the *first stage*, which is characterized by the feeling of exhilaration, of fullness in the head, and a smothering sensation if the percentage of nitrous oxid is too high. Objectively, the respirations are quickened and deepened, the pulse grows fuller, and the blood pressure is raised.

The *second stage*, or *stage of excitement*, is initiated with a loss of consciousness. Incoherent words, purposeless movements, laughing, crying and muttering are apt to occur. The respirations are more rapid and deeper than normal, while swallowing movements, sometimes with stertor, are noted. The skin now assumes the duskiess or lividity which is off and on a feature of nitrous oxid anesthesia and which is largely dependent upon the right proportion of oxygen and the care with which the administration is conducted. The patient is unconscious but any undue roughness will markedly increase the excitement. No surgical intervention should be attempted during this stage.

The *third stage*, or *stage of surgical anesthesia*, may be induced in from one to four minutes, depending upon the individual, the purity of the nitrous oxid, the general technique, the proportion of oxygen, and other details. With perfect technique, the breathing now becomes automatic, regular and without noise, although the occurrence of stertorous or snoring breath-

ing, with loss of rhythm, depends upon the method of administration and the preliminary medication.

The *fourth stage*, or *stage of overdose*, is ushered in with marked signs of asphyxia. The breathing becomes embarrassed, there are convulsive movements accompanied by excessive breathing and followed by difficult breathing. The climax is reached in violent expiratory efforts and general muscular spasm. Following this there is complete exhaustion, the pupils are more widely dilated, muscles flaccid, pulse imperceptible, respirations prolonged and sighing, and gradually ceasing as a result of paralysis of the respiratory center. The recognition of the fourth stage calls for immediately turning off the nitrous oxid and substituting pure oxygen. Respiratory failure and other emergencies are met in the same manner as other inhalation anesthetics.

Nitrous oxid alone is never indicated in the light of our present knowledge. With modern methods, and given with oxygen, Gwathmey says that it ranks above ether or chloroform as far as safety of life is concerned, and Crile, with his associates, have had 35,000 of these anesthetics without a fatality. In prolonged operations, requiring complete muscular relaxation, ether nearly always has to be added to the combination. In very weak debilitated subjects, and in the insane, it is contraindicated. It is also a very unreliable anesthetic for strong, muscular, athletic, alcoholic and obese subjects. In ophthalmic surgery and in any condition of obstruction in the air passages, such as enlarged tonsils and adenoids, it is also contraindicated. It should not be used, as a rule, in elderly or atheromatous patients, and an already existing high blood pressure would contraindicate its use. The modern technique of heating the gas does away with all refrigeration and there is no loss of body heat. Crile and others, except in the very weak or young, always precede their anesthetics by a hypodermic of morphin, gr. 1/6 to 1/4, and scopolamin, gr. 1/150, an hour before operation. One of the most complete and satisfactory apparatuses yet devised was invented by Doctor C. K. Teter, of Cleveland, Ohio. There are a number of others of varying degrees of complexity to be found in different surgical centers.

The following is Doctor Teter's technique: "Fill the nitrous oxid bag about two-thirds

full; fill the oxygen bag so that it is pretty well distended and is under a little pressure. Just before placing inhaler over patient's face, open the valve from the nitrous oxid bag. Now place the inhaler in position, being sure that you have perfect coaptation to exclude all air. Start the nitrous oxid flowing from the cylinder into the bag; this should be so regulated as to keep this bag full all the time. After the patient has been breathing pure gas for about ten or fifteen seconds, the oxygen valve should be opened to the second notch (which will be shown on the side of the valve cap and indicated by the ratchet), then keep increasing this one notch at a time after three or four inhalations, until you have reached the fifth or sixth notch; do not turn this further unless there are symptoms of asphyxia manifested. (The first manifestation of asphyxia would be blueness of the features, which would be first in the mucous membranes of the lips, in the ears and eyelids). If there are asphyxial symptoms present, you should advance the oxygen valve still further forward. It will be necessary to start the oxygen flowing from the oxygen cylinder into the bag after the patient has been breathing the mixture about forty seconds, in order to keep this bag well distended at all times, otherwise you would not be receiving the amount of oxygen indicated or desired. In order to keep the oxygen bag well distended the oxygen is allowed to flow very slowly from the cylinder, so slowly that one will not be able to hear it, but enough to keep the bag well distended all the time. Practice is the only sure teacher, but one is soon able to adjust this properly.

"If your patient is not going under the effects of this mixture after he has been breathing it about forty seconds or less, he is inhaling too much oxygen, or there is an admixture of air. If the latter is the case, correct it; if the former, turn the oxygen valve back a notch or two for a few seconds, and, if he still does not respond, it may be that the oxygen is flowing too fast from the cylinder: if so, correct this, and your patient should pass into a sound and peaceful sleep. Of course, you will find some few patients that are exceptionally hard to anesthetize, but by persistence all patients can be anesthetized with nitrous oxid and oxygen.

"By close observation on your part and being able to diagnose symptoms properly in

order to know when to decrease or increase the amount of oxygen, you are enabled not only to induce any desired depth of narcosis, but are able to maintain it for any reasonable length of time without ever admitting one breath of atmospheric air. In fact, you will be able to obtain and maintain better anesthesia without the admittance of air. You should not cause any jactitation of the muscles, or much if any cyanosis in producing anesthesia. Do not be in too much of a hurry in bringing your patient under the influence of any anesthetic agent, but take some little time and give the system time to accustom itself to the new order of things. You will not only get better results, but you will cause the anesthetic to be much safer by so doing."

As regards the influence of inhalation anesthetics upon the production of shock, Crile has shown experimentally that under approximately equal trauma the changes in the brain cells were about three times as great under ether anesthesia as under nitrous oxid-oxygen anesthesia, and that the fall in the blood pressure was on the average of two and a half times greater under ether than under nitrous-oxid-oxygen. As already indicated, there is less tissue change under nitrous oxid-oxygen than under ether, as shown by the decreased carbon dioxid output in the former, and, since we now recognize shock as the result of brain cell changes, it is easy to understand the lessened production of shock under nitrous oxid-oxygen, inasmuch as it does not exert as much harmful change in the brain cells as ether. It is fairly well conceded that chloroform is more dangerous than ether as regards shock-production in view of its well known tendency towards lowering the blood pressure, which latter is the chief phenomenon of shock.

Ethyl chlorid alone is out of the question as a general narcotic for prolonged anesthesia, although very useful for short periods. Whereas its combinations and sequences have been used with some satisfaction, the lack of definite percentages in the administration of the vapor is a drawback as well as the difficulty of controlling its effects. Clinical evidence does not tend to show it to be an anesthetic of value in shock or that its use is specially indicated in any other particular condition.

The A. C. E. mixture, in the usual proportion of alcohol 1, chloroform 2, and ether

3, has not found favor as an anesthetic in shock, or any other depleting condition, on account of the fact that, in administering, the drugs are not absorbed in the proportion in which they are mixed and hence the uncertainty of effect.

Many other anesthetics have been put forward from time to time but none have ever received the sanction which has been accorded the ones already discussed.

From a critical review of all obtainable data it would seem that whereas the nitrous oxid-oxygen anesthesia is the one of choice under ideal conditions, it is likewise apparent that *only under very exceptional circumstances has it proven to be such.* Crile and his associates have done far more than any others to bring out the advantages of this anesthetic and they fully admit that a large factor of their success is due to their own standardization of the nitrous oxid which is manufactured by their own hospital plant, the gas being delivered through a pipe line directly to the operating pavillion. It will be seen here that the conditions are certainly ideal, since at every juncture the even purity and accurate standardization of the gas is assured. Their anesthetists are trained in the use of this gas, which never varies, and thus uniform results are always obtainable.

The next point to be considered in approaching a decision as to the inhalation anesthetic of choice is the one which has to do with always being able to obtain from the manufacturers a gas of uniform and standard purity. It is a well known fact that the impurities which are liable to be present depend upon the materials used, proportions present, heat treatment, and the condition of the pumps and containers. It must be seen from this that the manufacture of this gas for surgical use calls for extreme accuracy in every detail if uniform results are to be obtained. Should the different plants for the manufacture of nitrous oxid gas differ in any degree, as regards the details mentioned above, it can be readily seen that their results must necessarily be different; and that this difference may vary within wide limits can be easily shown by an analysis of the different products on the market. Again, any one manufacturer, unless he takes elaborate and constant precautions to always insure a uniform product, will undoubtedly at times produce a gas not only of uncertain com-

position but of varying degrees of impurity. That this latter not infrequently happens can also be easily shown by an analysis of the different containers from the same plant, which indicates that the margin of error may be considerable. This fact is also borne out at times by clinical evidence, which accounts for the conflicting reports on the use of gas from the same manufacturer.

The question next arises, can we expect uniform results to follow the use of nitrous oxid gas unless it be manufactured in a special hospital plant and under conditions which insure a standard purity? It is obvious that our answer must be in the negative if for no other reasons than for those already given. There is, however, another factor which is not unimportant as regards obtaining uniform results, and this has to do with the anesthetist who, under ideal circumstances, is especially trained in the use of a pure and standardized gas which does not vary in its therapeutic effects. He thus becomes more accurately familiar with its anesthetic possibilities than would be the case if he occasionally and unwittingly used a gas of uncertain composition, which latter would not make for uniform results.

No one doubts the accuracy of the work and reports of Crile and his associates but the one factor of *uniform results* looms large in passing judgment on the relative value of two anesthetics, such as nitrous oxid-oxygen and ether, whose merits in shock are not far from being equal. In other words, though Crile was able to demonstrate that ether caused three times more shock-producing change in brain cells than nitrous oxid-oxygen, are we warranted in arriving at the same conclusions as regards the nitrous oxid and oxygen in common use? Of course, the same may be said of ether, but errors in the manufacture of a standard liquid are far less liable to occur than in the manufacture of a standard gas for obvious reasons, and besides, Crile apparently used the same ether which is in common use. In view of the fact that we cannot hope, with the ordinary nitrous oxid and oxygen of commerce, to obtain the same ratio of efficiency as did Crile, it is reasonable to assume that, under ordinary circumstances, the difference between the two anesthetics as commonly used would be much less, and, very probably equal, in their harmful effects upon the brain cells. In other words, if this were the only point that would enable

us to choose between the two anesthetics it would be very questionable to stamp one or the other as undoubtedly superior.

Granting that, in every day circumstances, the two are practically equal as regards their harmful effects upon the brain cells, there are several other factors to be weighed before arriving at a definite conclusion as to the present inhalation anesthetic of choice. Some of these factors are in favor of nitrous oxid-oxygen and some are in favor of ether.

There can be no doubt that it requires much more skill and experience to administer nitrous oxid-oxygen than it does to administer ether, and unless one is especially trained in the use of nitrous oxid-oxygen it may prove to be not only unsatisfactory but highly dangerous. As against this, it has always been an argument in favor of ether that it was the safest anesthetic in unskilled hands, and for the reason that the margin of safety was apparently much broader and more constant than with other anesthetics. The apparatus for administering nitrous oxid-oxygen is of rather a complicated character and this certainly cannot be put down as a point in its favor. The bulk and weight of the apparatus has so far practically restricted its use to the hospital, thereby curtailing its usefulness as regards the large amount of outside surgical work. The simplicity of giving ether by the open or closed method is certainly a recommendation in its favor and the fact that one or the other method admits of practically universal application is another point to be noted in favor of ether.

There can be no doubt that ether is a much more irritating gas than the nitrous oxid-oxygen combination. This is manifest principally in the mucous membranes of the respiratory and digestive tracts, giving rise to certain disagreeable, and therefore harmful, effects, both during and after operation. The modern technique in the administration of ether has for some time called for a few drops of an alcoholic solution of bitter orange peel on the mask as a preliminary to ether and this, in the vast majority of instances, does away with the disagreeable irritant effects as noticed by the patient. It also admits of a much more tranquil administration of ether, thereby lessening the amount used and rendering its other irritant effects practically negligible. As already pointed out, it is claimed by many that ether, cautiously administered, has not only not irri-

tated or caused harm in respiratory diseases, but that it has often exerted a beneficial effect.

As regards the physiological effects on the circulation, with the exception of the blood pressure as noted by Crile, the two anesthetics are practically equal. That the blood pressure in all cases, except in acute drug poisoning, is inseparably connected with brain cell fatigue, no one can doubt, and, other things being equal, if the two have practically the same effect on the brain cells under ordinary circumstances, it is fair to assume that the blood pressure effects of the two narcotics are practically the same. In regard to the kidneys it would seem that there is fairly good ground for attributing a certain amount of harm arising from the administration of ether in cases where these organs are seriously damaged. On the other hand, there are many who claim that, although somewhat irritating, it causes no more actual harm than any other general anesthetic.

The refrigerating effect of the drop method of administering ether was early recognized and led to the development of closed and rebreathing methods to obviate the loss of bodily heat in prolonged operations. The advocates of the open or drop method met this objection by partially enclosing the mask with a moist towel, as given in Davis' technique, causing a certain amount of rebreathing, which warms up the ether vapor and thereby does not cause an excessive amount of refrigeration. According to Gwathmey, the Mayo Brothers, of Rochester, Minn., have probably used the drop method of giving ether for a longer period of time, and a larger number of administrations, than any other surgeons. They have given it over 20,000 times without a fatality. In many other large clinics, both at home and abroad, it has found general acceptance and it would seem to indicate that it is the method of choice, as regards giving ether, with a large number of experienced surgeons. While statistics in different parts of the world vary and are oft-times misleading, Rovsing, who has had a long and distinguished surgical experience, states that after a careful analysis of all ether deaths, only one death in fifty-six thousand could be attributed directly to ether.

The possible after-effects of ether narcosis, in contrast to the after-effects of nitrous oxid-oxygen, would seem to indicate a favorable showing for the latter, although this is largely dependent upon the patient's general condition

at the time of operation. Gwathmey makes the following statement: "It has been stated that if ether is administered according to modern methods, with the utilization of preliminary and accompanying factors, the subject emerges, as a rule, from the anesthetic state as if from normal sleep, feeling no ill effects as far as the anesthetic is concerned. Under other circumstances, however, even with the most careful technique, the recovery period may be marked by retching, nausea and vomiting." Idiosyncrasies and untoward effects have also been noted in connection with nitrous oxid-oxygen, and there is no accurate data to show which of the two anesthetics is most responsible for occasional bad after-effects. There can be no doubt that when the anoci-association principle is applied, it will reduce the number of these occurrences in ether anesthesia as it has done in the case of nitrous oxid-oxygen.

In regard to post-operative pneumonias, Mikulicz, quoted by Rovsing, shows that this occurrence is no more common under ether than under any other anesthetic. In view of the fact that it was extremely rare to find pneumonia following operations on the extremities, thorax and head, it was argued that it was always due to two circumstances: (1) That peritoneal infection is conveyed to the lungs partly by way of the lymph vessels and venous blood, and partly by embolism; and (2) that a patient with a laparotomy wound dares not cough or breath freely, inasmuch as this involves pain in the wound. If, therefore, there is a previous bronchitis, or if an infection of the lung sets in, the development of pneumonia is favored by the deficiency in expectoration and lung ventilation. There can be no doubt that nitrous oxid-oxygen causes venous congestion to be more apparent than ether, and so much so that it is usually a serious hindrance in head and neck work. In atheroma, aneurisms and other conditions where the blood vessels are diseased, there is practically no difference in the effect of the two drugs. In diabetes, if any inhalation anesthetic is to be given, nitrous oxid-oxygen is to be preferred, although a local anesthetic would be less harmful than any respiratory narcotic.

In summing up, it would seem that except in the very unusual ideal circumstances which obtain in the hospital service of Crile and his associates, there are no factors which can be

seriously considered as pointing to the general superiority of nitrous oxid-oxygen over ether in the choice of an inhalation anesthetic. In view of the foregoing, and in view of the great ease and simplicity of administering ether, its great utility and the vastly much larger number of trained anesthetists, it would seem that *ether, by the open or drop method, is undoubtedly the present inhalation anesthetic of choice.* It is not to be understood that when opportunity arises, the surgeon is to neglect the use of some other anesthetic which could be preferred to ether in a particular case but, as the patient's interests are always paramount, that anesthetic or technique is to be used which will do most to insure safety and success.

Doctor Crile, in Murphy's Clinics of February, 1914, makes the following statement: "Nitrous oxid skillfully given, in my estimation, is the best anesthetic for surgical purposes, but it ought never to be given except by some one who has been well trained in its administration. In my judgment, the degree of M. D. does not qualify any man to give nitrous oxid anesthesia or any anesthetic, in fact. It gives any one a *legal* qualification, but it does not give one a *moral* qualification. It takes a special training to give nitrous oxid, for it is the most difficult of all anesthetics to give well.

"Now, gentlemen, I am speaking about this because I have known of certain fatalities from nitrous oxid anesthesia administered by inexperienced anesthetists. I believe that when well given, it is the safest anesthesia one can use, and I think that nitrous oxid not well given is perhaps the most dangerous anesthetic there is. Now, in my own clinic in the Lakeside Hospital, we have given nitrous oxid for general surgical purposes 8,000 times. I myself spent a great deal of time some years ago in working out the nitrous oxid problem in my laboratory. I watched the progress of this anesthetic and I took especial pains to train our first anesthetist, who in turn now trains others. It takes six months for a good training in nitrous oxid administration. I would not for one moment consider myself competent to give nitrous oxid to any patient, for I believe that it requires a particular training of the reflexes to give this anesthetic well."

The use of mercury was first made known to the Europeans by the Moors and Saracens.

Early in the fifteenth century there were some distinguished women physicians.

EPILEPSY AND ITS TREATMENT.

By W. J. CHEWNING, M. D., The Plains, Va.

In both diagnosis and treatment of epilepsy, the profession as a whole is giving more time and attention than ever before. There are several forms of the disease, and it affects not alone the nervous system, involving both the brain and cord, but the blood also plays a most important part. A disordered digestion is likewise an important contributing factor, the frequency of attacks being decidedly influenced by the character of food as well as bad digestive powers. Intestinal worms or injuries to the peripheral nerve similarly may cause a form of reflex epilepsy.

Little attention is, as a rule, paid to the various premonitory symptoms, and they are frequently attributed to a nervous condition and treated as such, being often neglected except for a few doses of bromides. When, however, the first attack of grand mal occurs, we blame ourselves for not having made a more careful examination and for not having given the case more careful attention.

Attacks may occur daily, weekly, monthly, or yearly, although under proper treatment there is no reason why they should not be greatly relieved and reduced in number or cured.

Epilepsy is of more frequent occurrence than would be supposed at first thought, for it is in many cases carefully concealed. Often a so-called attack of "vertigo" is in reality of epileptic origin, though it may possibly be diagnosed variously as a nervous condition, acute indigestion, kidney trouble, etc. This generation is essentially neurotic. The feverish, agitated life we lead, the worry of business cares, social exactions, all help to engender this condition. This disease has no respect for age, and I have had cases that started in infancy, youth, young adult and middle life. One case had a history of an attack at 16 years of age, and then went until 35 years old before having the second attack, so far as could be learned.

My experience as to the treatment used leads me to believe that this should depend upon the special form of the case,—with especial reference to its cause. Hence, to obtain satisfactory results, there must be many different treatments, depending upon the form. No one treatment or preparation will do for all cases, and from years of treatment of this disease, I

find that each case is a law unto itself. I have seen cases where croctalin had been used with most satisfactory results, in others where it not only did not help the patient, but the condition became actually worse and the attacks came oftener. Here let me state I have gotten better results from the combined use of mercury (protoioide) and croctalin than with the use of the latter alone. In using croctalin, the blood should be closely watched both as to clotting and the number of eosinophiles, and many of the failures to obtain good results from this treatment may be accounted for by not watching the effect of this preparation on the blood, increasing or decreasing the dose as indicated from each examination. Croctalin is a wonder worker in some forms of epilepsy, especially in the petit-mal forms.

For sometime I have been using dragees of potassium bromide, picrotoxine, and arsenate of antimony. Combined with this it is necessary occasionally to give daily increasing doses of tincture of belladonna, and a pill consisting of extract of colocynth, resin of jalap, calomel, and gamboge every other night. This keeps the bowels and kidneys acting and in good condition. I have gotten most satisfactory results from this treatment; in fact, the effect on the whole has been better in the grand mal types than from the use of croctalin, although I have combined both treatments in some cases. One case in particular, with a history of attacks since childhood, with from 15 to 20 attacks a day, used croctalin alone without results, but with the dragees and croctalin there have been no attacks in the past three months.

TRANSFUSION—ITS INDICATIONS AND LIMITATIONS.*

By H. H. KERR, M. D., C. M., F. A. C. S.,
Washington, D. C.

Surgeon to Freedman's, Children's and Garfield Hospitals.

The origin of the idea to transfuse blood from an animal, or man to man, is shrouded in the mists of ancient history. It is referred to in the writings of Tanaquilla, of Herophilus, of Pliny, and Celsus.

The discovery by William Harvey of the circulation of the blood, in 1628, suggested the operation of transfusion to Francesco Folli, who, in 1652, described his method. He used

*Original abstract of a paper read before the Medical and Surgical Society of the District of Columbia, May 6, 1915.

two canulas, one of bone and the other of silver. They were connected by a piece of prepared artery.

Following this work, many investigators took up the study of the problem, and many methods and inventions were reported.

However, this new procedure was condemned by the Faculty of Medicine of Paris, and, in 1668, they issued a decree against it. As a result, the operation came into disrepute, and was almost forgotten until early in the nineteenth century.

Murphy's paper, in 1897, showed the practical application of the suture to blood vessel anastomosis. His invagination method proved that the vessels could be joined by sutures without obliteration of the lumen. This stimulated active interest in blood vessel suture. Salomoni and Brian and Jaboulay brought out at about the same time the principle of approximating intima to intima. They proved that the flow of blood from one vessel to another could be kept up indefinitely without clotting, provided the anastomosis was made with eversion of the edges of the vessels and approximation of the uninjured intimas.

It was not until Carrel, in 1902, perfected the technique of blood vessel suture that the direct transfusion of blood could be carried out and controlled with any certainty.

When, in 1906, George W. Crile, of Cleveland, gave to the profession his method of transfusion by means of a canula, we had a technique that made the operation practicable to every skilled surgeon. Since that time may be dated the modern development of the operation. The enthusiasm which usually follows such an invention soon found many conditions that were directly benefited or cured by transfusion. Likewise, the rapidly growing experience with the operation soon demonstrated its limitations and difficulties. Many modifications of Crile's method have been reported, and other means of performing the operation have been described.

We may divide the modern methods now in use under two heads, the direct and the indirect.

The direct method is that by which the actual circulations of donor and recipient are directly connected. This group may be again subdivided into the mediate and immediate methods.

By the mediate method, the flow occurs through an artificial canula. In the immediate method the vessels themselves of donor and recipient are directly anastomosed.

Carrel's suture is the first example of the latter or immediate direct method. By his technique an artery of the donor is dissected out, divided and sutured to the proximal end of the divided vein of the recipient. The union is made with suture of the everted cut edges of artery and vein so that the intimas of the two vessels are approximated.

Crile's technique, with the use of a canula, is also an immediate direct method. The blood is not transferred through the canula, but the canula is used to support a direct anastomosis. The divided vein, prepared as in Carrel's method, is passed through the canula and cuffed back over it and is there ligated. Then this intima covered canula is inserted into the divided artery of the donor, and the end of the artery is ligated over the vein and canula. We then have the two intimas approximated, but the tedious suturing of Carrel's technique is done away with. The operation becomes very much less difficult and can be performed by any skilled surgeon. However, other operators have, in turn, improved on this method, so that there are now many modifications of Crile's canula on the market.

Perhaps the best of these is the Elsberg canula, presented by Charles Elsberg, of New York, in 1909. With this instrument the sometimes difficult threading of the severed vein through the canula is omitted and the first ligature is unnecessary. The artery, instead of the vein, is cuffed over the canula and held back by four sharp teeth at its base. One ligature around the vein, cuffed artery and canula is the only one required.

Of those direct methods which use a canula between the donor and the recipient—the mediate direct method,—Brewer's is the simplest and best. Carrel proved that if a foreign substance exposed to the circulating blood was coated with vaseline or paraffine, it would not cause clotting, hence the needles and threads of his suture method were sterilized in one of these media. Brewer, of New York, suggested the use of a glass tube whose lumen had been coated with paraffine. The method is extremely simple and usually efficacious. However, should the coating of the canula be imperfect,

or become so during a long transfusion, clotting, with the dangers of embolism, may result. There is also greater danger of air embolism by this technique than by the immediate direct method.

Bernheim, of Baltimore, described a method of transfusion similar to Brewer's in principle, but instead used two metal canulas, a male and female; one is inserted into the artery of the donor, and the other into a vein of the recipient, and the two fitted together. This technique is open to the same criticism as Brewer's.

By the indirect method of transfusion the donor's blood is removed to a syringe and re-injected into the circulation or muscular tissue of the recipient. As normal blood clots in three minutes or more, the transfusion of each syringe-full must not exceed that time. The puncture of a distended vein of the donor allows the blood to be withdrawn without incision, and it may be injected into the recipient through another puncture, either of a vein or directly into the muscular tissue. A small amount of blood may be transfused in this way with the greatest ease, but for large quantities an elaborate preparation is necessary.

Lindeman, of New York, has perfected this technique so that with simple punctures of the veins of donor and recipient, any measured quantity of blood may be transfused.

The method is ideal in the hands of Lindeman, but seems to have been found difficult for other men who have attempted to follow it. When so many take part in the operation the failure of one spoils the entire proceeding.

The advantage of measuring the amount of blood passed is an apparent rather than a real advantage. Who can say how much blood will be necessary to relieve a certain condition? The dose is always empirical and is regulated by the condition of donor and recipient.

Of all these various methods, the best is the safest and easiest.

The safest must be a direct immediate method, because the blood stream comes in direct contact with no foreign substance, and the two circulations, the donor's and the recipient's are continuous.

The easiest is undoubtedly one of the indirect methods. But in the opinion of the writer, the added danger of introducing a foreign substance into contact with the blood stream outweighs the advantages of simplicity.

So that the choice is with the direct immediate method that is easiest performed, and that method, in our opinion, is Elsberg's modification of Crile's canula.

For the transference of small quantities of blood, as in the prophylactic treatment of haemophilia, the syringe method, with intramuscular injection is our preference. Here the danger from possible clotting of the blood, or air embolism, does not obtain, as the blood is not injected into the recipient's circulation.

The operation of direct transfusion is not without danger to the recipient or donor. The donor, being a normal, healthy individual, assumes slight risk. Of course, it would be possible, but highly improbable, to take too much blood from a healthy person. A careful watch for symptoms of collapse should be kept. A marked increase in the pulse rate, or fall of blood pressure, or blanching of the mucous membranes is a sign of danger, and the flow should be stopped. When the recipient is suffering from a communicable disease, every precaution should be carried out to protect the donor.

Though the recipient is the one that derives the benefit from transfusion, he also assumes the greater risk. The principal danger to avoid is acute cardiac dilatation from too much or too rapid a transfusion, with resulting overburdening of the right heart. Death has occurred from such an accident. In the cases where symptoms of cardiac embarrassment arose, the artery to vein method was used. But with vein to vein technique it is almost impossible. Another danger is the introduction of air emboli into the circulation of the recipient. A small amount seems to do no harm, as proved by Senn many years ago. But large quantities may cause death from acute dilatation of the right ventricle.

A third danger is from haemolysis. This, however, is not as apt to occur as was at one time believed. Though doubtful cases have been reported, it is extremely rare. However, if the donor and recipient are not blood relations it is always advisable to test their blood to see that haemolysis does not occur, and that the donor's serum does not agglutinate the recipient's cells, or *vice versa*.

The ideal indication for transfusion is haemorrhage. Where life is endangered from the loss of blood, the replacing of that blood

is a positive cure. Crile proved that dogs, allowed to bleed until respiration had ceased, and only a feeble auricular cardiac beat remained, could be resuscitated by direct transfusion.

Transfusion is a better form of treatment for shock alone, or combined haemorrhage and shock than any known form of treatment. The blood pressure is raised and better sustained than by other fluids, and the rapidly occurring improvement is greater than that obtained by the use of fluids other than blood.

A third condition in which transfusion is the ideal treatment is poisoning by illuminating gas. The chief toxic factor in these cases is the carbon monoxide, which has an affinity for haemoglobin three hundred times that of oxygen, which it displaces. After respiration had ceased and the heart stopped beating in dogs poisoned with ordinary illuminating gas, resuscitation occurred promptly after transfusion. All the haemoglobin which has combined with the carbon monoxide is useless to carry oxygen to the tissues, and the rational treatment is, of course, the supplying of fresh haemoglobin uncontaminated with the gas.

Apparently transfusion is curative in haemophilia. From the researches of Howell, lack of prothrombin seems to be the cause of this condition. The supplying of prothrombin from the donor corrects this dyscrasia, and further haemorrhages are prevented. Whether renewing of the supply of prothrombin from time to time is necessary, experience will tell, but so far, once a sufficient amount is given, the tendency to bleed seems to be permanently arrested. Similarly, transfusion of normal blood in cases of purpura is often curative.

Another haemorrhagic condition, be its cause in the capillaries, as some think, or in the blood, responds promptly to this procedure—haemorrhage in the new born. There are gradually accumulating in the literature numerous instances of babies, all but exsanguinated, and when sera and drugs have failed to stop the bleeding, cured by transfusion.

Lastly, as a prophylactic measure before operation in cases weak from long sepsis, from anaemia, or from jaundice, transfusion is of inestimable value, as it allows the patient to withstand curative operation where otherwise the procedure would have been impossible.

Zingler reports in the last *Archives of Pe-*

diatrics, two severe cases of scarlet fever greatly benefited, if not cured, by transfusion from convalescent cases. Where the toxic symptoms were marked, with high fever and delirium, transfusion by the syringe method caused a decided drop in the temperature and a clearing up of the toxæmia. As scarlet fever is usually treated in isolation wards, convalescents are easily obtained as donors. It is a new form of serum treatment and possible of great development. Experimentally similar results were obtained in lymphosarcoma in dogs. Transfusion from animals that had shown a natural or acquired immunity caused regression or disappearance of tumors transplanted into dogs that had no immunity. Subsequently those recipients proved immune to further transplants. Zingler also calls attention to another condition which gives promising results to transfusion—extreme malnutrition in infants. Their waning lives may be rekindled to allow proper diet and hygiene to be instituted. Crile reports two suggestive cases of transfusion in puerperal eclampsia worth recording. The uterus was emptied, the patient bled and then transfused. He also cites a case of Coles in which he transfused a woman in the last stages of pellagra from a negress who had recovered from a severe attack six months before. Immediate improvement was followed by complete recovery.

The experience of the last few years has shown that the operation of transfusion is of very little or no benefit in many conditions.

In certain intoxications it has been found that the poisons become anchored in the fixed tissues, and transfusion has no effect. Strychnia apparently shows this affinity for the fixed tissues. Transfusion after a fatal dose of strychnia in a dog is of no benefit unless performed within one-half hour of the time of the ingestion of the drug. Certain other drugs act in the same way. The toxins of exophthalmic goitre seem also to have an affinity for the fixed tissues.

It is interesting to note that the first case in which transfusion by direct anastomosis of the vascular system of one individual to another was ever attempted was in a case of severe thyrotoxicosis by Crile of Cleveland.

Pernicious anaemia may be favorably modified by transfusion in the early stages of the

disease, but in the advanced stages it is not affected.

Leukaemia is another blood condition on which transfusion has no effect. The blood picture and clinical picture may be temporarily improved, but no lasting benefits result.

The results in malignant diseases, carcinoma and sarcoma, are negative. From the experimental work with lymphosarcoma in dogs, it seems results might be obtained, could we find donors with natural or acquired immunity to the condition.

Direct transfusion has been performed by the writer eight times. Although the number is small, the results are interesting. Three operations were done for haemorrhage in typhoid fever. In all no lasting result was obtained. Though two of the cases made most dramatic temporary recoveries from the death-like exsanguination, the bleeding recurred and death resulted. In the third case the haemorrhage continued all during the transfusion, which was continued for about one hour. It was apparent that we were bleeding the donor through the patient's circulation, and the operation was stopped. The bleeding continued till death supervened in a few hours.

Two other cases were transfused for haemophilia. Both made good recoveries. The first was a child of four who had been bleeding steadily from an incised wound of the foot for weeks, and in which all methods to control the oozing had failed. He was transfused from his father and the haemorrhage immediately ceased, nor has it recurred. It is interesting to note that the father presented himself the next day at a hospital in the neighborhood of his home on account of persistent oozing from the wound in his arm. Deep circumvection sutures were required to stop the haemorrhage. He had denied any history suggesting that he might be a bleeder himself, although he had never undergone any surgical operation.

The second was a marked case of haemophilia, with a history of recurrent alarming haemorrhages in all parts of the body since birth. The child, seven years old, was brought to the hospital weak, thin and anaemic from a recent haemorrhage from the mouth, which still continued. There were numerous subcutaneous haemorrhages, and the right knee showed the characteristic symptoms of a haem-

ophilic joint. The coagulation time of his blood was 22½ minutes. Direct transfusion from the mother resulted in the arrest of the bleeding, but the night following oozing began from the incision over the vein. Another transfusion by the syringe method was performed next day, and from that time improvement began. When he left the hospital three weeks after admission the coagulation time was 14 minutes. Six months later another test showed it 3½ minutes, and the boy apparently cured of his tendency to bleed.

In a recent case a girl of 22 was referred to me for operation for a large tumor in the upper right quadrant of the abdomen. She had been jaundiced for months, and had recently had severe haemorrhage from the stomach. She presented the picture of common duct obstruction plus pyloric obstruction. Her haemoglobin was 40 per cent., reds 2,000,000, and coagulation time 12 minutes—surely a bad risk for operation. She was transfused from her bother and showed marked improvement; so that, 24 hours later a gastroenterostomy and cholecystotomy were performed under local anaesthesia. No attempt was made to remove the large tumor, which appeared to arise from the head of the pancreas. No glands or other evidence of malignancy were seen at operation, and it was hoped that an attempt at a radical removal might be undertaken after the jaundice had cleared up and the starvation corrected. Her improvement, however, was arrested about ten days after operation by recurrence of the haematemesis. Death resulted.

One case of haemorrhage neonatorum was seen by the writer, and transfusion advised. After exposing the artery of the donor and inserting the male end of a Bernheim canula into it, the baby was lifted out of its crib to be prepared. He died at that moment, and before the anastomosis could be completed. We feel that had the attempt been made earlier the life of the child might have been saved.†

Most of these cases were done with the original Crile canula, and from artery to vein. In one case the anastomosis was made from ar-

†In my last case the transfusion, by raising the blood pressure, started a severe haemorrhage from a large ulcer of the stomach. Death followed in about 5 hours. The patient had been bleeding from his bowel for 3 months and it was with the hope of improving his blood picture (haemoglobin 10 per cent., reds 1,000,000), that transfusion was undertaken as a preliminary to operation.

tery to artery; in two from vein to vein. One transfusion was made by the syringe method, and one attempt with the Bernheim canula. We feel, however, that direct transfusion with the Elsberg instrument from vein to vein is preferable to all others.

Proceedings of Societies, Etc.

ROCKINGHAM COUNTY (VA.) MEDICAL SOCIETY,

The regular bi-monthly meeting of this Society was held September 11, 1915, in Harrisonburg. The president, Dr. J. H. Deyerle, of Harrisonburg, called the meeting to order, after which the regular order of business was transacted. Two very interesting and timely papers on Oral Hygiene and School Inspection were presented by Drs. Lineweaver and Nichols. After an exhaustive discussion, during which much interest was manifested in the probable establishment of dental inspection of the schools of the County, and the election of delegates and alternates to the meeting of the Medical Society of Virginia, in Richmond, in October, the Society adjourned.

W. W. KOONTZ, M. D.,
Secretary.

AMERICAN PROCTOLOGIC SOCIETY.

Reported by A. J. ZOBEL, M. D., San Francisco, Calif.

The following is an abstract of the principal papers read before the American Proctologic Society at its meeting at San Francisco, Cal., June 21-22, 1915, editorial mention of which appeared in a preceding issue of the *Semi-Monthly*:

Rectal Prolapse and Its Mechanics.

By WM. M. BEACH, M. D., Pittsburgh, Pa.

The terms prolapse and proidentia are interchangeable as applied to a dislocated rectum downward on account of defective anchorage.

Dr. Beach feels assured that many of the victims of dyschezia could give a history of prolapsus in childhood.

He states that we are coming to think of prolapsus in terms of hernia, the verity of which must be determined from a consideration of the pelvic fascia and intra-abdominal pressure. He gives in detail the anatomical reasons for the causation of rectal prolapse.

Under the head of treatment he states that a

number of surgical procedures have been devised and advocated for the restoration of the dislocated rectum; that they have seemed to succeed for a time, only to prove a failure later on. He mentions several of the procedures and gives his reasons for and against their employment. He gives also his operation of choice.

Cause of Dissatisfaction with Hemorrhoidal Operations.

By ROLLIN H. BARNES, M. D., St. Louis, Mo.

The reason for dissatisfaction with the textbook methods in the operative treatment of hemorrhoids is that they are based upon the fear of hemorrhage, and that pace has not been kept with modern surgical knowledge in regard to the control of this hemorrhage.

It is easier to take care of primary hemorrhage than of secondary bleeding such as may occur from a slough following the ligature or the clamp and cautery operation, because the surgeon is not always at hand when the latter occurs.

In the methods of Dr. J. Rawson Pennington, (*A. P. A. Trans.*, 1914), and the author (*A. P. A. Trans.*, 1912), a clean excision of the hemorrhoid is done, so that it requires only controlling the primary hemorrhage, for there is no slough. The tissues are injured as little as possible so that they will retain the greatest amount of resistance against infection. There is less pain in these open methods for we do not have the "confined infection" which is especially caused by the use of sutures and by injuries to the deeper tissues.

For the control of hemorrhage the author advocates the use of pressure. Also care should be taken of the bleeding vessel itself rather than a ligature should be tied around a mass of bleeding tissues, or that they should be cauterized. He also advocates that advantage be taken of that muscular contraction which can be secured to the greatest extent by minimizing trauma. The rectal plug acts against this muscular contraction.

The author opposes the customary purgation in the preparation of the patient before operation. He prefers the cold enema as a means to clean out the lower bowel. He contends that the daily enema in the after-treatment does not result in constipating the patient but rather aids in securing regularity of bowel action.

Peritoneal Adhesions and Intestinal Stasis.

By JAS. A. MacMILLAN, M. D., Detroit, Mich.

The author of this paper states that the interest of the medical profession in this subject was awakened by the work of Mr. Arbuthnot Lane, of London, England; that there is a demand for operative interference in many cases of intestinal stasis, but for an operation less radical than that of extirpation of the colon; that although in the majority of instances they are not causative factors, peritoneal adhesions in some instances produce intestinal stasis.

He further states that there are two points in diagnosis which the paper is intended to emphasize: (1), the importance of pain and tenderness; (2), That the offending adhesion will be found to belong to a few definite types.

Further Observation on the Treatment of Pruritus Ani by Autogenous Vaccines.

By DWIGHT H. MURRAY, M. D., Syracuse, N. Y.

In making the fifth report of his original research work on pruritus ani and pruritus vulvae, Dr. Murray gave the results of the examinations concerning the etiology of twenty-one additional cases together with their treatment, complications, and present condition. He also reported further on the cases previously examined, treated, and reported.

Dr. Murray hoped that no reader of his papers on this subject imagined for a moment that he claimed that all of these cases made prompt and complete recovery with no relapses.

He believes that he is still justified in emphasizing the claim that most cases of pruritus ani and vulvae are due to a local infection which may be benefited by treatment with autogenous vaccines.

Where he was unable to find streptococcus infection at the first bacteriologic examinations, this year when the patient had a slight relapse streptococcus fecalis was found. This gives additional evidence that infection may be present and yet the bacteriologic report may not show it.

Even when we have the knowledge that it is a skin infection; that the phagocytic power of the blood is below normal for the infecting bacteria; and that the vaccine injections give the best and most lasting relief; yet we are still unable to give patients a definite statement as to the number of treatments or length of time necessary before improvement will begin.

Nor are we able to assure them that no relapse will occur.

Six cases confirm the claim made in the fifth conclusion of his third report, namely—"The presence of skin infection with a local lesion begets an unfavorable prognosis for the cure of pruritus ani by an operative procedure."

Three cases confirm the claim made in the sixth conclusion of his paper in 1913, namely—"The absence of a demonstrable skin infection with pruritus ani together with the presence of a local lesion will justify a favorable prognosis for the cure of the pruritus ani by an operative procedure."

Acute cases do not seem to obtain the benefit from the vaccine treatment that chronic local infections receive.

Dr. Murray noticed that three of his very severe cases received little benefit during their course of treatment. He advised suspension of treatment and within a short time a marked improvement occurred in the severity of the pruritus and later the patients reported that the itching had practically ceased.

He states that he can account for this only upon the hypothesis that they were in a continuous negative phase while the vaccine was being administered, and that after discontinuing it they came into a positive phase. This might be taken as evidence that vaccine may be continued too long or the doses given too frequently.

The author says that in all the patients that he has examined and treated during the past year, it is remarkable that the cases of fistulae, hemorrhoids, ulcer, cancer, diseased crypts, hypertrophied papillae, constipation, and strictures gave no history whatever of having a pruritus ani. Yet authors still give these as causes. This confirms his statement in the second conclusion of the second report, namely:—"Even when there is a discharge of pus or other moisture on the perianal skin is not the actual cause of pruritus ani unless there is a streptococcal or other infection of the skin. They may exist together, but if so it is a coincidence."

This proof should satisfy the most skeptical and is an investigation that all can make without trouble.

The relapsed cases that returned for treatment have responded more readily to the vaccine treatment than when they first came, and

some who have not returned report that the itching is easily controlled.

Results of treatment by autogenous vaccine still continue to be the most satisfactory of any Dr. Murray has yet used. Patience and perseverance are necessary on the part of both the patient and the physician.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

PRACTICAL MEDICINE SERIES. Comprising 10 Volumes on the Year's Progress in Medicine and Surgery. Under general editorial charge of *Charles L. Mix*, A. M., M. D., Professor of Physical Diagnosis, Northwestern University Medical School, Chicago, and *Roger T. Vaughan*, Ph. B., M. D. Volume X, 1914: Nervous and Mental Diseases. Price \$1.35. Volume I, 1915: General Medicine. Price \$1.50. Volume II: General Surgery. Price \$2. Volume III: Eye, Ear, Nose and Throat. Price \$1.50. Volume IV: Gynecology. Price \$1.35. Volume V: Pediatrics and Orthopedic Surgery. Price \$1.35 Chicago. The Year Book Publishers. Cloth 12mo. Series of 10 Volumes, \$10.

While the above series of books is published primarily for the general practitioner, the arrangement enables those interested in special subjects to buy only the parts they desire. Each volume is well indexed, giving names of authors whose papers are abstracted and also the subjects discussed. Such well-known authorities as *Hugh Patrick*, *Billings*, *Salisbury*, *John B. Murphy*, *Casey Wood*, *Albert Andrews*, *William Ballenger*, *Dudley Stowe*, *Isaac Abt*, *Ridlon* and *Charles A. Parker*, all prominent in the Chicago medical world, have had in charge the editing of the volumes given above.

By *George Emerson Brewer*, A. M., M. D., Professor of Surgery, College of P. and S., New York; Surgical Director, Presbyterian Hospital; Consulting surgeon, Roosevelt Hospital, assisted by *Adrian V. S. Lambert*, M. D., Associate Professor of Surgery, Columbia University; Attending Surgeon, Presbyterian Hospital; and by members of the surgical teaching staff of Columbia University. Third edition, thoroughly revised and rewritten. Octavo, 1027 pages, with 500 engravings and 23 plates in colors and monochrome. Cloth, net, \$5.50. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This third edition represents practically a new work on surgery, for, as the author states,

not only has every chapter been rewritten, with new ones added, but, in order to insure with the maximum of certainty that every phase of modern surgery would be included, he has availed himself of the help of a number of colleagues on the Surgical Staff of Columbia University. As far as possible, chapters upon subjects in which notable progress has been made, have been revised and, in some instances, largely rewritten by those who had to do directly with instruction in these subjects. Certainly his efforts have been rewarded by a most excellent volume, and we feel confident it will prove highly valuable as a reference for surgeons, as well as a text book for students for whom the arrangement of its material is especially adapted.

The illustrations are numerous and helpful. The book concludes with an index of forty-five pages, double column.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH, ADOPTED DURING THE YEAR 1913. Reprint No. 264 from the *Public Health Reports*, 1913 and 1914. Washington Government Printing Office. 1915. 8vo. Paper. 539 pages. Price 50 cents per copy from the Superintendent of Documents, Gov't. Printing Office, Washington, D. C. State and municipal health departments and reference libraries can obtain copies of this publication by addressing Surgeon General *Rupert Blue*, U. S. Public Health Service, Washington.

Editorial.

The Medical Society of Virginia

Will hold its forty-sixth annual meeting at the Jefferson Hotel, Richmond, October 26-29, 1915. Because of the energetic efforts of the local committees as well as of the officers of the Society, if signs do not fail, this will be the largest gathering of Virginia physicians ever assembled. In addition to the two hundred members residing in Richmond, over four hundred others from out-lying sections of the State have, in response to inquiries mailed to them by the Local Committee of Arrangements, Dr. *Thos. W. Murrell*, Chairman, announced that they will attend, while this number will undoubtedly be considerably augmented by many of the eight hundred who have not thus far replied. In this connection, it is essential and urged that certainly those of this latter number who expect to be present will so notify the committee, in order that some idea of the total

attendance may be had with a view to making a proper provision for their entertainment. In addition to the doctors themselves, special efforts are being made to have members bring their wives and daughters, and present indications seem to point to an attendance of at least seventy-five of the fair sex. Mrs. J. Allison Hodges is Chairman of a local committee which is making extensive preparation for entertainment of the ladies.

The scientific sessions of the Society should prove unusually interesting. As was announced in the preliminary circular issued during August by the Secretary, Dr. Paulus A. Irving, the Subject for General Discussion will be Diseases of the Biliary Tract, as follows: Etiology and Pathology, Dr. S. B. Moon, Richmond; Symptoms and Diagnosis, Dr. Hugh Trout, Roanoke; Medical Treatment, Dr. Hugh McGuire, Alexandria; and Surgical Treatment, Dr. Lomax Gwathmey, Norfolk. The President, Dr. Samuel Lile, Lynchburg, states that the discussion of the Cancer Symposium will be participated in by Drs. W. L. Rodman, Thos. S. Cullen, and Jos. C. Bloodgood, while Dr. Harry T. Marshall, University of Virginia, is arranging a Tuberculosis Symposium.

Another interesting feature of the meeting will be the clinics and demonstrations that are being worked up by Dr. J. Shelton Horsley and his Committee, and, as far as practicable, it will be their purpose, in addition to arranging for regular clinics, to attempt to have on hand for individual study such special cases as visiting members may signify prior to their coming that they would like to see while here.

Meetings of the State Society are helpful to the doctor in many ways; they broaden him, besides giving him a chance for a "merry ha-ha" with some good friend he knew years ago. Come, and bring others. What say *you*?

The Floyd County (Va.) Medical Society

Has been reorganized and granted a charter with the following officers:—President, Dr. M. L. Dalton, Floyd; vice-president, Dr. R. T. Akers, Alum Ridge, and secretary, Dr. E. L. Lawrence, Floyd. The meetings will be held quarterly.

Falsely Labeled Medicines.

More than half a hundred manufacturers of patent medicines have been fined or had their goods condemned under the Sherley Amendment to the Food and Drugs Act, which prohibits false and fraudulent claims as to the

curative or therapeutic effects of drugs or medicines. Criminal prosecutions against the manufacturers were brought in 25 cases, but in 31 instances the falsely and fraudulently labeled medicines were seized while in interstate commerce. Claims made by the manufacturers for the curative powers of these preparations ranged from tuberculosis, smallpox and diphtheria to coughs, colds and scalp diseases. A number of other criminal prosecutions and seizures are pending in various Federal courts throughout the United States because of alleged violations of the Sherley Amendment similar to those which have already been tried. The officials charged with the enforcement of the Food and Drugs Act are of the opinion that the evils of the patent medicine business can be stopped only by the most drastic action.

The Fairfax County (Va.) Medical Society,

At its annual meeting in August, elected the following officers for the ensuing year:—President, Dr. Llewellyn Powell, Alexandria; vice-presidents, Drs. T. F. Dodd, Theological Seminary, and D. C. Cline, Dumfries; recording secretary, Dr. T. C. Quick, Falls Church; corresponding secretary, Dr. W. P. Caton, Accotink, and treasurer, Dr. E. L. Detwiler, Herndon.

Councilor Nominated to Medical Society of Virginia.

At the meeting of the Southside Virginia Medical Association in Lawrenceville, September 14, members of the Medical Society of Virginia, residing in counties in the fourth district, nominated Dr. E. L. Kendig, of Victoria, as councilor to the Society to represent that district.

The Prince William County (Va.) Medical Society

Held its regular meeting September 15, at the home of Dr. J. C. Meredith, Manassas. The members were entertained at luncheon, after which followed a discussion of medical questions and interesting surgical cases. Drs. W. A. Newman and J. M. Lewis, both of Manassas, are president and secretary respectively.

Medical Schools Opening.

In spite of the advanced requirements made of medical students, "the cry is still they come!" At the University of Virginia, where the freshman class has a capacity for only thirty-six, the medical school was full a month ago. At the Medical College of Virginia where the entry standard was advanced again this

year, it was feared that the attendance might show a decrease, but to the time of going to press, there is a good showing for attendance at this school also. The freshman medical class is expected to commence with at least twenty-five matriculants, while it was estimated that there would be at least fifty each for the pharmacy and dental sections. We suppose the situation in Virginia is identical with that in other states where medical education has a high standard.

American Public Health Association.

At the meeting of this Association in Rochester, N. Y., this month, Surgeon John F. Anderson, of the U. S. Hygienic Laboratory, Washington, was elected president. Surgeon General Wm. C. Gorgas, U. S. Army, and Dr. Frederick Montezambert, director-general of public health of Canada, were elected honorary members. The next convention will be held in Cincinnati, the date to be set later.

Dr. E. C. Levy, chief health officer of Richmond, Va., was re-elected secretary of the section of public health officials, an office he has held since the establishment of this section, and he was also elected a member of the executive committee. Drs. W. A. Plecker and J. O. Fitzgerald and Mr. Richard Messer, of the State Health Department, also attended this meeting.

Dr. Southgate Leigh.

Of Norfolk, Va., visited Natural Bridge, Va., on his return from attending the meeting of the C. & O. Surgeons at White Sulphur Springs, September 3.

Married—

Dr. Paul Morgan Strother, Lynchburg, Va., and Miss Eliabeth Lewis Bradley, Croswicks, N. Y., September 18. Dr. and Mrs. Strother will be at home after October 15, at 904 Wise Street, Lynchburg.

Dr. Geo. W. Brown.

Superintendent of the Eastern State Hospital, at Williamsburg, Va., was called to Culpeper, Va., the middle of this month by the death of his mother.

Delegates to Tuberculosis Conference.

The following have been appointed by Governor Stuart to represent Virginia at the Southern Tuberculosis Conference to be held in Columbia, S. C., October 8 and 9:—Drs. John J. Lloyd, Catawba Sanatorium; Chas. R. Grandy, Norfolk; E. E. Watson, Salem; Harry T. Mar-

shall, University and Miss Agnes Randolph, Richmond.

Prevalence of Notifiable Diseases.

In reporting on notifiable diseases by states for 1914, the *U. S. Public Health Reports* states that a relatively large number of reported cases of communicable disease, and especially when accompanied by a relatively small number of deaths, does not necessarily mean that the disease is more prevalent in that State than in other States. It may be that the health department and practicing physicians are more active in reporting these diseases or it may be partly due to the manner in which the health department collects information in regard to communicable disease. For this reason, it would appear that "comparisons are odious."

However, it may be of interest to note that of states reporting pellagra, Mississippi led with 10,954 cases, Virginia taking third place with 386 cases. Mississippi likewise took the lead in reporting malaria, there being given for that one state 116,688 cases during 1914. New Jersey reported 11,401 cases of malaria for the year while Virginia reported 6,926 cases for the last six months only. New York reported 31,073 cases of tuberculosis—by far the largest number of reported cases of this disease for the year. In typhoid fever, Mississippi again took the lead with 6,179 cases, New York, Ohio, Illinois and Virginia following in the order named, Virginia reporting 3,924 cases of typhoid fever in 1914.

Dr. Lewis M. Holladay.

Orange, Va., visited friends near Lewisburg, W. Va., after attending the meeting of the C. & O. Surgeons at White Sulphur Springs, this month.

Dr. J. A. Gilmer.

Of Big Stone Gap, Va., was elected vice-president of the recently organized Board of Trade of that place.

Examination of Candidates for U. S. Public Health Service.

Boards will be convened at the Bureau of Public Health Service, 3 "B" Street, S. E., Washington, D. C., and at the Marine Hospitals of Boston, New York, Chicago, St. Louis, Louisville, New Orleans, and San Francisco, on Monday, November 1, 1915, at 10 A. M., for the purpose of examining candidates for admission to the grade of Assistant Surgeon in the U. S. Public Health Service.

Candidates must be not less than 5 feet, 4 inches, or more than 6 feet, 2 inches, in height, with relatively corresponding weights, between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to professional and moral character. Credit will be given in the examination for service in hospitals for the insane or experience in the detection of mental diseases. Candidates must have had one year's hospital experience or two years' professional work, and are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

Examinations are physical; written, which begins with a short autobiography of the candidate, the remainder covering the various branches of medicine, surgery, and hygiene; oral, which includes subjects of preliminary education, history, literature, and natural sciences; and a clinical examination conducted at a hospital. The examinations usually cover a period of about ten days.

Successful candidates will receive early appointments according to their attainments on examination.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon, and after twelve years' service the latter are entitled to examination for promotion to the grade of surgeon.

Assistant surgeons receive \$2,000, passed assistant surgeons \$2,400, surgeons \$3,000, senior surgeons \$3,500, and assistant surgeon-generals \$4,000 a year. When quarters are not provided, commutation at the rate of \$30, \$40, and \$50 a month, according to the grade, is allowed. All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitation to appear before the board of examiners, address "Surgeon-General, Public Health Service, Washington, D. C."

Dr. Ramon Garcin.

Of this city, has established a scholarship medal in the upper school of the Collegiate School for Girls, Richmond. It will be known as the "Ramon Garcin Medal."

Medical Corps, Virginia Volunteers.

The following surgeons from Virginia were directed to attend the meeting of the Association of Military Surgeons of the U. S., at the Washington meeting, September 13-15:—Lt.-Col. Junius F. Lynch, surgeon general of the Virginia Volunteers, Norfolk; Majors Giles B. Cook, Richmond, Israel Brown, Norfolk, and Adam T. Finch, Chase City.

Dr. Charles Carroll Smith, Norfolk, has been commissioned a captain in the Medical Corps, to succeed Dr. E. C. S. Taliaferro, Norfolk, recently resigned.

A field hospital company was mustered into the State's service at East Radford, September 22. It is the first of its kind in Virginia, and will be composed of two officers and thirty-three men. Dr. J. C. Bowman, East Radford, recently transferred from the infantry to the Medical Corps with rank of first lieutenant, was detailed to form the company.

Dr. L. G. Pedigo,

Of Roanoke, Va., was a visitor at Blue Ridge Springs, Va., early in September.

Dr. Greer Baughman,

Of this city, was among those attending the meeting of the American Association of Obstetricians and Gynecologists, in Pittsburgh, the middle of this month.

New York to Have Hospital for Drug Users.

Donations of \$18,000 from John D. Rockefeller, Jr., and \$10,000 from Mrs. W. K. Vanderbilt have made it possible to go ahead with the erection of a hospital for drug habitues on Riker's Island, near New York City. The hospital, which will have accommodation for 132 patients, will care for the increased number of drug users in New York City caused by the enforcement of the Federal anti-narcotic law.

New City Physician.

Dr. B. L. Phillips has been appointed city physician for the second district, of this city, to fill the vacancy caused by the resignation of Dr. J. H. Crouch.

Dr. Douglas Vander Hoof

Has returned to his home in this city after an extended stay in the Virginia mountains.

Memorial Hospital.

Dr. Moir S. Martin, formerly of Stuart, Va., announces that he has purchased Irvin Memorial Hospital, Mt. Airy, N. C., which is a new

granite building modern in every particular. It is now known as the Memorial Hospital and is open to both surgical and medical cases with the exception of infections and contagious diseases.

Talk of Anti-Twilight Sleep Campaign.

It is reported that a Brooklyn woman is planning the organization of an association to oppose twilight sleep, her purpose being to interest wealthy women and thus secure money for giving publicity to the project. Never an advocate of this method, her views in opposition to it are more pronounced since the death of Mrs. Carmody, a public advocate of twilight sleep and one of the first women in this country to receive the treatment by the Freiburg method.

The Richmond Academy of Medicine and Surgery,

After a summer vacation, resumed its semi-monthly meetings September 14, Dr. J. Allison Hodges being the speaker of the evening.

Capt. Edward C. Register, M. C., U. S. A.,

Was ordered September 11, upon expiration of his leave of absence, to report for duty at Ft. Monroe, Va., relieving Capt. William M. Smart. The latter upon being relieved was to proceed to Chicago, for duty as attending surgeon in that city.

The College of Physicians and Surgeons, Boston,

Issued invitations to the opening address of their thirty-sixth annual session, held September the 15th, in the amphitheater of the College building. Dr. Thomas D. Crothers is dean of the College.

Dr. J. W. Baird,

Of Surry County, Va., has been appointed one of the delegates to represent Virginia at the Farmers' National Congress, convening in Omaha, Nebr., September 28.

The Pellagra Conference,

Which has been held triennially since 1909, will convene in October, for the third time in Columbia, S. C., under the presidency of Surg. C. H. Lavinder, of the U. S. Public Health Service. Dr. Jas. W. Babcock, Columbia, S. C., is secretary and chairman of Committee on Arrangements.

Dr. Perkins Glover,

Of Arvonnia, Va., was a visitor in Richmond, early this month.

Dr. W. C. Nunn,

Of West Point, Va., recently visited at the home of Dr. Wm. J. Newbill, Irvington, Va.

Red Cross Christmas Seals

Will be sold in this State again this year under the auspices of the Virginia Anti-Tuberculosis Association. It is expected to have at least 1,000,000 seals available for distribution to agents by the first week in November. Any information along this line may be obtained of Miss Randolph, 1110 Capitol Street, Richmond, Va.

Cholera in Austria.

From June 13 to July 3, this year, there were notified in Austria 939 cases and 202 deaths from cholera; from July 4 to July 17, there were 2,248 cases and 882 deaths from this disease, mainly in the civil population.

Obituary Record.

Dr. Henry Smith

Died at his home in Norfolk, Va., September 18, after a brief illness. He had returned the day previous from a trip to his old home in Canada and a visit to relatives in New York State. Dr. Smith was born in Ontario seventy-nine years ago but had made his home in Norfolk for thirty-four years and was a member of the Medical Society of Virginia. He was also a Mason. He graduated in medicine from the University of Michigan in 1859 and Victoria College, Canada, in 1861. He was a surgeon in the U. S. Army, 1863-1868, and a surgeon in the U. S. Marine Hospital Service, 1876-1885. His wife and two children survive him.

Dr. John S. Mitchell,

One of the oldest physicians in this State, died at his home near Bedford City, Va., September 8, aged eighty-eight years. He studied medicine at the University of Pennsylvania, graduating in 1852, since which time he had practiced his profession in Bedford County. A daughter and two sons survive him. Dr. Mitchell was one of the most highly respected and honored citizens of his county. The burial was conducted with Masonic honors.

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Original Communications.

THE CURABILITY OF CANCER OF THE CERVIX AND THE PERCY CAUTERY.*

By CHARLES R. ROBINS, M. D., Richmond, Va.

The high annual toll exacted from humanity by cancer of the cervix and the apparent futility of all methods of treatment have made it one of the most baffling problems of surgery. To no subject has a greater amount of study been given, so that a review of the literature would be beyond the scope of this meeting.

Merely tracing the evolution of operative treatment, we find that the first operations consisted of high amputation of the cervix, which was sometimes done with a cautery. This was found to simply stimulate the growth when the case was actually a cancer. With the advent of surgery the problem was thought to be solved and during my student days we were told that the cure of cancer had been found and that in all cases the uterus should be removed, the only discussion being whether it should be by the abdominal or vaginal route, the latter being recommended. This appeared to be the practice for some years and it has continued probably because most surgeons were too careless or indifferent about after results to make any attempt to ascertain how many of their cases were permanently cured. This teaching and practice received a rude shock when Baldy stated in a meeting of prominent surgeons that he never had a case of adenocarcinoma of the cervix in his own practice that had remained permanently cured and challenged any surgeon to produce such a case. In the meantime it had been dawning on the more scientific of the profession who attempted to follow up their cases that much methods were

inadequate and the scope of the operation was enlarged until the type of operation commonly known as the Wertheim was evolved. The theory of this operation was to make it similar to the Halstead operation for cancer of the breast and approximated the ablation of the connective tissue of the pelvis together with the contained lymphatics, these being removed in one piece with the uterus and appendages and the upper portion of the vagina. Wertheim published his operation in 1900, but its general adoption has been very slow in this country. Only in certain quarters where highly technical work is developed has it been made the routine operation. It was generally claimed that the operative mortality was too great to justify it and that including the operative mortality the results were no better than from simple hysterectomies. As an illustration of its slow adoption in America a statistical report collected by Jacobson, in 1910, gives out of a total of 2,467 cases only 298 by American operators.¹

The objections to the operation have been the high rate of operative mortality, the highly developed technical skill necessary for its proper performance and the tediousness of the operation. I believe that the operation should only be attempted by those who have had abundant opportunity to develop the necessary technical ability, but in such hands the results are constantly improving and the objections are disappearing. The duration of the operation is diminishing and the operative mortality is approaching reasonable figures, Wertheim having reduced his rate from 24.5 per cent. to 10 per cent.²

The reasons for the recurrence of cancer of the cervix after operation are the rapidity with which the disease extends into the parametrium, the fact that the extension usually takes place near the junction of the cervix with the vagina

*Read before the Richmond Academy of Medicine and Surgery, September 28, 1915.

where the bladder and the ureters are in close proximity to it and where the difficulties of securing a wide excision are very great, metastasis and implantation of cancer cells during operation. Even in early cases extension into the parametrium may be found to have occurred when not suspected, so that a simple hysterectomy will cut through cancerous tissue, which, of course, is followed by early recurrence in the scar. Wide excision I believe to be the only operation justifiable for cancer of the cervix.

When we come to consider the question of metastasis we have quite a different problem, owing to the fact that the lymphatics from the cervix drain into widely separated and deeply seated gland groups. It has been demonstrated that operations to remove these glands have been attended with such a frightful mortality that it has been practically abandoned. In addition, the operation was futile because it has been found where glands have been involved, that there has been almost invariably an involvement higher up that has not been reached.² There have been attempts to make the operation more radical so as to extend it to cases with more or less extensive involvement of pelvic structures. This operation was developed by Sampson and included the removal of the base of the bladder, amputation of the lower ends of ureters and implantation in the bladder of the severed ends. Sampson says himself that in addition to the high primary mortality he had never had such a case which did not recur.³ We can therefore conclude that the radical operation for cancer of the cervix shall consist of a wide excision of the parametrium, stripping it from the side walls of the pelvis and removing it in one piece with the uterus and adnexa and upper portion of the vagina. The most difficult part of the operation is ligating the uterine arteries where they are given off and dissecting out the ureters. This removes the primary lymph channels and spaces and small glands in which the first extension takes place and also all continuous tissues. Any enlarged glands detected should also be removed. The results of the operation are constantly improving and as Wertheim has reported the largest number of cases his figures give the best that may be hoped for. In his last reported 200 cases, his operative mortality was 10 per cent. and in 120 cases

that had been observed for 5 years after operation there was a permanent cure of 58.6 per cent. This is certainly a very excellent showing for a very desparate condition. During the period of his last 200 cases he operated on 60 per cent. of the cases coming under his observation. Even the radical operation is indicated only in those cases when on clinical examination the disease is thought to be entirely or nearly limited to the uterus. When there is appreciable involvement of the parametrium the operation is useless.

The Percy Cautery method of dealing with cancer of the cervix is the outgrowth of previous methods which has been worked out scientifically, backed up by experiment and put on a working basis through a simple technic, and has demonstrated its usefulness by large clinical experience in the hands of numerous operators. It was intended primarily as a palliative measure. In Percy's original paper read before the Western Surgical Association in December, 1911,⁴ he states that the Ries-Wertheim operation is one associated with such high primary mortality in the hands of all except experts that the subject of hysterectomy, radical or otherwise, may be dismissed as not worth while. He believes that the best that can be done is palliative treatment and reports surprising results from the use of his method. In a paper read before the same Society, two years later,⁵ he goes more fully into the scientific, experimental and technical aspects, both general and local. He reviews the various methods devised to combat cancer and also the experiments to determine the vulnerability of cancer cells to heat. Incidentally he refers to the arrest of tumor growth in patients who had high fever and the fact that the various injections incite a reaction which is accompanied by fever and thinks the heat from the fever may be the factor which produces the favorable action. He then details some experiments by himself in which his cautery is placed in blocks of meat. From all these he proves conclusively that there is a temperature which will destroy cancer cells and not normal cells, and that this temperature when properly applied to tissue will penetrate two and a half inches in every direction. The degree of heat in the tissues has been found to be practically 113° to 131° Fahrenheit. For the purpose of applying it he uses the electric cautery which bears his

name, and protects the vagina with a water-cooled speculum. The technic consists of placing the patient in the Trendelenburg position, opening the abdomen so that the hand may directly grasp the fundus, placing the water-cooled speculum and then introducing the cautery into the cervix where the uterus is manipulated against it by the abdominal hand.

The advantage of his cautery consists of the large point used and the control of temperature by a rheostat. The important points are that the temperature must be regulated so that there is no charring of the tissues and that it must be applied until the uterus becomes so hot that it can hardly be retained in the hand. This has been found to be an efficient test of the degree and penetration of the heat. The length of time varies from 30 minutes in cases of moderate severity to fifty minutes in advanced cases. Under no circumstances must the tissues be charred, as the charcoal forms a barrier to the dissemination of the heat. I am advised by Dr. A. C. Broders, of the Mayo Clinic, that in numerous cases where the cancerous uterus had been removed following treatment by the Percy Cautery, that no cancer cells could be detected after thorough microscopic examination.

When I first became familiar with the Percy method, it occurred to me that what could accomplish so much for hopeless cases would add immensely to the permanent cures in those cases where operation was indicated, and following out this line I have given a preliminary treatment to cases on which I performed the Wertheim operation. I have had a sufficient number of cases to enable me to test this method thoroughly, but the time has been too short to warrant report. Most of these cases have been borderline in which there was some penetration of the parametrium and in several there has been cachexia. In all, however, there has been a remarkable improvement in the patients' general condition and there has been no evidence of recurrence. When the time comes to report end results, I believe they will be unusually gratifying, and I believe that we are probably approaching a treatment that will enable us to say that cancer of the cervix, when seen sufficiently early, is a curable disease. It might well be asked why if the result of the cauterization is so good should any operation be performed. To this I would reply that a uterus that has once developed a cancer must

be potentially malignant and that the greatest amount of safety must be secured by its removal. An operation performed after or at the time of cauterization when the cancer mass has been destroyed and the cells rendered inert must secure better results than where the operation is performed when the cells are active and the manipulation of the tissues and the opening up of channels is extremely liable to cause transplantaion or extension beyond the field of operation. The difference is in dealing with a retrograde instead of a progressive process.

Clark, of New Orleans,⁶ has been working on the same lines and has recently read an interesting paper in which he details his methods and gratifying results to the present time. A note of hopefulness is very cheering when applied to such a dread malady as cancer of the cervix, and in this combination of treatment, the number of cured cases, I am satisfied, will be greatly increased, while in using the Percy treatment alone we can really help those cases which have progressed too far for operation, and by relieving hemorrhage, foul discharge, pain and cachexia add to their comfort and prolong their lives.

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8 West Grace Street.

EARLY DIAGNOSIS OF CANCER.*

By E. H. GRISWOLD, M. D., Peru, Ind.
Surgeon to Wabash Hospital.

This is not intended to be an ultra scientific paper on early cancer diagnosis. The subject is too large, and the bibliography too volumi-

*Read before the second annual meeting of the Association of Surgeons of the Chesapeake and Ohio Railway, at White Sulphur Springs, W. Va., September 3, 1915.

nous to try to compass it in a few minutes' talk. But the subject is receiving so much attention at present, and certain phases so much emphasis, that unless we stop and reflect occasionally, we are liable to get too far afield in our enthusiasm.

To read the great mass that is being written and published today on cancer, one unfamiliar with the facts would think that the rank and file of the medical profession were just being awakened to the great dread of cancer, to its prevalence, and to its being incurable in the great majority of cases, and only probably curable, in a small percent of cases, by early diagnosis and earlier operation. I wish to condemn the inference to be drawn from the many recent publications, that the great mass of the profession is not fully alive on this subject, and never has been. That is not the experience of my professional life, nor the majority of my professional acquaintances. Because we occasionally see a physician who has allowed his patient to go beyond recall, let us not blame the great majority.

Some one has started a cancer scare, and a loud voice has been raised throughout the land calling the profession to arms, as it were, to resist a new enemy that had invaded our coast. And the slogan is—detect him early and cut him off; better still, hang him on suspicion. And those medical gentlemen, thus commissioned, who fail to detect, give timely warning, and destroy, by timely act, these marauders, condemned they will be.

We are told, in high sounding phrases and to make a strong impression, of the great prevalence of cancer and its rapid increase, as though it were some new impetus that cancer had taken with ultimate determination to destroy the human family; that the profession should arise as a whole and carry this distressing news into every household, and teach the people that which the teacher himself does not know: *the early signs of cancer*. When we say early, we mean early enough to be of positive benefit to the patient.

All of you gentlemen of surgical experience, and I think medical ones as well, will agree with me that cancer is the most discouraging condition—I hesitate to say disease, as yet—with which we have to deal. We hesitate to operate on the late cases, and we constantly fear lest our early operation has been timely

or sufficiently radical. That it is relatively on the increase has not been definitely shown as yet, for statistic showings can be attributed to more accurate diagnosis—post-operative and post-mortem. Reports of the Berlin Hospital records show that 20 per cent. of the deaths from cancer were not recognized clinically. The great number of abdominal operations today for gastric ulcer shows an increase in gastric cancer and a corresponding decrease in gastric ulcer. That is, that operation disproves the clinical diagnosis as does post-mortem, though the clinical diagnosis was as nearly accurate scientifically as possible.

So far as is known today, the only absolute cure for cancer, if there is any absolute cure, is surgical. There may be some few exceptions.

We know, not theoretically but from practical experience, that the probability of cure is in direct proportion to the timeliness and thoroughness of the operation. Early diagnosis is therefore a prime factor. How are we to make an early diagnosis of cancer? How are we to make a diagnosis of cancer at all? To make a diagnosis of any disease or condition we must be able to recognize the symptoms or signs which characterize such a disease or condition. Cancer is a retrograde metamorphosis of tissue, characterized by peculiar and specific differentiation of cellular elements, proliferative in disposition.

The microscope has been and is yet our only positive means of differentiation of malignant growths from benign except the clinical course after the battle has been fought and lost. The microscope may be positively positive, but not always positively negative. The life cycle of a malignant growth is not positively known. It may be malignant from its most minute inception or it may be engrafted onto, or a transmutation of benign into malignancy. It is not known, for instance, that a simple ulcer of the stomach ever becomes malignant, or that a malignant ulcer is not malignant from its very inception. That is, we do know that we have a cancerous ulceration, but do not know that we have ulcerous canceration, if I may so express it. Experience has shown that if we rely on the microscope for diagnosis, in the majority of cases, the diagnosis will be too late. In the larger percentage of cancers microscopic evidence is only possible after

operation or post-mortem; therefore, too late for the much desired early diagnosis. The physical signs and clinical history must remain our only means of making an early diagnosis which is only presumptive until proven after operation or later development. What, then, are the early signs, so easily to be learned by the laity and that are being so carelessly ignored by the profession?

Because every division of the anatomy is subject to cancer, must we look upon every bodily malformation to be cancer or pre-cancerous condition? Do not as many cancers develop in normal skin as in warts, moles, ulcers, scars, etc.? In fact, I do not believe cancer ever developed primarily in scar tissue. We have been taught that lacerated cervices should be repaired to prevent development of cancer in the scar resulting from the tear. Does not the operation leave scar tissue also? Cancer develops in the cervix of those who have no scar.

It yet remains for some pathologist or symptomatologist to define the early signs of cancer, and especially those signs which the laity may easily recognize, that we may have the assurance of successful operation and final elimination of cancers.

A few illustrative cases are selected from a great number remarkable for absence of early signs of malignancy.

Case 1.—A maiden lady, aged 64, previous history negative except slight attacks of indigestion, relates that accidentally she discovered a lump in her side. She called on a physician to know what it was. He diagnosed cancer of the colon and inoperable. Examination revealed a tumor apparently of the splenic flexure of the colon. Operation three weeks after first discovery of the tumor, disclosed a cancerous stomach from the pylorus to near the cardia. Stomach adherent to the pancreas about the mid portion. A sub-total gastrectomy was done with uneventful recovery.

Case 2.—Mr. A., farmer, aged 50, had indigestion, for which he had been treated by several physicians and pronounced on careful examination to have no malignancy. Was feeling well for past six months, having gained 15 pounds. Was doing general farm work. Had severe pain one morning at 7 o'clock. His family physician called me at 10. Diagnosis, perfora-

tion of the stomach. Operation disclosed cancer of the duodenum and a large perforation at the pylorus. Abdomen filled with large quantity of hemorrhagic fluid and stomach contents. Condition of patient extreme, hence radical operation deferred. Perforation closed and posterior gastro-enterostomy performed. Course uneventful.

Case 3.—A. B. S., carpenter, aged 45, always perfectly well. On account of slight discomfort thought he had hemorrhoids. Examination revealed advanced cancerous growth high up in the rectum. Complete section of rectum removed by Kraske method. No enlarged glands found. Contrary to accepted practice proximal bowel was united to distal portion, which had no peritoneum, with a Murphy button. Union perfect except a small spot caused by failure to cut the silk thread on one button short enough. Otherwise, course uneventful. Patient resumed his work as bridge carpenter and grew stouter than ever had been. About one year later, he returned on account of failing health. Examination showed recurrence with general metastasis throughout abdominal cavity, of which he died in a few months.

Case 4.—R. A. P., switchman, aged 40, history negative, came to the hospital thinking he had piles, on account of difficult evacuation but no pain. Examination revealed a hard mass about 2½ inches within the rectum, through which the finger could not be passed. In this case a Kraske operation was performed by making a flap of the bony resection, as was not done in the previous case, proximal bowel dissected well up and numerous enlarged glands removed. The bowel united by suture but resulting union not so satisfactory as in the previous case with prolonged recovery, but after 2 years the patient is well and doing satisfactory labor.

Case 5.—Mrs. E. J. L., aged 30, mother of two, history negative. After birth of second child, the family physician found a small lump in the right breast, which she was persuaded to have removed. One year later she was operated for right ovarian cyst and appendix removed. Two years later, a small lump appeared in the left breast and being fearful of cancer, she desired a complete operation to be safe, and with her desire, I removed both breasts together with both pectoralis major

muscles, pectoral and axillary glands at one sitting, although the glands were not enlarged. She has borne two children since and has had no evidence of recurrence though she has continued pain in the right clavicular region.

Case 6.—Mrs. Chas. P., aged 45, mother of two grown children, presented a beautiful picture of health. She had a small lump deep seated in the left breast. No retraction of the nipple or involvement of the skin and freely movable. Entire breast removed with axillary glands which were greatly enlarged, one almost as large as the lump in the breast. Recovery uneventful and promise of complete cure. Six months later, there developed in the skin cancerous nodules covering the entire left chest from the spine to past the middle line in front. These did not seem to involve more than the true skin. There was a slight enlargement of the left cervical glands. She developed a severe neuritis of the right limb, involving principally the anterior cervical and obturator nerves. Appetite good and bodily functions normal, yet emaciation grew very rapid and death soon followed from exhaustion.

Case 7.—Mrs. P., aged 30, mother of two children, previous health good, family history negative. When presented to me, had a small growth between the first and second metatarsal bones of the right foot. There was a well-marked scar on the bottom of the foot from an operation performed some months before in St. Louis, for the removal of a like growth. The growth was removed as complete as possible without sacrificing the bone, to which it was adherent. It proved to be lymphangiosarcoma and soon showed evidence of return when the foot was immediately amputated. The stump healed perfectly and kindly, but the patient continued to decline and in a few months died of exhaustion.

Case 8.—H., farmer, aged 60, stout, healthful and robust, no previous illness, working every day, was taken suddenly ill with pain in the left lumbar region and had what his physician thought urinary obstruction. He continued ill for two weeks with this lumbar pain and rapid emaciation. It was then discovered that he had a large hard mass in the epigastrium. Exploratory operation was decided upon and revealed an enormous malign

nant growth of the left lobe of the liver. Death followed in two weeks.

Case 9.—Mrs. H., wife of the above, had been ill for many months with a pronounced case of general anasarca, pronounced by several physicians to be due to cardiac lesion. This patient had been spending her days and nights sitting in a chair. While she was being expected to die almost daily from the anasarca, that began to disappear very rapidly and was followed with extreme emaciation so that physical examination showed a marked tumor in the region of the stomach. Post-mortem showed cancer of the pancreas.

Case 10.—Mrs. P., aged 55, history negative, general health good, recent constipation growing more obstinate, consulted her family physician for this one symptom. Examination revealed a lump in the left iliac and an operation was advised, which was done without delay. Exploration disclosed a large growth of the sigmoid involving the entire lumen of the bowel and closely adherent to the pelvic wall. Not removable. Death in three months.

Case 11.—Mrs. C., aged 35, making her living by doing six family washings a week, on account of ill health, consulted her physician, who pronounced her case pulmonary tuberculosis. Not satisfied, she consulted another physician, who made a more thorough examination and found she had pelvic tumor and presented her to me for probable operation. Examination revealed a large friable mass closely incorporated into the pelvic wall. This woman was doing her regular washings up to the time I saw her and did not know previous to this that she had any pelvic disease. She died in a few weeks.

Case 12.—Mrs. C., aged 28, always well, family history negative except as to epilepsy of uncle and cousin; mother of one child, 14 months old, had not menstruated for two years. For 12 months she nursed the child, which was strong and well nourished; the mother herself was strong, in good flesh, and felt perfectly well except that she complained to her physician of some indigestion. Suddenly she began to feel nervous and weak, and was unable to retain food at times. Thought she might be pregnant and weaned the child. Weakness and anorexia continued with rapid loss of flesh. Was referred to me. She had a large visible tumor protruding from beyond

the normal lines of the body in the epigastrium and extending from the right to the left hypochondrium, and left lumbar region. Exploration revealed a large mass involving the liver, stomach, pancreas and spleen. She was not aware of any growth though she thought she was a little full in the stomach. Her only symptoms were anorexia, nausea, weakness and loss of flesh during a period of only two months.

What are the early signs of cancer that are so plain that "he who runs may read," for such they must be, if they are to be comprehended by the laity? If we are to make an early diagnosis of cancer, we must operate on suspicion and make the diagnosis afterwards.

I have purposely left much to be read between the lines to avoid too lengthy a paper. The desire is simply to appeal to the conservative mind of the profession regarding some of the phases of cancer now so much under discussion.

Is cancer really so rapidly on the increase or are we not simply finding by operations, post-mortem, etc., that cancer has always been more largely prevalent than believed or known?

The intelligent profession has always been painfully aware of its inability to deal successfully with cancer at any stage as the number of radical cures are exceedingly small. The same intelligent profession has always advised early intervention as the only hope of cure, and, from larger experience, more radical operation. From my own observation, I am of the opinion that not only the profession as a majority, but the laity as well, have had cancer on the brain for a long time, so much so, that many have been made to believe they had cancer when they did not have it, and consequently they never get cancer off the brain.

We yet do not know what cancer really is, nor have we an absolute cure. Dr. Beard, of Edinburgh, says he has discovered the real cause and the real cure, but the profession is too wilfully blind to accept it.

We do not know whether cancer is a condition or disease primarily or whether there be a precancerous state, local or general. But this we do know, that there is a local disorder primarily, and, secondarily, constitutional or general manifestation.

There are no positive early signs of cancer, especially those upon which the laity might rely as a guide, other than the same symptoms of more mild disease. The early signs of the most malignant form of cancer are so practically nil as to be unobservable, evidenced by the few cases here reported.

If cancer is a disease, we may some day be able to treat it constitutionally. Until then, our mortality must remain large for early diagnosis is uncertain, and many cases are inoperable for reasons of inaccessibility or limitations of radical removal.

When we succeed in inducing the laity to trust themselves to the doctor for all their slight ailments and to be willing to submit to painstaking examinations and, if need be, exploratory operations for diagnostic purposes, we will have taken the longest step towards early diagnosis of cancer. There are no early classical signs of cancer of which the laity may be made aware. The early stage of cancer is practically symptomless unless it be an external or visible one. Must we advise operation for every abnormal condition, because we have cancer on the brain? Some one has advised the profession to get cancer on the brain and keep it on the brain. If we do this and succeed in frightening the laity, we will be operating on a great many more cases for fees than for cancer. Most every diseased condition of the body has its specific symptoms for *early* operation, but cancer least of all.

Let us be alive to our professional duty. Win the confidence of our people and teach them to rely on us, confide in us, and cease patronizing patent medicines and the advertising quack, until they have sinned away their day of grace. Then we will be able to give them the advantage of an early investigation and in a much larger percentage of cases, afford them more material relief.

SOME PHYSIOLOGIC AND BIO-CHEMIC OBSERVATIONS ON MILK.*

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The man of business knows full well—at times too well—the importance of stock-taking: of ascertaining exactly how he stands. To neglect this precaution often means disaster.

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As in business, so in science, it is well to have a periodic stock-taking. Scientific facts accumulate rapidly. They give rise with equal rapidity to the formation of many theories. While they may be wonderfully enticing, yet we are apt to pass from theory to theory without assuring ourselves that the foundation on which we are building is secure.

Bearing this statement in mind, I beg to present some facts as well as theories, about an already much discussed subject. Some of these facts and theories though ancient, have retained their interests until now. And some of them, I trust, will at least appear in a new garb.

Milk, while considered the most satisfactory individual food material furnished us by nature, may become a veritable Dr. Jekyll and Mr. Hyde, in the world of the nutrients,—that is, if we do not keep pace with the physiologic and bio-chemic advance in the study and investigation of this specific secretory product of the mammary glands.

Milk is a natural emulsion, consisting of a plasma in which are suspended the fat globules. It contains the three nutrients—protein, fat and carbohydrate, and inorganic salts in such proportion as to render it an acceptable food. The globules of fat are composed of olein, palmatin, stearin, and butyirin. The protein constituents are in colloid solution, caseinogen being an unstable colloid while lact-albumen is a stable one. The carbohydrates are in crystalloid solution as well as the inorganic salts. Recently Jones² has reported that not only the carbohydrate lactose is normally present, but that there is a hexose sugar in sterile milk. He presents both bacteriological and chemical evidence to show that milk normally contains a substance reacting like dextrose. Besides these constituents there are traces of lecithin, cholesterol, urea, creatin, creatinine and the tri-glycerides of caproic, lauric and myrestic acids.³ Citric acid is also present in minute traces in fresh milk, though it is apt to separate out in an insoluble form from condensed milk.

In this connection Langdon Brown⁴ noted the frequency of thrombosis in typhoid cases in the South African War. Condensed milk had been used almost exclusively in feeding these cases. About 6 per cent. of all cases were affected with thrombosis—a rather high percentage, in fact, about double the normal

number. He is of the opinion that this increase in thrombosis was largely due to the general use of condensed milk with its absence of citric acid, or rather its separation into an insoluble form. He thinks that as fresh milk contains some citric acid it acts as an antidote to the large amount of soluble calcium salts in cow's milk.

Lyle⁵ also maintains the possibility of a milk diet predisposing to thrombosis by virtue of the large amount of soluble calcium salts which it contains. If this be true, in such diseases as typhoid and hematemesis, thrombosis could be diminished by allowing a more liberal diet and not adhering to an exclusive milk diet.

It must be remembered that citric acid is present in fresh milk only in minute traces, so that if an exclusive milk diet is insisted upon this difficulty may be avoided by the addition of citrate of soda to the milk. According to Martin⁶, citrate of soda acts by forming a double salt with calcium, which is available neither for the curdling of milk nor for the clotting of blood.

The possible inimical role of calcium in the production of harmful sequela in typhoid leads me naturally to a discussion of the inorganic constituents of milks. It will not be necessary in this paper to enter into any lengthy discussion of all the inorganic salts entering into the composition of milk. Milk, however, as a standard for determining all the requirements of the inorganic foods in man is an ideal one. For we are quite sure that milk contains in just the proper proportions all the inorganic salts necessary for the development of the growing individual.

Special interest has recently been taken in the role of calcium in the body generally, so I shall select this one of the inorganic salts of milk because of its general interest as well as for its particular action in the mechanism of milk curdling, the clotting of blood and its action on the heart. Certainly it is no inert substance but is essential to the animal organism, all of its activities pointing to an active function in metabolism. According to Voit, it is excreted in the urine and lost in small amounts by the bowel. He estimates about 0.15 to 0.16 grammes are lost in this way per day. Hence we see at once the necessity of replacing this important substance.

A rough estimate may be gained of the re-

lation between the composition of the inorganic salts of milk and that of the suckling, by making an analysis of the ash of both. In the case of calcium, as an important and representative one of the group, it is found in (100 parts by weight of ash contain in grammes) :

CALCIUM	Rabbit 14 days old 30.02	Rabbit's Milk 35.65	Rabbit's Blood 0.81	Rabbit's Serum 1.42
CALCIUM	Dog Few Hours Old 29.5	Dog's Milk 27.2	Dog's Blood 0.9	Dog's Serum 2.1
CALCIUM	Guinea Pig Newborn 32.21	Guinea Pig's Milk 31.1		
CALCIUM	Infant 36.1	Milk (Human) 16.4		
CALCIUM	Human Foetus 40.45	Human Milk 14.76		

It will be noted from the foregoing data that there is a striking similarity in the amount of calcium in the young animal and that of the milk, except in the case of human beings. It appears that the more rapid the growth of the animal the more nearly similar will be the result of the two analyses.

It is also of interest here to note with reference to calcium the wide difference in composition of the milk and the substances from which they are formed, that is, blood and plasma. This leaves us to infer that the mammary gland, in its secretive mechanism, has the power of selection.

A question of much interest to us now is, does the infant after it is weaned receive an adequate supply of the inorganic foods? Taking calcium as an example, it is found present in most of our ordinary foods in the following amounts:

The table⁷ below gives the amount of lime present. The values refer to 100 grams of substance dried at 120 degrees C., with the lime content in milligrams:

Sugar	0	Pears	95
Honey	7	Potatoes	100
Beef	29	Rice	103
White Bread....	46	Dates	108
Rye	62	White of Egg...	130
Apples	66	Peas	137
Graham Bread...	77	Plums	166

Huckleberries....	196	Cabbages	717
Human Milk....	243	Strawberries....	873
Oranges	575	Cow's Milk.....	1510

This table shows that it is necessary to understand the lime requirements of an infant. It can be seen that most of our foods are deficient in lime as compared with milk. A child six months old requires about 1 liter of milk daily; this contains about .5 grams of lime.⁸

The lack of lime salts has often been assigned as a cause of rickets, and it has been recognized that the disease is more frequent when mother's milk is replaced by some other form of nourishment. Also deficiency of lime in the food affects the infant more than the adult. This is natural since the former requires more lime for the growth of bone. Some very interesting studies by Weiser, on deficient calcium diet in animals have recently been published. He points out that a ration poor in calcium shows decided changes in growth with undersized, underweight, failure of appetite, and general nutritive decline; that the bones, too, are likely to be thin, fragile, pliable and deformed. One conspicuous fact brought out by his experiments was that there was quite an amount of the alkalies, sodium and potassium, in the bones poor in lime. Magnesium, which was heretofore believed to replace the lime, was not very plentiful. The deviations in the bones from the normal showed least in the skull, and were most marked in the ribs and spinal vertebrae.

It might be expected from the foregoing that calcium salts would benefit rickety children. Apparently such is not the case. There is plenty of lime in the blood of children with rickets, but for some cause the power of taking it from the blood and depositing it in the bones is diminished. It looks as if lime starvation is merely an imitation of rickets, for the bone cells, though still ready to deposit calcium, cannot obtain it.

Very little is still known of the combination of lime with the ordinary foods. An explanation of the way lime is present in milk or combined in milk, will shed some light on this question. It appears that lime is in some way loosely combined with the proteins of milk or dissolved in it in the form of an inorganic salt.⁹ Bunge has shown that it is not present

in any stable combination, though it is not definitely known whether some other organic substance in the milk may not serve to keep the calcium in solution in the presence of phosphoric acid.

In this connection, Boswerth¹⁰ finds as the probable arrangement of the constituents of human milk of average composition, the following: Fat 3.30 per cent., milk sugar 6.50 per cent., protein combined with calcium 1.50 per cent.; calcium chloride 0.059 per cent.; monopotassium phosphate (KH_2PO_4) 0.069 per cent.; sodium citrate ($\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$) 0.055 per cent.; potassium citrate ($\text{K}_3\text{C}_6\text{H}_5\text{O}_7$) 0.103 per cent., and monomagnesium phosphate ($\text{MgH}_4\text{P}_2\text{O}_8$) 0.027 per cent. It has been observed by L. Vaudin¹¹ that citric acid in milk is proportional to the lime contents.

This view of calcium being in combination with protein of milk has clinical support.¹² The pediatricist in the treatment of infants suffering from rickets urges as a prime consideration the administration of a sufficient amount of proteins in the dietary.

It is probable that too much importance has been attached to the fat, protein and carbohydrate content of foods used as a substitute for mother's milk. Nor can such a food be judged alone by its caloric value. From our present knowledge of metabolism and food values, it should be pointed out that a mistake is being made unless equal attention is being given to the amount as well as the chemie combination of the inorganic salts in such substitute feeding.

We must constantly bear in mind that human beings and animals as well, under certain conditions, as in growth, starvation, pregnancy and lactation, each have their peculiar drain upon the inorganic nutrients. More publicity and investigation should be given to this subject, especially the influence of lactation upon calcium requirements.

Steinback and Hart¹³ in an investigation of this subject on animals, point out that during lactation there is a drain on the skeletal lime supply when there is an insufficient calcium assimilation. So, during the entire period of lactation, the dietary should contain a liberal supply of lime. When we recall that most of our popular human foods, such as bread and meat, are wanting in this important constituent, no astonishment will be shown at

an unusual drain on the maternal lime supply during lactation. It is yet to be announced just where the limits of safety are in our ordinary dietary. Biologic investigation must make it clear how foods should be adjusted to meet the needs of the human organisms.

The acid and alkaline phosphates give to milk its characteristic reaction. That is, milk is said to be amphoteric; in carnivora, however, fresh milk gives an acid reaction, but in most mammals the reaction is alkaline or more frequently amphoteric. These salts vary considerably in different animals as well as at different stages of lactation.¹⁴

It is of interest here to note some recent studies by Clark¹⁵ on the reaction of cow's milk. Ordinarily to determine the reaction milk, the alkaline constituent is estimated by titration with decinormal sulphuric acid, with blue lackmoid as an indicator and the acid constituent with decinormal soda, with phenolphthalein as an indicator.¹⁶ Clark points out that such an index is of no value except to show the capacity of milk to "neutralize" the added acid or alkali. He emphasizes the fact that a true reaction can only be determined in terms of hydrogen—or hydroxyl—ion concentration, by electrometric methods. By the method an exact departure from the reaction of normal breast milk can be obtained where the ordinary practice of adding certain alkalies in the process of modifying cow's milk is adopted. Such alkalies are chiefly lime water; however, bicarbonate of soda, and milk of magnesia are added "to correct the high acidity of cow's milk" and to prevent the formation of a tough curd in the stomach.

Clark shows by his method that the addition of alkalies for the purpose of neutralizing "the high acidity of cow's milk," is based upon the wrong principle. He finds a normal average hydrogen-ion concentration of human breast milk lies between 1.07 and $.60 \times 10^{-7}$ about the same as of pure water at 30 degrees C. The introduction of 5 per cent. lime water has a marked effect in distinctly lowering the reaction below that of normal human milk. The average value obtained with 5 per cent. lime water used as a dilution, was 4.3×10^{-8} . As Clark intimates that in modifying cow's milk for infant feeding, it would not be wise to allow the reaction to depart from the normal hydrogen-ion concentration, 1.07 and $.60 \times 10^{-7}$.

Not only is this fact brought out in this accurate determination of the reaction of milk, but two other vital and important factors which, if true, would condemn the use of such alkalies as lime water, bicarbonate of soda and especially milk of magnesia. Not only is this procedure unnecessary, but it is one which involves, by reason of the presence of these alkalies, an inhibitory action of both the proteolytic and lypolytic action of the gastric juice upon milk.

If the use of alkalies is followed by the above mentioned facts, digestive disorders may be initiated, resulting in slight or even serious intestinal disturbances. Though such a disturbance may be at first slight, we cannot underestimate the damage that may occur, for even a slight disorder of gastric digestion is often marked by a rapid and fatal change in the bacterial flora of the intestines.

We must recall in this connection that there are two antagonistic bacterial processes occurring in the human intestines—fermentation and putrefaction. In mother's milk the fermentative processes predominate, while in cow's milk putrefactive changes have the ascendancy. So, in the breast-fed infant the former process holds true. Now, if the addition of alkalies to cow's milk further favors a tendency to putrefactive changes, we should certainly heed a timely admonition of Clark. He says that the addition of alkalies to modified milk is criticized because of its probable influence in displacing from the intestines a normal bacterial fermentation and replacing it with those proteolytic or "putrefactive processes which are responsible for many of the digestive disorders of infancy."

The effect of boiling milk is a much discussed question. Clinical evidence does not always agree with laboratory and animal experiments. The effect of heating milk to or near the boiling point is said to lose its antiscorbutic properties, a change in its natural flavor, and the formation of a scum on the surface. If this scum is removed it is rapidly renewed. Its formation is due probably to coagulation of the lact-albumen, which carries to the surface some caseinogen and fat.¹⁷ While there are evident disadvantages in boiling milk, yet there are two well-recognized advantages: (1) all microbe organisms are destroyed; (2) the gastric juice, by virtue of its pepsin or ren-

nin, causes a flocculent and not a bulky precipitate. The explanation of this is that by boiling, a part of the dissolved calcium salt is precipitated as tri-calcium phosphate.¹⁸

A criticism of the first advantage accruing from the boiling of milk is that there are ordinarily three general groups of bacteria found in milk.¹⁹

(1) The aerobic non-sporulating organisms, the most abundant of which are the lactic acid bacteria.

(2) The aerobic spore-bearing.

(3) The anaerobes.

In raw milk the first group predominates, and, as the milk ages, this group causes it to sour and clot. This may be looked upon as a desirable change in milk as the bacteria involved are nonpathogenic and may be beneficial when taken into the alimentary tract. One of the reasons for this is that this change which has occurred in the milk resembles very closely that change which takes place in the human intestine.

Another benefit derived from the first group is that in multiplying they may almost completely inhibit the aerobic and anaerobic spore-bearing organisms present.

Boiling or heating milk affects the various groups in different ways. At 60 degrees C., the lactic acid bacteria are destroyed, affording an opportunity now for the development of the other group, and, as these groups develop, gaseous putrefactive changes occur in the milk. At 85 degrees C., the first group—the lactic acid group—are entirely destroyed. The aerobic spore-bearing organisms now appear in great profusion, converting the curd produced by other organisms into a slimy liquid which gives the disagreeable odor of putrefaction. This change is undesirable, as the spores which cause it will survive even on ice for a long time. It appears that to completely destroy these spores milk will have to be subjected to the action of steam under pressure.

From these facts we are warned that there is a danger zone in heating milk, ranging from 65 degrees to 85 degrees C. Between these figures it will not clot normally and undesirable changes take place as described above. Hence, it appears from investigations of Ford and Pryor,²⁰ if such antagonism exists in milk between the lactic acid group and the spore-bearing aerobes and anaerobes, that a similar

antagonism may be found in the intestinal tract of man. If such is the case, the use of lactic acid bacteria in intestinal derangements due to the growth of spore-bearing bacteria is advisable and the use of milk, in which the lactic acid bacteria have been destroyed without at the same time destroying the spore-bearing bacteria, is contra-indicated.

The safest milk, when not sure of uncontamination with pathogenic organisms, is milk that has been boiled from ten minutes to one-half hour and then preserved on ice. Also, all heated or boiled milk should invariably be kept on ice, since heated milk is more apt to be decomposed than raw milk.

In any sort of a discussion of milk we must keep constantly before us the importance of the metallic salts, both in their physiologic functions as well as in certain pathologic conditions. The production of thrombosis has already been mentioned, as have other phenomena, such as the retention of sodium chloride with the production of edema, the part iron plays in chlorosis and many other abnormal conditions now thought to be due to a deficiency of one or more of these salts. Recently the etiology of chilblain, angio-neurotic edema, urticaria, physiological albuminuria and certain forms of headache have been explained upon this basis.

Dogs fed on an ash-free diet of fats, carbohydrates and meats, die in twenty-six to thirty-six days. Mice die in twenty to thirty days if fed on the organic but ash-free constituents together with the extracted salts of cow's milk. Hence, Lunin, in conducting his experiments on mice, concluded that the inorganic salts must be provided in organic combinations as found in vegetable and animal food.

Following upon these experiments, it has further been determined that there are certain organic substances present in milk and other food stuffs in minute quantities that have no doubt heretofore been overlooked. It appears that they play a most important part both in growth and in disease. These organic substances would have been removed in the experiments mentioned above on dogs and mice. To these important organic substances the name vitamins has been given. One has been isolated in the outer layer of rice and given the formula $C_{17}H_{20}N_2O_7$ by Funk.²¹ He has also found these bodies in milk, yeast, ox-

brain and lime juice. A sterilization or boiling of milk appears to destroy the vitamins, so that it probably explains the production of scurvy in infants fed entirely on such milk. While some of the vitamins are destroyed by heat, as in milk and in dried fruit and vegetables, lime juice appears to be an exception. It does not lose its activity as an anti-scorbutic after having been boiled an hour. There are probably similar substances in meat extracts. A knowledge of this may cause us to revise our estimate of the value of bouillon and beef tea, not because of their nutritional value, for it is negligible, but for their well known action as a stimulant to gastric secretion and the probable fact of their containing vitamins.

It appears, then, that the inorganic salts are necessary to maintain life; that in all probability they are best absorbed and utilized when in organic combination with foods; that there is a striking difference between the ash content of human and cow's milk, which should have weight in the artificial feeding of infants; that certain pathologic conditions arise when the organism is deprived of certain inorganic salts, that is, they are not absorbed even though found in abundance in the food; that in certain other pathologic conditions salts are actually withdrawn from the body to such an extent as to impoverish the organisms and produce grave disturbances of nutrition;²² also, that these salts are present in human milk in sufficient quantity and in correct proportion for the needs of the nursing infant. This fact holds true with the exception of iron.

In the case of iron we are struck with the relatively low iron content of milk as compared with the content of the other salts. This same comparison holds true with many of our food stuffs. Bunge, in his analysis of iron, makes this clear. The values refer to 100 grams of substance with iron in milligrams.

Sugar	0	Rye	3.7 to 4.9
Egg albumen	0	Cabbage	4.5
Honey	1.2	Potatoes	6.4
Rice	1 to 2.5	Beans	8.3
Oranges	1.5	Beef	16.9
White bread	1.5	Asparagus	20.0
Apples	1.9	Egg yolk	10 to 21
Cow's milk	2.3	Spinach	33 to 39
Human milk	2.3 to 3.1	Hemoglobin	340

Though human as well as other milk is poor in iron, yet it appears that the mother supplies its young with a sufficient amount of iron. This supply, however, is not furnished in the milk but by way of the placenta. This is corroborated by many analyses of animals and human embryos. It is found in both that the iron content is greatest at birth and decreases steadily until it reaches its minimum at the end of the period of lactation. Why such a mechanism is preferred, rather than have a sufficient amount of iron secreted in the milk, is not clear; yet, such an occurrence would in all probability throw some light on the absorption of iron in general.

Hemoglobin contains .4 per cent. of iron, yet it is estimated that the entire blood of an average man contains only 2.5 grains of iron.²³ So, from this we must understand that, while hemoglobin is comparatively rich in iron, it is nevertheless an extremely precious metal in the body. Indeed, so scarce is this metal that nature conserves it in the organisms. When hemoglobin is destroyed in the liver, the iron contained in the hemoglobin is not excreted but retained by the liver cells, and in all probability used over again in the red bone marrow, to help form fresh hemoglobin for new red blood corpuscles. The pigments of bile, urine, and feces, contain no iron. It is to be remembered in this connection that the capacity for hemoglobin to hold and convey the respiratory oxygen depends directly upon the percentage of iron present.

This scarcity of iron in the body as well as in most foods, and the uncertainty of its absorption through the alimentary canal, may be one of the reasons for the economical handling of this element directly through the placenta.

We must not lose sight of the import of iron. Besides, it should be noted that the iron stored in the infant at first in sufficient quantity, decreases gradually from birth, and that towards the end of lactation the store of iron in the infant plus the iron in the milk, is insufficient for the formation of the required amount of hemoglobin. This has been shown to be true by excluding all foods except milk at the end of lactation; the infants invariably develop anemia. When foods rich in iron are now administered to the anemic infant, the hemoglobin values increase rapidly.

So it appears very undesirable that the

child should be restricted to a milk diet much longer than the ordinary period of lactation (nine months), as after this time milk will not furnish the iron necessary for the child.

The problem of iron absorption and its distribution, in the body, when inorganic iron is administered, has not been solved. It is not yet known whether the inorganic salts of iron take part in the formation of hemoglobin or of hematin. While iron in its organic form will combat chlorosis and may be explained as forming hemoglobin, yet, on the other hand, its effect may be indirect; that is, only exciting those organs which have to do with the formation of hemoglobin. We do not know as yet whether chlorosis is actually caused by a lack of iron.

One fact in this connection should at least impress us. When inorganic iron is added to milk and administered to an animal or child suffering from low hemoglobin contents, it has no effect upon the absolute amount of hemoglobin contained in the animal, but, on the other hand, does appear to accelerate the growth of the animal.

The difficulty of inorganic iron taking part in the formation of hemoglobin can be shown by the structural formula for hemin and the complex synthesis which must take place if the animal cell is to utilize it.

The introduction of iron in the molecule is probably not difficult. Iron does not play an important role in the formation of hemin, but there must be other organic material available. So, in a practical way, when we think of inorganic iron participating by synthesis in the formation of hemoglobin, it must be recalled that other building materials play the important role in such a synthesis. The application is to give foods (such as meats, eggs and green vegetables), which are rich in iron, and yet combined with other material necessary for the formation of hemoglobin.

Other salts of milk which in one way or another influence the metabolic process, are magnesium, potassium, sodium, phosphorus and sulphur. Potassium salts are essential to body growth; the potassium ion acts in the reverse direction to the sodium ion, since it promotes muscular relaxation. The sodium ion is essential in preserving the irritability of tissue, especially muscle tissue. While both of these salts appear to be essential, the former one

(potassium) is usually supplied in sufficient amounts with our food and the latter (sodium) is generally added by the cook. Magnesium salts appear to favor the inhibitory processes in the body, acting as a probable antagonist to the calcium salts, which appear to be activators.

Phosphorus must be of much importance, especially during growth. It is found in certain important compounds of the body, in nucleo-protein, nuclein, nucleic acid, and the phosphatides—lecithin, kephalin and sphingomyelin, which occur for the most part in nerve tissue. It is an important constituent of the human skeleton and is present in milk, partly in organic combination as in casein and partly as an inorganic salt. There is a parallelism between phosphorus and the calcium content of milk and the rate of growth of the young of the species.

As Hutchinson points out that the brain of the new-born infant is doubled in weight during lactation, and as we have already seen that phosphorus is an important element in its building to say nothing of the skeleton, we can easily realize its import.

The amount of phosphoric acid in human milk is 0.05 per cent. per hundred parts by weight of milk. In cow's milk there is 0.20 per cent. per hundred parts; in rabbit's milk there is 0.99 per cent. per hundred parts. While the human milk contains the least, yet it appears sufficient for a proper development. In this comparison of human, cow's and rabbit's milk, it shows how difficult it is to replace one kind of milk with that of another when we take in consideration the wide difference in rate of growth as well as in the composition of the milk itself.

While the Law of the Minimum should hold in regard to the inorganic elements, yet we should not lose sight of the fact that, though a milk substitute be rich in an element like phosphorus, it may be of little value. For in order that the cells may utilize phosphorus it is necessary for sufficient amounts of certain other substances to be present as pointed out in the discussion of iron.

There is no doubt that in most of the dilutions of cow's milk there is an excess of certain inorganic salts, a fact now neglected in the feeding of normal infants. On the other hand, their presence may play an equally im-

portant role in the feeding of children already suffering from a disturbance of nutrition. This lack of the knowledge of the inorganic salts and the role they play in metabolism is in all probability one of the factors that account for a greater mortality in bottle-fed babies.

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SOME PROBLEMS OF NUTRITION IN INFANTS.*

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It is not my purpose to discuss the recent physiological or biological chemistry of infant feeding, but to bring before you what practical bearing some of these researches have upon some of the common errors met with in the nutritional disturbances of infancy.

Research of the various workers in the field of nutrition, immunity, and metabolism, have upset some of our previous views upon the feeding of infants, and have, in some respects, caused a reconstruction of our ideas of artificial feeding.

The superiority and importance of breast feeding over all other methods is admitted by all, but, so far, this method, though the normal and best adapted to the infants' needs, has not received the attention it so properly deserves.

The passage of immune bodies from mother to infant through milk has long been considered a possibility. Greater immunity to in-

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fection shown by breast-fed babies has been emphasized by Langstein, Meyer, Czerney, Davis and others. Artificial feeding, however successful, gives no immunity against infectious processes. The importance of breast feeding is again emphasized when we compare the mortality of breast and bottle-fed infants. One-third of all infant deaths are ascribed to unnecessary artificial feeding.

Jaschke's (*Mon. f. Geb. U. Gyn.*, 1908), analysis of 13,952 children born in Bordeleagues clinic, showed a mortality of 14 per cent. for the breast-fed, and 31 per cent for those who were bottle-fed by their own mothers, and 50 per cent. for those bottle-fed by others than their own mothers.

Davis's studies of 736 infants from two weeks to one year old in Boston, showed that 74 per cent. of infant deaths above the age of two weeks are among the bottle-fed, and only 32 per cent. among the breast-fed; and concludes that, of the infants reaching the age of two weeks, one in five dies before a year old of the bottle-fed, while if breast-fed only one in thirty fail to reach the one year mark. The deaths of these infants would be 60 per cent. less if all were breast-fed. (*Amer. Jour. Dis. Children*, March, 1913).

Much work has been done upon the problems of artificial feeding. Until very recently but little attention has been devoted to the problem of enabling a mother to nurse her baby. What then can we do to aid in this important function?

Prenatal Care of the Expectant Mother.—Regulate the health and hygiene of pregnancy so that the mother is in the best possible condition to enter upon lactation. Impress upon her the importance of maternal feeding and prepare the breasts for nursing. The breasts should be inspected several weeks prior to the expected confinement. Flat or inverted nipples should receive proper treatment. Cleanse the nipples with soap and water, followed by 50 per cent alcohol; then lubricate them with olive oil or cocoa butter to keep them softened and avoid fissures and erosions. How often have you seen nursing women who dreaded the hour for the infant to nurse on account of the pain from fissured and eroded nipples? Such is not conducive to maternal feeding from the mother's point of view.

Too frequently do we see infants removed from the breast for trivial causes, which, if

properly investigated and correctly interpreted, could be successfully continued under proper management.

Among the most frequent causes of discontinued breast feeding are the following: Insufficient supply of milk, crying after nursing, undigested stools, vomiting, stationary or loss in weight.

To determine the amount taken by the infant, weighing before and after nursing for 24 hours is the best method to determine whether or not the supply is sufficient in quantity.

Crying after nursing may be due to many causes and is not a reliable indication that the quantity of milk is insufficient.

Undigested green stools are frequently seen in breast fed babies who are thriving satisfactorily.

Vomiting after nursing may be due to faulty nursing habits and over-feeding.

Stationary or loss of weight is the most reliable indication that the milk is inadequate. Without accurate observations of the infant's progress in weight, without regulation of the habits of nursing, without weighing before and after nursing to determine the quantity taken, and without observing the character of the stools, are we able to gain accurate knowledge as to the efficiency of maternal nursing, or are we able to properly apply the adjuvants we have intelligently?

We not infrequently see infants in the early weeks who give a history of having gained in weight for a few weeks systematically, although there was vomiting shortly after nursing, and 4 or 5 loose green curdy stools a day. Then would follow stationary or slight loss in weight. In such cases there is usually an abundant supply of milk, usually too frequent nursings and failure to assimilate the food, with consequent indigestion and an intolerance for fat. Such cases respond to reducing the amount by lengthening the nursing periods and diluting the milk by giving boiled water or cereal decoction before nursing until the food balance is established.

Again, we see another class who show nutritional disturbance from the beginning, lose weight, have small, green, scanty stools, nurse frequently and cry. Weighing before and after nursing shows insufficient supply of milk. Complementary feeding of small quantities, one-half

to one ounce of modified cow's milk after nursing, will supply the deficiency and meet the nutritional requirements until the diet and hygiene of the mother has been regulated and the breasts become adequate. Supplemental feedings may be given in cases where there is a continued insufficiency throughout lactation.

This brings us to a consideration of artificial feeding.

The proper artificial food for an infant must furnish him with the nutrition that will cause his physical and mental development to progress through infancy and bring him to the period of childhood with a normal development, bodily and mentally. The proportions of the food elements to bring about this effect will depend upon each individual infant's capacity to metabolize the several components.

That the normal, healthy infant will digest and assimilate artificial food without carefully adjusting the proportions of fats, proteids, carbohydrates and salts, we are all aware. The infant suffering from nutritional disturbances requires careful and painstaking study to properly adjust the food to his nutritional needs. In other words, the food must be adapted to the infant and not the infant adapted to the food.

The mistakes we so often see are that infants suffering from nutritional disturbances and sick infants are fed on the same text-book formulary intended for normal, healthy ones.

Indeed, the more recent text-books are emphasizing the fact that there are no formulae suitable for all, but that each individual infant is a problem of its own: what is suitable for the one is inadequate for the other.

Among the first problems that present themselves in the artificially-fed are the amount and form of food to be given and the frequency of feeding.

Generally speaking, the quantity will depend more upon the size than the age of the infant.

Finkelstein estimates that the normal healthy infant consumes about 150 c. c. per kilo of body weight during the first three months of life, slightly less during the second three months, and from 120 to 130 c. c. during the third three. The form of food will depend upon the individual infant's capacity to metabolize the food elements and its nutritional requirements. The caloric method of computing the nutritional requirements is a valuable one and deserves

more general use. While we cannot feed by this method alone, it gives us valuable information in many instances. In no other way do we receive such striking proof of deficiencies or excesses in our dietaries. It is a valuable check upon the percentage method, and the two should be used conjointly.

The frequency of feeding is governed by the motility of the stomach, the concentration of the food and the power of digestion of the infant for the various food elements.

Clark's studies (*Amer. Jour. Dis. Children*, May, 1909), showed that the motility of the stomach varies inversely with the concentration of the food. Variations in the amount of fat influences the motility of the stomach more than other foods. Large amounts of fat require greater time to pass the pylorus than do smaller amounts.

According to Cannon's investigations, the carbohydrates are the first to leave the stomach, the proteids next, and last the fats.

The role of the fats has assumed a place of unexpected prominence within the last few years. We previously believed that the difficulties encountered in feeding cow's milk were largely due to the proteid-element, this being present in much greater proportions than in human milk, and we so modified our food according to the percentage method as to bring the proportions of fats, proteids and carbohydrates in the same relation as they existed in human milk. Numerous contraindications were given for the use of casein, and the fats were looked upon as the principal element to rely upon in making up our food.

The pendulum has swung in the other direction with our increasing knowledge of the physiology and chemistry of digestion and metabolism studies.

Today we hear of the many contraindications for fats and carbohydrates and the therapeutic virtues of proteids. Failure sooner to appreciate the difficulties in the digestion of fats were due largely to a misinterpretation of the various symptoms produced by their effects in the stomach and intestine. Those of us who followed the teachings of using high fats and top milk mixtures have encountered difficulties of fat intolerance, and continue to see them among those who still cling to these teachings. The impression still prevails among the laity that the cream is the best portion of the milk and

consequently is best for the baby, and that cream overcomes constipation. The work of Czerney, Keller, Finkelstein and others shows unmistakably that fat is the primary factor in many cases of disturbed nutrition. Infants fed on high fats sooner or later develop an intolerance for fat and suffer from disturbances of balance as shown by slow gain in weight or no gain. Further increase the fats in such cases and they suffer greater injury and more severe disorders of metabolism.

The curds, so common in the stools of artificially-fed babies, were for a long time laid to the difficulties of proteid digestion, but we have learned this was not the cause of trouble; the fats, and not the proteids, are at fault.

The work of Hess, Talbot, Morse and others has helped materially in clearing up our past confusion of the stools and placed a clearer conception upon their physical, chemical and microscopic significance.

The knowledge gained through a better understanding of the fats has been a long step in advance in the success of artificial feeding. We no longer begin with high fat and top milk mixtures, for we have learned that there is less difficulty in starting when we begin on low fats and moderate proteids, rather than on high fats and low proteids. There is nothing more disastrous to successful feeding than starting with a stronger formula than the infant can digest and gradually scaling it down, until the point is reached where the digestion has been so disturbed that nothing but the weakest food can be cared for.

It is far better to begin on a weak food (less than our judgment tells us that the infant's nutrition needs), and increase as much as the infant can digest properly.

Proteids are necessary for growth and development, and higher proteids can be given, if the fats are not so high as to disturb digestion. It is desirable to give as much fat as the infant will digest, as fat is a valuable food when it is properly assimilated. It is equally important that fat should not be increased when there is evidence of imperfect digestion, as there is no food the digestion of which is so quickly destroyed as fat, and none which will so quickly check the growth and development of an infant with nutritional disturbance. Early recognition of the clinical manifestations of fat is essential to successful

infant feeding, as fat is usually the beginning of the disturbance of food balance. At this time it is readily amenable to treatment, and prompt recovery ensues when the fat is reduced and the food adjusted. The organism once injured by fat in its nutritional balance suffers greater injury from other foods.

Among the symptoms of fat indigestion are: loss of appetite, leaving a part of each bottle, vomiting shortly after nursing, a creamy acid butyric acid smelling material. Stools, at first large, contain many soft curds; later, they are pale, putty-like, dry, crumble easily and have a foul odor. There is loss in weight, or else it is stationary. Any of such symptoms are, to those familiar with fat indigestion, an indication to reduce the fat.

For the cases of vomiting, constipation and loss in weight, good results will follow the use of skimmed milk with the addition of cereal gruels as diluents and carbohydrates in the form of maltose and dextrose and malt soup with flour.

Not only have fats received a great amount of study but the carbohydrates have also come in for their share.

The sugars commonly used in infant feeding are cane sugar, milk sugar and combinations of malt sugar, such as dextrimaltose, malt soup, etc. Opinions are by no means unanimous as to which sugar is best suited for the infant's nutrition. Different views are expressed as to the effect in regard to tolerance, increase in weight and correction of nutritional disturbance.

Czerney and Keller have demonstrated that the tolerance of malt sugars is higher than cane sugar or lactose. Leopold's observations confirm these views. Jacobi many years ago believed that milk sugar caused intestinal disturbances and advocated the more general use of cane sugar. Brady advocates the use of polycarbohydrates consisting of mixtures of starch, cane sugar, maltose and dextrose, claiming that larger quantities can be given when the carbohydrates are combined. This view is becoming more popular. The combination of maltose, dextrose and starch as suggested by Czerney and Keller would tend to support this theory of greater tolerance when sugars are combined.

Finkelstein first called attention to the role of the sugars in the nutritional disturbances,

claiming that many, if not all of the disorders of nutrition were due to carbohydrates. More recently he has modified his views somewhat, his present opinion being that the sugars and salts are at fault. Finkelstein found that the carbohydrates by fermentative changes, which they undergo, produced diarrheal stools and intoxication. His studies and experiments in the chemistry of food metabolism and careful clinical observations caused him to classify the nutritional disturbances under four main heads:

1. Disturbance of balance, characterized by diminished tolerance for food, especially fat. There is slow gain in weight or the weight remains stationary. If larger amounts of food are given, diminished powers of metabolism become evident. The carbohydrate tolerance at first is good but gradually diminishes. Increasing the amount of food in balance disturbance in the hope of greater gain brings about the second stage:—

2. Dyspepsia, which is a more severe manifestation. The tolerance here is reduced for both fat and carbohydrates. Abnormal fermentation or gastro-intestinal disturbances of moderate degree are present. The weight is stationary or a slight loss may occur. Increasing the amount of food causes the "paradoxical" reaction which consists in abnormal stools, loss in weight and temperature reaction.

That the gastro-intestinal symptoms are alimentary in nature is shown by the fact that a close relation exists in the quality and the quantity of the food. Reduce the amount of food and the severity diminishes; increase the amount and the symptoms become intensified. Dyspepsia is the precursor of the more severe stage of disturbed metabolism—decomposition.

3. Decomposition, atrophy, or marasmus.—The intestinal wall has been injured by the previous stage of dyspepsia; without this injury, decomposition does not occur. In the stage of decomposition the intolerance for fats and carbohydrates is marked. The loss of weight is gradual, but emaciation proceeds until the child is a mere skeleton. Hunger and thirst are extreme, although the food is in excess of the nutritional requirements. Temperature is subnormal. The stools are usually constipated with excessive soaps.

4. Intoxication, which refers to the toxicoses of nutritional disturbance, is characterized by great intolerance for food, especially sugars.

The symptoms are disturbances of consciousness and of respiration, glycosuria, fever, diarrhea, collapse, albuminuria, leucocytosis and loss of weight. Transitional stages are common, after the fever comes marked loss in weight with diarrhea, then other signs of intoxication. Sugar is considered the prime factor in fever. It must be promptly cut down or removed. There must be an injury to the intestinal tract for intoxication to occur, such as takes place in the stage of dyspepsia.

It is evident from these foundations, that the stages of disturbed balance and dyspepsia are the stages in which the opportunities for careful clinical observation and treatment will show the best results.

Recognizing intolerance for fats in the artificially-fed in the incipency, as shown by the signs enumerated above, and reducing the fat in milk and using the combinations of malt for which the infant shows the greatest tolerance, will reduce the cases of the more severe forms of nutritional disturbance to the minimum.

It will be noticed that the proteids are not mentioned as factors in causing the disturbance of nutrition according to Finkelstein's observations. On the contrary, further observations led him to the conclusion that casein did not cause disturbances of nutrition. It was shown that, in the presence of casein, larger quantities of carbohydrates could be given without causing fermentation.

From these observations Finkelstein and Meyer, in 1910, prepared a food which they called "eiweissmilch," the analysis of which yielded: Proteids, 3 per cent; fats, 2.50 per cent.; carbohydrates, 1.50 per cent.; ash, 0.50 per cent. One quart of milk contains 370 calories.

Preparation.—To one quart of pasteurized milk add a tablespoonful of essence of rennet (or two junket tablets). Let stand at 100 F. for one-half hour. Filter off the whey from the curd through cheese cloth by gravity. The curd is then washed with water and forced several times through a fine sieve with a spoon or potato masher. One pint of buttermilk and one pint of water is added to the curd and shaken to form a smooth suspension.

Finkelstein and Meyer reported their first 150 cases treated with this method of feeding in cases of decomposition and intoxication with

brilliant results; other reports since then have been equally encouraging. In their first communication, the addition of sugar was cautioned against; more recently, they advised the addition of sugar as the symptoms improved.

Since the introduction of this method of feeding in nutritional disturbances, numerous clinical observations have been made in Europe and this country. The reports have been most gratifying and better results are obtained than in other methods of treatment.

Modifications of the preparation of the milk have been used but the main principles have been followed. The objections urged by some have been that it is not sufficient as a nutritive, to be long-continued, and will not cause sufficient gain in weight as a continued food. There is some foundation for this belief. Without adding larger quantities of carbohydrates the gain in weight is slow. There is no contra-indication to other foods, however, after the disturbed nutrition has been corrected.

Wilcox and Hill (*Amer. Jour. Dis. Children*, April, 1913), advocate the use of skimmed milk in the preparation of eiweiss milk. With this method of preparation the starvation diet is done away with, and the milk is given without preliminary treatment. The protein milk is used as a corrective in all grades of digestive disturbances, and excellent results are reported in acute and chronic infections of the gastrointestinal tract as well as in nutritional disturbances of a non-infectious nature. The fact is emphasized, however, that this diet—with a low caloric value (8.5 to the ounce)—cannot be too long continued, but other foods with higher nutritional values must be combined as soon as the symptoms will permit, and finally be replaced by other foods. The writer has used this method since 1910 with encouraging results, and continues to employ it whenever indicated.

Administration.—The length of time protein milk is used depends upon the digestive condition and upon the loss or gain in weight. If there is improvement in the stools in two or three days, and a slight gain in weight, no addition is made until the stools appear characteristic of protein milk—large, light yellow, pasty stools, with no odor and free from mucus. If there is loss in weight, on the first appearance of improvement malt is added. Wilcox and Hill divide the corrective period into four

stages: 1, That in which protein milk is used alone; 2, Protein milk with malt; 3, Protein milk with small amounts of plain milk; 4, Protein milk largely replaced by plain milk.

Time does not permit going further into the detail of this valuable therapeutic and nutritive agent in the feeding of children suffering from nutritional disturbances. Suffice it to say that numerous clinical reports of its value should stimulate a more general use.

No one element of food is responsible for all nutritional disturbances. A careful inquiry and correct interpretation of the phenomena of disturbed digestion caused by the several will lead to a practical application of our present day knowledge.

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THE PROGNOSIS AND TREATMENT OF CHRONIC INTERSTITIAL NEPHRITIS.*

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Chronic Bright's disease is, to all practical purposes, incurable. Some have claimed to cure a few cases, but from the pathology of the condition, one is disposed to doubt this unless, possibly due to syphilis, and recognized early.

While chronic nephritis is incurable, the subject of this disease should not be given his death sentence, but, on the other hand, told that much can be done, and that he may yet have years of usefulness, comfort, and happiness, confined by the necessary limitations in diet, habits, etc. Fortunate, indeed, is the chronic nephritic whose condition is recognized early, i. e., before the cardio-vascular and retinal changes have taken place. Seen early, under the proper hygiene in regard to eating, clothing, drinking, working, etc., one may live for many years in comparative comfort. On the other hand, as is too often the case, we do not recognize the trouble until the blood pressure is very high, the heart greatly hypertrophied, yea, even dilated, with its train of distressing symptoms. It is easy to picture the difference in prognosis in the two diverse conditions.

Seen late, even after the heart is greatly hypertrophied, we can do much for the patient's comfort and happiness, and prolong life.

The so-called uremic phenomena, nausea, vomiting, diarrhoea, loss of weight, and protracted headache, unless due to an acute ex-

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cerbation or some temporary cause, give us great concern. The outlook is grave in the arterio-sclerotic kidney with its pronounced general arterio-sclerosis, with, possibly, a coronary sclerosis and myocardial changes.

I want to lay stress on the frequent and regular use of the sphygmomanometer, not only as an index to the treatment, but to a correct prognosis. An increasing blood pressure—increasing from day to day and week to week in spite of rest in bed, appropriate diet, with necessary medication—is cause for grave concern. Much, also, may be gained by watching the blood pressure in a period of cardiac incompetency, and the future predicted more accurately as one sees the rise (or fall) of pressure under rest, diet, digitalis, etc.

The outlook in a given case depends much on the intelligence of the patient and his willingness to co-operate with and carry out the instructions of the attendant.

Sometimes sudden coma or convulsions may overwhelm one seemingly doing well. Inter-current pneumonia carries off many.

The prophylactic treatment is probably confined to warning hard workers, heavy eaters, gouty subjects, alcoholics, and workers in lead. The middle aged man who is constantly on the go, with full steam on, should be told to go slow—put on brakes; the heavy eater and drinker should be warned of the danger of immoderation to his kidneys and arteries. Every case of acute nephritis from whatever cause, should be carefully watched through convalescence. In acute infections, scarlet fever, measles, malaria, tonsillitis, otitis media, pneumonia, etc., the urine should be watched for evidences of nephritis and the appropriate diet and medication instituted.

A neglected cystitis, prostatitis or pyelitis may terminate in chronic nephritis, and hence should be treated energetically.

The active treatment necessarily implies the removal of the cause when possible.

The diet of the chronic nephritic should consist largely of vegetables, milk, butter, bread and fruits. Meats in small quantities, once a day or, possibly, on alternate days, do no harm unless they cause gastroenteric intoxication as evidenced by the symptoms and indican in the urine. Eggs should be allowed once a day, if desired. Until the last few years red meats were interdicted in chronic nephritis. These

cases do much better on a limited amount of proteids. A milk diet alone throws more work on the already overworked heart and kidneys; consequently should not be advised, except possibly for a short time. Sweets, pastries, pies, candies and condiments of all kinds should be interdicted. When there is edema in chronic nephritis, it is probably best to cut out salt. I want to emphasize the importance of not only what should or should not be eaten, but the amount eaten. The chronic nephritic should not eat heavily at any time, especially at night. Similarly, he should not be allowed large draughts of water. Von Noorden suggests one day in a week that he be allowed two or three liters—so-called flushing days. Undoubted benefit is derived from the alkaline laxative waters. So, also, the chalybeate waters do good in anemia. Alcohol should be interdicted entirely. A cup of coffee or an after-dinner cigar to the habitual user probably does no harm.

Both tobacco and coffee, however, should be cut out if the blood pressure is very high.

The subject of chronic nephritis should be instructed as to the amount of exercise taken. Over-exertion, either physical or mental, must not be allowed. Either throws more work on the heart and kidneys, already overworked. The patient's hours for sleep and rest should be regular and he must not dissipate in any way. During an acute exacerbation absolute rest in bed is necessary, as well as a greatly restricted diet.

Moderate exercise in the open air is, under ordinary circumstances, very beneficial. It is desirable, when possible, for the chronic nephritic to live in a warm dry climate during the winter and a cool climate during the summer, provided the altitude is not too great. His clothing should be warm, probably flannel worn next to the skin. He should take only tepid baths and that daily.

In a given case of chronic Bright's it is sometimes puzzling to know when to interfere with a high blood pressure. As increased blood pressure with its accompanying ventricular hypertrophy is compensatory, I do not believe measures, other than hygienic and dietetic, should be instituted to lower the blood pressure, unless there are evidences of impending cerebral hemorrhage or cardiac incompetence. On the other hand, if the sphygmomanometer shows a reading of 180 to 250

m. m. of Hg., active measures must be instituted. A brisk calomel or saline purge, with rest in bed and a greatly restricted diet, will frequently bring down a high pressure. If the symptoms are alarming, venesection does temporary good. Nitroglycerine in one-hundredth to one-fiftieth of a grain doses or sodium nitrate in one to five grain doses every three hours, are frequently beneficial. Iodide of potassium in small doses—say five to ten grains well diluted after meals—is said to do good.

Daily tepid baths aid in elimination, thereby lowering the pressure. When there is impending heart failure, absolute rest in bed is necessary. Digitalis in ten to fifteen minim doses often works wonders. Here, too, the diet and water should be reduced to the minimum. Some times the tincture of strophanthus acts better than digitalis. When rapid stimulation is desired, camphor in 1 to 3 grain doses dissolved in olive oil hypodermically, does well. Caffeine and strychnine likewise act well. Here, too, venesection sometimes tides the patient over a crisis. An abundance of fresh air should be provided at all times.

When there is edema in chronic interstitial nephritis, is usually due to an acute exacerbation or to a failing heart. Sweats, if used here, should be used with great caution. The bowels should be kept open with salines or the vegetable laxatives, such as cascara, senna or aloes. It is frequently necessary, however, to resort to calomel or elaterin. If the kidneys shut down, diuretin, 60 to 100 grains a day, frequently gives relief. Cream of tartar with lemonade acts well. Digitalis and caffeine, acting through the heart, are sometimes of great value. Citrate and acetate of potash often act beneficially on the kidneys.

When uraemia is threatened, as shown by severe headache, delirium, restlessness, high blood pressure and rapid heart, an active purge should be given, together with colonic flushing with normal salt solution. It is here that I believe morphine does great good by quieting the extreme restlessness and delirium, relieving pain and procuring sleep. Sometimes the bromides or chloral in large doses will answer. Chloroform will have to be given to control frequent convulsive seizures.

All chronic nephrities sooner or later become anemic. Basham's mixture is probably the best hematic we can use in this condition. The

tincture of chloride of iron is hard on the stomach. The scale preparations and Bland's mass do well. We can do much to prevent a severe anemia by an appropriate diet, fresh air and exercise, and the proper care of the alimentary tract. The bitter tonics do good when the appetite is poor. Nux vomica and hydrochloric acid are indicated sometimes. An acid condition of the stomach is relieved by magnesia or soda bicarbonate, or, maybe by rhubarb and soda. Protracted vomiting is often relieved by abstinence from all food, lavage together with possibly bismuth or cerium oxalate. If necessary, give nutritive enema in saline solution. Diarrhea is relieved by large doses of bismuth, tannigen, or tannalbin. Headache, in the early stages, can usually be relieved by a correct diet, a daily evacuation from the bowels, together with moderate open-air exercise. Later, we have to resort to the coal-tar preparations, bromides and codeine. Frequently, a severe headache is relieved by lowering the blood pressure. It always comes to the point that in order to relieve the headache and nocturnal asthmatic attacks, we have to resort to morphine. We should always try codeine or heroin first. Cerebral hemorrhage, pneumonia, and pleurisy, should be treated as they arise. Care should be used in giving the salicylates, phenol and anesthetics, for fear of irritating the kidneys.

Renal decapsulation does good in (1) relieving renal pain of chronic Bright's; (2) in cases of hemorrhage when the bleeding is restricted to one kidney; (3) in cases of chronic Bright's with a movable kidney; and (4) anuria, dropsy, and dyspnoea may be temporarily relieved by renal decapsulation.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

Text-Book on Nervous Diseases.—Edited by H. CURSHMANN, of Mayence. Authorized English edition edited by Dr. CH. W. BURR. With 156 text illustrations. Blakiston's Sons & Co., Philadelphia. Price, \$12.

A translation of the well-known work on Nervous Diseases, edited by Curshmann and others, has just been translated into English

under the supervision of Dr. Burr. One who wishes to become familiar with the fundamental principles and theories concerning Physiology and Pathology of the Nervous System, will peruse this book with benefit. Particularly fully are described the diseases of the brain. Interesting also is a chapter on Surgery of the Nervous System, by Krause. The conventional division and sub-division of various subjects are preserved. However, it is surprising to find several chapters treated quite incompletely. Diseases of the cerebellum are certainly not described with the fullness that modern investigations require. Neither has mention been made of the newer methods of treatment of such an important affection as Syphilis of the Nervous System. The cerebro-spinal fluid is not described in accordance with the newer knowledge of the subject. Only two pages are devoted to this very important chapter.

If, in spite of the book being only a translation, the American editor thought it wise to add a personal chapter on functional nervous diseases (which, however, is well presented), it would have been of advantage to give the student the latest and most recent acquisitions of neurological science and therapeutics. It is true that the book appeared in 1909, nevertheless, modifications and additions should have been made in accordance with modern knowledge. On a whole, the book will be useful to the neurologist. G.

A Text of Surgery for Students and Practitioners.
By GEORGE EMERSON BREWER, A. M., M. D., Professor of Surgery, College of P. and S., New York; Surgical Director, Presbyterian Hospital; Consulting surgeon, Roosevelt Hospital, assisted by ADRIAN V. S. LAMBERT, M. D., Associate Professor of Surgery, Columbia University; Attending Surgeon, Presbyterian Hospital; and by members of the surgical teaching staff of Columbia University. Third edition, thoroughly revised and rewritten. Octavo, 1027 pages, with 500 engravings and 23 plates in colors and monochrome. Cloth, net, \$5.50. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This third edition represents practically a new work on surgery, for, as the author states, not only has every chapter been rewritten, with new ones added, but, in order to insure with the maximum of certainty that every phase of modern surgery would be included, he has availed himself of the help of a number of colleagues on the Surgical Staff of Columbia University. As far as possible, chapters upon subjects in which notable progress has been

made, have been revised and, in some instances, largely rewritten by those who had to do directly with instruction in these subjects. Certainly his efforts have been rewarded by a most excellent volume, and we feel confident it will prove highly valuable as a reference for surgeons, as well as a text book for students for whom the arrangement of its material is especially adapted.

The illustrations are numerous and helpful. The book concludes with an index of forty-five pages, double column.

(EDITOR'S NOTE.—In the final printing of the above notice in our last issue, by some unaccountable accident, the first line, giving name of the book, was dropped. In justice to the author and the book, we have thought it well to reprint the notice in full).

Editorial.

Traumatic Injuries of Nerve-Trunks in the Light of Recent Observations.

The injuries being inflicted in the European war present a mass of valuable material for medical and surgical diagnosis and methods of treatment. In reading carefully collected observations on injuries of peripheral nerves, one is amazed at the enormous varieties and possibilities of damage to nerve-trunks in their entirety or to their components. A shell, for example, may not cut the nerve bundle but produce only a mechanical compression. In such a case the intrafascicular connective tissue, as well as the myeline membrane, may remain intact and only a cicatrix will be formed on the surface. Clinically, only symptoms of compression will be observed. In other cases only a few filaments of the nerve-trunk may be slightly injured and then symptoms of irritation will be present. In this case, in spite of tenderness and pain, the prognosis is not necessarily grave, as such cases may recover completely. The neighboring tissue may be explored but there is no justification for surgical intervention on the nerve itself.

When the nerve-trunk is cut or torn by a shell, symptoms of interruption of nerve function will be present. The chances for spontaneous cure are small and for the following reasons: Cicatrization is interfered with because of interposition between the central and distal ends of torn filaments, of fibrous and vascular formations which develop irregularly in

all directions. The latter form a serious obstacle for the young axis-cylinders in their course from the central to the peripheral end. Even in such cases the consensus of opinion is not to interfere too soon. In fact, at the end of six to ten weeks, signs of regeneration commence to become evident in the entire nerve. If at a later date—several months after the injury—symptoms of complete interruption of nerve function persist, it is proper to suppose that there is an obstacle between the two ends of the nerve in the shape of a bad cicatrix. Intervention is then necessary, viz.: removal of the cicatrix and suturing of both ends.

In some cases there was paralysis in addition to symptoms of compression, and, in spite of it, complete recovery followed without operative procedures. In cases of compression, therefore, which show a tendency to spontaneous improvement no interference is advisable.

The conclusions which can be drawn from this experience can be summed up as follows: Lesions of nerve trunks of the extremities require, generally speaking, surgical intervention if their duration is not less than six weeks. On the other hand, persistent and progressive pain is indicative of early operative procedures. It is also to be borne in mind that pain occurring at an early period improves or disappears more frequently after an operation than pain which develops at a later period.

ALFRED GORDON, M. D.,
Philadelphia.

Medical Society of Virginia.

The 1915 meeting of our State Society, to be held in Richmond in a little more than two weeks, promises to be a record breaker in point of attendance, and it is needless to say that the local profession, proud of this fact, is bending its energies to have it a success scientifically and socially. Dr. Thos. W. Murrell, chairman of the entertainment committee, his corps of assistants and the entire Richmond profession, are manifesting great interest in the meeting. More than 580 members residing outside of Richmond have signified their intention of attending and it is reported that the doctors will bring with them between 150 and 200 ladies. There are about seventy papers to be presented and, though every spare moment is to be filled with pleasure, nothing social is expected to interfere with the scientific program. There will be several luncheons, receptions, auto rides, a theatre party and a ball, for

both the men and women, so that in the variety of entertainment, there will be something for every one to enjoy.

In addition to the symposiums on Diseases of the Biliary Tract and on Cancer, previously mentioned in our pages, there will be a symposium on Tuberculosis, such noted authorities as Drs. D. R. Lyman, Lawrason Brown, Chas. L. Minor and Louis Hamman having promised to give papers on some phase of the subject. The discussion of these papers will be opened by Dr. J. J. Lloyd, of Catawba Sanatorium, and Dr. Stephen Harnsberger, one of the pioneers in tuberculosis work in this State.

The dates of our meeting are October 26, 27, 28 and 29. If you have not already notified the Entertainment Committee of your intention to be with us, make your plans accordingly and notify them now. It is not yet too late. In view of the crowd expected to attend, it would be well to make hotel reservation in advance, if possible.

The American Roentgen Ray Society

Held its sixteenth annual meeting at Atlantic City, September 22-25, under the presidency of Dr. A. L. Gray, of Richmond, Va. By common consent, this was voted the most interesting and successful meeting in the history of the Society, both as regards quality of papers and numbers in attendance. There were forty papers announced on the program, every one of which was presented to the Society. *The American Journal of Roentgenology*, the official organ of the Society, was placed under new business management and steps were taken to make it pre-eminently the best in print, pertaining exclusively to the science and art of roentgenology. The editor-in-chief of the Journal is Dr. Preston M. Hickey, of Detroit. The editorial staff remains the same except that Dr. Geo. C. Johnston, of Pittsburgh, was added to the publication committee *vice* Dr. Jas. T. Case, of Battle Creek, whose term of office had expired.

The place of meeting for the 1916 meeting, to be named later, will be at some place in the Middle-West. The newly elected officers are: President, Dr. A. W. Crane, Kalamazoo, Mich.; vice-presidents, Drs. Robt. W. Gibbes, Columbia, S. C.; Wm. B. Bowman, Los Angeles; secretary, Dr. W. F. Manges, Philadelphia (re-elected); treasurer, Dr. Wm. A. Evans, Detroit, and new member of the Executive Committee, Dr. D. R. Bowen, Philadelphia.

The Clinical Congress of Surgeons of North America

Will have their annual meeting in Boston, October 25-29. Dr. John B. Murphy, Chicago, is president; Dr. Chas. H. Mayo, Rochester, Minn., president-elect, and Dr. Franklin H. Martin, Chicago, secretary-general. An interesting program of clinics has been arranged to be held on the various days at more than a dozen hospitals in that city.

The State Health Department,

In a bulletin just issued, states that there were 1,006 estimated cases of typhoid fever reported in Virginia during August, which is 392 cases less than for the same month in 1914. The disease has been reduced in this State more than 50 per cent in the past seven years.

Again the Department announces that a telegram or telephone message for diphtheria antitoxin will be received at their headquarters, 1110 Capitol Street, this city, at any hour of day or night, and the shipment will be made immediately. When ordered this way, bill for the antitoxin, at the special rates allowed by the State Board of Health, is rendered direct by the manufacturer.

Dr. R. J. Wilkinson.

Who was recently associated with Dr. C. C. Coleman, of this city, assumed charge as surgeon of the Chesapeake and Ohio Hospital, Huntington, W. Va., on October first.

Promotions in Public Health Service.

Passed Assistant Surgeons Norman Roberts, Geo. L. Collins, Harvey G. Ebert, Herbert M. Manning and Frederick C. Smith, of the U. S. Public Health Service, have been promoted and commissioned as surgeons.

The American Association of Obstetricians and Gynecologists,

At its meeting in Pittsburgh, last month, elected Dr. Hugo O. Pantzer, of Indianapolis, president, and re-elected Dr. E. Gustav Zinke, Cincinnati, secretary. The 1916 meeting is to be held in Indianapolis.

Dr. E. C. S. Taliaferro

Returned to his home in Norfolk, Va., last month, after a pleasant vacation spent at Crockett Springs, Va.

The Mississippi Valley Medical Association

Is scheduled to meet in Lexington, Ky., Oc-

tober 19-21, under the presidency of Dr. Hugh Cabot, of Boston. Dr. Henry Enos Tuley, Louisville, Ky., is secretary of the Association.

Dr. Edmund S. Boice,

Who spent much of the summer in and near Richmond, has returned to his home at Rocky Mount, N. C.

Dr. Charles K. Mills,

Formerly professor of mental diseases and neurology in the University of Pennsylvania Medical School, has resigned to devote his time to his practice and research work.

The Association of Military Surgeons of the United States,

At its annual meeting in Washington, in September, elected Surgeon General Rupert Blue, of the U. S. Public Health Service, president, and Lt. Col. Edward L. Munson, M. C., U. S. Army, secretary. Next year's meeting will be held in Chicago.

Dr. A. T. Sheffield,

Holland, Va., was laid up with a bad arm and shoulder which prevented his attending the September meeting of the Southside Virginia Medical Association and reading a paper, as he had anticipated.

Dr. J. W. C. Jones,

Of Newport News, Va., was a visitor at Warm Springs, this State, during the latter part of September.

Dr. Rudolf B. Teusler,

Formerly of Virginia, a medical missionary in Japan for some years, has returned to the United States and will complete plans for the enlargement of St. Luke's Hospital, Tokyo, which was founded by the American Episcopal church. When enlarged, the hospital will have about 150 beds. In addition to the regular foreign staff, it is then planned to have several young American physicians for a service of three years at a time, thus offering advantages for post-graduate study to those who accept positions in the hospital.

Drug Addicts.

Since enactment of the Harrison Anti-Narcotic Law, March 1, 1915, more than 97 per cent. of cases treated at the Richmond City Home have been white people, although records show that arrests for violations of the law,

traceable to drug addictions, have been more numerous among the colored than among the white people of this city.

Dr. A. S. Priddy,

Superintendent of the State Epileptic Colony, at Madison Heights, Va., is on a visit to the San Francisco Exposition.

Dr. William P. McGuire

Has returned to his home in Winchester, Va., after a stay of several weeks in Connecticut and Massachusetts.

Married—

Dr. Ernest T. Trice, Richmond, Va., and Miss Evangeline Howard Palmer, Graham, Va., September 22.

Dr. C. H. Rolston,

Of Mt. Clinton, Va., has been nominated by the Democratic County Committee of Rockingham to succeed himself as a member of the present House of Delegates from that county.

The Medical Society of the State of Pennsylvania,

At its annual meeting in Philadelphia, in September, elected Dr. Chas. A. E. Codman, of Philadelphia, president, and re-elected Dr. C. L. Stevens, of Athens, secretary.

Dr. W. C. Ford,

Of Woodstock, Va., was a recent visitor in Harrisonburg.

Dr. L. D. Morgan,

Gladys, Va., was operated for appendicitis by Dr. Lile at St. Andrew's Hospital, Lynchburg, Va., on September 24.

Dr. J. R. Gildersleeve,

Has returned to Richmond, after spending the summer in the mountains of Virginia.

Health of Garment Workers.

The U. S. Public Health Service in an investigation in New York City, last summer, of 2,000 male and 1,000 female garment workers, who volunteered for physical examination, found that only 2 per cent. of the total number were free from defect or disease. The prevalence of tuberculosis among the males was ten times that in the U. S. Army and three times the Army rate for the females. Defective vision was found in 69 per cent. of those examined.

Dr. T. B. Leonard,

Of this city, recently motored to Bumpass, Va., for a short stay.

Dr. T. C. Firebaugh,

Harrisonburg, Va., was a visitor in Richmond last month.

Dr. Oliver C. Brunk,

Richmond, Va., has recently been the guest of his parents, near Harrisonburg, Va.

Assistants in W. Va. Health Department.

Dr. S. L. Jepson, who has recently taken up his work as Health Commissioner of West Virginia, has appointed Drs. C. R. Weirich, of Wellsburg, and M. P. Malcolm, of Charleston, as assistants, in charge of the departments covering preventable diseases and the enforcement of the pure food and drugs law, respectively.

Dr. J. R. Parker,

Recently of Goldsboro, N. C., will be surgeon in charge of the new hospital being built in a suburb of Burlington, N. C.

Drs. Samuel Lile and Robt. P. Kelly,

Of Lynchburg, Va., recently enjoyed a motor trip to Roanoke, Radford, Abingdon and Norton, in the southwestern part of this State.

Dr. J. Thomson Booth,

Of the State Health Department, who was recently operated on at St. Luke's Hospital, this city, for appendicitis, has gone to Ashland, Va., for a short stay.

Dr. Robert S. Preston

Has returned to his home in this city after a few days spent in Southwest Virginia.

Swimming-Pool Sanitation.

Public Health Reports has published a timely piece on the need of swimming-pool sanitation. Public pools have been established in about 100 of the larger municipalities and they will continue to grow in popularity, especially as many schools are beginning to include swimming lessons in their curriculum. It is stated that the diseases transmissible from swimming in polluted water are chiefly of a venereal, ocular, aural or intestinal nature. In order to prevent people who frequent these resorts from being contaminated by such diseases, attention is called to the "importance of refiltration and chemical disinfection in the care of swimming pools that are open to the public."

Dr. Samuel P. Oast,

Of Portsmouth, Va., has been assigned to duty as medical officer for the Fourth Infantry, with the rank of first lieutenant.

Dr. Frank Page Nelson,

Of New Glasgow, Va., was in Amherst on business, the last of September.

Dr. A. W. Freeman,

Formerly of the Virginia Health Department but now epidemiologist in the U. S. Public Health Service, represented the Service at the meeting of the Missouri Valley Public Health Association at Kansas City, Mo., the last of September.

The Pi Mu Medical Fraternity

Had their annual dinner in the roof-garden of Westmoreland Club, this city, September 29. Dr. N. Thos. Ennett is chief officer of the fraternity at this time.

Dr. R. Angus Nichols,

Richmond, with a party of friends, went on a motor trip through the Virginia Mountains in September.

Dr. E. L. Caudill

Has moved from Troutdale to Narrows, Va.

Dr. Joseph Blake,

Who was chief surgeon of the American Ambulance at Neuilly, has resigned to become chief of the new general British base hospital, near Fontainebleau.

Dr. W. S. Briggs,

Of Dinwiddie C. H., Va., has been appointed physician to the county almshouse.

Berlin Birth Rate Still Decreasing.

Again we note that the Berlin death rate is still on the decrease, the rate being about 25 per cent. less for July of this year than for the same month in 1914. For the months of May, June and July of this year there were reported only 7,523 births as opposed to 10,030 for the same three months last year.

Dr. R. C. Carnal,

Of Ballsville, Va., was a recent visitor in Richmond.

Dr. Guy M. Naff,

Of Garysburg, N. C., will locate in Emporia, Va., very shortly, for the practice of his profession.

Dr. H. Gilbert Leigh,

Of Petersburg, Va., has been elected vice-president of the Hopewell Heights Development Company.

Dr. Allard Memminger,

Of Charleston, S. C., will remain at his summer home at Flat Rock, N. C., until the middle or end of November.

Hopewell Hospital.

Drs. D. L. and J. N. Elder, of the class of 1913, Medical College of Virginia, have opened a hospital at Hopewell, Va.

Obituary Record.

Dr. Sydney B. Barham,

One of the best known physicians of Surry County, Va., died at his home at Runnymede, September 20. He was 77 years of age and had been engaged in the practice of medicine for more than fifty years, having graduated from the Medical College of Virginia in 1861. He was delegate to the American Medical Association in 1877 and president of the Alumni Society of the Medical College of Virginia in 1891. He represented his county in the State Legislature for several terms and was for more than 30 years chairman of the board of supervisors of Surry County. His widow and two sons survive him.

Dr. Robert Scott Wiley,

Died September 4th, at his home in Covington, Va., aged 69 years. He was graduated in medicine from the Medical College of Virginia, Richmond, in 1872, and from the University of Maryland, Baltimore, in 1873. He was a member of the Medical Society of Virginia. Dr. Wiley, who was one of the best known physicians of Alleghany County, moved to Covington from Iron Gate, in that county, about a year ago.

Dr. Austin Flint,

Physiologist and psychiatrist, died in his home in New York City, September 22, from cerebral hemorrhage, aged 79 years. He was a graduate from Jefferson Medical College, Philadelphia, in 1857. Dr. Flint was author of several works on physiological subjects and was emeritus professor of physiology at Cornell University Medical School.

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Original Communications.

IS PSYCHO-ANALYSIS OF DIAGNOSTIC VALUE IN NERVOUS DISEASES?*

By J. ALLISON HODGES, M. D., Richmond, Va.
Physician-in-Charge, Hygeia Hospital.

Any new method of diagnosis is welcomed by the physician, especially if relating to nervous diseases.

The theory of this method is based upon diagnosis by dreams, and holds out enough of the mystic and scientific to make it an interesting study and stimulate the enthusiasm of many advocates.

It is dependent on two facts, namely, that our dreams are the stories of our wishes, and that our mental life is divided into the conscious and subconscious, and that the subconscious or unconscious repression of our wishes and desires is often the cause of irritation and subsequent disease.

The difficulty in the application of the method is the correct interpretation of the dreams, and while a few of these interpretations may be logical and easy of application, many of them are fanciful, if not indeed farcical.

Consequently, in my opinion, there is a great deal in the theory, but practically and especially for the average physician, its methods are uncertain and inapplicable in many cases.

I believe that it is founded on a principle which has been long neglected by physicians, for most of us are too prone to treat the disease that is present and not consider the patient, or the patient's past history and life outside of the clinical symptoms that have arisen in the progress and manifestation of disease.

In other words, disease-expressions are not always due entirely to the active cause, but may

be due to underlying factors that are remote, and yet a present irritant.

The function of the psycho-analyst is to unravel past impressions which have become subconscious to the patient and properly value them as to their bearing upon the case in question.

The psycho-analyst believes that this can be done only by the proper interpretation of dreams, but at the same time believes in "the confessional" which he has established between himself and the patient, and my purpose in directing attention to this subject is to affirm that I believe that if the average practitioner would devote more time to a careful and conscientious study of the past history and inner life of the patient, there would be less necessity for relying so much upon the dreams of the patient.

In the hands of specially trained scientists, psycho-analysis is more or less easy of application, but in the practice of the family physician, the method is difficult, precarious and unsatisfactory.

I believe, too, that most valuable information is often lost because we are frequently too rushed to devote sufficient time to the analysis of our cases and are too ready to treat present symptoms, irrespective of the past.

Furthermore, "He who thinks he is sick, is sick," in my opinion, as Sydenham long ago dogmatically stated.

In fact, few reach maturity without discords having been struck upon the delicate strings of the soul, and these discords later rise to nag and vex.

By tracing present symptoms back to memory, back to their lodgment in the subconscious mind, the practitioner is often able to effect a cure.

This is the hope, and the therapeutic end of psycho-analysis, to unravel the tangled web of

*Read before the Richmond Academy of Medicine and Surgery, September 14, 1915.

life for those who, because of the pressure of unconscious forces, are living less than full, free lives.

This system of soul analysis, meaning by soul the whole stream of mind life, conscious and unconscious, comprises a study not only of disease, but of faults of character and errors in training as well.

It interests its disciples not so much in the study of symptoms as in the cause of the symptoms, and its pathology concerns itself with origins.

Its first step is the negative determination that the symptoms have no physical origin.

Its next step is to locate its beginning in the mental or nervous life of the individual by a study of the patient's dreams, and claims that it finds in sex-disturbance the focus and originating cause for a large group of our miserable ills.

We may be incredulous, but must admit that there is a large group of nervous disorders in which the physical derangement is perfectly real, but the origin is purely mental.

As an example of physical effects from a purely mental origin is the whole group of hysterias. Note, for example, a man lying flat of his back for ten years, and all the result of hysteria, or a woman may go totally blind, because of a condition of mind.

This system, of course, does not seek to relieve those nervous or mental disorders which have a physical basis or origin, such as neuritis, neuralgia, paralysis from pressure or hemorrhage, brain tumors, arterio-sclerosis of the brain, etc., all of which show destruction of nerve-tissue, and are due to direct physical causes.

But, outside of these, there are manifold nervous conditions which have no physical derangement, and it is to these that the diagnostician-by-dreams applies the theories of his system, and the amazing thing about it—the seeming miracle of it—is that the analysis is the treatment and the cure.

When Shakespere made Macbeth ask the doctor, "Canst thou not minister to a mind diseased, pluck from the memory a rooted sorrow and raze out the written troubles of the brain and heart?" and the doctor made reply: "Therein the patient must minister to himself." Shakespere voiced the present day therapy of psycho-analysis.

By this system the patient works his own cure when his mind is opened to the true significance of some incident that may have happened years ago, but left its irritating scars which have never healed.

The analysis is supposed to be made by a study of the dreams; the harmful effect of past incidents and conditions is due to the fact that they are unconscious; as soon as they are made conscious they vanish, it is claimed. For example, with the paralyzed woman whose paralysis is traced back to disloyalty of her husband.

In confirmation of the fact that many of our desires are repressed, it is essentially true that a distinguishing feature of child-life is want-life. Note, for example, the day-dreams of the child; the child-habit is duplicated in our night dreams. If poor, we dream of wealth, etc.; every dream is the expression of a wish, hence disease is a wish gone wrong. According to Freud, we are thrown into life with an all-consuming want or love-life (libido) within us; it is often suppressed in the child. It grows by what it feeds on—it wants, wants, and yet is buried deep; it is silent, speaks no language, but just yearns.

If it is satisfied, all is well; if not, beware!

Add to this the second fact alluded to, the conscious and subconscious life, and the mystery of it all grows and enlarges.

The conscious mind is the educated, trained mind of our daily thinking—memory and judgment rule—everything that happens is chalked upon the board so that we can read the score.

But that is not the larger part of our life; in fact, it is the least important. The unconscious or subconscious is a sort of basement of the mind into which we throw all the rubbish, all the "don't cares," all the "forgettables," that burden or mortify or annoy us and hinder our enjoyment of life. To use a psycho-analytic term, we "repress" them. These memories, naughty children of our minds, also (closeted in our mental cellars), rise up in secession and produce conversion-hysterias, etc. We thought they were gone, but not so.

In my opinion, many of these buried facts which are as much irritants to the higher nerve centers as ulcers may be to the mucous membranes, may be brought into the light of clinical consideration as certainly and thoroughly by detailed study of the past life-his-

tory of the patient as by the interpretation of the fragments of the patient's dreams.

By either method, however, patience, tact and care must be exercised wisely, to make therapeutics effective.

DISCUSSION.

Dr. Jas. K. Hall asserted that nearly all patients suffer from maladaptation. This must be of mental origin. To comprehend the Freudian philosophy we must accept several things as axiomatic, e. g., that consciousness is a continuous stream from birth to death; that physical activity of any kind, other than reflex, is of mental origin, and that the converse is also true. Freud assumes that back of every physical action and mental process is psychic activity. Mental processes are looked upon as differing not qualitatively but quantitatively.

Dr. Hodges has called attention to the subconscious life. Most of our mental processes never come to the surface. Civilization is more a matter of repression than expression, this being brought out in the analysis of Freud. We see better a man's character when he is drunk than when he is sober.

Freud's conception of hysteria and other psychologic conditions is that they are symbolized eruptions which the patient endeavors to prevent coming to the surface.

Psychoanalysis is old; examples of it are found in the Bible; politicians use it; successful business men use it. The interpretation of dreams is also old, notwithstanding Freud's claim to be the originator. Freud states that every thought, every action is pre-determined, and that more of us comes out of our subconscious than our conscious life. He claims that the dominant factor is sexual. *Dr. Hall*, in conclusion, reported two cases of rather abnormal activity, in which, by a process of mental analysis, he had been able to reach the underlying motives. One of the patients was in early paresis, and is now absolutely demented. The other recovered, but he is doubtful of the psychoanalytic method being responsible for that.

He looks upon the method as of great value in diagnosis, but is doubtful of its therapeutic worth except in the hands of a very skilful psychoanalyst.

Dr. J. N. Upshur said that to him the question of dreams, the thought that we are all dreamers, was a most interesting subject. He

believes dreams to be nothing but a kaleidoscopic expression of something that occurred in the past, and he has no faith whatever in their psychoanalytic interpretation. Take the case of an absolutely chaste young man; he eats a heavy meal, goes to sleep soon thereafter, and, lying on his back, with his stomach dropping down on the solar plexus, he will have a lascivious dream and emission.

The dominating influence of the physician's mentality, his obtaining the confidence of the patient, brings about the cure. He is of the opinion that, in many cases, there would not be present the states that Freud claims if the physical condition were not pre-existent. The mind is intangible, illimitable; and he cannot believe that the sexual factor is the dominating influence in every psychologic condition.

Dr. B. R. Tucker, asserting that there are some tangible things in psychoanalysis, cited as an example the case of a man who reproduced a poem after reading it but once twenty-four years previously. Some patients cannot be subjected to psychoanalysis. Nervous persons run the world. The fanatical reformer reverts to the primary emotions—desire or fear or both. He either fears that he will fall, and pursues his chosen work as a matter of prevention; or he has already fallen, and takes up the work as a matter of relief.

Dr. Tucker reported two cases, one, that of a man who feared germ contamination; the other, that of a girl who had hallucinations. Both resulted in cure through psychoanalysis, and both were found to have a sex basis.

Dr. Hodges, closing the discussion, said he had brought up the subject because it is, at this time, attracting much attention, and because there is something rational and tangible in it. Freud is correct in saying that the libido actuates and dominates the race more than we are apt to suspect, for even in early life, at the age of 5 or 6 years, children have a soul—or love-life—not necessarily wholly sexual, but a yearning in which there is a sexual element; and he, himself, has found that the nervous element predominates in those who, when children, had bed-fellows of the opposite sex and had been much fondled and handled by them.

There is more in the psychic than we realize. *Dr. Hodges* does not believe that every man is bad, but he does believe that in every one of us there is something that is ever suppressed.

He disagrees with Dr. Upshur that there is always a physical basis of disease. Concerning suggestion, he is of the opinion that by its means we can often get at the base of many annoying conditions.

FRACTURES.*

By RICHARD P. BELL, M. D., Staunton, Va.

This subject, while rather commonplace, for that very reason, seems a good one for discussion. We are all interested in fractures. Bone lesions, while essentially surgical, have to be and are dealt with by many medical practitioners who do not do any other forms of surgery. A discussion of fractures by this society should, therefore, prove profitable to most of us.

Almost needless to say, I have nothing new or original along this line to offer you, but there are certain points and principles that, it seems to me cannot be too often or too freely emphasized, and it is the purpose of this short paper to call attention, perhaps needlessly, to some of these.

Very few medical men will admit to any love of the treatment of fractures. If the roll of our own members here assembled were to be called, I venture to say that well over 90 per cent. of us would own that we answer calls to fracture cases with no great and overwhelming sense of pleasure. The reasons are not hard to determine. They are difficult cases to be perfectly successful with, and our bad results, if so be that we get them, follow us around for the rest of our days, and refuse to be hidden. A successful case of typhoid fever or appendicitis will call us blessed, an unsuccessful one at least cannot rise up and curse us; but the persistency with which an old limp or a crooked arm pursues us through life is appalling.

Fractures are difficult lesions to deal with for reasons so apparent that they need not be enumerated. But in spite of the difficulties, our successful results will overwhelmingly outbalance our failures if only we give that careful and minute attention to detail in each case which every case deserves and demands.

There are but three things to be considered in connection with any fracture, namely,—diagnosis, reduction, and fixation. Take each one

up in its order and properly attend to it, and nature will abundantly well look after the result.

In making our diagnosis, it is essential to make an exhaustive diagnosis. It is not simply necessary to know that we have a Colles' fracture, or that the humerus is broken at about the lower third. But the exact direction, extent and condition of the lesion ought to be determined.

We still come in contact with the old time practitioner who scorns modern methods of diagnosing fractures, regarding the use of the X-ray machine as a disgraceful admission of inability, and we meet many other men, and able ones at that, who only make use of the X-ray in very complicated cases, deeming it an unnecessary trouble and expense in the simpler fractures. Fortunately, both of these classes of men are diminishing. Also, fortunately, there remain very few localities so remote that they do not have practical access to a good X-ray plant, providing some little effort is made to reach it.

For the sake of the patient and for our own protection, this boon should never be denied any fracture victim. You may be ever so sure of the correctness of your diagnosis, and of the success of your reduction, but unless you back it up with a plate, your sureness will avail you nothing six months later in a court of law with the attorney for the prosecution brandishing two or three recent views of your end result before the eyes of the jury, and with the patient himself hobbling around the court room with the aid of three friends and two crutches. The old rule that a consultant should always be called in a fracture case for the protection of the attending physician was all right in its day, but in these times, one good X-ray plate is of more value than ten consultants. This is looking at the matter from a perfectly selfish standpoint, but from the viewpoint of the patient, the argument is stronger still. If possible get an X-ray plate before the fracture is reduced, but always get one afterward.

In case it is necessary to make a diagnosis without the aid of a picture, handle the injured limb with the greatest possible gentleness. The practice of trying to elicit crepitus in a wide-awake patient is much to be condemned. It is a most unimportant symptom.

*Read before the Augusta County Medical Association, Inc., at its regular quarterly meeting at Staunton, Va., August 4, 1915.

Inspection, measurement, comparison with the uninjured fellow, and gentle palpation are sufficient to make a diagnosis in nearly every case. It is well to forget about crepitus at least until the patient is asleep. A desirable impaction, for instance, in a fracture of the neck of the femur in an old person, may be broken up and much harm done by an unwise effort to elicit crepitus. Forget the crepitus and depend on your tapeline and your knowledge of anatomy. In no branch of surgery does a good knowledge of anatomy stand one in better stead than in handling fractures. Particular heed should be paid to muscular attachments and muscular action.

In the reduction of fractures, the importance of anesthesia is so great and has been so often insisted upon, that it hardly seems necessary even to mention it here. Very few fractures of important bones with any displacement whatever can be properly reduced without anesthesia. Patients sometimes object to taking an anesthetic for fracture reduction. Particularly is this true of strong, muscular men of the more ignorant classes, who think it the mark of great bravery to have the bone set while awake and conscious.

Such people should not be allowed to influence one's better judgment by their foolish and ignorant whims. The saving of pain is far from our main object in giving the anesthetic, and but for this fact we would gladly accommodate all such heroes. However, it is complete muscular relaxation we are after, and if we are unable to get the patient's consent to obtain it, we had best tell him to employ another doctor.

Most simple fractures can be reduced without open operation. The fad of going into every case where there was even the slightest excuse has fortunately passed, and the hundreds of bad results of unwise plating, wiring, and nailing done in the past decade, constitute a formidable and impressive monument to the fad, and a valuable warning to unwise enthusiasts of open-bone surgery. The present activity in bone surgery in the field of auto-grafting and pegging, if held within the proper limits, will prove and has proven in competent hands a boon in many cases. But this, too, is apt to be overdone for a time by some men who are prone to let their enthusiasm run away with their judgment.

Every fracture should, if possible, be so reduced that the fragments maintain a position of stability when released, and even when slight passive motions are gone through with. Claybrook, in the *Va. Medical Semi-Monthly*, recently brought this point of stability out forcefully. It is a most important point. After you have reduced the fracture, do not put the splints on at once, but wobble the limb around a little and see if your reduction is stable. If so, then we are reasonably insured against a slipping of the fragments during the application of the fixation dressing after the site of fracture is no longer visible.

A stable reduction is not always possible. In double fractures of the forearm or the leg, and in oblique fractures anywhere with no serrations to engage, the splints alone must be relied on to maintain stability. It is in such cases that the X-ray is of greatest value to us. If, after repeated attempts at reduction, the plates still show a result that will probably give impaired function, then open operation and direct fixation are in order. But it must be borne in mind that good functional results with unnoticeable deformity are sometimes obtained in cases that look extremely doubtful on the X-ray plates. Good judgment and experience alone will enable us in such cases to decide what to do; and, if we are lacking in either, our patient is indeed in hard luck.

In the fixation of fractures, the material used for splinting must be chosen according to the needs of the individual case.

Patent ready-made splints, the kind that come in complete sets with one splint for each bone, are usually very disappointing. They look well until you go to put them on. Then they never quite fit, and we find ourselves trying to make the fracture fit the splint rather than the splint the fracture. Except for temporary supports, in my experience they are quite useless.

With a good supply of thin poplar board, cotton sheet wadding, thick gauze rolls, plaster of Paris, and adhesive plaster, we are well equipped to handle the splint situation.

Poplar board can be had at any planing mill, and every doctor who treats fractures should have a supply on hand.

Cotton sheet wadding is much better than absorbent cotton for padding. It is more resilient and therefore less compressible; it is

cleaner and more easily cut into the desired shapes. All dry goods stores keep it.

Nothing in connection with the treatment of fractures is more important than the ability to properly apply plaster casts. The first essential is to have always on hand an adequate supply of good plaster rolls. This implies either making your own rolls, or procuring them from the supply room of some good hospital where the nurses are instructed in making plaster. The miserable little rolls that are put up by the wholesale drug houses, and which we can obtain from the drug stores in individual tins are worse than useless. It is next to impossible to put on a good cast of any size with them, and entirely impossible to make a large cast, as, for instance, a hip cast extending from the nipple line to the toes.

It is a very simple matter to have good plaster rolls, and anyone can in a short time make a supply large enough to last for a long while. First, buy an original package of White Dental Plaster, five, ten, or twenty pounds. For bandages, crinoline bought at any dry goods store should be first washed to get rid of most of the starch, dried, and torn into five yard lengths of any width desired. Into these bandages is rubbed, on a smooth table, a thick layer of the plaster, the bandage being rolled up loosely as the plaster is rubbed in. The rolls when completed are stored in the large tin can in which the plaster came, and thus kept perfectly dry until needed. Plaster rolls made in this manner are very cheap, and may be made wide enough to put on any sized cast quickly. They contain an abundance of plaster that is always reliable and they set almost immediately. Good plaster is fine insurance.

Our main effort in applying a splint of any sort should be to procure a permanent fixation of the fragments. To this end, it is a great necessity to immobilize both the joint below and the joint above the site of the fracture, thus putting out of commission all the muscles that exert a pull on either fragment in any attainable position. For instance, a fracture just above the ankle cannot be properly and permanently fixed with the immobilization of the knee. Even in Colles' fracture, contrary to custom, we would be sure of our results if the elbow were fixed, and many a bad result from a Colles' fracture has been due to the power of

supination and pronation which the free elbow gave.

In leg fractures, the so-called ambulatory treatment before union has taken place seems to me contrary to every sound principle. The maintenance of fixation is rendered difficult, and the process of repair is impeded.

In joint fractures, never fail when possible to put the joint up in that position which will prove most useful should a stiff joint result. Elbows should be put up in flexion and knees in extension. Nothing is more useless than a stiff extended elbow, unless it is a stiff flexed knee.

There are many other points connected with this interesting subject that I would like at least to touch on, but time forbids, and with apologies for the somewhat rambling nature of my remarks, and the hope that they will at any rate prove a nucleus for profitable discussion, I will conclude.

TREATMENT OF THE BONE WHEN AMPUTATING EXTREMITIES.

By DRS. D. W. and ERNEST S. BULLUCK,
Wilmington, N. C.

The ultimate hope for every amputation is that the loss of the member shall be partly compensated by a useful stump. It is rather the exception to see an amputation, especially well done at the time of operation, leave a stump that is ideally fitted for its mission.¹ To meet its requirements, a stump should be covered by movable skin, be well padded with soft parts, and, if of the lower extremity should bear the weight of the body without evidencing tenderness. Pain and tenderness make stumps useless for direct weight bearing.

Lyle² studied thirteen patients whose thighs were amputated by different surgeons and found only one end-bearing stump. In ninety-six amputations Crammer³ found seventy "bad stumps" and only two capable of bearing direct weight. The same absence of utility is shown in Braunigs⁴ study of one hundred and twenty-two amputations at the thigh and leg, for he found "only a few" end-bearing stumps. These operations were performed by the periosteal method by which the periosteum is preserved and used to cover the raw end of the bone. These bad results are from fair samples of this method of amputation. It is likely to become a question of how much responsibility

rests with the surgeon as to whether he has done the best that could reasonably be expected of him. According to the estimate of Lyle, twenty per cent. of painful stumps are due to progressive osteitis, periostitis, and neuritis caused by the compression of nerves.

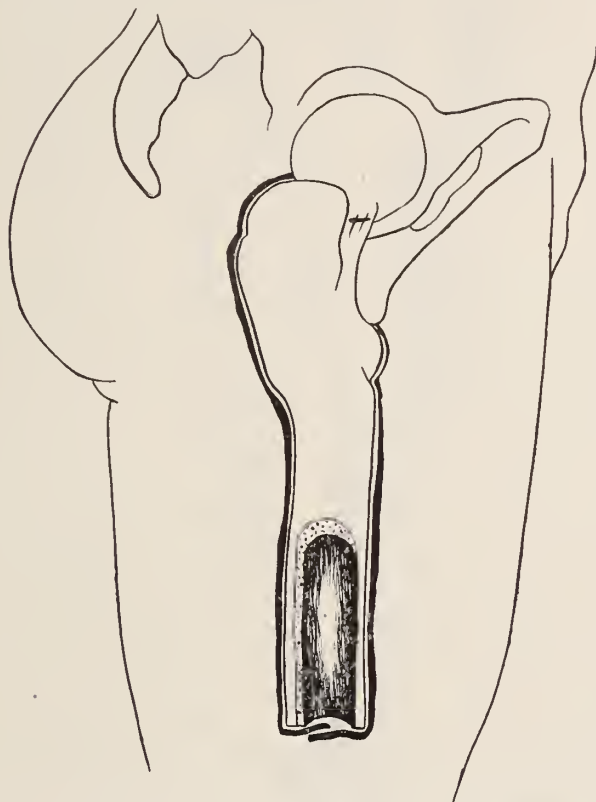


Fig. 1.—Periosteal method.—Dark line represents periosteum covering cut surface of bone.

To obviate these conditions, the nerves should be pulled well out and cut close so that they will retract beyond the scar tissue of the stump. The end of the bone should be protected from trauma and well covered by soft parts. The remaining eighty per cent. of the painful stumps he attributes to atrophy and exostosis. To avoid stump atrophy begin early massage and exercises. After the first week a box is placed in bed and the patient presses the stump against it for a few minutes. The duration and frequency of this and other exercises are increased until the entire weight can be borne upon the stump. If the amputation is of the lower extremity, a "peg" is fitted on which the weight is transmitted directly. The best formed stump, if not quickly put into use as a real support, may become atrophied and useless. Later, a permanent prosthetic appliance is fitted so

that it will receive the weight through the end of the stump and not distribute it to the sides of the limb and the joint above. By far the most important factor in the production of painful stumps is exostosis. It is the common practice in amputating to cut through the periosteum at a lower level than the line of incision for the bone. This periosteal cuff is turned back until the severance of the bone, after which the periosteum is pulled over its cut surface. This procedure resulted from the belief that the bone was nourished entirely by periosteum, and in the event of its removal necrosis would result. Small fragments of bone escaping from unhealed stumps were accepted as proof that the denuded bone had not been well covered with periosteum and died as the result thereof. We now know that the bone depends upon the internal blood supply for nourishment and, if deprived of its covering, will not die. This

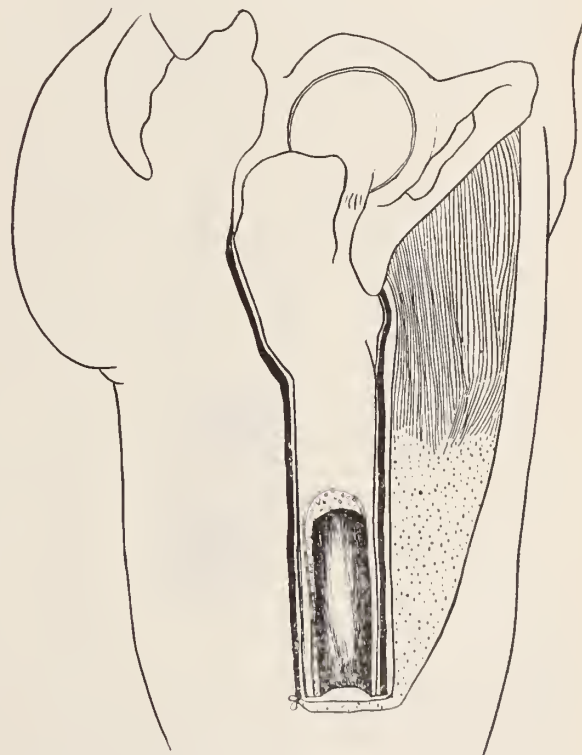


Fig. 2.—Tendinoplastic method.—Showing tendon stitched over end of bone.

precludes the necessity of covering the bone with periosteal flaps.

Hirsch⁵ has shown that in covering the bone with periosteum many shreds result. These retain their primitive osteoplastic function and produce bony spikes that interfere with the

comfort of the stump. To prevent the formation of these bony excrescences three methods of treating the cut bone have evolved. They all have as their object the prevention of bone spicules, yet this end is attained by different means although, under certain conditions, one method offers advantages over the other.

Tendinoplastic Method. (Duval-Welms). With this method the periosteum and bone are sawed transversely at the same level, and a piece of tendon large enough to cover the raw surface of the bone is drawn across it and stitched to the periosteum at the edges. This method has a limited application, but gives good functional stumps at the knee, ankle and elbow, where good tendons are available.



Fig. 3.—Osteoplastic method.—Periosteum maintaining normal connections.

Osteoplastic Method (Bier). By this method the bone and the medullary canal are covered by a bony flap. If the flap is to grow over the end of the bone with certainty the periosteum should maintain its normal connections.⁶ This is thought by Estes⁷ an excellent means of closing the canal and covering the bone. It supplies a bone stump the architecture of which seems especially designed for weight bearing. The success of this procedure depends, how-

ever, on certain conditions. Some bones are better sources for the bone flaps than others. Further, if the flap is to adhere and grow there should be no trauma or infection,—two

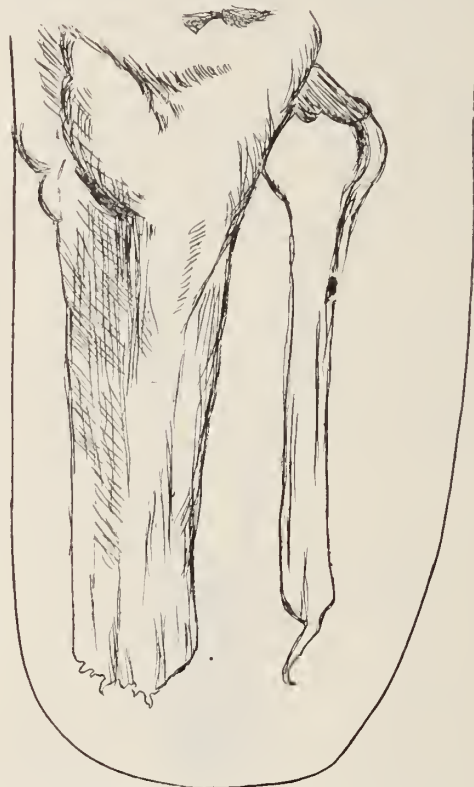


Fig. 4.—Spicules resulting from exostosis (drawn from X-ray picture.)

conditions prominent in most injuries necessitating amputations. Lastly, if the flap should die, the result is worse than through failure of any of the other methods. While the results are excellent under proper conditions, its use cannot be general.

The Aperiosteal Method. (Hirsch-Bunge). This method avoids exostosis by dividing the periosteum one-half an inch above the level of the bone amputation (Bunge⁸). This leaves the cut surface of the periosteum in an undisturbed relation with the bone and spares it the trauma incident to the sawing. The bone marrow is then spooned out for half an inch to prevent its growth exuding from the bone canal. It has been shown by Haas⁹ that the regeneration of the bone is never found except when periosteum is present and the uncovered bone stump remains clean and smooth. This method has had extensive practical tests in the Russian-Japanese and Balkan Wars, with results that are

brilliant when compared with the old periosteal method. In studying forty amputations done in this manner, Ranzi¹⁰ found that twenty-five had healed by primary union and fifteen by secondary intention. Thirty-one end-bearing stumps were obtained; in seven cases the results were "fair" and two stumps were not end-bearing. Of the fifteen cases healed by secondary intention, ten had good stumps, four were fair, and one was a failure. The remarkable feature is the good results obtained from infected cases. It is in just these cases that the periosteal method fails, for inflammation leads

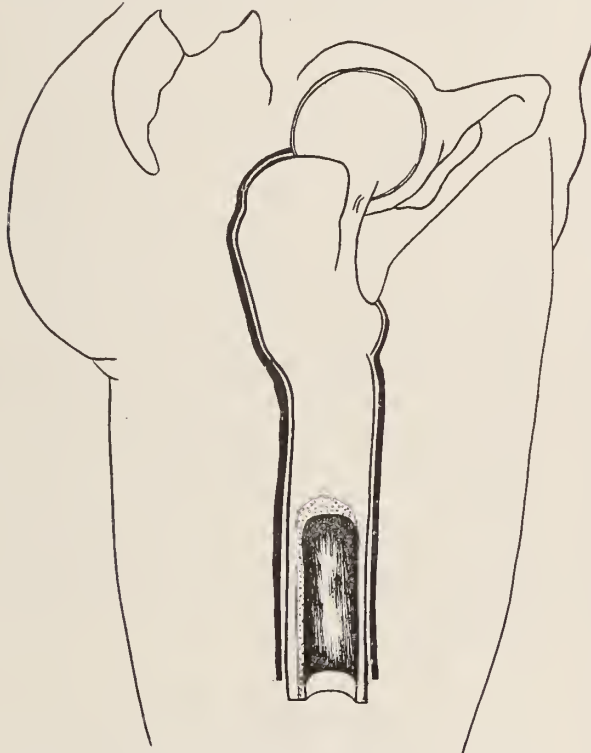


Fig. 5.—Aperiosteal method.—Periosteum cut at high level and marrow spooned out.

to exostosis. In the event of complications in healing, this is the only method that is likely to result in a good stump.

We may properly conclude that the end results from periosteal amputations are uniformly poor; that under certain conditions osteoplastic and tendinoplastic operations leave good stumps, but that in the aperiosteal operation the results are more certain and just as good as in either of the others.

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Southern Building.

SYPHILIS OF THE STOMACH—WITH REPORT OF CASE.*

By FRED M. HODGES, M. D., Richmond, Va.

Case referred to me by Dr. Porter, Nov., 1913.

Man; age 22, single, works in saloon; negro. *Family history*—Negative.

Past history—Typhoid 11 years ago; gonorrhoea twice; denies syphilis. Used to drink beer, but none for the past six months.

Present illness—Was in good health until six months ago, when he began to suffer with fullness in abdomen, and belching of very sour material about half hour after eating; for past two months has vomited good deal, and this relieves discomfort and, at times, the pain, which is not severe. At times when nauseated, he has had sudden attacks of dizziness, and has been obliged to catch hold of something to prevent falling; hands get cold and numb when attacks of dizziness come on. Good appetite; markedly constipated. No symptoms referable to other organs of the body.

Physical examination negative, except for

*Reported before the Richmond Academy of Medicine and Surgery, September 21, 1915.

rather vague tenderness over epigastrium. Urinalysis negative; blood examination not made. Stomach urinalysis; Ewald meal, expressed after 60 minutes, showed 70 c. c. Total acidity 58.6; free HCl 34.6; lactic acid, negative. Large amount of blood and some pus.

A diagnosis of ulcer was made on November 24th, and the patient put on milk diet, magnesia, olive oil. On December 2nd, patient was no better, and fluoroscopic examination showed retention and a filling defect in bismuth at the pylorus. The diagnosis of ulcer was confirmed, but, as a matter of routine, the chest was examined and a diffusely dilated aorta found; then a probable diagnosis of syphilis of stomach was made. Wassermann strongly positive. On December 10th, salvarsan was given, .6 of a gram, intravenously, and patient put on mercury and iodides. On January 1st, practically all the stomach symptoms had disappeared, and with a continuation of the mercury have not re-appeared.

We know that organic syphilis of the stomach is rare. Chiari reported four instances in a series of 329 individuals coming to post-mortem. Morgan, of Washington, recently reported eight, and states that 1 per cent. of all his stomach cases are syphilitic. Smithies, in a series of 7,545 patients with dyspepsia, found one in every three hundred to be due to syphilis, and, in a series of 1,603 with demonstrable pathology, found 26 of syphilis of stomach, or 1.6 per cent. Adami, Chiari, Weichselbaum, Kaufman, Aschoff and Smithies, all agree that syphilis of the stomach may be congenital or acquired, and functional as a part of a general infection, or organic. They are practically agreed on the pathology, which may be a round cell infiltration of the loose areolar tissue of the stomach wall, endarteritis and thickening of mucosa and submucosa, giving chronic gastritis, ulceration (with or without stenosis), gastric tumor (with or without obstruction), and perigastritis, often with involvement of adjacent viscera. The instances in men and women in Smithies' series were nearly equal—ages varied from 20 to 66 years. In a large majority they were tertiary manifestations. Wassermann and Noguchi reactions were positive in all. The symptoms were not characteristic; duration varied from six months to 24 years, simulating ordinary ulcer, some duodenal ulcer, with or without obstruction, and

some carcinoma, with or without obstruction. Some gave a history of pain at night, and colicky attacks simulating gastric crises.

In Morgan's and Chiari's series there was gastric pain and not influenced by the character of food (worse at night.) There was retention, even though there was no actual stenosis of pylorus, this being in direct contrast to carcinoma, where there is rapid emptying of the stomach, unless actual stenosis exists. The appetite was good in the majority of instances. Morgan and Sears found a low hydrochloric acid and total acidity in the majority of their patients, but Smithies, in his series, found hydrochloric acid average 33 per cent., and total acidity 51.8 per cent.

Three years ago I saw a case of syphilis of the stomach posted in Stoerks' laboratory. All of the symptoms, physical and laboratory findings, were those of carcinoma of the pylorus with obstructions. Post-mortem showed a large nodular firm tumor of pylorus which was proven to be a gumma. In my patient, the symptoms, physical and laboratory findings, were identical with those of an ordinary gastric ulcer. The differential diagnosis was made by finding a diffusely dilated aorta on fluoroscopic examination, a positive Wassermann, and finally by the therapeutic test.

I have under treatment at present a patient with practically the same history, physical, X-ray and laboratory findings as the above, but sufficient time has not elapsed to determine the result of specific treatment.

501 East Grace Street.

THROMBUS.*

By T. P. SATTERWHITE, M. D., Louisville, Ky.

For the formation of a thrombus, three elements are necessary:—fibrinogen, and calcium salts, which exist normally in the blood, and nucleoproteid, which is never found in normal blood. There are certain conditions of the blood vessels which predispose to thrombus:—chlorosis, sepsis, excess of calcium salts, retardation of the rate of blood current, traumatism, inflammation of coats of vessels, pressure, and infectious diseases, as typhoid fever.

The varieties of thrombi are parietal and valvular, and where a vessel is completely ob-

*Read before the second annual meeting of the Association of Surgeons of the Chesapeake and Ohio Railway, at White Sulphur Springs, W. Va., September 3, 1915.

structed, it is known as obturating thrombus. When thrombi occur in the heart, they are usually formed chiefly in the intertrabecular heart wall. In arteries thrombi most frequently occur behind constrictions and dilatations. In veins they sometimes form valve pockets from which they develop into thrombi, or they may form in small veins and extend into larger veins. Cases have been recorded where thrombi, beginning in small veins of the lower extremities finally grew to the inferior cava and even reached the heart. Where they occur in smaller vessels, they are the result of disease in the surrounding tissues, especially of an infectious and toxic character or a necrotic process.

The first deposits in cases of parietal thrombi consist of delicate translucent whitish layers. When fully formed, they are hard and closely adherent to the inner surface of the vessel. Should softening occur to the superficial layers of the thrombi and the blood current be sufficiently strong, these disintegrated products may be swept along the circulation and arterial thrombi may be produced. Should yellow septic openings occur, the thrombi break down, and at times foul-smelling masses are the result. Organization of a thrombus is the most favorable result, though a chalky concretion is also a favorable sequel in the life of a thrombus.

In Moullens' treatment of thrombus of the superficial veins of the leg, he excises at the very earliest opportunity the whole thromboid portion of the vein, with the most excellent results. The wound is healed in a week and the patient can get up cured and freed from all the risk of embolism. Lee obtained a cure in two cases following cellulitis of the hand by ligating the cephalic veins. Rigaud in an analogous case tied off the saphenous vein. Krussold successfully resected a portion of the femoral vein above a pyemic thrombus. Hartman has also been doing successful work along that line.

In former days, when thrombus occurred, the attempt to save life was limited to amputation of the afflicted limb. Now, no difference exists with regard to early operative interference in every case of pyemic thrombus. Seppel, in 1901, tied off the right internal iliac, the branches of which were filled with thrombi. Baumann, in a case of chronic pyemia, tied off

the ovarian and internal iliac five weeks after delivery. The patient made a rapid recovery. The vena cava has been repeatedly ligated, and in no case has any harm resulted. Thayer, of Baltimore, reports a case of venous thrombus occurring in the course of typhoid fever. He says, out of 1,462 cases of typhoid fever there were 39 instances of venous thrombus. Five of these 39 cases resulted fatally. The lower extremity was the seat of the thrombus in all but a few of these cases. In 26 cases the development of thrombus was associated with fever: in eleven the first distinct symptom was



Before illness.

pain and chill. Zeigler's work on general pathology says thrombus occurs most frequently in cases of degeneration and inflammation of the intima of the heart and blood vessels, as well as, for instance, under conditions which cause slowing of the circulation, compression, narrowing and dilatation of the vessels, fatty heart, stenosis, and insufficiency of the valvular orifices, perforating wounds of vessels, crushing of vessel walls, and laceration of the intima. He says, further, that thrombus follows

cases of syphilis, typhoid fever, laparotomy infection, surgical shock, acute rheumatism and phlebitis. From whatever cause thrombosis has formed, it increases rapidly in size, the blood stream, in passing over it, deposits layers of



patient suffered pain between the malleoli, which gradually extended up the leg to the saphenous opening. The pain was darting or neuralgic in character, and irregular but severe at times. He spent most of his time in a reclining chair with his leg on a level with his body. In a few days there was increased pain and edema of the foot and leg.

Some years ago I treated a young lady, 23 years of age, for typhoid fever. She made apparently a fairly good recovery, all of her functions were normal and she was in good physical health. In about twelve months or less her face and neck commenced to swell. She could not stoop without considerable discomfort. The swelling of the face became fearful, swollen so much that no one except her most intimate friends could recognize her. Lip and face became bluish at times. There was no

fibrin until the caliber of the veins is obstructed, and it becomes complete. We then have an obturating thrombus. Zeigler says it is unusual for the clot to become organized. It more frequently happens that both clot and vein contract and form a firm and shrunken cord. Cure of this form sometimes ensues when the clot contracts to one side of the vein and the blood stream is allowed to pass, thus re-establishing the circulation. Cases have been recorded where the circulation has drilled an opening through the center of the long axis of the thrombus and established the circulation through the vessel.

The first visible symptom of thrombus is edema and pain of the parts below the obstruction. I have lately had two cases of thrombus, one in a man about 60 years of age, and the other in a young lady. In the man the thrombus was femoral, 23 days after laparotomy. The



pitting. Her pulse was about normal and all her functions the same. This condition continued for several months. Gradually the veins of the left side of the neck and clavicular region, extending over to the sternum, became

very much enlarged, and she was so disfigured that she had to arrange her clothing accordingly. As soon as the collateral veins began to enlarge, the swelling of the face commenced to subside, and she has now resumed her beauty. The only inconvenience she suffers now is that she cannot stoop over without more or less discomfort. One of the doctors who saw this case had a similar case in a man, but the physical signs were more pronounced. The swelling in this case never entirely subsided. He lived for five years.

Dr. Samuel, of my city, presented at the Clinical Society the case of a boy (see photos) about seven years old who had some years before had a fall and injured his spine. There was no curvature, but at the juncture of the upper lumbar and lower dorsal vertebrae was a very much enlarged spine. This large mass of bony structure indicated the part injured. The boy is now in fairly vigorous health, but the vessels of his body, anteriorly and posteriorly, are greatly enlarged, showing the establishment of collateral circulation. This compensates for the thrombus in the inferior vena cava, which was due to degenerative changes in the wall of the vessel resting on the diseased vertebrae.

234 East Gray Street.

THE VALUE OF MEDICAL ORGANIZATIONS AND CO-OPERATION.*

By M. J. PAYNE, Staunton, Va.

When we reflect upon or compare the various means advocated for the preservation and restoration of health, the more discriminating mind of the public, the more exacting requirement imposed upon physicians, the multiplicity of organization seeking to limit, control or direct the conduct of the practice of medicine and surgery, the increased struggle for existence, the incidence of the high cost of living, one is brought to the realization of his own limitations and the necessity not only for self-improvement, but of improvement of the medical profession as a whole; and one is confronted with the realization that this improvement should embrace the moral, physical, social, educational (or mental) and financial standing of the physician and the medical profession.

A medical association should provide every means for making its members the most efficient practitioners of medicine attainable and should safe-guard the profession from all incidences and embarrassments detrimental to their mutual and individual welfare.

The constant aim of the organization or association should be not only the literary and scientific improvement of its members, but social and financial betterment, and thereby to establish a professional, social and financial caste for its members, its body organization, in order that the most beneficent relations may be developed between the profession and the public.

When the medical profession realizes that its successful establishment depends upon the success of every member of that profession, then we can hope to obtain the first requirement for success, complete and perfect co-operation in a body organization. The success of the individual physician is absolutely necessary for a weak, inefficient member of the profession is a distinct and serious detriment, inasmuch as we are judged by our failures rather than by our successes.

A medical association should provide for its membership an extension of medical education and instruction, and should not exclude any one from its instruction except the non-resident and morally unfit. Influential medical associations may well lend their aid to and should exert every influence to establish a better and broader, as well as a more cultured profession. This organization may be made the important means for developing an efficient medical profession, capable of influencing public policies, alike beneficial to the public and the medical profession.

The association should take active part in public matters and legislation, thereby influencing public policies, beneficial alike to the profession and the public. The public is awakening to the importance of the work—the power for good—of the regular medical profession. Let us then so exercise and develop our influence that in the future we may return even greater good to the public—the people—and be found ready to meet any exigencies that may confront the people or the profession. Let us apply ourselves seriously to health work, to the advancement of medical education, to the upbuilding of medical

*Read by invitation before the Rockingham County Medical Association, at Harrisonburg, Va., July 10, 1915.

schools, to the development and growth of medical associations, to the establishment of the regular profession, to the exclusion of the quack, the ignorant and newer departures claiming and clamoring for recognition in the healing art, the various "pathies," to the education of the public in things that should be known, to the stimulation for and development of better methods of and earlier diagnosis, to the prevention of diseases by individual instruction, to rendering to mankind the benefits of careful and exact conduct of all cases submitted for treatment, to ridding ourselves of shams and pretenses, untruthful remarks or statements, to avoiding illy-spoken criticisms, self-boasting of immaterial and trivial claims, for the public is demanding to know the nature and kind of service rendered, and rightly so; for upon the health and happiness of the people the strength of a nation must depend. The strength of this nation is dependent upon the success of the preservation of the health of its citizens, and the regular profession is the custodian—the agency entrusted and empowered with this duty.

I have thus far endeavored to show the increasing duties and responsibilities of the medical profession, and with the ever-increasing responsibilities—the *newer and more exacting duties imposed upon the medical profession of today*—we cannot depend upon ill-advised, inefficient means for obtaining proper and sufficient returns for meeting the requirements of every-day life. The physician of today must be well equipped mentally, physically and financially to properly and successfully engage in the practice of medicine or its specialties.

And how can we successfully employ the most convenient and efficient means—the most advanced means of practicing the healing art—without proper and sufficient financial returns? The physician must be well paid. A poorly paid physician is inefficient, and, though he may be equally well prepared from an educational standpoint, he is denied the better equipment and opportunities for scientific advancement and post-graduate facilities and of, perhaps, hospital connections enjoyed by the more prosperous associate.

Impress upon your mind today this idea: that your services first should be the best possible you are capable of giving, *that you will*

endeavor to advance your knowledge of medicine and surgery daily, that you will aid in extending medical knowledge not only to your associates, but to the profession as a whole, that you will endeavor, so far as lies in your power, to educate and instruct the public in proper health and sanitation measures. that you will let those employing you understand that you value your services, and that you expect compensation, and this attitude will impress the people with the importance of the medical profession, will lift the regular medical profession to a higher and a broader plane of usefulness and power for good. In this way, irregular, illegal and quack practitioners will find no fruitful fields for their practices. You must demand, and, if necessary, enforce payment of accounts, and you will find this not only profitable and advantageous to the individual, but alike advantageous to the medical profession.

The people must understand that to practice medicine properly, efficiently, *demands* a fair remuneration in order that sufficient time and proper equipment may be employed with each case. The public should know that it is imperative for the physician to equip himself properly, in order that he may successfully meet the varying and exacting duties of the profession. The public patronizes the equipped physician, and it is, therefore, to your individual interest to be fully equipped and efficient.

Interest yourself in the achievements of the thinking, working men of the profession. Forget the failures and the short-comings of your neighbor physicians, and a bigger, a broader world is before you—a field of splendid opportunities is opened to your endeavors. Noble ambition combined with determination does not stop at small things; it aspires to greater achievements. To obtain results of this kind, one must concentrate all his intellect upon his duties—the task before him.

How shall all this be accomplished? First, organize, then outline a plan of procedure, and I seriously advise for your mutual good the forming of a local Post-Graduate Medical School to meet weekly. Have one or more to instruct at each meeting. Arrange live, interesting subjects, and after the teacher has fully discussed the subject, extend the instruction by discussions and quizzes.

In connection with your school, establish and maintain a library and reading room with the best medical journals, papers, etc., and obtain by donation or subscription standard books. Devote special meetings to the discussion of keeping case records—now very important, keeping of accounts, making and rendering of accounts, how to collect and how to deal with slow accounts, and do not forget the care of the charity patients, both at their homes and in the hospital.

Your local hospital, its management, and financial aid deserve your very best moral and financial support.

Seek to harmonize the varied interests among the physicians of your county. Waive or drop any mutual misunderstandings. Indulge in social meetings, with good banquets and after-dinner speeches. Learn to know each other better by frequent associations, for many a diamond is deeply hidden in the unpolished quartz. Develop and aid your associates by personal contact, and let one and all add to your association at each meeting the best possible influence and information looking to mutual betterment.

Find out the man or men most capable of doing special work in your community, and do not be afraid or ashamed to have them do special work, i. e., stomach, eye, nose, ear and throat work, or surgery. In this way you may continue to share in the responsibility and management of the case and this will, I am sure, add to the patient's welfare and aid you to better understand and manage similar cases.

Send your cases to the home hospital and thereby avoid the necessity for delayed operations attempted in desperation to give the patient a chance.

Make every effort to diagnose your cases early. Seek to rob cancer of its terror by a diagnosis in the precancerous stage. It is far better that a breast be removed in a stage of inflammation, which I believe always precedes cancer and from which cancer develops, than to be forced to resort to the most extensive dissection, when anyone, even the layman, would make a diagnosis.

If time permitted, I would like very much to discuss many other points of great interest, but, let me add, all advanced and newer methods and discoveries should be employed—some of which, however, (the X-rays) demand

the exclusive practice of anyone who may use it. Else the X-ray operator must have a very ideal regard for ethical work; otherwise some curious and embarrassing circumstances will surely develop. An X-ray operator should never make an observation or diagnosis to the patient or friends, and should be extremely careful in his X-ray interpretations.

I cannot close without adding that our ethical code needs to be revised to the extent that truth, honesty and honorable dealing should be had toward all, observing and keeping in mind all times the golden rule, "Do unto others as you would have them do unto you." Likewise, remember that we can best serve our people and our profession by a united front, "Among whom no dissension should ever exist," save to better serve and better agree.

And, finally, get together, stay together, work together, for before you are fields of unlimited discoveries, wonderful possibilities and splendid achievements.

Let "each man follow his sympathies unto himself, assimilating all."

"Using men's thoughts and forms as steps to rise,
Who speaks at last his individual word,
The free result of all things seen and heard,
Is in the noblest sense original.
Each to himself must be his final rule,
Supreme dictator, to reject or use,
Employing what he takes but as his tool.
But he, who self-sufficient dares refuse
All aid of men, must be a god or fool."

—Story.

THE TEACHING OF ANATOMY.*

By EMORY Wm. REISINGER, M. D., Washington, D. C.
Associate Professor of Anatomy, Georgetown
University.

In submitting this paper, I wish to express my due respect for former systems of teaching anatomy, and, while not attempting to criticise former methods, simply lay before you suggestions as the result of my observations and experience. I beg, therefore, your careful consideration of this idea of presenting to the student this important subject—the framework of our entire profession.

The student comes to the medical and dental college from a university, and is bringing to us a trained mind, a mind that thinks for itself; so, *with this thought ever foremost*, we must lay this subject, the structure of himself, open to him in a systematized and orderly manner. Otherwise, every medical and dental

*Read before the Department of Anatomy, Georgetown University.

college lays itself open to the confounding, if not criticism, of the well organized brain that our matriculates bring to our University halls. Now, remember, we are not teaching children but men—trained men—men who have enjoyed at least two years of college work; hence, it seems to us, we must first impress upon him the grandeur and depth of this study, so as to awaken his interest, strike home the wonderful creature he is, stimulate his brain, arouse his enthusiasm, and secure his hearty co-operation to master this most important and most exact branch of the medical and dental courses of instruction.

Now, no college has a right to admit a student to the study of anatomy until it is properly equipped. All colleges should have first a competent and trained corps of instructors, including a *college* prosector, a man capable of preparing any and all portions of the body for demonstration for any professor connected with the University. The University should have all paraphernalia necessary to instruct this branch. This is no criticism of the past—I think it wonderful what has been done with so little—we are only speaking of the present, *the modern University*. If finance or other considerations make it impossible, these conditions should be remedied at the earliest possible moment, because no laboratory is more important, if as important, as the anatomical laboratory. A college should have and present charts, slides and manikins of all the body. The part under instruction should be illustrated from all viewpoints. The student should hear of, see and handle each macroscopic portion of the subject under discussion, and each part of the body should be illustrated microscopically, not only by the Professor of Histology, but by each professor connected with the course. There should be sections on exhibit of each part under discussion in each class, and the sections, bones, dissected parts, charts and microscopes should be attainable by the student *at any time*, to be used under the eye of an instructor, or in the college library, under the Librarian—the college being protected from loss by a cash deposit or some such form of handling the apparatus. Each professor and instructor in the university should be furnished by the college with a *catalogue of all* apparatus possessed by the college, and the

college should possess the proper apparatus to give all its advertised courses, including anatomy, before it accepts the student's money.

SUGGESTION OF COURSE AND EQUIPMENT.

(1.) Have the student first instructed in the origin of life, let him understand fecundation and development, and have him *see* for himself the budding and growth of living cells.

(2.) Have him go direct to the dissecting room after learning histology and osteology, and start dissection under a *trained* instructor; have him know just what he is going to do *before* he uses his knife, and to explain to the instructor his understanding of the matter at hand after careful study of the part to be operated upon.

(3.) Have each day's work laid down in a printed manual. Each day should cover a definite assigned portion of the body, no more and no less—not to have hours of dissection only, but also just what is to be done at each meeting.

(4.) Have a *set* time for reviews and examinations on the work done.

(5.) Impress the student that he is studying anatomy, *all* of anatomy, and that he is *always* to be ready for an examination on everything he may have studied; that he *never* graduates in anatomy, and is always a student of the same—whether he is a freshman or a gray-haired practitioner of his chosen profession.

(6.) Closely associate with anatomy, applied anatomy. Bring before the student body all specimens obtainable; explain each, and impress upon them that the diagnosis could only have been made through anatomy, and could only be described in medical and dental literature by an accurate knowledge of anatomy.

(7.) Impress the embryo practitioner with the fact that anatomy is the *sine qua non* of each and every branch of our profession, whether it be the opening of an abscess or performing a Cesarean section.

Now, you will say, how can this be done, and that is what I have briefly outlined. Here is a manual outlining the course in anatomy as it seems advisable:

SYSTEM TO BE USED IN DISSECTING.

1. Have student demonstrate the skin.
2. Have student remove the skin.
3. Have student demonstrate the fascia.
4. Have student remove the fascia.

5. Have student demonstrate the superficial muscles.
6. Dissect out superficial muscles—do not remove.
7. Identify and know arteries, veins and lymphatics.
8. Review.
9. Loosen up deep muscles.
10. Identify arteries, veins and lymphatics.
11. Review.
12. Study and dissect joints.
13. Review the bones of the part.
14. Remove the viscera of the part when ordered by the Professor of Practical Anatomy—and under his instruction.
15. Demonstrate the entire part.
16. Written examination of entire part dissected.

1228 Sixteenth Street, N. W.

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

Reported by A. J. ZOBEL, M. D., San Francisco, Cal.

(Continued from page 308.)

Emetin Hydrochloride in the Treatment of Amebic Dysentery.

By GEO. B. EVANS, M. D., Dayton, Ohio.

Amebic dysentery is epidemic in tropical regions. It may become endemic by importation. Although various authors have contributed to a very comprehensive knowledge of the disease, there still exists considerable confusion in the interpretation of those symptoms and signs which make for accurate diagnosis and prognosis.

Dysentery may persist for months or years after the amebic ulcerations have been healed, without amebiasis being present. It may exist in a mild or severe form.

A positive diagnosis can only be made by the aid of the microscope. The smears should be taken preferably from the ulcerations on the free border of the rectal valves.

The author believes that treatment by irrigation is a thing of the past. It has been supplanted by emetine hydrochloride hypodermically.

Diet and rest are very important in treatment.

The conclusions are that what quinine is to malaria, and mercury to syphilis, emetine hydrochloride, hypodermically, is to amebiasis.

Constipation with Special Reference to its Treatment.

By LEWIS H. ALDER, JR., M. D., Philadelphia, Penn.

Dr. Adler called attention to the fact that the intestinal tract is the chief sewer way of the body, and as such required as much attention as the plumbing in one's dwelling; that the term "constipation" is a relative one and the line of demarcation between what is physiologic and that which is pathologic in a given case, can only be drawn by a thorough study and knowledge of the individual; that the standard of health in one person, whose bowels move only on alternate days may be as perfect as in the individual who has two normal bowel actions per diem; that one of the chief etiologic factors in producing or inducing this malady is the neglect, frequently repeated, to respond promptly to the calls of nature, and to the pernicious practice which Americans, at least, have fallen into, of resorting to the taking of purgative medication.

Attention was called to the contra-distinction between obstipation and constipation. In constipation we have to deal with functional diseases of some portion of the intestinal tract; while in obstipation there is normal functional activity, but there is some deformity, growth, constriction, flexion, or foreign body in the intestinal canal which offers a mechanical obstruction to the passage of the fecal current. He stated that these distinctions must be borne in mind, for, while they may present similar symptoms, the treatment is entirely different.

The chief object of the paper was to lay stress upon the treatment of constipation by other than medicinal means.

The author advises that all conditions, general or local, which interfere with the health of the individual, should be removed; and that diet and hygiene should be given careful consideration. He also advises that where massage is given it should be carried out by the physician himself and not by a masseur.

(To be continued.)

Analyses, Selections, Etc.

The Results of Tonsillectomy Under Local Anesthesia.

All of the one hundred cases reported upon by the reader of the paper. B. DeF. Sheedy, New York, were examined several months after operation. No patient under fourteen

years of age was operated upon under local anesthesia. There was no grouping of the patients examined as to whether the throat conditions were the result of operation under local or general anesthesia. The enucleation of the tonsils had been performed by some one of the many methods in vogue for the last few years for the complete removal of the gland; and as the operations were performed in practically all the public institutions in New York City, many men of prominence in laryngology were the operators, so that the results could not be attributed to poor technique on the part of one man.

The writer arrived at the conclusion that tonsillectomy, so far as removing pathological tonsils is concerned, is a better operation than the old time tonsillotomy; but pointed out that many of the throat defects following the operation of enucleation are due to clumsy and non-surgical technique.

The writer also pointed out the normal relation of the surrounding parts to the tonsil and put forth a strong argument against the use of sharp instruments for the dissection of the tonsil from its bed, that being the cause of injury to the muscles with resulting deformities.

Of the one hundred cases examined months after operation, more than 80 per cent. of the patients had deformed throats. The 20 per cent. of patients with what appeared to be normal throats following the operation, were inconvenienced in no way at any time following the operation. Of the eighty patients, thirty-four complained of speech defects for from one to three weeks after operation; sixteen complained of speech defects for more than three months after operation; while four had practically lost the singing voice. About 25 per cent. of the patients stated that their throats felt better and that they could speak and sing better after operation than before. Inability to use certain words had continued with 5 per cent. of the patients for more than six months after operation.

The variety of deformities following enucleation were classified as follows:

(1) The pillars on both sides had disappeared, with the soft palate tightened to such an extent that the opening at the naso-pharynx was narrowed.

(2) The pillars on both sides had grown together.

(3) The anterior pillar had wholly disappeared, with a large amount of cicatricial tissue deposited on the posterior pillar.

In the four patients whose singing voices had been seriously affected, the posterior pillar had disappeared through amalgamation with the anterior or with the lateral wall of the pharynx.

The reader emphasized the fact that he did not think the last word had been said in regard to tonsil enucleation, and proposed as a remedy for preventing the unsatisfactory throat results an operation for removing the tonsil by what he called the "eversion method," and with charts and diagrams pointed out that the capsule of the tonsil is simply a bag, the bottom of which may be pulled through its mouth so that its inner surface becomes the outer; and that if the capsule with its glandular tissue is everted and a snare placed on, removing the tonsil with its capsule complete (there being no dissection and therefore no injury to the muscles surrounding), would result in no deformities.

The exceptions to the rule presented, viz., that the tonsil will evert on traction, were

(1) Those cases in which the capsule was bound down to the surrounding tissues by previous attacks of inflammation.

(2) Those cases where the capsule was very much contracted and contained cicatricial tissue only.

(3) Those cases of hypertrophied tonsils which had everted themselves and the tonsil was found everted when the patient applied for treatment.

The points advanced in favor of the procedure were

(1) Simplicity of the operation.

(2) Practically no hemorrhage.

(3) Little or no deformity following the procedure.

(4) Only three instruments necessary for the operation, viz., tonsil tenaculum, blunt pointed tonsil knife, Tyding snare.—(*Author's Abstract.*)

An Intranasal Operation with a Guide for the Cure of Dacryocystitis.

F. M. Hanger, Staunton, the originator of this method, says that before recommending the operation herein set forth for the cure of

dacryocystitis, he pre-supposes that an effort has been made to relieve the condition by the usual means of probing the nasal duct with probes increasing in size to ones fully as large as Theobold's No. 12 or 13, and that failure has resulted. The operation is an office one, and is done with cocain and adrenalin, the patient being seated in a chair with a head-rest.

First, a few drops of equal parts of a twenty per cent. solution of cocain muriate and adrenalin chlorid, 1 to 1000, are injected into the lachrymal sac. There is no danger of the solution entering the nose because of the stricture usually found just below the sac. Then, a small lachrymal probe so moistened that pulverized cocain will adhere to it is passed into the sac and the cocain worked down in the nasal duct as far as the stricture. In a few minutes the whole canal will be so anesthetized that larger and larger probes can be passed into the nose until Theobold's No. 13 can be passed without pain.

This probe is left *in situ* and is the guide during the operation within the nose. The inferior turbinated bone and the site over the nasal duct are then rapidly and thoroughly cocainized and adrenalinized with a cotton swab, special care being given to the under-surface of the inferior turbinated bone. Then the front attachment of the inferior turbinated bone is severed with Struycken's nasal forceps and about one-third of the bone cut away with a small Hartman tonsil punch. The lower end of the probe is now seen in the lower meatus.

As the lower front part of the bony nasal duct is thick and hard, it may be necessary, but not always, to cut it away with a curved or angled chisel or gouge, in order to use to advantage the curved right-angled punch-forceps with which the operation is rapidly completed. It is best for an assistant to hold the speculum when the chisel is being used, a Myles speculum being the best. The lachrymal probe or guide is now slowly withdrawn upward, while the male blade of the punch-forceps follows in its wake and bites away, at several bites, the inner wall of the nasal duct up beyond the stricture; thus converting it into an open gutter and the operation is finished. The punch-forceps are best made in curved rights and lefts with a universal handle similar to

some antrum forceps; yet, straight forceps can be used.

This part of the operation can be done entirely with the chisel and gouge, as the guide protects at least two-thirds of the lumen of the duct and prevents the possibility of wounding the maxillary antrum or the ethmoidal cells which lie respectively to the outer side and behind it. The gutter can be extended up into the sac, if necessary. However, it should stop just beyond the stricture which can be determined by the ease with which the probe or guide can be re-introduced into the nose. This is an easy and common-sense operation, being somewhat similar to a urethrotomy with a guide, and can be performed painlessly, bloodlessly, and by any operator who possesses only a slight degree of skill. It is best to pack the nose with a strip of gauze for twenty-four hours to restrain hemorrhage and irrigate the lachrymal sac for a few days. Water should pass easily into the nose and drainage of tears should be perfect in a week's time, if not sooner.—(*The Laryngoscope*, January, 1915.)

Twilight Sleep.

The objections to "Twilight sleep" seem to be creating an opinion that it does not possess sufficient advantages over the accepted way of administering chloroform, to warrant the risk of nervous damage to the mother, asphyxiation of the child, prolongation of labor and severe hemorrhage. The main objection seems to be the impossibility of stopping the action of the drug should it act badly. Chloroform is administered in such small amounts that its action is evanescent. We do not yet know why the uterine contractions should be accompanied by pain. Not a few capable men are convinced that labor pains serve a physiological end. Some of our best obstetricians refuse to ease up the suffering unless it is evidently pathological. Hysterical and nervous women give an exaggerated idea of their agony, while normal women quite generally say that their suffering was nothing to what they had been led to expect. Except in the diseased, the pains have no discoverable bad result. When they cease, the woman seems to be in a perfectly normal state. If we could be sure they serve no purpose, we would try to stop them in every case, but unfortunately we have no drug which will do this without incidentally weakening the muscular contrac-

tions and prolonging labor—sometimes fatally, not to mention the hemorrhages from a relaxed uterus. The profession has been so shocked by the quackery of a few European health resorts that it accepts new things from abroad with considerable reservation. We must investigate for ourselves. The slowness to take up "Twilight sleep" gave rise to denunciation of our proverbial opposition to the new, but in this case at least, it was our only course. The excellent articles published in this issue of *American Medicine* (Twilight Sleep number, January 15th), show that we have not yet sufficient evidence for anything like unanimity of opinion, and we must leave the question open awhile longer. The only thing settled seems to be that it is more useful in first labors in hospitals. Normal multiparae whose previous labors have been short will probably go on having babies the way they have done for a million years or so—a way which has survived as the fittest in spite of its suffering, which, strange to say, some of them forget afterwards almost as completely as after scopolamine. In the meantime it is desirable that competent men continue to study this method critically, in order to determine its real value in the management of labor, its proper technic, the drugs to use, its contraindications, and finally the best means of controlling or counteracting any untoward effect that may arise in the course of its administration; in other words, to establish its limitations no less definitely than its indications and effects. (*American Medicine*, New York.)

Tincture of Iodine as a Hemostatic.

Tincture of iodine is held to be a valuable hemostatic in hemorrhage from gastric or intestinal ulcers. In one severe case of typhoid fever reported hemorrhage persisted in spite of the application of an icebag and the administration of gelatin, lead acetate, opium, ergotin and strychnine. The condition being critical, as a last resort tincture of iodine was prescribed, in small doses at short intervals. The diarrhea and hemorrhage soon ceased, and the patient recovered after taking the mixture for twelve days without a sign of iodism. Five similar cases treated in the same way showed equally satisfactory results. The diarrhea was rapidly checked in most cases. When it failed, the diarrhea was very likely due to a mixed infection. In one case of intestinal hemorrhage

of unknown origin, but probably gouty, the bleeding was likewise promptly arrested. In four cases reported of hemorrhage from a gastric ulcer the action of tincture of iodine was rapid. It also relieves the abdominal tenderness in this condition, and probably assists in cleaning and cicatrizing the ulcer.—(*Exchange*.)

Improving Tincture of Iodine.

The addition of calomel, one part in 3000, to the tincture of iodine, is said to be prophylactic of septic infection. This preparation when diluted, one drachm to one ounce of sterile water or normal salt solution, is an ideal wound-dressing, and unapproachable when used internally in sore throat, bronchitis, tuberculosis, etc. For internal use the dose is one drop in a teaspoonful of sherry before each meal, and increased drop by drop, to tolerance.—(*Exchange*.)

Diagnosis and Treatment of Anterio-Polio-myelitis in the Pre- and Post-Paralytic Stage.

In *International Clinics*, Vol. IV., Neustaedter, whose studies have so materially advanced our knowledge of the etiology of infantile paralysis, discusses the symptomatology of the stage of invasion and emphasizes the extreme importance of early diagnosis. His experience leads him to believe that the onset of fever, with the usual signs of coryza, are very suggestive if, instead of the angry, hyperemic pharyngeal mucosa one finds in beginning of measles there is an anemic, glistening edematous condition of the throat, with a serous, frothy exudate. This syndrome, Neustaedter believes pathognomonic. With these symptoms there is commonly headache and pain, with or without gastro-intestinal disturbances.—(*Denver Medical Times*.)

Pathological Fracture.

A "pathological fracture" is usually due to a bone tumor (sarcoma, carcinoma, myeloma), cyst or gumma. An expert interpretation of a radiograph will best serve to distinguish these. The Wassermann reaction, it must be remembered, is sometimes negative in tertiary syphilis.—(*Am. Journ. of Surgery*, New York.)

Galen, who lived 130-200 A. D., wrote fifteen books on anatomy and was the first vivisector. His classification of muscles exists to-day.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

Marie Tarnowska.—By A. VIVANTI CHARTRES. With an Introductory Letter by Professor L. M. Bossi, of the University of Genoa. Published by the Century Co., New York. MCMXV.

“Marie Tarnowska, the fatal Russian countess whose tragic story went round the world seven years ago and who has just been released from the Italian prison to which she was sentenced for instigating the murder of her lover, has revealed in this book the secret history of one of the most startling and mysterious of modern crimes. This modern Circe, as she has been called, who wielded a strange and irresistible influence over men, luring them to their doom, was visited in her cell by the Anglo-Italian poetess, Mrs. Anne Vivanti Chartres, to whom she poured out the story not only of her crime but of her entire life,—a story told in the first person, and in a style naturally and powerfully dramatic.

“The book was written at the suggestion of Prof. L. M. Bossi, of the University of Genoa, the Italian alienist and gynecologist, who contributes a prefatory letter urging that the Countess was the victim of a morbid physical condition, and that the publication of her story will be of service to science in revealing so intimately a certain type of feminine criminality which he believes to be capable of cure. Prof. Bossi vouches for the general sincerity of the narrative.”

One closes the book with feelings of mingled pity and horror. Her mother, an epileptic, two aunts in an asylum for the insane, her father of fierce, dominating mentality: she, herself, probably epileptic, certainly hysteric, a morphine and cocaine habitue afflicted with organic disease of the generative organs, and a roue for a husband, both degenerates—what further basis need be sought for any crime in the entire category of criminals?

The tale is told fascinatingly. Whether it was truthfully told to the writer is another question. Is it uncharitable to think that Marie Tarnowska is an excellent pleader for the world's clemency?
M. W. P.

Editorial.

The General Practitioner and Early Diagnosis.

Under the title, “Does the General Practitioner Utilize the Means at his Disposal for the Diagnosing of Early Pulmonary Tuberculosis?” Dr. James S. Ford (*Med. Record*, Sept. 18, 1915), presents facts and figures which tend to show that the average general practitioner is exceedingly careless in his efforts to diagnose pulmonary tuberculosis correctly. He states that, in order to see just what was being done by the family physician in this respect, he undertook a study of 1,000 cases admitted to Gaylord Farm Sanatorium, from October, 1907, to January, 1915. After detailing the result of his investigations of these cases by groups determined by the stage of the disease on admission, he found that these 1,000 cases had consulted 1,940 physicians. Only 133 of these physicians made a chest examination, took temperature and examined sputum; 197 made no examination of any kind. The remaining 1,610 physicians made partial examinations, which included making only physical examination, in many instances through the clothes, in taking temperature only, or in examining sputum only, or, in other instances, a combination of the two of the methods but not all three. By comparing his findings with those of other investigators, he showed that the attitude of the general practitioner in not making use of the routine measures of physical examination, taking temperature, and examining sputum, is widespread. His indictment of haphazard examinations, which it must be admitted is not altogether without justification, owing partly, as stated by Abrahams, to the haste with which many physicians work, as well as to the fact that sometimes patients object to special examinations, concludes by urging that some means should be devised to impress upon the medical profession the necessity for utilizing all means at their disposal for diagnosing tuberculosis in its incipency, when the chances for arrest are excellent.

What has been said of tuberculosis will likewise apply to the early diagnosis of other conditions. However, as was pointed out by Dr. E. H. Griswold in his article on the “Early Diagnosis of Cancer,” which appeared in the *Semi-Monthly*, October 8, the physician is not

always to blame for failure in this direction, as in *this* disease definite early signs are not always sufficiently apparent to be detected by the most skilled physician. And he makes this statement in spite of the fact that he, like other surgeons, believes in the imperativeness of early diagnosis and early operation in cancer.

The facts brought out by Dr. Ford would seem to indicate the need for introspection on the part of the physician. What is the cause for this inability to make a proper early diagnosis? It is apparently up to the individual doctor to investigate and pursue the study of his cases more carefully.

Medical Society of Virginia.

The time for our annual meeting being so near at hand, there is practically nothing to add to our previous announcements. It simply remains for the members of the Society to be in Richmond on Tuesday, October 26. The program promises a number of interesting papers on a variety of subjects and a large attendance will enhance the pleasure and instructiveness of the meeting. Come prepared to stay through the whole meeting. A greater number and variety of entertainments have been provided for the members and the ladies accompanying them this year than ever in the history of the State Society. Do not neglect to register promptly. Headquarters are at the Jefferson Hotel. Numerous other hotels and boarding places will also furnish comfortable quarters.

The Roanoke (Va.) Academy of Medicine.

At its last bi-monthly meeting, October 5th, elected officers for the ensuing year as follows: President, Dr. J. R. Garrett; vice-presidents, Drs. W. R. Whitman and E. T. Brady; secretary, Dr. J. D. Willis, and treasurer, Dr. George S. Hurt. No other business of interest was transacted at this meeting.

The Augusta County (Va.) Medical Association,

At its annual meeting held in Staunton, August 4, 1915, elected the following officers for the ensuing year: President, Dr. W. F. Hartman, Swoope; vice-presidents, Drs. S. B. Whitmore, Kenneth Bradford and J. B. Rawlings, all of Staunton, and secretary, Dr. Guy R. Fisher, New Hope. Dr. H. B. Spencer, Staunton, was re-elected treasurer.

Dr. Lucien Lofton

Has moved from Emporia, Va., to Richmond, and is located at 219 Mutual Building, where he will be engaged in genito-urinary work.

Dr. and Mrs. J. A. Noblin

And little sons, Stuart McGuire, and William Chandler, of East Radford, Va., attended the Centennial Celebration at Gate City, Scott County, Va., September 29th, and spent a week visiting relatives. Scott County is Dr. Noblin's old home.

Surgeon Henry Carter,

Of the U. S. Public Health Service, has been detailed to co-operate with the State Board of Health of Virginia, in stamping out malaria in this State. Dr. Carter, who is a native of Virginia, is considered one of the best posted surgeons in the service on malaria and kindred diseases and was actively engaged in this work in Panama during the digging of the canal.

Dr. Leslie B. Wiggs.

Of this city, has been suffering from injury to his left knee and a number of bruises and lacerations, as the result of an automobile accident early this month, when one of the occupants of the automobile was killed.

The Southern Medical Association

Is to hold its annual meeting in Dallas, Texas, November 8-11. Dr. Oscar Dowling, of Shreveport, La., presiding. Dallas is making elaborate preparations for the entertainment of its guests and a pleasant time and interesting meeting is anticipated. Dr. Seale Harris, Birmingham, Ala., is secretary.

The Southern States Association of Railway Surgeons and the Association of Southern Medical Women will, as usual, meet between sessions of the Southern Medical Association.

Dr. and Ms. J. C. Wysor,

Of Clifton Forge, Va., spent several days in Richmond, recently.

Dr. B. C. Willis.

Of this city, has gone to Rocky Mount, N. C., where he is associated with Dr. E. S. Boice at Park View Hospital.

Dr. J. N. Barney,

Fredericksburg, Va., son of Capt. Barney, of the Confederate States Navy, was in charge of the dedication services, October 20, when a granite marker was placed on the old home of Commodore Maury, in that city, under the auspices of the United Daughters of the Confederacy.

The American Electrotherapeutic Association,

At its annual meeting in Atlantic City in September, elected Dr. Jefferson D. Gibson, of Denver, Col., president; Dr. Byron S. Price, New York City, secretary, and re-elected Dr. Emil Heuel, also of New York City, treasurer.

Married—

Dr. Albert Pierce Traynham, who is associated with the State Health Department, Richmond, and Miss Kate Baxter Crawford, of Henrico County, Va., October 20.

Dr. Hubert Benbury Haywood, Jr., Raleigh, N. C., and Mis Marguerite Manor, Harrisonburg, Va., October 19.

Dr. Charles Richard Reaves, Greensboro, N. C., and Miss Virginia Seay, Shores, Va., October 20.

Dr. George D. Kahlo

Has returned to White Sulphur Springs, W. Va., after a two weeks' visit at Atlantic City.

Dr. Robert F. Williams,

Of Albemarle County, Va., near Charlottesville, has accepted the position as resident physician at Woodberry Forest School, in Orange, Va.

Officers of Student Body, M. C. V.

At the annual meeting of the student body of the Medical College of Virginia, October 12, Mr. William B. Brigman, South Carolina, of the senior medical class, was elected president; Mr. Ballou, of the senior dental class, vice-president, and Mr. Amick, of the senior pharmacy class, secretary-treasurer.

Dr. J. M. Burke

Was among the speakers at a meeting of the business men of Petersburg, Va., October 4th, when a resolution was adopted to build a first-class road between that city and Hopewell, where is located the Dupont powder plant.

Dr. M. G. Robinson,

Formerly of Max Meadows, Va., is now located in Wytheville, Va., where he will make his future home.

The American Association for the Study and Prevention of Infant Mortality

Will hold its sixth annual meeting at the Bellevue-Stratford Hotel, Philadelphia, November 10-12. Any information may be obtained of the Executive Secretary, 1211 Cathedral Street, Baltimore.

Dr. and Mrs. W. A. Wallace

And their two children, of Spartanburg, S. C., spent three weeks this month touring North Carolina and Virginia during which time they visited Richmond. Dr. Wallace is well known to many Virginia doctors, having graduated from the University College of Medicine, Richmond, in 1906.

Dr. George W. Crile,

Cleveland, O., delivered a lecture before the New York Academy of Medicine, October 7.

Danger from Common Drinking Cup.

The Virginia Health Department has recently issued another bulletin urging upon parents and school authorities the necessity of requiring each child to have and use exclusively its own drinking cup. It is hard to estimate the harm that results from the common drinking cup in the scattering of disease.

Dr. J. C. Sutherland,

Clintwood, Va., is Republican candidate for the office of treasurer of Dickensen County, this State.

The Tranquil Park Sanatorium

Is to be the name of a new hospital shortly to be erected in the suburbs of Charlotte, N. C., for the treatment of non-contagious medical diseases. Dr. John Q. Myers and Dr. John P. Munroe, both of Charlotte, will be president and vice-president of the institution, respectively.

Dr. E. L. W. Ferry

And family, of Millers Tavern, Va., were among the visitors in Richmond during Fair Week.

Dr. J. Paulett Clark

Was elected a member of the Board of Governors of the Piedmont Club, Lynchburg, Va., at its annual meeting, this month.

The Kentucky State Medical Association,

Meeting in Louisville, in September, elected Dr. A. M. Vance, of that city, president, and re-elected Dr. A. T. McCormack, secretary, a position he has held for many years.

Dr. and Mrs. Walter A. Wells.

Washington, D. C., have been spending several weeks at White Sulphur Springs, W. Va.

Dr. J. Willis Price,

Whose former postoffice was Riceville, Va., now receives mail at Gretna, Va., the former office having been discontinued.

An Interstate Commission to Fight Mosquitoes

Has been suggested by Commissioner Goldwater of the New York City Health Department to avoid a repetition of this year's mosquito experience. If his plans are carried out, the commission will be organized at the end of this year. The U. S. Public Health Service has been invited to co-operate with the Commission.

Hospital to be Dedicated in Pittsburgh.

Invitations have been issued by the trustees and medical director of the Elizabeth Steel Magee Hospital, Pittsburgh, Pa., for the dedication exercises of the hospital on October 27, 1915. The building is located on Forbes and Halket Streets. On this occasion will also take place the conferring of honorary degrees by the University of Pittsburgh. A subscription dinner will be had at the Schenley Hotel that evening.

Dr. and Mrs. E. L. Tompkins,

Of Finecreek Mills, Va., with a party of friends, motored to Richmond for a short visit this month.

Prof. Chas. Wardell Stiles.

Of the Hygienic Laboratory, Washington, D. C., gave the first of the Harvey Society lectures for this year at the N. Y. Academy of Medicine, October 16, his subject being, "Recent Studies on School Children with Special Reference to Hookworm Disease and Sanitation." A number of other prominent speakers are on the program for the remaining lectures which are to be held at stated intervals up to and including April 29, 1916. The next lecture will be on November 6th.

Dr. John B. Deaver,

Of Philadelphia, read a paper before the Mecklenburg County, N. C., Medical Society, at its meeting in Charlotte, late in September. While in that city, he performed more than a dozen surgical operations in two of the hospitals.

Tuberculosis Day.

The National Association for the Study and Prevention of Tuberculosis is requesting every one to unite in having a Tuberculosis Week in

December, from the sixth to the twelfth. Wednesday, the 5th of December, has been selected as Medical Examination Day, on which day all people, sick and well, are urged to see a doctor and learn whether they are in good physical condition. Arrangements will be made to have free examinations for those not able to pay a physician.

Dr. A. J. Hurt,

Of Chester, Va., was given a smoker in his home town, October 5th, at which time he was endorsed as candidate for the Chesterfield Board of Supervisors from Bermuda district.

Dr. and Mrs. Archibald C. Randolph

Have returned to "Grafton Hall," near Upperville, Va., after a brief stay in Maryland.

Dr. F. J. Wright,

Formerly of Fork Union, but more recently of Blackstone, Va., is now located at Danville, Va., with offices in the Dudley Block.

Dr. S. Westray Battle,

Asheville, N. C., left early in October for Europe, to visit his son and daughter, the latter being a nurse in the Belgian field hospital.

The Journal of Laboratory and Clinical Medicine

Made its initial appearance in October and is to be a monthly journal devoted to the laboratory in its relation to medicine and surgery. The price is \$3 per annum and it is published by the C. V. Mosby Company, St. Louis. The editor-in-chief, Dr. Victor C. Vaughan, of the University of Michigan, Ann Arbor, and his able staff of associate editors are to be congratulated on the very excellent journal they have just had published.

The Sheltering Arms Hospital,

Hanford, W. Va., has just issued its report for the year ending April 30, 1915. This hospital, with accommodation for 100 patients, cared for a total of 2,014 patients during the past year, which is an increase of 304 over the previous year. Five nurses were graduated from its training school last year. This hospital is chiefly for miners and their families, whether sick or injured.

Dr. and Mrs. J. P. Stiff,

Of Fredericksburg, Va., spent a short time in Richmond, this month.

Dr. Douglas Vander Hoof

Read a paper October 5th, at the meeting of the Kanawha County Medical Society, at Charleston, W. Va.

Dr. Wm. C. Hollopeter,

For a number of years professor of pediatrics at the Medico-Chirurgical College, Philadelphia, has resigned. Dr. Jas. H. McKee succeeded him.

Indiana State Medical Association.

At the meeting of this Association last month, Dr. Geo. F. Keiper, of Lafayette, was elected president, and Dr. Chas. N. Combs, of Terre Haute, was re-elected secretary.

Dr. A. E. Turman

Has returned to his home in Richmond after a visit to his brother in Chincoteague, Va.

The Atlanta (Ga.) Urological and Dermatological Society

Was organized in September with Dr. Bernard Wolf as president and Dr. O. F. Elder secretary.

Dr. P. P. Causey

Has been appointed surgeon for the Atlantic Coast Line Railway at Wilmington, N. C., to succeed Dr. J. H. Borneman, deceased.

Ether Day

Was observed as usual at the Massachusetts General Hospital, Boston, October 16, in commemoration of the demonstration given by Dr. William Morton in the use of ether in that hospital on this date in 1846. An interesting program was carried out, the principal address being given by Dr. W. W. Keen, Philadelphia.

Dr. Ennion G. Williams,

State Health Commissioner, addressed the Stenographers' Association of Richmond, at its regular meeting on October 12th.

The University of Maryland, School of Medicine.

Has chosen Dr. Wm. F. Lockwood dean, *vice* Dr. R. Dorsey Coale, deceased. Dr. A. M. Shipley, who had been acting dean, refused the appointment.

Dr. Chas. W. Hunt,

Brevard, N. C., was the recipient of the \$250 prize offered by the Malt Nutrine Department of the Anheuser Busch Co., St. Louis, for the best name for their picture sent to doctors all

over the country, some weeks ago. The name suggested by him was "On the Honeymoon Trail."

Dr. Roshier W. Miller,

Of Barton Heights, this city, was among the speakers at the dedication exercises of the new school building at Glen Allen, on the evening of the 16th of this month.

Pennsylvania has Inadequate Accommodations for Consumptives.

In spite of the fact that there are three State sanatoriums for consumptives in Pennsylvania, there are reported to be over 1,100 on the waiting lists of these institutions. Their tuberculosis dispensaries, of which there are 115 scattered throughout the State, attend on an average of 10,000 patients a day.

Favor Athletic Field.

Drs. William H. Parker and C. M. Hazen, Richmond, were among the speakers at a meeting on October 8, recommending that this city have a big athletic field in its northeastern section.

Dr. Robt. M. Gallant,

Of the 1915 class, Medical College of Virginia, is now located in Charlotte, N. C., where he will practise his profession.

A Typhoid Epidemic

Was reported at Charleston, W. Va., this month, though no apparent cause for the epidemic has been discovered. About fifty cases have been reported.

Dr. and Mrs. Henry H. Briggs,

Asheville, N. C., had a dinner party at Battery Park Hotel, Asheville, N. C., in honor of Dr. L. T. Perdue, of Wilmington, who has lived in Asheville for the past two years but is leaving shortly to make his home in Mobile, Ala.

The National Committee for the Prevention of Blindness

Will hold their first annual meeting in the Assembly Room of the Russell Sage Foundation Building, corner East 22nd Street and Lexington Avenue, New York City, at 4:30 P. M., November 4. Ex-President Taft will speak and Dr. G. E. de Schweinitz, of Philadelphia, will make an address. In a bulletin just issued by

the Association, report is made of the work being done for the prevention of blindness in eighteen states. Virginia is conspicuous by its absence of apparent interest in this work. The States interested are fighting trachoma, ophthalmia neonatorum, the use of wood alcohol and the abuse of children's eyes in the schools. Schools for the blind in this country announce a reduction in the percentage of admissions of pupils with ophthalmia neonatorum for the past five years from 23.9 per cent. in 1910-11 to 15.1 per cent. in 1914-15.

Dr. and Mrs. O. E. Hedrick

And little daughter, of Museville, Va., have been visiting relatives and friends in this city.

Washer-women Required to Register.

The Asheville, N. C., Health Department passed an ordinance July 26 last, requiring every washer-woman in that city who launders for pay and is not employed by regularly licensed laundries, "to report and register his or her name and address in the office of the health officer" of that city. The premises and paraphernalia used by these people shall be investigated and inspected by the health officer at any reasonable hour of the day. Failure to comply with the ordinance shall cause the offender to be subject to a fine.

Dr. James S. Haile,

Chatham, Va., was in Richmond for several days early in October.

The Physical Examination of Cooks and Waiters,

In the New York City hotels and restaurants, is still going on. As previously noted, an ordinance was recently passed in that city requiring all persons engaged in the preparation or serving of food in public eating places to submit to examination to establish his or her freedom from an infectious or venereal disease in a communicable form. It is estimated that there were 90,000 people who would thus have to submit to examination. Up to the time that 15,000 applicants had been examined, it is stated that syphilis and tuberculosis had been found frequently enough to justify the work. Ten suspected typhoid bacillus carriers had also been detected.

Dr. W. B. Pettit,

Of New Canton, Va., has gone on his second trip this year to the British Isles, having

sailed this time from Newport News to Scotland.

To Prevent Cold Feet

Among the soldiers, a fertile cause of illness, the *Medical Council* states that the Germans commend the use of paper or cotton socks, the feet of which should be sized with a mixture of collodion, colophony, castor oil, alcohol and ether to keep the feet dry.

The Visiting Nurses' Association,

Of Richmond, reported a total of 10,604 visits during the summer months, 1,230 different patients having been attended in these visits.

The Bayonne (N. J.) Hospital

Made more than \$400 from a game of base ball played by a number of doctors and Elks of that city, the former winning by a score of 3 to 0.

Obituary Record.

Dr. Charles Shannon Butts,

Of Newport News, Va., died in Oklahoma City, Okla., early this month, and his body was taken to his native state, West Virginia, for burial. Dr. Butts was about forty years of age and received his medical diploma from the University of the City of New York, in the early nineties.

Dr. Nicholas M. Corbin,

For many years a practising physician of Caroline County, died at the home of his niece, in Ashland, Va., October 5, at the age of 73 years. He was a graduate of the Medical College of Virginia in the class of 1864. Dr. Corbin was one of the charter members of the Medical Society of Virginia.

Dr. Luther H. Keller,

Of Hagerstown, Md., died September 30, of heart disease, aged 63 years. Having been born in Shenandoah County, Va., and received his early education in Roanoke, he was well known to many Virginia doctors. He had been a member of the Medical Society of Virginia since 1876. Dr. Keller received his M. D. degree from the College of Physicians and Surgeons, Baltimore, in 1874. He was an ear, nose and throat specialist.

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Original Communications.

UNREST.*

By SAMUEL LILE, M. D., Lynchburg, Va.

My first duty is to offer thanks to the Medical Society of Virginia for the honor conferred upon me at its meeting in Washington, D. C.,—which I feel sure was poorly demonstrated at the time. To be chosen the presiding officer over such a body of men as our State has, can but make any man feel his own unworthiness; at the same time he cannot fail to feel proud of the honor. It is especially pleasing to have been elected at the meeting held in Washington, our Nation's capital, and to preside at that held in the capital city of my adopted State.

In casting about for a subject on which to address you, I had much trouble, not as to number of subjects, for they were innumerable, but one on which I could best entertain such an audience. I had a curious feeling all over my system; it permeated every part of my being. At first I was at a loss to say what it was, but it finally dawned upon me that it was that spirit which is now pervading the entire world, the spirit of unrest, so I determined that I could find no better or broader subject for my discourse than that which already pervaded my entire nature; hence—

UNREST.

Never in the history of the world was the spirit of unrest so prevalent; we see it in all the walks of life and in all classes, races and sexes. What does it all mean? I trust that no other nation will be so unsettled by it as was Germany. Yet it does seem that Japan is to no slight extent following in Germany's footsteps, and we need not be surprised at any moment if our own great country becomes involv-

ed in war, so great is this unrest unsettling the nations of the world. Had we any one at the helm of our government than the Hon. Woodrow Wilson, we would already have fired guns in Mexico, and probably been sending men, ammunition, ships and money to the war zone across the great Atlantic. Let us thank God that we have him steering our affairs during these days of world-wide unsettled conditions.

Labor, in its wonderfully organized condition, is full to overflowing with dissatisfaction, and is at all times in a state of unrest and turmoil, seeking something more than it has ever gotten. If this was ambition, and ambition only, we could congratulate it, but, not being so, we must be on guard at all times lest a general revolution beset us and desolate our country as did the French Revolution in days gone by. The schools are affected with the same state of affairs, and to such an extent that a man educated ten years ago could not possibly be a teacher to-day, unless he be re-educated, or has followed such as his vocation.

In our own noble profession the same spirit caught hold something like a quarter of a century ago and has redounded to the good along every line of work and has lifted the profession from an apparent dungeon into a field full of fresh air and sunshine. The world has been greatly benefited thereby, and it does seem that conditions are getting better and better every day. We no longer guess at diseases nor call them just anything we may, and expect the suffering public to be satisfied with this off-hand guessing. The truly scientific spirit has taken matters in hand and is guiding it in the way in which it should go, and the world is reaping the reward of scientific work well done.

Under this same spirit, from a professional standpoint, we have seen longevity increased, and the death-rate in practically every acute febrile disease decreased, and I might say in

*Address of the President, delivered before the Medical Society of Virginia, at its forty-sixth annual meeting at Richmond, October 26-29, 1915.

everyone, save in pneumonia; in this it has increased in numbers of cases as well as in numbers of deaths.

We no longer guess at the causes of diseases, but, with the scientific use of the X-ray and the bacteriologist and microscopist, their causes are definitely determined, and we know at once, in almost every instance, whether the disease is amenable to curative treatment or not. Many that are not curable through the influence of drugs are self-limited, and knowing that prevents efforts expecting definite results through such means, or the probable bad effects if such efforts were made. Superstition as to diseases, cures, etc., is slowly on the wane, and could we beat out every vestige of it, how much could and would be accomplished, for wherever there is ignorance there superstition reigns.

Unrest is unquestionably bringing about preparedness, and the latter means efficiency, but may mean more. What could the doctor do but for preparedness when he so often has to act on the spur of the moment in a life and death case? And what would have become of Germany had she not been better prepared than the allied nations combined? In this case the entire world was the loser, not on account of preparedness alone, but with its being in every way coupled with militarism, and that militarism governed by greed and aggression, having been fostered for a period of forty years by the only real military government under the sun.

This feature of unrest fostering preparedness may be for either good or evil; just so with ambition. Ambition has been the downfall of many great men in both ancient and modern times, and the lack of it has kept many able men from accomplishing what they might have done. Environment and parentage largely control a man's ambition. For instance, the son of an ordinary blacksmith or carpenter will usually be content to be as good in the same line as his father was; so all along the line of trades and professions, but occasionally ambition will crop out, and when so, it knows no bounds. Unrest will drive ambition, and ambition stirred by unrest will seek preparedness, and the trio often lead to efficiency, and efficiency to success, but success is not happiness, for Pope has said, "Man never is, but always to be blessed."

The higher education of women began its

career about 1890, since which time the number of college women has increased nearly four-fold. In this same time marriages have decreased markedly and the number of children born to these college women has decreased to a startling degree. For instance, of the eight most representative female colleges of the country graduating one hundred or more students each year, Bryn Mawr with 294 and Swathmore with 148 graduates, are fairly representative. A comparison of these two schools, and an average of the marriages from them will give a fairly accurate proportion of the marriages taking place among women's college graduates.† Bryn Mawr shows 41.8 per cent. and Swathmore 58.7 per cent. of marriages among their graduates. Taking this average, then, about 50 per cent. of such women marry; and the best available statistics show that less than one child is born to each graduate. Are they scorning the injunction to "be fruitful and multiply"?

Some writer has recently said that "The waltz, after remaining the supreme waist-embracing dance for about a century, had given place to the seductive new dances which play quite a prominent part in this day. The gay youths of both sexes abandon themselves to the seductions of hesitation, tango, maxixe, *et id genus omne*, with an enthusiasm never shown for geometry or syllogism, axe or saw, theodolite or crucible."

Lovers look for the good in each other, remembering that the business of love is to idealize or imagine, and imagine means to "image," or see.

With these facts before us, it is only necessary to follow them and all will be well. A young woman of to-day does not know how to prepare herself for life, for surely she does not know whether she is to be a stenographer, bookkeeper, clerk in a dry goods store, a dress-maker or a housekeeper, or whether some good or bad man is going to seek her hand in marriage. So, until rather late in life she cannot determine what the future has in store for her; hence, she is at a disadvantage, and one, too, not always easily overcome.

Unrest has attacked the women of the world and is making many of them more efficient in every line but one, and that one is the most important in life. It has stirred the latent ambi-

†Statistics by Nearing, *Journal of American Statistical Association*, June, 1914.

tion in her and caused her even to feel and to know that she is an important personage. But along with this she has the idea that she has been imposed on by her male companion to such an extent, that she openly demands the right of suffrage, and when in possession of that, she will make Mr. Man do as she demands.

It is a well-known fact that woman rules the world, not by threat or force, but by her sweet and gentle motherly manners.

Under the present state of affairs things are changing, and she no longer wants to be the mother of men, and man can't be, so what is to be the outcome? She has sought and gained access to almost every field of labor from the highest professions to the lowest grade of menial labor, yet, as some editor has recently said, it matters not how efficient she may be in her chosen field, she will invariably drop it when some good man seeks her hand in marriage. This is the strongest evidence of the natural instinct of woman, and as every woman will act in the same way, it proves conclusively that it is her strongest natural instinct.

But to go further, she is attempting to throw off that strongest natural instinct by declaring war to the bitter end, or to a declaration against filling a house with her natural offspring, and showing a disposition not to become the willing mother of her husband's children. She may under protest consent to going through the travails of labor for one, but then a definite and distinct line is drawn and vengeance is declared against any successor. This brings about a different spirit of unrest in man, and often drives him from home, because home is not such as he has always pictured mentally, and so the matter goes on until home is not home any more, but a place of unhappiness, love no longer reigns supreme, club life follows, unhappiness comes on apace, then jealousy—the demon—creeps in, and the termination may be with a voluntary separation or divorce.

Why do the present-day women have to enter all the fields of labor in competition with man, when it was not necessary twenty years ago? Is it because man does not care for her as he did formerly, or is it because woman wants to dress better and make generally a better appearance? Or, having gotten a taste of public life, is she unwilling to lead the quiet home life of her mother? This is a class of

unrest which is detrimental to our country in many ways. For instance, man and woman working in common, almost as the same gender, as it were, causes man to lose respect for her, and to a certain extent, she for him, and so under such conditions marriage is decreasing and divorce increasing *pari passu*.

Home life is becoming a back number, and the society woman of to-day prefers club life to real home-life; hence, in consequence, home life is disappearing and club-life is increasing. This looks as if the woman prefers the open public life of man to that of her natural God-given home-life which has held the world together, and shows, too, that the natural increase of our population is not from the better class of people, but comes from the lower walks; hence, the higher class is on the decrease and the lower is stepping up higher. So intellectually, instead of gaining, we are losing, and this loss being constant, in only a few decades we will drift to the lower standards rather than ascend to the higher. What is the remedy?

Having had a taste of the free, easy way of men, we cannot say that women shall not have the same, for certainly man is not entitled to any more privileges than his life-long partner, woman, though he often assumes such. Woman, in the words of an ex-governor of Alabama, and a woman-hater, too, "Is not only the *best*, but in a sense equally truthful and more catholic, she has been denominated Heaven's last, best gift to man. She is at once the sweet soother of humble toil and the graceful and elevating companion of genius. Under the magic inspiration of her smiles the fields wave with joyous plenty and the workshops pour out their floods of ingenious mechanism. The oceans whiten with commerce, and the cities are crowned with magnificent architecture." What living man who is not in full accord with such sentiments? If such there be, go mark him well, for him no loving hearts do ever swell, and all his nature is as cold as if 'twere pure and frozen gold.

In all the walks of life woman controls only one monopoly, and from her man can never take it, not even be in competition, nor has she any fear thereof, and this monopoly is that of becoming mothers.

But this monopoly can be so neglected that the human race may retrograde in character and decrease in number. But this will never

come, unless, becoming suffragists, women may decline to cultivate this, their God-given monopoly.

At a recent meeting of the Academy of Moral and Political Science, in Paris, it was reported that births in France for the past twenty years had fallen annually from 860,000 to 750,000. Thus it will be seen that in this length of time there must certainly have been quite a loss to the population of France. Just so with our own country, while I have no statistics to quote here, there is abundant evidence to show that, but for the tide of immigration, our population is decreasing even more rapidly than that of our sister republic across the sea. We admit about 1,000,000 newcomers annually, and at each census we show an increase of about 10,000,000, or 1,000,000 for each year, and this does not attempt to add to the number of immigrants their own offspring. What increases we could show, aside from the immigrants, would be to the credit side of these immigrants and from the uneducated classes of our native peoples.

Then it must show that our educated classes as well as our society people are not following these natural wants, that of filling their homes with their husbands' offsprings, but that in some way or somehow, the homes of such bear too heavily upon the minds of our women, that they are declining to do their God-given duty in this respect. This is a fast age and an age of luxury: can it be that the luxurious life is leading to profligacy, and that this profligacy will lead to the downfall of our nation, as has so often been the case with opulent nations in the past?

Carthage fell because of its opulence leading to profligacy, and so did Rome, and many other instances could be mentioned. To-day our country is acknowledged to be the wealthiest on the globe. All nations are watching us both from a standpoint of national wealth and national commerce. We occupy to-day the position of the "middler" in a game of marbles, and when the game again actively begins every nation will be found plucking at the "middler" with every attempt to knock him out. Every boy and girl knows about the "middler" in a game of marbles, and what it means if he is struck a sufficient blow to knock him out.

These being facts, it stands us in hand to re-educate our women along the fields of useful-

ness, and to show them wherein home is their proper place. And, too, that homes should be filled to overflowing with strong, vigorous, healthy, legitimate children, children who will be both a comfort and a pleasure to their parents, a credit to themselves and an honor to their country. When such conditions as these prevail, unrest, as to the fear that man will get the better of woman, or the husband of the wife, will cease; home will again be home and happiness will reign supreme.

This condition can only be brought to bear through the influence of woman, not by force nor by political influence, but through that womanly-hearted affection which woman only can bestow, and which, when properly extended, will control any man who ever lived or died, and will almost always convert even a demon into a human with kindly intentions. What a world we would then have! Compare it, if you can, with the conditions sought on all sides, that of woman sacrificing her womanly and motherly natures, for those of man, who is constructed on entirely a different basis, whose nature is far more brutal and lacks the inborn tenderness of his opposite sex.

Many women could be cited who have shown the strength of any man who ever lived, in every way but physically. This is not one of her natural characteristics, however, nor do men expect such of her, but let her in the future, as in the past, teach "the savage the transforming powers of society and civilization."

"Cornelia lays her jewels on the altar of her country that Rome may live", and never sang, "I didn't rear my son to be a soldier."

When home once more becomes the abode of love and affection, and is filled with happy hearts around the family circle, due not in part, but almost *in toto* to woman's influence, then will man exclaim with one accord, Amen!

"All men know that woman's organization is as delicate as a sylph and as timid as a fawn, that she braves the hydra of disease and the carnival of his slaughter, and from some cause which earth cannot explain, the monster withers and dies in her holy presence. To woman has been confided the vestal fire of God's worship, and she raises in His holy temples such anthems of praise as a fit diapason of seraph around His sacred throne, and in the twilight of life, when swallows homeward fly, when earth and earthly things are viewed with light

that breaks from heaven, she plumes her pinions for her native skies and beckons us on to the throne of God."

SANATORIA IN THE FIGHT AGAINST TUBERCULOSIS.*

By LAWRASON BROWN, M. D., Saranac Lake, N. Y.

Efforts to stem the inroads of any contagious disease proceed usually along two main lines: first, attempts are made to cure those already afflicted with the disease so speedily, so surely, so efficiently that they cannot become foci for spreading the disease; and, secondly, when attempts at cure prove, so far as the control of the spread of the disease is concerned, unavailing or inefficient, a more direct struggle is begun to prevent the disease. So it has been with tuberculosis. Many men in this audience easily recall the time when pulmonary tuberculosis was considered a necessarily fatal disease. As late as some seventeen years ago when I first went to the Adirondacks, I realized that while I had told patients that pulmonary tuberculosis was curable, deep in my being I did not believe it. So strong and so prevalent was this view that when institutions for the "cure" of pulmonary tuberculosis were first started their very name "sanatoria" implied that the disease was curable.

It is interesting to consider for a moment the status of the tuberculosis problem early in the last decade of the last century.

An early diagnosis was seldom made, and when a diagnosis of pulmonary tuberculosis was announced to the family or to the friends of the patients, it was received with sad and gloomy forebodings, for who had ever heard of a patient with consumption recovering? As early as 1850, that master of medicine, Austin Flint, of Buffalo, of Louisville, of New Orleans, and of New York, was capable of making as early a diagnosis as any of us do today. But how alone he stood! Think of the chaotic state of public health work in regard to tuberculosis at that time and picture the consternation of a health officer who might have been asked to look for tubercle bacilli in the sputum of a suspected case!

The dire forebodings that the public associated with pulmonary tuberculosis were entirely

justified, for, recognizing it as a necessarily fatal disease, it was, even when suspected, not diagnosed until the patient stood waiting his summons upon the brink of the Styx. Had notification been enforced at that time, I doubt if some notification cards would have reached the registrar's office many days in advance of the death certificates. In short, diagnosis of pulmonary tuberculosis was tantamount to a sentence of speedy death. This state of affairs led Brehmer, as I have said, to call his institution for "curing" tuberculosis, "sanatorium," derived from the Latin verb sanare, to heal. A few saw a dim ray of light, of hope of cure earlier, but their faint piping brought no response from a downcast world.

In the early 80's the sanatorium idea reached America, and first, Trudeau, in the Adirondacks, and a few years later, Bowditch, near Boston, founded the institutions which led the way in this country. About the end of the last century Bowditch was instrumental in having Massachusetts build the first State sanatorium. About this time I began to work in tuberculosis and I well recall how we struggled to get early cases for the sanatoria. We argued that if we could only get a case early enough our problem was an easy one. Alas! time has revealed the fallacy of such a belief. Only twenty-five to forty per cent. of those in the incipient stage are discharged "apparently cured" from the sanatoria. Today we know that some patients pass through no incipient stage, but leap at a bound from a doubtful to a well-advanced stage.

This leads me to refer to the changing ideas in regard to the terms used in connection with pulmonary tuberculosis. On my entry into the work many held that patients and laymen deserved that the word "cured" should be employed to denote those free of symptoms for three months, though some used "apparently" before "cured," an adverb overlooked or soon forgotten by everyone except those who saw the relapsed patients. The misfortune is that many of the laity and even some physicians were so lulled into security by the term "cured," that they believed it implied in regard to tuberculosis what it did in measles. I do believe that pulmonary tuberculosis is curable, but I hold that permanent arrest is the most frequent termination of the disease in most of those who are later able to pursue their usual occupations.

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The unfortunate fate of the sanatorium patient is that he must be forced to yield his place to another before, in many instances, he has received the maximum benefit to be derived from his stay in the sanatorium. This is due to the fact that the applicants exceed the capacity, whereas the reverse should be always the case.

However all this might have been at that time, the idea was widely prevalent that if only a sufficient number of sanatoria could be built the problem would be solved.

About this time, Calmette, of Lille (captured early in the present war by the Germans), stimulated no doubt to another scheme by his patriotic antagonism to the sanatorium idea which was of German origin, devised or modified the dispensary idea. This had long before been instituted in Edinburgh by R. W. Philip, but had failed to make any impress upon the world until Calmette heralded it internationally. After this, one step led to another, all of which the other speakers will mention, until finally the extent of pulmonary tuberculosis became known.

It was then seen that the tuberculosis problem was so great, that the number of patients who could be treated in the sanatoria was so small in comparison to those who should be there treated, that they were like a drop of water in the James river at flood time. This led to disparaging remarks concerning the usefulness of the sanatorium, and many, I regret to state, indulged in them. Even then, fortunately, those who knew best clearly recognized that the sanatorium was by far the best institution in which patients in large numbers could be successfully treated. Here close supervision of the patient's life, of his diet, of his life out-of-doors, of his exercise, and, most important of all, of the "intensive" rest necessary for two or three months at the beginning of treatment, can be maintained and emphasized and enforced. The sanatorium then, stands today in regard to treatment as it always has done, pre-eminent, but it is clearly recognized that without other agencies it has not proved efficient in the struggle against tuberculosis.

The ineffectiveness of the sanatorium in the anti-tuberculosis campaign was long ago recognized by such a man as Osler, who, as early as 1898, preached the establishment of municipal hospitals for tuberculosis. On the other

side were men who stated that by 1920 tuberculosis would be as small a factor in the body social as small-pox is today, and, further, thought it inexcusable to build any but the cheapest structures, for they would soon fall into innocuous desuetude. One State was criticized for its permanent buildings and explained its "error" by saying that they could later be used for its insane patients.

I might say, by way of parenthesis, that the criticism of the sanatorium is due in part to the mistaken idea that the sanatorium is an "end-institution." In the State system of education in Virginia, I would call the University the end institution. In such a system the sanatorium would occupy the position, for instance, of the Episcopal High School at Alexandria. The remainder of the life of the discharged sanatorium patient must be spent in what might be termed a "sanatorium extension course." I mean by this that when a patient leaves the sanatorium with his disease arrested, his struggle is not over and he must apply and change the knowledge of his disease, acquired in the sanatorium, so that, gradually, the forerunner knowledge is replaced by that rare and later acquisition, wisdom. Knowledge, I might add, is what comes from without to cause us to act, while wisdom is assimilated knowledge and compels a man to act, so to speak, reflexly and intuitively.

The sanatorium, however, has other functions than treatment. It must be given credit for starting the anti-tuberculosis crusade. Altruism, which grew out of the maternal love of offspring, and of her twin sister, sympathy, led to the founding of all hospitals and more or less indirectly to the establishing of the sanatorium. A broadening of these virtues was the beginning of the attempts to prevent disease. The sanatorium workers have been ever at the front in all endeavors to limit the ravages of tuberculosis. The explanation of such interest is not far afield,—it lies in education and an attempt to get at facts. Other agencies, which my fellow speakers will describe, produced statistics which showed the great extent of the disease, and, thanks to the educational work which the sanatorium had done, many men appeared to use these agencies.

We have seen that the sanatorium awoke

public interest in a disease which, due to faulty and late diagnosis, was considered absolutely hopeless. This was brought about, as I see it today, through two factors due in great part to the sanatorium. First, the public was educated to know that pulmonary tuberculosis in a far advanced stage deserved the gloomy prognosis it had always received. They began to demand, as this truth became more widely known, that an early diagnosis be made. The medical profession in part has been keenly aware of this fact for some time, and I now get patients in whom I have at times great difficulty in detecting any signs of pulmonary tuberculosis. The second great factor in this enlightening of the public is the leavening influence of the patients who have been educated at the sanatorium. Some of them feel the call and in season and out they talk and preach prevention of tuberculosis. The graduates of different sanatoria vary in this respect, due to how forcefully the physician in charge of the sanatorium has impressed this duty upon them. In any community the assistance that two or three or even one patient, who has had his disease arrested, can render to one or two live physicians in the struggle against tuberculosis is inestimable. The successful struggle in the eradication of any disease must be based upon the firm foundation of an educated, an enlightened citizenship.

There is another function of the sanatorium to which I have never seen sufficient credit given. Disease to nearly every layman and to many physicians means "acute disease" and that only. When "disease" is mentioned, the picture is of acute pneumonia, in which the patient has recovered or is dead inside of three weeks, or, again, of typhoid fever, where, unless relapse supervenes, seven or eight weeks finds the patient at work or buried. The ordinary medical man has neither time nor patience to treat chronic disease. Now, one of the fundamental principles in the treatment of chronic disease, which has been clearly established by the sanatorium treatment of pulmonary tuberculosis, is the education of the patient about his disease.

The sanatorium started the stone rolling, and today we see the same principle taken up in other chronic diseases. Already it is saving many formerly doomed to death from dia-

betes. When a child of ten can test his urine and keep it sugar-free by proper regulation of his diet, it behooves us to apply the principle to many other chronic diseases. The germ of this truth sprang from the sanatorium treatment of pulmonary tuberculosis. The time has come, gentlemen, and gone when that type of physician who speaks in an oracular manner, who can brook no suggestion, who is jealous of a nurse better versed in details of treatment than he, can be smiled at.

The sanatorium idea has been modified in America in many ways in the attempt at prevention of tuberculosis. For some years these institutions many believed had apparently the same aim as the hog-pen, viz., to control and fatten its inmates. That such a course means a defeat of its purpose is now clear. To send a mass of soft fat, propelled by flabby muscles, to physical labor of any kind is not only inexpedient, but cruel. The sanatorium must attempt to arrest the disease as well as to fit the man for his future work, for he must in many cases return to work and, alas, only too often to insanitary surroundings. Hard work, questionable food, and rest at night in a room which cannot be ventilated, means defeat for many. I mention this particularly, for every worker in the struggle against tuberculosis has heard of the "unteachable consumptive." The patient must support his family, he struggles to do so, and, owing to his surroundings, begins to grow worse. He recognizes it, and with failing strength come bitterness and carelessness. His family become exposed and, in many cases, the tubercle bacillus is implanted to develop possibly in later years in his children. Here the "night" sanatorium may be the means of saving the wage earner and his family. It should be established in every large center of population like Richmond and Norfolk, and offers the worker with arrested disease a chance to sleep outdoors, and, what I have never seen sufficiently emphasized, a place where he can (safely) perform his morning pulmonary toilet without endangering others. The value of these sanatoria cannot be overestimated. For those who cannot leave home, day sanatoria or day camps have been established, and a few maternity sanatoria, where those expecting to give birth to children can spend a few months before and after confinement, have been of great assistance. What is

the outdoor school but a further modification of the sanatorium idea?

I could continue, gentlemen, for some time but I will spare you. I must, however, before closing mention one more and I believe the most important modification of the sanatorium. The sanatorium is, as everyone knows, nothing but a hospital so constructed that its inmates can live continuously in the open air while well protected against the elements. The early workers in such institutions saw clearly that if by their fruit, if by their results, they should be known, it behooved them to admit only very early cases. This may have been justifiable at the beginning of the anti-tuberculosis campaign, but it was soon recognized that by such a course those who most needed nursing were excluded. About the same time the general hospitals began an attempt to exclude open pulmonary tuberculosis from their wards, and another door was closed. The next step taken was admission to some sanatoria of all patients who did not require nursing, for it was seen from various observations that the signs of disease in the lungs did not constitute the best basis for admission to municipal sanatoria. This was an entering wedge, and today, gentlemen, thirteen States have passed laws authorizing the erection by the counties of tuberculosis hospitals. These institutions differ from the sanatorium only in that they admit patients in any condition. Their aim is primarily the prevention of disease and, secondarily, its cure. They keep patients as long as they wish to remain, for they argue that every day in the hospital is a day less of exposure for the family of the patient. In Connecticut, where my confrere, Dr. Lyman, is doing such splendid work, they have built two or three large tuberculosis hospitals or sanatoria for just this purpose, and Massachusetts has done the same. The sanatorium has been the model for the class of institutions most successful in the prevention of tuberculosis. Build them on the plan of an ordinary hospital and their usefulness is greatly reduced, for every patient wishes to have a chance for recovery. "Hope springs eternal in the human breast."

In conclusion I might say that—

The sanatorium first proved that pulmonary tuberculosis could be permanently arrested or

cured and the sufferer returned to his home and his activities.

The sanatorium remains the best institution for the treatment of pulmonary tuberculosis.

The sanatorium has been the starting point of the anti-tuberculosis crusade.

The sanatorium has educated the public in the necessity for early diagnosis.

The sanatorium was the first to recognize the importance in chronic disease of the education of the patient.

The sanatorium has been modified to aid the worker, to aid tuberculous women about to become mothers, to give health and education to the sickly school-child, and, most important, it has served as a model for the hospitals which play such an important part in the anti-tuberculosis campaign of today.

THE DISPENSARY IN A TUBERCULOSIS CAMPAIGN.*

By LOUIS HAMMAN, M. D., Baltimore, Md.
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Hopkins University.

In glancing over the program of this morning's meeting, I noted that there are many papers to be presented, and I decided to make my remarks brief. This decision, I am sure, will be agreeable to you, and it is quite satisfactory to me because the particular phase of the tuberculosis campaign that I am called upon to present, requires no apology and no detailed exposition. Your Chairman asked me to discuss the position and the value of the tuberculosis dispensary because I have had some experience in developing such an institution, and I accepted the invitation gladly, feeling that it would be but little effort to speak upon so familiar a subject. However, when I came to decide upon just what to say to you, I was embarrassed to choose an appropriate topic. You are all conversant with dispensaries and their aims, and, although the aims of the tuberculosis dispensary are somewhat different from those of the general dispensary, still, from your knowledge of tuberculosis and the anti-tuberculosis campaign these differences must be at once apparent. Thus, the position and value of the tuberculosis dispensary become transparently obvious and need no extended presentation to make them clear. On the other hand,

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these very differences introduce problems of organization and management that deserve minute consideration. It would be simpler to speak for hours upon these details than to present briefly the salient features of the tuberculosis dispensary, but such a discussion could have interest only for those planning tuberculosis dispensaries or actively engaged in their direction. I must choose, therefore, simply to repeat already well-known facts and patent conclusions in the hope that repetition may further arouse your interest and lead you, while considering the best way of attacking tuberculosis, to lay emphasis upon an institution that I am convinced deserves the widest adoption.

It is impossible for me to imagine an effective plan for combating tuberculosis that does not give the dispensary a prominent position. It is the central point of attack, the clearing house of all other anti-tuberculosis activities. It is the station where the tuberculous are discovered and the fears of those not infected are confidently dispelled. It is the doorway to sanatoriums, hospitals and other institutions. It is the councilor that advises and guides patient and family. It is the helping hand that brings relief to homes in dire distress. Allow me to point out briefly the details of some of the work.

1. The first task of the dispensary is to get patients. As far as my experience goes, this is the easiest part of the work, for, as a rule, a dispensary need only open its doors and announce its purpose to have patients flock to it. The nurse, who quickly wins the confidence of her patients, their family and their neighbors, is the main factor in building up and encouraging a clientele. However, the dispensary, to hold its place in the esteem of its patients, must do better work than the general dispensaries. Patients quickly learn where their interests are best served. The medical work must be more accurate; the patient must receive more considerate service than dispensaries usually accord; a strong personal relation must be established between the institution and the patient; results must be prompt and telling. I do not mean results in treatment but in diagnosing and directing and managing the patients. In a word, the conduct of the dispensary must be efficient and business-like, not casual and disinterested.

2. The most important function of a tuberculosis dispensary is to diagnose tuberculosis in an accurate and authoritative way. Patients come for advice and relief, and an adequate recognition of their condition must precede attempts at treatment or prevention. Physicians working in such institutions must be skilled in the arts of physical examination, which are difficult, and since diagnosis rests upon more than finesse in percussion and auscultation, they must have also wide experience to give them sound judgment. Early cases of tuberculosis should be recognized, and even in moderately and far advanced stages of the disease a discriminating diagnostic ability is demanded. There is not a field in medicine that requires a combination of so much skill and so much good sense as the diagnosis of early pulmonary tuberculosis. One can err almost as gravely from over-zealousness as from stupidity, and correct diagnosis hangs upon a fine balance.

3. A satisfactory diagnosis having been made, patients must then be advised, first, about an appropriate plan of treatment, and, secondly, about measures of prevention. The dispensary must be supplied with all necessary information concerning local institutions caring for tuberculous patients. More than this, they should, wherever possible, be the admitting station for such institutions. In this way the welfare of patients is expedited and the institutions are served in that they are supplied the particular material they desire. Thus early, moderately advanced and far advanced cases are quickly sent to their appropriate place. What a waste of time and energy if each institution has its separate examining station and patients are shuffled from one to another before finding the accommodations provided for them!

It will be impossible to send to institutions all patients found to be tuberculous. Those unable or unwilling to go must receive a measure of supervision in their homes. I do not look upon the treatment of tuberculous patients as a fundamental function of the dispensary. If the staff is large enough and enthusiastic enough, the treatment of selected cases will add great interest to the work. Ambulant cases may be managed without much additional labor but the care of patients in their homes, as well as in-

struction in preventive measures is the work of the nurse.

4. A tuberculosis dispensary could as well get along without doctors as without nurses. Her duties are as important as those of the physician. All the work in the home falls to her care. When the diagnosis has been made, she visits the patient and prepares him for admission to an institution or for proper attention in the home. The family is instructed in methods of prevention, and other members of the family are encouraged to come to the dispensary for examination. When the patient departs, the home is disinfected under her supervision. Upon his return, it is arranged for his reception. Throughout the patient's subsequent life the nurse is the guardian of his health and of the well-being of the family, bringing to them in a concrete and practical way the aid the dispensary has to extend and the lessons in proper living it seeks to enforce.

5. Tuberculosis is mainly a scourge to the poor, and so many economic problems are left in its wake that a tuberculosis dispensary more than any other, needs a well-run social service department. A patient is sent to a sanatorium but has not the clothing that must be supplied. Another is asked to give up his work and go off for six months or a year when a family depends upon his wage. Yet another, returning from the sanatorium, can work only part time, and suitable occupation must be found and financial assistance procured. A mother is ill and needs sanatorium care but cannot embrace the opportunity offered until the children are provided for in her absence. Almost every patient presents some such difficulty that must be investigated and taken care of before medical advice can be followed. Local conditions must decide who shall do this important work. In many places it falls upon the over-taxed nurse; in others, special social service departments exist. As a rule, it is inadvisable for the dispensary to give material aid to the patients. It should investigate these needs and work toward their relief in harmony with existing charitable institutions.

To summarize, the important things for a dispensary to do are to get patients; to make the proper diagnosis; to make the best disposition of the patients that local conditions permit; to instruct and guard the family; to smooth away the difficulties in the road to fol-

lowing medical instructions; to support the patient with advice and aid throughout his rough journey. These are the fundamental and essential functions of a tuberculosis dispensary. Still, though of secondary importance, there are a great many other things that the dispensary can do.

If the staff is large enough to allow leisure from routine duties, there are many clinical problems that may be profitably studied. If the funds are sufficient to meet the expense, the establishment of a laboratory will make possible a more thorough study of the patients, and investigation of some of the numerous experimental problems the disease presents. Although extensive investigations be not undertaken, nevertheless many minor questions of interest may be probed, and familiarity with laboratory aims and methods will stimulate interest and zeal in the clinical work. A reading room with a library of important books upon tuberculosis and current monographs and journals dealing with the latest advances in the subject will be a valuable addition.

I am sure this hasty review of the work done by the tuberculosis dispensary has added little to increase your information and nothing to strengthen your conviction of its value. However, as I stated when beginning my remarks, the importance of the dispensary in the fight against tuberculosis is so obvious, particularly to a medical audience, that I believe I would weaken its position and undermine your conviction were I to plead vigorously for a recognition already so generously accorded. The dispensary by itself cannot accomplish much; its value consists in centralizing all other tuberculosis agencies and in bringing these benefices directly in touch with the patients and situations they are meant to reach. A community wishing to attack tuberculosis must have publicity bureaus, nurses, sanatoriums and hospitals, but none of these agencies will be fruitful without the intermediary services of the dispensary.

There are heavy demands upon public and private funds for tuberculosis warfare and it is important, since dispensaries should be many, that those supported by State or municipal money should be economically equipped and managed. To meet the fundamental demands of a tuberculosis dispensary requires only a simple and inexpensive equipment—a few rooms

plainly furnished, a doctor and a nurse. As the work expands, more rooms, more physicians and more nurses must be added. When it is possible to form such an association it is desirable to establish the tuberculosis dispensary as a part of an existing general dispensary. Many patients are then quickly transferred from other departments for diagnosis and direction, and the association with other departments is stimulating and broadening to the physicians and, when consultations are required, an advantage to the patients. Besides such State or municipal dispensaries, I think there should be in large cities, particularly in connection with medical schools, tuberculosis dispensaries founded upon a broader and more liberal basis; dispensaries that will serve the community in a practical way by caring for patients, but which will at the same time be a center of advanced scientific information about tuberculosis, a source adding to the stream of knowledge of the disease and a school for training medical men in the essentials of diagnosis and treatment. There is no other disease so widely prevalent and of such importance to the patient and the community and that is so indifferently and so inadequately taught in the medical school. The tuberculosis dispensary will be an important factor in remedying this deficiency.

In conclusion, as an illustration to my remarks, I will tell you very briefly of the development of tuberculosis dispensaries in Baltimore. I do this not to urge what has been done there as a model to be followed elsewhere. The present state of affairs is the outcome of a gradual growth, and includes many undesirable features that such slow growth entails. Each community has special conditions that must be met in a special way. The general objects of the tuberculosis dispensary are clearly developed and firmly grounded: how best to reach the goal is a local problem.

In 1900, Dr. William Osler founded the Leanne Society for the study of tuberculosis and instituted special observation of the tuberculous cases in the medical dispensary. In 1903, Mr. Henry Phipps provided funds for establishing a special department for the observation and care of tuberculous patients, and through the interest of Mr. Victor G. Bloede, a nurse was engaged to visit the tuberculous patients in their homes. The Phipps

Dispensary was opened in 1905. In 1906, a special out-patient department for the tuberculous was established at the Maryland University Hospital, and, in 1907, another at the Christ Church Dispensary. In 1912, the first municipal dispensary was started, and two more have been added since. Thus, Baltimore has had three types of institutions, two connected with large hospitals and medical schools, one a private philanthropic enterprise, and three municipal dispensaries. The aims of these institutions have been somewhat different. All have sought to further the general tuberculosis work, but, whereas this has been the sole object of the later two types of dispensary, the first type has made teaching and investigation an equally important part of its program.

Twelve years ago there was but one nurse in the city connected with the Phipps Dispensary. Later, a second nurse was appointed under the direction of the Instructive Visiting Nurses' Association and soon thereafter another was added to the staff of the Phipps Dispensary and three more to the Visiting Nurses' Association. The nurses divided the city into separate districts, visiting the tuberculous patients reported by institutions and private physicians. In 1910, sixteen nurses were appointed by the municipality, and this number has recently been increased to eighteen. These eighteen nurses now visit all the tuberculous poor in Baltimore, working in close relation with the private and municipal dispensaries.

During the first years of the Phipps Dispensary there were but meager institutional accommodations for tuberculous patients. Eudowood, a small sanatorium near Baltimore, was alone available, and it accepted only early cases. In 1905, the Municipal Hospital was opened for advanced cases; in 1908, the Jewish Hospital at Reisterstown, for early and advanced cases, and the Bloede Hospital at Eudowood for advanced cases; in 1909, the large State Sanatorium at Sabillasville for favorable cases, and in 1913 the enlarged State Sanatorium, accommodating over 400 patients in all stages of the disease. The Phipps Dispensary is the admitting station for Eudowood and the Jewish Hospital, and all the dispensaries admit directly to the State Sanatorium and to the Municipal Hospital. The Phipps

Dispensary now enrolls over 1,200 patients each year, and nearly 8,000 visits are registered.

It is difficult to estimate with precision what benefits have come to the community through its tuberculosis dispensaries. Their value cannot be satisfactorily demonstrated or accurately expressed. As I have said, their purpose is not to get results directly. As concerns the treatment of tuberculous patients, they cannot compete with sanatoria, and, since our hope to make home supervision an effective measure of prevention has been disappointed, they in no way replace the hospital for patients with advanced disease. However, there are a few concrete successes that may be enumerated.

1. Without the dispensaries registration would be a failure. Over half the patients registered are reported from the dispensaries.

2. They have popularized anti-tuberculosis measures and, through their consideration for the patients and personal interest in their welfare, as well as through their skill in diagnosis, have gained the confidence and esteem of the people. There is no lack of patients; the demand is always beyond the normal capacity of the dispensary. Furthermore, the confidence inspired leads patients to follow as far as possible the measures proposed.

3. Skill in diagnosis has been highly developed, and owing to the interest of the nurses, there has been abundant material for its practice. About half of the patients coming to the Phipps Dispensary turn out to have no active tuberculous disease.

4. All tuberculosis institutions have a waiting list. There are more demands for accommodation than can be met.

5. Every patient is promptly visited by a nurse, the family instructed, and as many members as possible brought to the dispensary for examination.

6. At the Johns Hopkins Hospital there is a special social service department to investigate economic conditions and apply appropriate remedies.

7. Finally, and most important of all, a feeling of confidence and appreciation has been cultivated amongst the people who now are ready to accept and follow the advice of the tuberculosis doctors and nurses. Some years ago it was impossible to persuade more than a few advanced consumptives to go to hospitals.

At the present time, so general has become the knowledge of anti-tuberculosis aims and measures that when sufficient and satisfactory accommodations for advanced cases are provided there will be waiting hosts of intelligent and instructed patients ready to avail themselves of the offered opportunity.

I have purposely refrained from discussing the general aspects of the tuberculosis campaign, even though it has been difficult for me to do so. Naturally, I have acquired very definite views about the value of anti-tuberculosis measures, and these views are lively enough to demand utterance. I have denied them recognition because they do not directly influence an estimate of the purpose or value of the tuberculosis dispensary. As an institution the position of the dispensary is assured because its value is not dependent, as is the value of the sanatorium, for instance, upon a precise and, therefore, perhaps erroneous measure of certain factors in the anti-tuberculosis movement. If the treatment of tuberculosis as a broad sociological measure of repression is demonstrated to be futile, then the importance of sanatoriums dwindles in proportion to the degree of futility. Not so with dispensaries which serve equally well all factors in the campaign and whose services shift with the changing stress upon varying views and aims. Its purpose commits it to no rigid action, for it serves to spread and facilitate the function of those principles that science and experience proclaim at any specified time to be best adapted to meet our purpose.

714 Park Avenue.

VISITING NURSES IN THE FIGHT AGAINST TUBERCULOSIS.*

By DAVID R. LYMAN, M. D., Wallingford, Conn.
Superintendent Gaylord Farm Sanatorium; Member of
Connecticut State Tuberculosis Commission, etc.

Ten years ago when our tuberculosis campaign was just at the beginning of its remarkable development, our papers on tuberculosis were largely devoted to emphasizing the fact that sanatorium treatment actually *did* cure or control early tuberculosis. The public mind having once grasped this truth and visioned a hope of emancipation from the fatalistic attitude of the previous centuries, more and more

*Read before the forty-sixth annual meeting of the Medical Society of Virginia, at Richmond, October 26-29, 1915, as a part of the Symposium on the State versus Tuberculosis.

of time and thought was devoted to the problem, and we soon began to have it said that we could never control tuberculosis by means of the sanatoria alone; that the advanced cases also needed care and were more of a menace to the public health; and we began our campaign for advanced hospitals.

This movement in turn brought to light many cases who could not be cared for in institutions, for, as soon as there was any relief in sight, the number of cases which were brought to the public notice so far exceeded the number of available beds that it became evident that further means must be devised in order to reach them.

The result of this was the establishment of the tuberculosis dispensary. Its object was to provide trained advice and supervision for carrying out at home the treatment which had proven so valuable in the sanatoria. The dispensaries were conducted by specially trained physicians having at their command nurses who were sent out to the patients' homes to see that the physicians' orders were carried out.

Starting as merely an adjunct to the dispensary, the visiting tuberculosis nurse has found a field open to her which is untouched by any other worker. Entirely apart from her relation to the dispensary she furnishes the one reliable available agency for studying the tuberculosis problem at its core—i. e., in the homes of the people and in their places of occupation; and has proven herself our most valuable force for educating the public and enlisting public sentiment in the fight. In other words, the tuberculosis campaign has been a peculiar one in that we have started with the incidental equipment of a thoroughly developed campaign and gradually worked backward to its fundamentals.

In discussing the value of visiting nurses in your State campaign, I wish to try to place them before you, as I see them; as of fundamental, not incidental importance. I believe that if you will but profit by the experience of other States and incorporate this feature in your work now, that it will not be long before you regard it as the most valuable force in your possession. In fact, if I were compelled to start a campaign with but one of our four great agencies—sanatoria, hospitals, dispensaries, or visiting nurses,—I should unhesitatingly choose the latter; for it would follow as the

night the day that their work would in turn produce the other three, and there cannot be a shadow of a doubt but that you need all four!

Your vital statistics show that in 1914 there were 3,727 deaths from tuberculosis in Virginia. Estimates as to the number of living cases are usually based on ten to each death. This would give you over thirty-seven thousand cases in your State, the majority of whom are probably serenely unconscious of the fact that they have the disease. It takes but the slightest consideration to convince anyone that your excellent sanatorium at Catawba and the limited accommodations you can provide for the advanced cases can never more than scratch the surface of a problem of 37,000 people. Aside from its individual results, the sanatorium can at best merely aid in the general education and in focusing public opinion upon the question. The only agency that comes anywhere near getting in close touch with the real problem is the visiting tuberculosis nurse.

Let me try to review for you the several lines in which her work is of paramount value, assuming, of course, that the nurses employed have first had special training in tuberculosis as well as in social service work.

First.—She is our very best agency for finding cases, most of whom, as I said above, are blissfully unconscious of their condition. Mr. Homer Folks, of the New York State Charities Aid Association, in his report on "A Seven Years' Campaign" (i. e., in that State outside of New York City), very aptly says:

"The most valuable function which the trained nurse has come to perform in the general State-wide movement is that of finding out where the tuberculosis patients are while they are still alive. Heretofore in an overwhelming majority of instances they only came into notice when the death certificate was filed."

It is an old and sadly familiar story to the general practitioner that the average case of tuberculosis does not consult a physician until the disease is well advanced. Many cases go unrecognized for years. They may feel below par, but do not deem it of sufficient importance to seek medical advice. In her work of friendly visitor—and please note the emphasis on the word "friendly,"—the nurse usually hears in addition to the details of the patient's troubles, the intimate personal history of the rest of the household as well as that of a fair proportion of the neighbors. After she has visited one or two houses on a street she usually knows who

else on that street has a cough or is run down or has had hemorrhages. The public health nurses of New York State have found on an average of five new cases for every one registered. I should say, that in our work at Wallingford fully one-half of our early curable cases are sent to us by the visiting tuberculosis nurses of three nearby cities, and many of these cases have never been near a doctor. In Frederick, Md., the local tuberculosis association decided in 1909 to employ a nurse. They secured a graduate nurse, but one who had had no training in tuberculosis work or in social service. She resigned three months later because there was nothing to do. The County Medical Society was consulted and it appointed a committee to consider the matter and they advised the association that there was no need of a nurse at that time. Some of the members, however, persisted in their belief in this need and one year later were so fortunate as to secure a nurse whose training and inclination peculiarly fitted her for the place. At the end of sixteen months this nurse reported over two hundred cases under constant observation, and this in a town of 12,000 inhabitants.

Second,—The tuberculosis nurse can do great good in persuading patients to go to the sanatoria or hospitals for treatment. Unfortunately, most patients refuse to do this when first advised to by their physicians, and straightway go in search of another doctor who will give them what they think is more sensible advice! The nurse in her frequent visits can influence the family as well as the patient, and is usually able to cite other cases from among the friends of the patient who have taken sanatorium treatment with good results. She induces many patients to go to the sanatoria who otherwise would develop advanced tuberculosis and die at home. It takes a good deal of persistence and persuasion to get most patients to a sanatorium, and a good nurse is the most persistently persuasive agency I know of.

Third,—The work in which the visiting nurse first demonstrated her value was in supervising home treatment for cases under the care of the dispensary. As Dr. Hamman's paper has dealt with this, I will not go into the details of the work. He has shown you how thoroughly such home treatment can be carried out with the aid of a good nurse. Here, then, is the means to which you must resort for the

care of the large proportion of the cases in your State. With a dispensary and enough attendant nurses, any community can give fairly adequate care to all its tuberculous cases. I say 'fairly' adequate because I do not think that home treatment even under the most favorable conditions is ever quite as good as that in a sanatorium. You lack the presence of the other patients as object lessons with which to drive home your instruction, and you also have to contend against the favorite nostrums of the interested neighbors. Home treatment is, however, of great value when carried out under direct supervision, and the visiting nurses are the only available means for furnishing this supervision, especially for the patients in the rural districts. Here living and housing conditions are often worse than in the city slums and the educational facilities of the cities are lacking. The fresh air, the sunshine, and, as a rule, the wholesome food are, however, more readily available and the work of the nurses is simplified to that extent. The work of the rural school nurse has shown what an enormous field for public health nursing there is yet untouched in these districts and this is especially true as regards tuberculosis.

Fourth.—The visiting nurse has more power in the campaign for the prevention of disease than any other agent. With the better class of patients, her visits, her instructions as to care of sputum, etc., and the disinfection done by her or by the health officer at her request, are all cordially welcomed and the menace of infection removed from the children in these houses.

She has, however, to contend against the patient of limited intelligence or education and the criminally careless consumptive whose presence is rarely discovered except through her work. For these two we *must* have institutions where they can be sent and where the criminally careless can be kept under restraint.

Fifth,—A corps of visiting nurses would be of great value in connection with the work of your sanatorium. After the patients have returned to their homes and resumed active lives, their ultimate recovery depends upon the care they take of themselves for the next few years. Three-fourths of the relapses among our discharged cases are due to carelessness. There are few patients who are not better off for supervision. In fact, it is human nature to be on

one's good behavior when one is conscious of being watched. If each town had a tuberculosis nurse to whom Dr. Lloyd could report all patients on their return home so that they could be kept under regular periodical observation, the increase in the percentage of arrested cases and the consequent increase in dollars and cents of the value of the sanatorium to your State would more than repay the cost of the nursing.

In order to discover just what was the value of a sanatorium's work in dollars and cents, I kept track of all discharged patients at Gaylord Farm for a period of ten years. We had accurate records of all but twenty-two of our eleven hundred and twelve discharged patients: we knew the work that they had been doing, their wages, and the amount of time they had lost. We found, to be brief, that while the equipment and maintenance of the sanatorium had cost a total of \$400,477 in ten years, the discharged patients had already earned \$1,339,000. The value of this work is, as you see, a very real one, and the follow-up work of the tuberculosis nurse transforms your discharged patient from a speculation to a conservative investment.

Sixth.—The visiting nurse is our best means of arousing public interest in the work. She is closely in touch with its appealing personal side and has to learn to present this at its greatest value in order to secure aid for her needy cases. Most people are oblivious of the needs of the situation, but are readily interested by an actual demonstration, such as a nurse's work can always afford. Miss Durkee, the Director of the Division of Public Health Nursing of the State of New York says that—

"The tuberculosis visiting nurse employed through Red Cross seal money has demonstrated what a socialized visiting nurse can accomplish, and many of the nurses now employed by municipalities are the ones whose work so commended itself to local boards of health that the municipal appropriation was secured to make permanent the work and release voluntary funds for further progressive demonstration."

Seventh.—The visiting nurse is our only readily available agency for making an accurate study of the tuberculosis problem. It is in this line that most of our work must be done, and it is on this account that I urge you, no matter along what other lines you develop your campaign, that you employ as many thoroughly trained tuberculosis visiting nurses as you can

afford and let them help you study your problem, so that you may get the greatest value from your expenditures.

I can readily illustrate:—A few years ago we advised all patients to follow open air work. Now we have it proven that patients with fair home conditions do best at their old occupation and do better indoors than out. We are accustomed to consider this or that occupation as predisposing to tuberculosis, yet in our statistics have taken little account of family history, house infection or living conditions. In the *British Journal of Tuberculosis* for July, 1915, A. Maxwell Williamson contributed an article on "Housing and Tuberculosis" that was very disturbing to some of our theories. He showed, in a tabulation of the tuberculosis death-rate of Edinburgh, Glasgow and Greenock, that the rate bore a distinct ratio to the type of house, over 70 per cent. of the deaths occurring in houses of three rooms and under, and the cases in any ward or city increasing in direct proportion to the number of such small houses it contained. Are Dr. Williamson's studies accurate, and do they apply to Virginia as well as to Scotland? If so, our money to prevent tuberculosis should be spent almost exclusively in improving housing conditions. There is great need for an accurate study of the conditions influencing the development and spread of tuberculosis, and this study, to be of real value, must be made in the homes and in the factories. We must know as to each case not only what was the occupation and under what conditions the patient worked, but also the housing conditions, the living conditions, and the personal habits as well as the family history and the probability of exposure in the home: and this information cannot be accurately gathered from questioning the patient, but must be the result of personal investigation. It would pay any community or Commonwealth to institute such a survey of its tuberculosis problem. When we can give the true answer as to the reason for the difference in the tuberculosis death-rate in two neighboring towns, or tell just why—as in a certain town in my State—the men of one nationality die within ten years of beginning a certain occupation, while those of another nationality die of old age though employed in the same factory and at the same work,—when we can answer such questions as these, we will be commencing to comprehend

just what our problem is. No one can gather this information for us as can the visiting nurse, and it alone would make her indispensable.

Eighth.—In common with all Southern States, you have an especial need of visiting nurses in that you have the problem of your colored population to deal with, with its death-rate double that of the white in the rural districts and almost treble the white race in the cities. This problem must be studied and a solution found before you can hope to control tuberculosis in Virginia. If there is one thing in which we are agreed, it is that early childhood is the time of greatest danger of tuberculosis infection. With your kitchens, your laundries and your nurseries in the hands of a race whose death-rate from consumption is treble that among yourselves and to whom the word hygiene conveys absolutely no meaning whatever, where, may I ask, should your tuberculosis campaign logically begin?

I have met those who felt that I exaggerate the importance of this problem. I had one friend on the medical faculty of a Southern university who had incipient tuberculosis and on account of this had his attention fixed on the protection of his three children against possible infection. He told me that in one year he discharged eighteen cooks and housemaids because they had tubercle bacilli in their sputum. Can the importance of such a menace which exists more or less throughout the South be exaggerated?

If you undertake, as you must, the solution of the problem of the tuberculous negro, his peculiar but well-known aversion to institutions, will make it impossible to study him in sanatoria or in hospitals. You must reach the negro in his home, as a friend and not as an official, and must study there the conditions which determine his great susceptibility to tuberculosis before you can ever hope to control the disease in your State, and from the very nature of the work, the only agency that can possibly succeed at it is the visiting tuberculosis nurse.

I have tried to give you in brief my reasons for claiming that the visiting nurse is of fundamental importance in our campaign. Her work has probably reached its greatest development in New York State, first under the State Charities Aid Association, and, latterly, under the State Department of Health. There are now

employed in that State, outside of New York City, 245 public health nurses, and I quote you no less an authority than the Commissioner of Health of the State of New York, Dr. Herman M. Biggs, for the valuation of their work as being "at the foundation of all constructive public health work and indispensable for its proper development."

THE CONTROL AND SEGREGATION OF THE ADVANCED POOR CONSUMPTIVE IN ITS RELATION TO THE ERADICATION OF TUBERCULOSIS IN VIRGINIA.*

By CHARLES L. MINOR, M. D., Asheville, N. C.

At a time when so large a part of humanity is trying to destroy the other, it is encouraging to an optimist to see a gathering like this whose aim is so purely altruistic and whose members are, this morning, especially occupied in trying to circumvent, and if possible to eradicate, one of the world's greatest plagues.

But, encouraging as it is to see so many doctors so occupied, it is far more promising when we note that we have with us a Committee from the Legislature of this dear Mother of States, that noble Old Dominion we all love so much and which we wish to see in the vanguard of every good movement whether it be philanthropic or hygienic.

We doctors, however altruistic we may be, are naturally most interested in curing our individual patients, but the point of view of the philanthropic laymen is the deeper one, and much as they must rejoice over an invalid's cure, their real aim is not so much the good of the individual citizen as the improvement of the conditions of all citizens. Hence, problems of prevention appeal to them much more insistently than any others.

If I am right in this view, then the subject on which I am to address you should appeal to our legislators even more than those important ones on which you have just heard from men who speak with highest authority.

In the war against tuberculosis there are, analyzed to their fundamentals, but two aims,—prevention and cure.

Cure is indeed a noble aim. To take the sick citizen, on whom is fastening the grip of a dread disease, which, if not recognized early

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and treated efficiently, will surely destroy him and, in too many cases, pauperize his family, and to restore this man to health and to working efficiency with a new view of life and of his place in it, such as is acquired by those undergoing treatment for tuberculosis, is a splendid task for the physician, the philanthropist and the State, and this value is not easily overestimated. Doubtless many of those here today are the beneficiaries of the great movement for the cure of tuberculosis and feel a deep and inextinguishable gratitude for what the science of medicine has done for them. But, while prevention is not so striking, while its results are not so quickly nor easily seen and have to be brought to light by the labors of the statistician, while the man who has escaped infection owing to the State's hygienic activities, directed by medical science, does not usually realize that he has escaped anything and hence cannot have a heart full of gratitude, nevertheless, every thoughtful person who considers the matter will plainly see that prevention, in its beneficial effects on the community and the State, is so much more far reaching and important than cure, so much more economically effective, that the latter, as an aim for the State, sinks into relative insignificance, though, of course, it cannot be neglected.

Cure affects units only of the body politic and our utmost efforts leave a majority of the tuberculous sick of the State without treatment. Prevention, on the other hand, powerfully affects the whole body politic, increases the expectancy of life of every citizen, keeps workmen at work and well and useful to the State, instead of trying to restore them to the tasks from which, by disease, they have been torn. If, then, I am right, and none of my auditors who have studied the subject will deny it, how is the State to attack this great problem of prevention?

Find out how tuberculosis is spread in a community, and we have taken the first step in its prevention.

As my hearers know, science has shown us that the disease is brought about by the lodgment, in sufficient numbers, and subsequent growth in the body, of the tubercle bacillus, a microscopically small plant or fungus which, entering the body chiefly through the respiratory, digestive or lymphatic systems and lodging by preference in the glands around the

roots of the lungs, does not develop immediately, but lies latent in the body for a longer or shorter period of time, developing into an active disease anywhere from one to forty years later, at such a time as the body of its host is lowered in vitality by sickness, starvation, bad hygiene, mental worry, dissipation, or what not. Further, it is probable, if not certain, that the large majority of people are infected in childhood when the body is most liable to easy infection. Thus, the prime cause of the disease is the germ, and, however unfavorable the conditions under which the person lives, the disease cannot develop unless the germ has entered the body.

Now, while there are several methods by which the tubercle bacillus can be disseminated and gain entry to the body, the chief source of the germ is found in the sputum or spit of consumptives.

In early and favorable cases the organism is often entirely absent from the sputum or only present in very small numbers, but in the sputum of advanced cases it is found in untold millions; many of these, it is true, are dead, but with an abundance of live ones to do their harmful work. In view of this, it will be easily seen that on the habits of sputum disposal of the consumptive, especially of the advanced cases, depends the amount of infectious material spread through the world; and it has been demonstrated that, in proportion as we are able to control the sputum disposal of such advanced cases, we are able to greatly lessen the incidence of this disease. Could that control be absolute, could we destroy every bit of germ bearing sputum which human beings spit, we could come very near to eradicating the disease within the life of this generation. Of course there are other means by which the germ is spread, chief among which is the milk of tuberculous cows, which, if unboiled, plays an important role in the infection of babies and young children, and which needs to be carefully watched for by doctors and parents, but every other source of the germ sinks into insignificance compared to human sputum.

If, then, the problem of prevention is the State's chief problem, and if sputum control must be the center of our preventive efforts, then patient control, the management of the tuberculous patient, especially as to his habits

of expectoration, should be the chief aim and object of all intelligent anti-tuberculosis efforts.

But if it were necessary to control by law every tuberculous patient in the State, the task would be an almost helpless one, which is clear when we recall that from one-tenth to one-seventh of all deaths are from tuberculosis, and that, therefore, the number of the tuberculous sick in the State at any time is a very much larger one.

Fortunately, the many patients of the more fortunate classes, not necessarily the rich but those with means enough to get proper care and surroundings and who are by custom trained to decent habits of spitting and of general hygiene, do not demand the attention of the State. Their habits of cleanliness, as I have said, are good; they have physicians to watch over and to train them, and more and more of our profession are learning how to control and train these patients who have hitherto been neglected and untaught, so that, even if the case is an advanced and hopeless one with profuse germ-laden sputum, it has been amply demonstrated that, *with properly carried out precautions*, these cases can be made harmless to their families and their neighbors.

The problem has not then to do with the well-to-do or even those of moderate means; it is first and foremost the problem of controlling and training the poor consumptive, especially the poor advanced consumptive, preventing him from acting as a constant source of dissemination of the poison through the community. That this is no imaginary peril has been scientifically demonstrated in New York, Philadelphia and other great cities, where whole blocks of tenements for the poor have become so infected with tuberculosis by the filthy habits of their sick inmates that each new family moving in after the sick ones, becomes infected, often within the first year, the disease thus being passed from family to family through a long succession of years. These infected and fatal buildings are known to the local Health Boards as tuberculosis blocks.

Those of you who have ever done any medical or philanthropic slum work, and to the honor of our profession be it said these two sorts of work go ever hand in hand, will not wonder at such things, knowing very well how our submerged tenth lives. I do not speak merely of our beggars and down-and-outs, but

equally of the poorer class of workmen and workwomen, and of our hosts of negroes whose dirtiness and ignorance is rivalled by our foreign immigrants. Can you, who have seen it, ever forget the condition of their rooms and of the corridors of their tenements, characterized by those four friends of tuberculosis—dirt, darkness, dampness and lack of fresh air: the filth never removed, the windows, when they have any, rarely or never opened, the dirty children playing on the dirtier floors on which the sick members of the family expectorate indiscriminately! Do you think you or your children could stay well under such conditions, forced to eat the horribly cooked food the tired, ignorant, overworked wife prepares! Could you educate *your* children properly so as to make them good healthy citizens and useful to the State in such surroundings as the tenement offers, with sickness around them, with no hygiene, with poor food, with none of that privacy the soul needs to grow in, and with bad examples and bad companions all around them?

But often enough the quarters are worse yet—some damp cellar below the street level, some dark cubicle with no windows at all, or one which opens on some narrow so-called airshaft through which none of God's fresh air and sunshine, which should be the right of all His children, ever comes. On a filthy pallet in the corner lies the father of the family in an advanced stage of consumption, coughing his life away and spitting over floor and walls, his wife and children toiling at piecework, while they inhale the omnipresent germs which will, before long, be making inroads on their poorly nourished bodies, painting their cheeks with the hectic flush of disease, emaciating their bodies and hurrying them on to the same end their father is approaching. Leave this poor man where he is and he will die surely, but, in dying, will drag down with him his family and often his neighbors. Remove him where he can get proper care till he dies, disinfect his tenement, watch over his children, and you will nip in the bud a focus of infection whose future possibilities for evil to the community are hard to over-estimate.

It is, then, eminently the duty of the State, as also its interest, to see that conditions such as these foci of infection which I have described and which exist everywhere through the State

today be brought to an end. It is impossible that our legislators, when they are shown the facts, should allow a canker like this to gnaw continuously at the vitals of the State's working men who form such an important part of its citizenship. And let me again repeat that the danger is not limited to the loss of the individual working man, but spreads to much wider limits through the infection of future workers, through the pauperization of the children of these workers, on whose health and efficiency the future prosperity of the State depends.

Let us see then what the State can do without assuming a paternalism alien to Anglo-Saxon instincts. Can it put the consumptive in its sanatorium? Certainly not, even if its over-crowded condition made that possible, for he has passed the stage when the sanatorium could possibly save his life, and he would only fill a bed which should be used by a hopeful curable case.

Shall he be referred to the anti-tuberculosis dispensary? It would be folly, for he is too sick to drag himself there even if that could do him any good, and while the already overburdened district visiting nurse might be sent to his home and could doubtless do some good by instructing his family, she cannot hope to successfully teach him those habits of decency and cleanliness he has never known, and which in any case, if they are to be carried out effectively, demand a certain minimum of means on his part which he has not got. Yet you cannot let him stay where he is if you expect to save his family and his neighbors from the contagion which he spreads. And you are forced to come to the only satisfactory solution of this problem, to give your Health Department police power to remove him from his home,—which, bad as it is, he will cling to desperately,—and place him in one of a series of specially constructed hospitals planned to care for just this class of advanced consumptive. Here, watched over by tender-hearted women (for when God developed the nursing instinct in humanity, He placed its seed in a woman's heart, and we men are at our best but poor, unsympathetic nurses, and the sick one longs for a woman's hand on his fevered brow and a woman's gentle voice at his ear), here rendered harmless to his fellow patients and nurses and to the community by skilful care and thorough sputum disposal, with enough medical atten-

tion to meet and control painful symptoms, visited at intervals by the family he loves and which he is now unable to harm, he can pass in quiet and comfort his last days, no longer a menace to his family and his State. The Health Board disinfects his home to protect future occupants, and watches his children to prevent as far as possible the development of already acquired infection. If such steps are well carried out, we will not have to wait long to notice its effect on the health and efficiency of the community.

But does the free American citizen protest that this infringes too much on the liberty of the individual? If so, why do we segregate our small-pox and leprosy patients, why is the scarlet-fever patient not allowed to walk around uncontrolled to spread his disease? Because all republics are founded on the theory of the greatest good to the greatest number, and sickness and death are such dire things that no sensible man doubts the right of the State and the community to defend themselves against them. Where small-pox and leprosy kill their tens, tuberculosis kills its thousands, and indirectly blights the lives of other thousands whom it does not infect. Its effect on the nation is a thousand times worse than that of any other disease and, much as I, a freeborn Anglo-Saxon, believe in the importance of the freedom of the individual and his liberty to develop along his own lines, it is universally recognized that that liberty is conditioned upon its not bringing harm to other citizens. Our legislators have shown themselves very clever in devising all sorts of laws to accomplish all sorts of good purposes and to cure all sorts of ills of the body politic, and when they recognize, as I believe they will, the importance to the State of this subject, they will evolve laws to meet the situation, too cleverly constructed to give opportunity to other clever lawyers to find loop-holes in them through which they can crawl.

And do you ask how and where these hospitals shall be erected, and what we can hope from them?

Take up the latter question first: Dr. Arthur Newsholme of England, one of the world's foremost authorities on the statistics and general problems of tuberculosis, has demonstrated in his book, "The Prevention of Tuberculosis," published by Methuen of London, and which I

would commend to your careful attention, that the death rate from tuberculosis declines in any community in direct proportion as the consumptives are segregated in hospitals for the care of advanced cases. His conclusions, backed up by impregnable statistics, are now universally accepted.

To quote him briefly, "In England and Wales in the period 1866-1903, segregation, measured by the fraction of total deaths occurring in institutions, has approximately doubled and the death rate from phthisis has approximately halved; in London, segregation has not quite doubled and the phthisis death rate is rather more than half." This book teems with interesting statistics and graphic curves, and is a mine of information, not merely for doctors but for sociologists and legislators. If, then, he is correct we can justifiably expect a notable decrease of the tuberculosis morbidity rate and, therefore, death-rate, as soon as the State is prepared to segregate and, as a result, properly care for its poor advanced consumptives.

The wisdom of thus checking tuberculosis at its source, instead of merely trying to cure it when developed, is, as a business proposition, too clear to need more than to be stated to my auditors. The loss to Virginia annually from tuberculosis is not measured merely by those 3,500 cases of tuberculosis which we know die yearly from this disease, though we know that this number is far from fully reflecting the amount of tuberculosis in the State. The real loss comes from the enormously greater number of those who are each year infected by these dying ones, who thus keep up and increase the annual toll of lives, thus sapping the economic efficiency of the State. I am not sufficiently familiar with the health conditions in Virginia to say what number of poor consumptives would, by the building of such hospitals as I have suggested, be prevented from further infecting their fellow citizens, but if 3,500 Virginians, or even more, die yearly from tuberculosis, it must indeed be a goodly number, large enough certainly to justify the expense the State would have to incur.

If the economically minded ask if it is not possible for these poor invalids to be cared for in their own homes, I would say most emphatically that it has been shown to be utterly impossible, though the district nurses have done much splendid work to better home conditions.

And those of you who know the habits of our poor, and especially of our negro poor, will have no illusions on the subject.

Granted, then, that such hospitals for advanced cases are a justifiable measure to be taken by the State for the safety of its well citizens, and for the comfort, and for rendering harmless its sick ones, where should they be erected and how should they be filled?

The first aim should be, while protecting the well, to comfort and solace the sick and dying, and any plan that rendered their last days less happy through deficient care could not meet the approval of our legislators.

Since the State is large, we must have enough of such hospitals so that the relatives of the invalids can, without too much effort or expense, have the opportunity of seeing them at intervals. Hence, the State should be divided into districts of not too great size, in each of which should be one such hospital. Of course, for the convenience of the patient's family, it would be good if each county had one such institution, but not only would this be too expensive, but the management would be too apt to be affected by county politics and its discipline interfered with by county influence. It would seem much wiser that the district plan should be followed and the hospital be entirely under State control.

Being for hopeless advanced cases, only a small proportion of which could be arrested and restored to the category of moderately advanced ones, the buildings could be less expensive than regular hospitals or than sanatoria,—the plans should be inexpensive, the administrative cost moderate, the chief cost being for a sufficient number of skilled and, above all, kindly nurses. The medical staff could be small, as palliation and euthanasia is all that is called for. Beauty of site should be carefully considered, for there are few who are not made happier even if sick and dying by the contemplation of the beauty of nature.

But granted that such institutions are provided, how shall the State find those needing its care? In this task the State Board of Health would have to assist,—the various city dispensaries, the visiting and district nurses, the city and county health officers, the local physicians, and all local philanthropic bodies and church and charitable organizations. For some of these it would be their duty to look for

those who should be removed from their homes for the good of the community; for others it would be a pleasure to help the State to help her poor and to get for them the blessings which such hospitals, well and humanely run, would confer.

At first, with most, and always with a certain class of unintelligent superstitious patients, such removal would be violently fought, but I cannot believe that they could get any legal or political backing for their protest and, if the hospitals were properly run under a humane superintendent, and kindhearted nurses, all but the most ignorant, chiefly among our negroes and immigrant foreigners, would be only too glad of the opportunity for kind and effective care they would offer.

As with every innovation, this system would at first meet with violent opposition from those sentimentalists who always place the feelings of the individual and his imagined sufferings ahead of his real good and ahead of the good of the citizens of the State as a whole. Such opposition must be expected, but after a few years of efficient management, and only such should be tolerated, if politics which is so painfully apt to try to insinuate its ugly head into all institutions, can be kept out, and if the care given the patient is what it should be, you may be sure that objections will die out in the face of proven results, and that such hospitals will be accepted as part of the regular order of things and appreciated fully.

Then we shall begin to see that reduction of tuberculosis in Virginia which Dr. Newsholme has demonstrated in European countries, and while, as I have said, those who through their means have escaped that infection that would otherwise have seized them, will be ignorant of what they have escaped and of the great debt they owe the State, its reward will be not perhaps their appreciation of her efforts, but the joy of her sons and daughters saved from a dread and fatal sickness, and kept busy and happy at their accustomed tasks from which tasks well and efficiently performed grows the efficiency of the State.

61 N. French Broad Avenue.

The Virginia Health Department has, in its November Bulletin, published a register of physicians in private practice with a list of health officers and a roster of registrars of births and deaths in Virginia.

DISCUSSION.

Dr. Stephen Harnsberger, Catlett, in opening the discussion, remarked that we had heard four valuable papers. The subject of "The State *vs.* Tuberculosis" showed that this was a problem that had to be carried into every home in order to win a victory, and State aid was necessary for this. When laymen take an active part in public health matters, it is splendid proof of the soundness and efficiency of modern prophylactic measures. We should bear in mind that Governor Stuart, statesman and patriot, who has ever stood for the best for the masses, is behind this campaign. The active and intelligent interest of Governor Stuart gives abundant reason for anticipating the active concern of counties and municipalities throughout the State.

The speaker believed the social and economic conditions of the day, with the poverty resulting therefrom, was largely responsible for the great number of cases. Formerly we depended chiefly on the control of individual cases by repressive measures, but reason tells us we should expect more good from preventive hygiene and sanitation in the home and home surroundings, as well as in all places of employment, lodging, etc. The further families are removed from excessive work and toil, provided they are safeguarded by wholesome physical and moral surroundings and influences, the fewer will be the fatalities from tuberculosis. Poverty is the lapse of the individual; its remedy is industry and economy. It cannot be legislated away. The causes of tuberculosis and the circumstances of its spread must be widely promulgated by States and municipalities; so that the truth shall reach even to the most ignorant, disorderly and necessitous homes.

He believes that tubercular infection is received by the individual prior to the fifteenth year of his life, and that all of the blame should not be laid at the door of bad environment. It should be brought closer home. Physicians are not without blame. The medical schools are delinquent. More attention should be given to the teaching of obstetrics and pediatrics. The mothers should be taught about the care of infants. Statistics tell us that twenty-five per cent. of all school children are underfed. This does not include the great

number who do not attend school. This means that over one-fourth of the children, who harbor the germs of tuberculosis, are ruthlessly, or ignorantly, or carelessly, or unavoidably made the potential victim of an easily preventable disease. The markets overflow with demineralized, chemicalized and innutritious food-stuffs, which seem especially chosen and liked by children and others who are short in appetites and funds. People should know that these emasculated foods are of doubtful merit and carry possible definite harm. It should be kept in mind that primary infection rarely occurs after the fifteenth year—never before the second month. When the people know that tuberculosis remains latent under improved health conditions, they will put more earnestness into this program of life. What is most needed is an extension of the campaign to every household, to the end that each family will feel itself in duty bound to look after its own premises and immediate neighborhood. The medical schools should be urged to make obstetrics and pediatrics hold first rank; and graduates should be required to have at least one year's training in modern maternity and pediatric work as a prerequisite to the practice of medicine. If children are born healthy, or made healthy and kept healthy, they will not have tuberculosis. Counties and large municipalities should have full-time health officers and visiting nurses to see after the hygienic and sanitary condition of the homes, places of employment, etc. The fault does not lie in Nature and Nature's ways—the fault is in the ways of man. Even the dog, if given a chance, will keep clean and keep to clean surroundings; nor will it eat and drink that which harms. Why should reasoning man do less?

In conclusion: Tuberculosis is preventable. Tuberculosis is auto-curable. Tuberculosis is simply the natural result of a breach of individual duty. The person who thinks, bathes, eats, drinks, works, rests and acts intelligently will not have tuberculosis.

Dr. John J. Lloyd, Catawba Sanatorium, said: In the beginning, I want to thank these gentlemen for their kindness in coming here to show their interest in helping us solve our problem. What they have said has so completely covered the ground that I feel there

is very little that I can add. They have laid before us methods which have been tried out in other States and found satisfactory, and have told us from their own experiences how the various branches in the campaign can be used to the best advantage.

It seems to me that the thing for us to do now is to formulate our own plan of campaign, modeling it along the line suggested, and use our greatest efforts immediately in an educational campaign in order to raise the necessary funds.

The sanatorium, as has been so fully shown, plays a most important part in the campaign. We already have the Sanatorium intended for early cases, and I believe that the present capacity of one hundred and sixty-eight beds will be sufficient to care for the early cases for several years at least, as during the year just closed we had only seven and three-quarter per cent. of incipient cases, or a total of 28 out of 361 patients discharged.

If it were possible for every patient in the State to spend a few months in a sanatorium early in their illness, I believe that the results would be tremendously improved and, if follow-up work could be done and each patient kept under partial supervision, the after-results would be tremendously improved.

As has already been said, most patients relapse because of carelessness—and a sanatorium is surely the best place for patients to learn what constitutes carelessness for them. Too many patients come to Catawba with the idea gotten from their home physician that they will be well in one, two or three months. We all know this is an impossibility, and while a stay of three months is too short, at the same time most patients carry away with them a good deal of useful information after such a brief stay.

The field of the dispensary is, indeed, a very large one, and every town in our State should have a dispensary with nurses in attendance. A dispensary without the nurse is, in my humble judgment, worse than useless, for a patient is too prone to think he is "taking the cure" when he visits his physician once a week and does just as he chooses the balance of the time. The dispensary advises,

the nurse supervises, and it is supervision that gets results in tuberculosis.

The value of the trained tuberculosis visiting nurse is inestimable. We surely need many of them in the State and, by enlarging our training school at Catawba, I think we could turn out enough nurses to fill this need. Personally, I believe that a nurse who has been a patient herself makes the best nurse in tuberculosis work, for she knows better how to handle her patients, and is, as a rule, more interested than the general graduate nurse. Besides having already gone through it herself, she appreciates the value of the details in the patient's daily life.

If the doctors of the State will lend their full and free co-operation, the work of these visiting nurses will be much simplified and the good accomplished largely increased. The tuberculosis nurse is taught that a hemorrhage, a pleurisy, a persistent cough in a person who is run down, or an unexplained loss of weight with vague digestive symptoms, means tuberculosis, generally speaking, and yet we hear of some physicians feeling that the nurse is meddling in their affairs when she advises such a patient to consult his physician for a diagnosis. Co-operation on the part of the physician is an essential, and I believe that the physicians of the State will gladly co-operate along these lines.

We need visiting nurses badly, and yet we must provide places where recognized cases can be treated. The cities should care for their own advanced cases, as some of them have already begun to do, and the advanced cases from the rural districts should be cared for in county or district hospitals. These hospitals for the advanced cases should be free and maintained by the cities, counties and districts. As already mentioned, the State has a Sanatorium with one hundred and sixty-eight beds for the early cases, and I believe this is sufficient for some years to come. The negro problem is, of course, our greatest one, and will prove to be the one hardest to meet. Only a very small per cent. of the negroes needing treatment can or will go to a sanatorium, but a place should surely be provided to which those who wish treatment can be admitted. The secretary of our State Association has been hard at work for months raising

money by private subscription to erect a sanatorium for negroes. It seems a pity that the voluntary offerings of the State should have to be used in erecting sanatoria of this kind. It would seem that the work of the State Association would more logically be educational and in keeping visiting nurses in the field, yet this was the greatest present need and seemed to be the only means for obtaining a place for negroes any time soon.

Our Legislature does not appreciate the immensity of this work, but I believe that if we could show a waiting list at Catawba of say three hundred, we would have a mighty strong argument for a generous appropriation this winter for the tuberculosis campaign.

In behalf of the campaign, I should like to ask the physicians of the State to send to the Sanatorium the applications of all patients needing sanatorium or hospital treatment, so that we may present a tangible argument for obtaining money to carry out a campaign which we, as physicians, recognize to be of such tremendous importance.

Is it too much to hope that at the close of the next ten years the campaign in Virginia will have made such strides that there will be no such thing as an uncared-for tuberculous patient, no matter whether he has means or not? It seems to me that this is the ideal that we should work for, and also that these gentlemen have shown us how to go about it.

Editorial.

The Medical Society of Virginia

Held its forty-sixth annual meeting in the auditorium of the Jefferson Hotel, Richmond, October 26-29, 1915, with a registered attendance of 601 members—the largest number to record their presence at any meeting in the history of the Society. There were, in addition, over 150 visiting ladies accompanying out-of-town members. Great credit is due the Local Committee of Arrangements, Dr. Thos. W. Murrell, Chairman, for their energetic efforts in promoting such a large gathering.

The first session was opened with prayer by Rev. T. A. Smoot, D. D., after which there was an Address of Welcome by Hon. Geo. A. Ainslie, Mayor of Richmond. This was responded

to on behalf of the Society by Dr. A. L. Tynes, of Staunton. Dr. Samuel Lile then delivered his Annual Address as President. Reports of the various committees and officers were next in order. The Executive Council, through its Secretary, Dr. Thos. W. Murrell, and the Judiciary Committee, through its Chairman, Dr. Charles R. Grandy, reported no matters of interest since the 1914 session. Dr. W. D. Turner, Chairman of the Membership Committee, stated that he had no report, though he had the applications of two physicians who wished to join, but were unable to do so, as their county societies had not met since June. This matter was referred to the Executive Council, which later reported that the applications had been distributed to the Councillors in whose districts the applicants resided with the request to secure such memberships in legal form at the earliest possible moment. Dr. Paulus A. Irving, Secretary of the Society, reported that thirty members had died since the last meeting, four had resigned, four had been dropped from the roll for various reasons, while the addresses of fifteen were unknown.

The Treasurer, Dr. M. W. Peyser, said in his report that "The radical change in the organization of the Society has created very much confusion with the finances." He states that the lists of members of component societies furnished his office are incomplete; that, of the 47 reported affiliated societies, only 33 have made remittance, two sending assessments for but one member, and others for but four or five. So far as he could tell, not one society had paid in full. "Some of the secretary-treasurers have written that they cannot make collections from their members: one doubts that his society will hold itself responsible for the per capita; another, that direct payment to the State Treasurer is best; that he cannot obligate himself to collect the assessments, and that (in common with others) his society has tried several times, but unsuccessfully, to hold a meeting."

Because of the round-about methods of making collections, which have been made necessary by the reorganization plan, the Society now finds itself in debt, with an unpaid balance due on the Transactions of 1914 of \$611.09, as against a treasury balance of \$126.40. In view of the above statements, the Treasurer recommended the divorcement of at least the finan-

cial end. With reference to this subject, the Society, upon recommendation of the Executive Council, adopted the following: "That the rules regarding the payment of dues be suspended during this meeting, and that the Treasurer be authorized to collect State Society dues and give a receipt therefor, which shall be a voucher on the local Society for that amount of his annual dues."

At another session, in the discussion of a paper by Dr. Southgate Leigh on the "Advantages of Medical Organization—Its Progress and Possibilities in Virginia," Dr. Stuart McGuire moved that the Executive Council be directed to appoint a committee of five to report a new charter, embracing all the good of the present one, and rejecting all that is bad. This motion was seconded. Dr. A. Barnes Hooe moved, as an amendment to Dr. McGuire's motion:—"Be it resolved that doctors of medicine who were eligible to membership in this Society before the new plan of organization, and who are still in good standing professionally and morally, be now considered eligible for membership whether they are or are not members of component societies. Seconded. In the discussion that ensued, however, both motions were lost sight of in another motion to adjourn,—which carried.

Reports of the Necrological Committee, Dr. J. W. Ayler, Chairman, and of the Delegates to the American Medical Association, Dr. W. E. Anderson, Chairman, were referred to the Executive Council.

The report of the Legislative Committee, Dr. Geo. A. Stover, Chairman, told of the work of his Committee, together with friends in the legislature and the profession, in the successful effort to prevent the re-imposition of the special license tax on physicians. He was of the opinion that the final chapter in a fight that had been waged by the profession for fifteen years was now ended. He stated, in concluding, that the funds of his Committee had been entirely exhausted, and that the present indebtedness amounted to \$250. In this connection, the Society recommended that the President appoint a committee to have in charge the raising of a fund for the presentation of a suitable testimonial to Dr. Stover in appreciation of his untiring labors and invaluable work in behalf of the Society.

A number of resolutions and changes in the

by-laws with reference to component county societies was adopted. Among other matters attracting special attention of the Society were resolutions to be brought to the attention of the State Legislature with reference to the medical inspection of public school children in Virginia, the custodial care of the feebleminded, etc.

The Council nominated the following officers and committees: For President, Dr. Charles V. Carrington, Richmond; Vice-Presidents, Drs. M. J. Payne, Staunton, E. E. Feild, Norfolk, and R. M. Wiley, Salem; Secretary, Dr. Paulus A. Irving, Farmville; Treasurer, Dr. Mark W. Peyser, Richmond; Judiciary Committee, Dr. C. R. Grandy, Chairman, and Drs. W. E. Vest, Virginius Harrison, John A. Owen, J. L. Early, J. S. Burton, I. E. Huff; Membership Committee, Dr. W. D. Turner, Chairman, and Drs. Geo. J. Williams, J. E. Knight, W. F. Driver, G. T. Divers; Legislative Committee, Dr. A. L. Gray, Chairman, and Drs. J. Bolling Jones, H. U. Stephenson, C. H. Rolston, J. F. Lynch; Delegates to the American Medical Association, Dr. W. E. Anderson, with Dr. G. W. McAllister as alternate; Dr. Southgate Leigh, with Dr. L. T. Royster as alternate.

The name of Dr. Joseph A. White, Richmond, was presented to the Society for President from the floor by Dr. Frank H. Hancock, Norfolk, and, being seconded, the vote resulted—for Dr. White, 263; for Dr. Carrington, 106. Dr. White was therefore declared duly elected. The other nominees of the Council were elected without opposition. The retiring president, Dr. Samuel Lile, was elected Honorary Member.

Dr. R. E. Whitehead, Norfolk, was elected councillor for the 2nd district; Dr. E. L. Kendig, Victoria, 4th district; Dr. R. L. Rhodes, Roanoke, 6th district; and Dr. J. Staige Davis, University, *vice* Dr. Powhatan Moncure, for the State-at-large.

Norfolk was decided upon as the next place of meeting. The subject selected for general discussion was Nephritis, subdivided as follows: Etiology and Pathology, Dr. E. G. Hopkins; Symptoms and Diagnosis, Dr. W. H. Ribble; Medical treatment, Dr. P. W. Boyd, Jr.; Surgical Treatment, Dr. R. P. Bell.

A large number of entertainments were provided by the local committee for the members and ladies accompanying them and we believe

the 1915 meeting will long be pleasantly remembered by both the hosts and their visitors.

We publish in this issue the address of the President and the Symposium—The State *versus* Tuberculosis. The majority of other papers read at this meeting will appear in succeeding issues of the *Semi Monthly*.

New Society Organized.

A tri-county society, including doctors in Spotsylvania, Stafford and King George counties, Virginia, has been organized with the following officers: President, Dr. W. A. Harris, Spotsylvania; vice-presidents, Drs. J. N. Barney, Fredericksburg, and E. M. Sneed, Garrisonville; secretary-treasurer, Dr. C. Mason Smith, Fredericksburg. Meetings will be held every other month. This supplants the Rappahannock Valley Medical Association and the Spotsylvania County Medical Society.

Married—

Dr. E. L. Caudill, Narrows, Va., and Miss Flora Weatherly, Troutdale, Va., October 27.

Dr. John Russell Perkins, formerly of Spencer, Va., and Miss Mary Juliette Miles, of Baltimore, Md., November 3. Dr. Perkins, who has for the past year been a resident physician in the Baltimore Eye, Ear and Throat Hospital, will, after a short trip, take his bride to Winston-Salem, N. C., where he will take up his special work.

Dr. Harry Wall, Norfolk, Va., and Miss Ellinda Tiffany Burdick, Claremont, Va., November 3.

Dr. Benjamin Franklin Montgomery, Stephens City, Va., and Miss Lucy Deahl, Berryville, Va., October 27.

Dr. William E. Lawson, formerly of Catawba Sanatorium, Va., but more recently of Wilton, N. Y., and Miss Margaret Heljer, of Hoboken, N. J., on November 3.

The Nansemond County (Va.) Medical Society.

At its meeting held in Suffolk, October 12, elected the following officers for the ensuing year:—President, Dr. Josiah Leake, of Deans; vice-president, Dr. R. E. Parker, of Chuckatuck, and secretary-treasurer, Dr. A. T. Sheffield, of Holland. Delegates were appointed to attend a meeting in Norfolk to nominate a councillor from the second district to the Medical Society of Virginia. Dr. R. E. Whitehead, of Norfolk, R. D., was the nominee.

Virginia Doctors in Politics.

As a result of the recent election, the following are some of the doctors who will take an active part in the politics of this State: Dr. Thos. S. Hening, of Jefferson, and Chas. U. Gravatt, of Port Royal, in the State Senate; Drs. S. T. A. Kent, of Ingram, Benj. F. Noland, of Leesburg, Geo. F. Floyd, of Bridgetown, Peter Winston, of Farmville, and C. H. Rolston, of Mt. Clinton, in the House of Delegates; and in Goochland County, Dr. L. K. Leake, of East Leake, and William M. Holman, of Lee, were elected district supervisors.

The Augusta County (Va.) Medical Association, Inc.,

Held its regular quarterly meeting November 3, in Staunton, Dr. W. F. Hartman, of Swoope, presiding. Interesting papers were read by Drs. M. P. Jones, Churchville, John L. Hankins, Fordwick, and M. J. Payne and A. L. Tynes, Staunton. Clinics and a banquet at the Country Club concluded a pleasant and instructive meeting. Dr. Guy B. Fisher, New Hope, is secretary.

Dr. and Mrs. W. W. Dunn.

Richmond, have been the recent guests of friends in Danville, Va.

Skin Diphtheria

Having been found to be present in this city, the Health Department has issued a circular giving precautionary measures and it is believed that no special trouble will be anticipated. The eruption, which occurs usually on the arms and legs though it may appear also on the hands and lips, was found to have preceded a number of cases of diphtheria of the throat and nose and an examination of a large number of cultures showed the presence of the diphtheria germ. Locally applied antitoxin seems the best form of treatment. An order has been issued excluding from the public schools children suffering with the eruption.

Dr. George J. Williams,

Of Newport News, Va., suffered two broken ribs and several severe bruises on the evening of November the 5th, when his automobile turned turtle.

The Norfolk County (Va.) Medical Society,

At its annual meeting in October, elected Dr. J. J. Miller, president; Dr. R. S. Kight,

vice-president, and re-elected Dr. W. P. McDowell, secretary-treasurer.

Dr. A. L. Wilson

Has returned to his home in Lynchburg, Va., after a visit to Charlestown, W. Va.

Dr. and Mrs. Robert Hoskins

Have returned to their home in Mathews, Va., after a motor trip to Richmond.

Councilmen at Stony Creek.

Drs. W. D. Price and V. A. Thornton were among those nominated for town council at Stony Creek, Sussex County, this State.

Dr. W. Nelson Mercer,

Who recently located at 114 East Franklin St., this city, attended the annual celebration of the surrender of Gen. Cornwallis to Gen. Washington, in Yorktown, Va., last month.

Dr. A. S. Priddy,

Superintendent of the State Epileptic Colony, has been a recent visitor at his old home, Keysville, Va.

Dr. Walter Joseph Otis,

Since completing his term of service at Memorial Hospital, this city, has become junior assistant physician on the staff of the McLean Hospital, at Waverley, Mass., near Boston.

Dr. W. A. Gordon,

Elkton, Va., was elected one of the trustees of the State Council, Junior Order United American Mechanics, at their meeting in Danville, in October.

Dr. Leslie C. Brock,

Smithfield, Va., was one of the delegates appointed by Governor Stuart, to represent this State at the meeting of the Atlantic Deeper Waterways Association, which convened in Savannah, Ga., November 9.

Dr. R. Lester Hudgins,

Of Farmville, Va., was in Arvon, Va., early this month, to attend the funeral of his father.

The National Association for the Study of Pellagra,

At its triennial conference in Columbia, S. C., in October, elected the following officers: President, Capt. J. F. Siler, of the Medical

Corps, U. S. A.; vice-presidents, P. A. Surg. R. M. Grimm, of the U. S. Public Health Service, and Dr. Henry Rice, Columbia; secretary, Dr. Jas. W. Babcock, and treasurer, Dr. Jas. A. Hayne, both of Columbia.

Dr. O. C. Page,

Of Brodnax, Va., early this month, suffered serious and painful injuries as the result of a fall from the second story window of his mother's home, in Durham, N. C., where he was visiting. Dr. Page plunged from the window while walking in his sleep, and was unconscious when picked up.

Dr. John N. Upshur,

Of this city, delivered an address on the Battle of New Market before the Woman's Club of Ginter Park, on the afternoon of November 3.

Dr. J. R. Spencer,

Farmville, Va., who was taken sick in the meeting hall on the last day of the Medical Society in Richmond, has steadily improved since reaching home and is able to be out again.

Dr. E. W. Peery,

Lynchburg, Va., attended the recent meeting of the board of education of the United Synod of the Lutheran Church, in Columbia, S. C.

Dr. B. A. Rice,

Of Forest, visited Montvale, Va., during the latter part of October.

Surgeon John F. Anderson,

Who for several years has been director of the Hygienic Laboratory of the U. S. Public Health Service, Washington, has tendered his resignation from the service to take effect January 12, 1916. Surgeon Geo. W. McCoy will succeed him as director of the laboratory.

Dr. H. A. Burke,

Petersburg, Va., has been awarded one of the prizes donated by the *International Journal of Surgery* for presenting what was considered second of the four best papers presented at the recent meeting of the Seaboard Air Line Railway Surgeons' Association.

Dr. Fred M. Hodges,

Upon the recommendation of Dr. Leslie Wiggs, chief of the staff of the Richmond City

Home, has been appointed by the Administrative Board associate physician in the tuberculosis department at the home.

Surgeon Claude H. Lavinder,

Of the U. S. Public Health Service, visited the home of his father in Lynchburg, Va., in October.

Dr. John Mann,

Of Petersburg, Va., who has served nine months in the American Red Cross Hospital, at Kiev, Russia, is now in Tokyo, Japan, where he is in charge of St. Luke's Hospital, during the absence of Dr. R. B. Teusler in this country. He has had many interesting experiences during his stay abroad.

Dr. George T. Collins,

Of Highland Springs, Va., who has been a patient at St. Luke's Hospital, this city, has sufficiently improved to return to his home.

Dr. John O'Brien

Has moved from Spout Spring, Va., to Blandville, R. D. 1, W. Va.

Dr. James M. Bland,

Boykins, Va., visited his old home near West Point, Va., last month.

Lectures on Diseases of the Skin.

The Governors of the New York City Skin and Cancer Hospital, Second Avenue and 19th Street, announce that Dr. L. Duncan Bulkley, assisted by the attending staff, will give a series of clinical lectures on diseases of the skin in the out-patient hall of the Hospital on Wednesday afternoons at 4:15 o'clock. These lectures, which commenced November 3rd, will be free to the medical profession on presentation of their professional cards.

Dr. J. Fulmer Bright,

Of this city, was one of the delegates to the National Guard Association, which convened in San Francisco, November 9.

Dr. E. A. Craighill,

Of Lynchburg, Va., visited his old home in Charlestown, W. Va., the latter part of October.

Dr. Randolph Winslow

Has been elected president of the faculty of the School of Medicine of the University of Maryland, Baltimore.

Dr. George Ben Johnston,

Of this city, has been on a trip to Chicago, Rochester, Minn., and New York City.

Dr. A. F. Kerr,

Clifton Forge, Va., was appointed one of the district deputies at the annual meeting of the Grand Royal Arch Masons in Richmond in October.

Dr. G. T. Divers,

Buena Vista, was a recent visitor at Stuart, Va.

Dr. Winfield S. Hall,

Of Chicago, addressed the boy scouts of this city, October 30, on "The Things a Boy Ought to Know."

A Trachoma Hospital at Welch, W. Va.,

Was opened early in October by Surgeon John McMullen, of the U. S. Public Health Service. The hospital has accommodations for twenty patients.

Dr. Frank P. Righter.

Of Pittsburgh, Pa., has recently become connected with the medical department of the Atlantic Life Insurance Company in this city, and is located in Ginter Park.

To Lecture to Boy Scouts.

Drs. H. Cowles Rucker, Ennion G. Williams and Roy K. Flannagan, of Richmond, have accepted invitations to lecture to the boy scouts of this city on first aid, personal health and public health, respectively.

Dr. Louise Taylor-Jones,

Washington, D. C., who established a hospital for babies at Nish, Serbia, returned home in October.

Asst. Surg. R. L. DeSaussure,

Of the U. S. Public Health Service, has been transferred from the Hygienic Laboratory, Washington, to the Marine Hospital, Baltimore.

Dr. John R. Atwell,

Wicomico Church, Va., was a recent visitor to Washington, D. C.

Dr. S. P. Beebe

Has resigned from the faculty of Cornell Medical School, New York.

Dr. and Mrs. E. R. Turnbull,

Lawrenceville, Va., with a party of friends, motored to Richmond early this month for a short visit.

Dr. Lucien Lofton and Family,

Who have recently moved to this city, spent a few days last week at their old home, Emporia, Va.

Transactions of the Tri-State Medical Association

Of the Carolinas and Virginia were issued during the latter part of October. The book contains 426 pages including a roster of members. It is neatly compiled and makes its usual attractive appearance.

Dr. and Mrs. A. M. Saunders

Returned to their home in Norfolk, Va., the last of October, after a motor trip to Richmond and to Fluvanna, Cumberland and Buckingham Counties.

Dr. J. J. Terrell,

Of Lynchburg, R. D., Va., was elected surgeon-general of the Grand Camp of Confederate Veterans at the reunion in Fredericksburg, Va.

The United States Civil Service Commission,

Washington, D. C., announces an open competitive examination for assistant in metabolism investigations, for men only, under 45 years of age, on December 8, 1915. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the United States Public Health Service for duty in the field at a salary of \$1,500 a year, and vacancies as they may occur in positions requiring similar qualifications. The duties of this position will be to make complete food analyses, including calorimetric determinations. Appointees will also be required to use the respiration apparatus for the determination of the energy metabolism.

Virginia Doctor Wants Assistant. Will pay \$125.00 per month with view of turning over practice later. Must be A-1 all-round young man in every particular. State full particulars of self and experience in first letter. Strictly ethical and references exchanged. Address 77, Care *Virginia Medical Semi-Monthly*.—(Adv.)

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Original Communications.

ETIOLOGY AND PATHOLOGY OF DISEASES OF THE BILIARY TRACT.*

By S. B. MOON, M. D., Richmond, Va.

Channels communicating with the alimentary tract are often diseased. This includes normal and abnormal pockets, large or small, crypts, diverticula, any irregularity in the normal contour, from the mouth to the rectum.

The biliary tract is no exception, and on account of its complexity, anatomically and physiologically, it exhibits a variety of signs and symptoms as well as of pathologic end results which have puzzled and interested physicians and surgeons through all time.

It is a question whether the disease is primary in the food tract and secondary in the side channel or *vice versa*. Trouble in the food tract has so often been relieved by operation on the appendix, bile tract or other side channel, that the latter have been accused as primary offenders. Doubtless they are oft-times so, but a perfectly sound food tract, so maintained at all times, would probably preclude most diseases of the side channels.

Diseases of the biliary tract are, therefore, probably in most cases preceded by and consequent to duodenitis, or gastro-enteritis. This acts in several ways. The infection may extend directly through the bile channels, reaching the gall bladder and the liver ducts; or the infection may be carried by the portal blood stream to the liver and excreted into the ducts. And, furthermore, the abnormal and irritating products formed in the digestive tract as a result of disease, and absorbed through its diseased mucosa, reach the liver cells at first

hand through the portal circulation, upsetting the liver function, altering the character of the bile and bile tract secretion, and causing thereby disorder of this tract. Thus, also, the tissue cells have their power of resistance to infection diminished, and various germs of disease, being present, multiply and irritate the tissues, causing cholangitis, cholecystitis, gallstone formation, and other associated diseases.

Such, briefly, is the etiology of bile tract disease. Various factors may contribute, predisposing to or exciting inflammation. Among these are excessive or improper food, sedentary habits, obesity, tumors, pregnancy, tight lacing, parasites and their ova. Adults are mainly affected; children rarely, although they are often the subjects of gastro-duodenitis. Undoubtedly one attack predisposes to another, and gallstones once formed become a constant menace.

It may be stated that bacteria are, as a rule, the active exciting cause of disease in the bile tract: that these enter most often through a diseased mucosa of the digestive tract, being taken into the portal circulation; and, reaching the liver, already irritated and damaged by toxins, pass out among the hepatic cells, multiply, set up focal necrosis, and finally enter the bile channels, continuing their irritative effects. We need not pause to enumerate all the various pathogenic germs which may infect this tract. They comprise most of the common bacteria causing inflammation. The bacillus of typhoid fever was formerly given perhaps too prominent a place in the etiology, particularly of gallstones. Recently the colon bacillus has assumed prominence, and is now recognized as perhaps the most frequent causative organism in bile tract disease. This more or less universal offender, present with us from birth till death, harms but little, it may be, during early life. But as years go by, and the

*Read before the Medical Society of Virginia at its forty-sixth annual meeting at Richmond, October 26-29, 1915, as a part of the Symposium on Diseases of the Biliary Tract.

tissues become more susceptible, or the germs by some circumstance more virulent, they are enabled to wander from their earlier habitat, the bowel, and attack the appendix, the kidney pelvis, or the bile tract, being a contributing, if not the sole factor in the causation of disease.

Thus the liver function is disturbed, the bile altered in character, the mucosa of the biliary tract congested and damaged, and various pathologic conditions ensue, more or less severe and permanent in character. Among the most interesting of these results is the formation of biliary concretions or gallstones. These seldom are formed elsewhere than in the gall bladder, the necessary conditions being very infrequently obtained in the ducts. From five to ten per cent. of all autopsies show the presence of gallstones in the gall bladder, and their wide variation in number and size is common knowledge.

The cause and mode of formation of these concretions has long been the subject of discussion, investigation, and experimentation; but, even at the present time we must admit incomplete knowledge of the subject in ultimate detail. Recent advances in physiology, chemistry, and pathology have, however, done much to clear it up, and some theories formerly highly regarded by the profession have been discarded. We shall not discuss these, nor shall we dwell upon such predisposing factors in the etiology as age, sex, race, pregnancy, constipation, sedentary habits, obesity, etc. With these you are all familiar.

First, let us remember that the formation of gallstones is a slow process, requiring from two to five months for the attainment of moderate size. They are not, therefore, formed during the brief stage of an acute process, but are rather due to a prolonged intracystic condition, resulting perhaps from an acute initial stage, but more often being chronic or sub-acute primarily.

Two factors appear to be the chief if not the essential causes of gallstone formation:

1st. Bile stagnation with concentration of various substances in solution, and

2nd. Cholecystitis, especially of infectious origin.

Stagnation results from partial or complete obstruction to the outflow of bile, or from one of the predisposing causes above noted. Bile

thus dammed back in the bladder becomes condensed, and, furthermore, definitely and considerably altered in composition by the addition of substances secreted by the mucosa of the bladder. Among the most important of the latter is cholesterin, which is practically always present in gallstones, and may be the sole constituent. Stagnation alone, however, does not, as formerly believed, result in gallstone formation, though concretions of pure cholesterin may at times be due to this factor alone. Inflammation must, as a rule, also be present, and, indeed, germs are often found embedded in gallstones, serving either as a nucleus, upon which the solid constituents are precipitated, or being accidentally incorporated in the concretion whose origin and growth is due to the effect of their vital activity.

Chemically, bile may be considered as a fluid in which are dissolved more or less imperfectly two distinct classes of substances, crystalloids and colloids. Each of these remains in solution by virtue of the other's presence, and is precipitated upon the loss of the other. Indeed, any change in the electric condition of either substance may result in its precipitation, the other then passing out of solution and falling down likewise as a consequence.

Recent studies have shown gallstones to be constructed as a framework of colloid substance, the interstices of which are filled with crystalloids. It is easy to conceive that, in concentrated bile, the exact equilibrium necessary for the maintenance in solution of its crystalloids and colloids might easily be broken by any disturbing factor of the proper character. Such a disturbing agent is evidently supplied by the bacteria themselves, or by their irritative effect upon the cystic mucosa. Possibly electric conditions are altered, but more likely substances elaborated by the bacteria, or liberated upon their dissolution, exert an effect upon the colloids in solution, causing their precipitation to form the framework of the stone, the crystalloids then, as a consequence, being also precipitated, completing the stone structure by filling in the interstices. It may be that enzymes of bacterial origin become the disturbing element. Their chemical affinity for colloids is marked, and exhibited to such a degree that it is difficult to obtain enzymes of any variety entirely free from colloids, even by elaborate chemical procedures. Such enzymes, there-

fore, set free in the bile, exerting an attraction upon the colloids in solution, might upset the equilibrium, precipitate the colloids, and thus cause the stone formation. But here we leave established fact and enter the realm of fancy. It may be stated, however, that certain bacteria, the streptococci, are known not to be productive of gallstones, while others, notably the typho-colon group, are especially prolific in their formation, hence evidencing that specific bacterial products are essential.

In some such manner biliary concretions are formed, and are present in about ten per cent. of all bodies coming to autopsy. However, in not more than in about one in ten of these do they give definite signs of their presence during life by causing disease. This is perhaps largely due to their slow formation, giving nature time to adapt herself to the new condition without undue strain. Probably, also, in many cases of indigestion and other abdominal disturbances, the real cause remains undetermined until autopsy reveals gallstones. Indeed, as long as these remain quietly in the bladder, no definite sign of local trouble is usually manifested. If, however, the bladder is tightly packed, or the stones be large or numerous, a sense of dragging or heaviness and discomfort is usually felt, and pressure may obstruct the pylorus or interfere with other normal physiologic processes in this region.

Among the many varied pathologic effects of gallstones may be mentioned cholecystitis, pericholecystitis, obstruction and other affections of the cystic and common ducts, secondary changes in the liver, pancreas or other organ by extension, and malignant tumor.

Cholecystitis in its manifestations is analogous to and resembles inflammatory changes in other hollow organs lined with a mucosa. It is a result as well as a cause of gallstones, a vicious circle being established, and the bacteria being aided by the devitalizing, traumatic or obstructive effect of these potentially foreign bodies. Thus we find the ordinary or catarrhal cholecystitis, the ulcerative, purulent, and even a hemorrhagic variety. The first effect of the catarrhal form is excessive secretion from the mucosa, especially of mucus. If the ducts are obstructed, the contained bile being absorbed, this secretion may distend the bladder to a great size, producing hydrops. The presence of pyogenic organisms causes the addition of

pus to exudate, and empyema of the gall bladder is the result.

But more commonly the effect of the inflammation is later to cause degeneration and destruction of the epithelium of the mucosa, with overgrowth of the fibro-elastic tissue in the wall. This afterwards contracts, shrinking the sac as a whole, producing various deformities, such as diverticula, or the hour-glass shape. Shrinkage may progress to such a degree as to cause practical obliteration of the gall bladder, or difficulty of recognition at operation.

Pericholecystitis may be due to diffuse extension of the inflammation through the cystic coats to the peritoneum, or to ulceration with perforation. Here, as elsewhere, nature endeavors to wall off the advance of the inflammatory process. Peritonitis, localized or diffuse, abscess formation, or more commonly adhesions are the result. Painful attachments to other organs, limiting also their free movement and function, may be the first condition due to gallstones demanding surgical relief. Or the ulceration may advance through the wall of some adjoining viscus, forming a fistula, delivering one or more gallstones into the alimentary tract, or even into the kidney pelvis or urinary bladder.

In rare instances biliary calculi may be formed in the biliary ducts. But, as a rule, when so found, they have escaped from the gall bladder. Severe jolting, strong spasmodic bladder wall contractions, or palpation may cause the change of position, but it is believed that an exacerbation of the already existing cholecystitis is mainly responsible. This causes the bladder to be distended with increased secretion and exudate, allowing freer mobility of the calculi, and their expression into the cystic duct. As a result severe muscular spasm is set up, with intense pain, which continues usually till the stone, passing also through the common duct, is delivered into the duodenum, or is removed by the surgeon. In other cases the stone may drop back into the bladder, the colic being thus relieved.

Again, the calculus may become permanently lodged in the common bile duct, most often at its lower end, in which event it will either completely block the duct, partially block it, or float within it and exert the so-called ball-valve action. A firmly impacted stone may subsequently become loosened by distension of the

duct above it, due to bile pressure. Thus, the jaundice due to obstruction may be acute, long standing, or intermittent. Stones remaining in the ducts give rise to inflammation, with possible ulceration, perforation, or the formation of an abscess or diverticulum.

In closing, let me call attention to the fact that gallstones appear to be a fruitful cause of primary cancer of the gall bladder. Calculi are present in from 70 per cent. to 100 per cent. of cases of cancer, according to various observers. They are probably the cause, not the result of the cancer, for cholelithiasis precedes the tumor growth, and malignant disease of the gall bladder has been proved not to produce calculi. Thus we have the pathologic sequence as follows: gastro-duodenitis, hepatitis, cholangitis, cholecystitis, gallstones, cancer, which, as a rule, ends the story.

2027 Grove Avenue.

SYMPTOMS AND DIAGNOSIS OF DISEASES OF THE BILIARY TRACT.*

By HUGH H. TROUT, M. D., Roanoke, Va.
Surgeon to Jefferson Hospital.

If one should undertake to present the "Symptoms and Diagnosis of Diseases of the Biliary Tract" in an approbative manner, it would require the publication of a fair sized volume, and as the Medical Society of Virginia already has sufficient trouble in obtaining funds for the "Transactions," I will confine myself briefly to that condition most frequently encountered by the surgeon, *e. g.*, gall stones and cholecystitis.

The past history of every patient should be most thoroughly studied—the number of pregnancies, typhoid fever, pneumonia and other infections, rectal troubles, the various diarrhoeas and intestinal upsets; all apparently play a part in the etiology of gall bladder troubles and, therefore, should be given some consideration in adding up the evidence. Of course, the history of previous attacks assists materially in the diagnosis.

Naunyn ascertained 25 per cent. of all women over sixty years old showed gall stones at autopsy; while the usual statistics give the disease to be comparatively infrequent under forty. However, in our series of one hundred

and ninety-six cases they were found more frequently between thirty and forty years of age—the youngest being four years and the oldest seventy-six years.

As the majority of cases of gall stones cause no symptoms one can see how difficult and uncertain the diagnosis of a latent gall stone can be, but if it is associated with biliary colic, temperature, jaundice, leucocytosis, etc., the case comes already labeled and addressed to the surgeon, requiring no further diagnosis.

It has been truly said the most constant symptom of gall stones is "indigestion," and the examination of the records of the Jefferson Hospital, Roanoke, Va., out of one hundred and ninety-six cases, one hundred and twelve gave as the admission complaint "indigestion;" of the remaining eighty-four, all, except fifteen, stated in their histories they had suffered for various periods with the so-called "indigestion" and that it played an important part in their past history. Emphasis is laid on this to try to illustrate "indigestion" is a symptom and not a disease as is usually considered by the patient.

In this small triangular space in the upper right quadrant of the abdomen, which can be covered by the hand, are situated many organs; pathological lesions of which can and do produce pain frequently similar in type, duration, extent, etc., during the early stages of the disease, but late in its progress this pain usually becomes far different in most of its aspects. It is, however, in the early stages, before secondary changes have occurred either in this region or in some remote part of the body, we want to obtain a diagnosis, and this multiplicity of viscera makes our task most difficult;—*e. g.*, instead of gall stones, a post-cecal appendix, a chronic pancreatitis, renal abscess, hypernephroma or a duodenal ulcer, etc. However, it is fortunate practically all diseases which produce pain in this region are surgical and, therefore, a mistake in diagnosis is not so serious as it might be in other parts of the body, except in diaphragmatic pleurisies, basal pneumonias, congestion of liver due to cardiac lesion, or some distinct medical condition which a complete physical examination would eliminate.

This pain in gall stones may be described as a "dull aching" in the early stages of the disease rather than an actual pain, and such is

*Read before the Medical Society of Virginia at its forty-sixth annual meeting, at Richmond, October 26-29, 1915, as a part of the Symposium on Diseases of the Biliary Tract.

usually the case if there is no cholecystitis or impaction. Of course, we are all familiar with the typical pain of gall stone colic with its various radiations, and we frequently hear doctors state they never make the diagnosis of gall stones unless the pain radiates to the right shoulder. In our experience this radiation to the shoulder has not been of any great value. In other words, this pain varies from being so slight as to pass unnoticed to a pain so severe as to cause occasionally a fatal syncope such as I have recently seen in one case.

The relationship of pain to the taking of food is of much importance in the differential diagnosis between gall bladder affection and ulcers of the stomach and duodenum. However, this cannot be relied upon too implicitly, for we all see a few cases of pain in the upper right quadrant which are relieved by the taking of food, and an exploratory incision reveals, not ulcer of the stomach or duodenum as we might have been led to expect, but gall stones or cholecystitis. As a rule, the pain is of comparatively short duration, not lasting usually over two to five hours acutely, though it may persist for months or years as a dull ache without ever being severe. Much speculation has been indulged in as to what causes the pain in gall stones. The most generally accepted theories are impaction, infection, sharp cutting edges of the calculus or adhesions. However, I believe we all can recall cases in which pain was severe and there was no impaction, no infection, no cutting edges, a rather small stone and no adhesions. The typical biliary colic does not have to be described to this audience for we all have seen and know it, and those of us who have not seen it will readily recognize it without any further knowledge than has been gathered from the usual text-books.

Belching, nausea and vomiting are frequently associated with this trouble but as these three symptoms are so frequently connected with many other lesions, they are of no practical importance.

It is almost a constant rule to find tenderness, especially on deep inspiration and some spasm over the right rectus muscle during the acute or sub-acute attack and none when the condition is quiescent.

Occasionally, a mass can be felt, and operation usually reveals this to be due to the en-

larged gall bladder surrounded by the omentum.

I have had doctors tell me they could feel the gall stones, and one man actually counted them for me, but operation revealed none, but instead a simple cholecystitis. It has never been our experience to be so fortunate as to feel a gall stone through the abdominal wall,—except in one case which was associated with carcinoma and in a very thin woman.

Riedel pointed out that a portion of the right lobe of the liver frequently became enlarged and was easily mistaken for a gall bladder. It is for this reason this portion of the liver, when found, is named after him. Great enlargements of the gall bladder due to dropsical conditions have been reported, and even Tait once made the diagnosis of ovarian cyst before operation revealed it to be an obstructed gall bladder.

If anyone seriously considers the cause of elevated temperature I think he will conclude it must necessarily be a very inconstant finding in this disease, for there are many such conditions as the indefinite term, "the degree of resistance of the patient," the amount and character of infection present to be estimated. For example, I recall a few cases which showed gangrenous gall bladders filled with calculi both in the bladder and ducts and associated with a colon bacillus infection but no elevation of temperature. Another case having a very small stone apparently free in the gall bladder but associated with a streptococcus infection gave a temperature of 106° F. From this, one can see how uncertain the elevation of temperature must be. The frequent lack of temperature might also be explained by the limited lymphatic supply of the gall bladder.

We have found an increased leucocyte count of considerable assistance and, taken in association with the polynuclear count as described by Sondern in 1905, is of great value both in diagnosis and prognosis. While the blood is being examined the coagulation time should always be estimated, especially if jaundice be present, for by this means the question of operative and post-operative hemorrhage can often be avoided by the giving of proper prophylactic treatment.

Chill is not usually present except in infections of the gall bladder, and in our series of one hundred and ninety-six cases of calculi

associated with cholecystitis it was found in only twenty-six cases, which included those cases that did not have an actual chill but only felt slightly "chilly." One should not forget the intermittent fever of Charcot with its chills and jaundice, and this disease often presents such a symptom-complex as to be most difficult to distinguish between gall stones and cholecystitis.

I am sure much harm has been done by an almost universal custom of waiting for jaundice to appear before making the diagnosis of gall stones. The sooner we all learn jaundice is a relatively infrequent symptom, the quicker and more accurate will our diagnosis be. Jaundice does not always mean "gall stones" for any obstruction to the biliary tract such as cancer, cirrhosis or syphilis of the liver, etc., will produce it.

Most of us forget there is almost as much bile secreted in twenty-four hours as there is urine excreted in the same length of time, and all of us have experienced to some extent the discomfort incident to even a temporary retention in the urinary tract. If this be true with a relatively large urinary bladder, it is easy to understand the agonizing pain due to even the partial obstruction of the biliary tract as well as the deep jaundice incident to a complete blockage of the same. As a rule, where one finds jaundice there is the history of "clay-colored" stools. By the usual term "clay-colored" is meant white putty-like and not what I once saw on a chart when the patient had replied in the affirmative in reply to the usual question relative to stools, for further examination of the history showed the patient's idea of clay was that it was red and not white clay.

It is not an infrequent occurrence to find bile present in the urine before there is any sign of jaundice. In fact, I believe bile is always first present in the urine before jaundice appears in the skin or eyes and it is simply a question as to the relative time the urinalysis is made. The urine also frequently shows red blood cells, albumin, casts, etc., especially if the symptoms have been severe and acute.

The spleen is enlarged about the same as it is with any other acute infections, except that it is not so large as it is with malaria and typhoid.

Some X-ray men tell us this diagnostic aid is of great assistance in every case; others inform us it is only of value when the stone is

definitely shown, and my own opinion is this latter class are the men to be followed.

We have neither the time nor is there the necessity to give a detailed differential diagnosis between this disease and appendicitis, ulcers of stomach and duodenum, pancreatitis, malaria, typhoid fever, syphilis of the liver and other diseases with which it is sometimes mistaken.

No man ever expressed the gall stone situation more tersely than did the late Dr. Maurice H. Richardson, in 1906, when he delivered his classical paper entitled "Gall Stones Without Symptoms, and Symptoms Without Gall Stones," and, as this is the true state of affairs, it should stimulate us to a more careful study of our cases so that ultimately the diagnosis of this disease may become less uncertain.

MEDICAL TREATMENT OF DISEASES OF THE BILIARY TRACT.*

By HUGH McGUIRE, M. D., Alexandria, Va.

Acute Catarrhal Cholangitis (Catarrhal Jaundice): The general view is that this condition is produced by a duodenal catarrh accompanied by swelling of the mucous membrane of the papilla of Vater, thus blocking the entrance of bile into the gut. Friedenwald has shown that this catarrhal condition is accompanied by an increased secretion of hydrochloric acid, the hyperchlorhydria keeping pace with the jaundice. This fact explains the necessity for dietic restrictions. During the first few days food should be limited to milk, diluted with lime water or Vichy, cereals and toast. As long as a trace of the cholangitis remains, which should be determined more by the appearance of the stools and urine than by the discoloration of the skin, cooked or raw fruits, the coarser vegetables, fried food and acid foods and drinks must be avoided. Alcohol should be entirely forbidden. The patient usually has a distaste for fats, which are badly tolerated. After several days of the milk and cereal diet, additions, such as potatoes, asparagus, sweet-breads or stewed chicken, can be cautiously tried.

The medical treatment during the first few days is similar to that for acute gastritis, which usually is the causative agent of the cholangitis.

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itis. The gastric symptoms always precede the jaundice and only after the skin discoloration is perceptible can the diagnosis between cholangitis and gastritis be made. The use of proper laxatives is the most important medical consideration. Drastic purgatives irritate the already swollen mucous membrane of the duodenum and must be avoided. Eichhorst prefers licorice powder but the salines, such as sodium phosphate or sulphate or the Carlsbad salt, are regarded generally as the most useful. The alkalies, especially sodium bi-carbonate, relieve the acidity and render the patient more comfortable. If nausea is persistent, lavage with hot alkaline solutions, applications of heat to the epigastrium and the administration of broken doses of calomel can be tried. Large enematas of salt solution by increasing peristalsis are valuable. If itching of the skin due to jaundice is annoying, lotions containing about two per cent. carbolic acid or an ointment of five or ten per cent. menthol in lanolin will often give relief. Osler recommends McCall Anderson's dusting powder which is composed of zinc oxide, 15 parts, starch, 30 parts, and camphor, 6 parts.

After the acute symptoms subside, dilute nitro-muriatic acid in fifteen drop doses after meals will be found beneficial. Convalescence is usually uninterrupted if care as to the diet is observed.

Chronic Catarrhal Cholangitis (Chronic Catarrhal and Relapsing Jaundice): The medical treatment is much the same as that outlined for the acute condition. In cases complicated by gastric catarrh lavage is indicated. Large enough quantities of hot water to thoroughly wash out mucus and remnants of food should be used once daily at first, and afterwards at less frequent intervals. Colon irrigations are even more useful than lavage. Two or three quarts of normal salt solution are advised once daily until the jaundice has completely cleared up and such symptoms as itching, mental depression and irritability have ceased. The diet restrictions mentioned for acute cholangitis must be maintained. The most useful drug in these chronic cases is calomel. Small broken doses can be used over a period of several weeks if improvement is noted.

The great difficulty in treating cases of chronic and relapsing jaundice lies in the uncertainty of their etiology. Treatment for re-

lief must be instituted before the causative factor is apparent. In fact, the diagnosis is often made by the success or lack of success of the medical treatment. Catarrhal jaundice may simulate an impacted common duct stone. On the other hand, what is at first regarded as a catarrhal condition may be caused by stricture of the duct, pressure of tumors, chronic pancreatitis or other conditions. If, after a fair trial with drugs, diet, lavage and colon irrigations there is no improvement, and especially if there is a steady deepening of the jaundice, surgical measures should be advised.

Suppurative Cholangitis is amenable to surgical treatment only.

Cancer of the Bile Passages, when diagnosed early, is a surgical disease.

Cholecystitis and Cholelithiasis: The most interesting and important section of the discussion of the medical treatment of diseases of the biliary tract is that pertaining to cholecystitis and cholelithiasis. Inflammation of the gall bladder and gall stones so often co-exist and the symptoms of each condition are so often complicated by those of the other that a differential diagnosis can rarely be made except by surgical exploration. When relief by medical means is given, it is brought about by relieving the cholecystitis and not by ridding the patient of the stone or, as has been forcibly expressed, "Making the patient a gall-stone carrier rather than a gall-stone sufferer." It is advisable and almost necessary to discuss the medical treatment of cholecystitis and cholelithiasis together.

Regarding Prophylaxis: These conditions are much more frequent in the obese, in those who lead sedentary lives, eat too much, are constipated, and use alcoholic stimulants. The advisability of correcting these conditions is obvious. The use of the automobile, rapidly becoming more general in all classes of society, by limiting walking, will certainly prove an etiological factor in the future. Women who have had many pregnancies and suffer from relaxed abdominal walls should have proper supports. Corsets should fit properly and not be worn tight. In cases of typhoid fever urotropin should be administered throughout the disease. Crowe has demonstrated that it is excreted in the bile in sufficient amounts to have bactericidal action.

The ideal medical treatment of gall stones

would embrace three objects: 1st, The solution of gall stones; 2nd, The discharge of gall stones from the gall bladder and ducts; 3rd, Relief of the gall bladder infection. These questions will be discussed in the order named.

The solution of gall stones: We possess no remedy which has this power. Olive oil was supposed for a time to dissolve the stones, but it was later determined that the masses resembling gall stones which were passed after its administration were saponified oleic acid. There is no reason to believe that olive oil, ether, or turpentine of the old school, or any of the numerous modern preparations presented with extravagant claims, have the slightest power as solvents for the stones. Gall stones are composed of cholesterin, biliruben-calcium, calcium carbonate and calcium phosphate. Of these, cholesterin alone is soluble in bile. It is, therefore, theoretically possible for stones composed of pure cholesterin to be dissolved by bile. This solution will take place in a test tube but it is not to be expected in the infected and inflamed gall bladder, whose impaired drainage would encourage the formation of other stones even if the first were dissolved. Certainly clinical experience teaches that we can expect little either by the administration of drugs or by *vis medicatrix naturæ* as far as the solution of gall stones is concerned.

The discharge of the gall stones from the gall bladder and ducts: No medical treatment will bring this about. It is true that many single gall stones pass through the ducts and that both large and small stones find their way by fistulous openings from the gall bladder to the intestines. A possibility of cure in this way is presented, but the chance is so remote it should not be looked for nor expected. It will be well to remember that all stones in the gall bladder are rarely if ever passed and that the catarrhal condition of the gall bladder would favor the formation of other stones even if such a favorable emptying occurred.

Relief of the gall bladder infection: It is here only that medical treatment offers hope. Gall bladder infection will be separated for discussion into the acute and chronic types. The acute condition is gall stone colic. Here the first demand is for the control of pain. Morphia, in one-quarter to one-half grain doses, alone or combined with atropia or nitroglycerine, should be given hypodermically at

once. While waiting for its action, chloroform or ether may be employed; they should not be used to the point of surgical anesthesia but only sufficiently to render the pain bearable. Hot applications over the seat of pain and hot general baths are often of service. When the attack is accompanied by nausea and vomiting, lavage with hot alkaline solutions should be used. Coal-tar drugs should not be employed. They are useless for such violent pain and serve only to depress an already depressed patient. As in all inflamed conditions, local rest is most desirable, and for this reason no purgatives or enematas should be employed and starvation for the first twenty-four hours insisted upon.

With the passing of the attack or in the numerous cases where no acute attack occurs, treatment towards controlling the cholecystitis must be begun. The chance for relief by medical measures is much greater in cases where it is instituted early and before the gall bladder inflammation has become chronic, fistulas and adhesions formed, and the digestion and general health undermined.

When the gall bladder is enlarged and there is soreness and tenderness over this region, very warm Priessnitz compresses should be used continuously during the first twenty-four hours. As the tenderness subsides, the compresses can be omitted during the night and later on used only for an hour or so in the morning and afternoon. Another local measure of value is the colon irrigation with hot saline solution. Many pathological conditions of the liver are alleviated by this treatment.

The importance of rest in acute and sub-acute cholecystitis must be emphasized. While exercise is an important prophylactic measure, it should not be employed when symptoms are active. Automobile tours, horse-back riding and athletic sports should then be forbidden. Kolisch states that at Carlsbad, where ten thousand of these cases were treated annually, active exercise was not allowed until a year after all symptoms subsided.

Positive rules as to diet cannot be laid down. Gastric secretory abnormalities, especially hyperchlorhydria, so often are present that the food must be selected to suit these complications. Alcohol, fats, rich and greasy food, are not well tolerated. Acids must be avoided. Fruits, both cooked and raw, and the coarser vegetables should not be allowed. In

all cases personal idiosyncrasies must be studied and the food question settled for each individual patient. When hyper-acidity exists, frequent meals will add to the patient's comfort.

A few drugs are valuable. The saline mineral waters tend toward reducing gastric acidity, flush out the bile passages and lessen the catarrhal condition in the duodenum. They are best given before meals when the stomach is empty. Carlsbad and Vichy, natural and artificial, are often employed but are in no way superior to the sulphate and phosphates of soda or the magnesium sulphate. The addition of bi-carbonate of soda to these salines is frequently an advantage.

It is thought that salicylic acid stimulates the production of bile and hence increases its flow through the bile tract. It is also an antiseptic and its excretion with the bile certainly in many cases gives relief. As previously mentioned, urotropin, through somewhat similar means, is an important remedy in these conditions. Its antiseptic value is probably greater than that of any other remedy. Ox-gall, in my experience, has been the most useful single agent I have employed in diseases of the gall tract. The principal constituents of the purified product are sodium glycocholate and sodium taurocholate. These salts increase the quantity and fluidity of the bile, act as an antiseptic throughout the bile tract and increase peristalsis. I have found the preparation of bovine bile marketed by Hynson, Westcott & Co. as "Glycotauro" most reliable.

Before concluding, I wish to say a few words as to the choice of medical or surgical measures of relief for these cases. Both have their field of usefulness, but as yet no line has been sharply drawn to indicate to which class individual cases belong. Nothing indicates this more forcibly than the writings of medical and surgical authorities. It is indeed strange to see the internist recommending surgery and the surgeon inclined to conservatism. Billings writes "Gall stone disease must be recognized as a surgical disease. The danger of cholangitis, hepatic abscess, perigastric adhesions, pancreatitis, etc., occurring as a result of gall stones is so great that even the most conservative physician may well hesitate to take the responsibility of non-surgical treatment." On the other hand, in speaking of typhoid infection of the gall bladder, Deaver says "Typhoid

cholecystitis rarely calls for operation. The majority progress favorably. I have followed too many cases to a sure convalescence without operation to believe that all cases arising in typhoid fever should be operated on." Hans Kehr, after an unusually wide experience with these cases, concludes that "Eighty per cent. of all cases will become latent in time." It is stated that Kehr declines to operate upon two out of every three cases sent to him for surgical treatment.

Possibly here as in other conditions the pendulum swings too far in both directions and mid-ground is the safer position. My personal opinion is that the mild cases, especially in the early stages, should have medical treatment tried, and that many mild cases and some of the severer ones will run a rapid course to complete recovery as far as symptoms and discomfort are concerned. When it is recalled how frequently those conditions have been shown to exist at autopsies and by their discovery during abdominal operations performed for other conditions, and remember that a large per cent. of these cases had few if any symptoms as a result of the presence of the stones or inflammation, it is absurd to believe that all cases of cholecystitis and cholelithiasis should be referred to the surgeon. Unlike appendiceal attacks, a short delay for the trial of medical remedies is not likely to cause dangerously acute conditions.

On the other hand, I wish to emphasize that a large proportion of cases are more surely, quickly and safely relieved by the surgeon than medically. Those which from the beginning are very acute, and those for which medical treatment gives no relief, and where there is a tendency toward frequent relapses, should, if there are no contraindications, be treated surgically. It is unfair to them to continue with drugs and dieting after a reasonable trial has shown the futility of medical treatment. It must be remembered that the surgical results will be better, the operation simpler and the danger less if they are submitted to the operation before the general health has been undermined by digestive disturbances, toxemia, and adhesions, and the danger of malignant changes will be minimized. In capable hands the surgical risk is not great. It is small when the great relief usually obtained is considered. Of course, surgery does not always bring about all that was hoped for but many of the poor re-

sults are not due so much to lack of success of the operation as to the delay in seeking surgical aid and the consequent production of pathological conditions which no measure can relieve.

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SURGICAL TREATMENT OF DISEASES OF THE BILIARY TRACT.*

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In presenting the surgical aspects of a subject in a symposium of this sort my endeavor, after a careful and comprehensive review of the literature, shall be, as far as possible, to summarize the consensus of thought and in a degree to standardize the best procedures. Our own activity in this field has been influenced by this process, which, coupled with a ripening experience, has more or less regulated and moulded our operative procedures.

Our early experience was gained in a very difficult class of cases, which only came to operation of very dire necessity,—just the same experience that the appendix cases presented in their early operative developments. In fact, we were called to operate in advanced and complicated cases where the original disease had been swallowed up in the sequelae of neglect, presenting some well nigh unsolvable problems and almost prohibitive technical obstacles, with, of course, a discouragingly high degree of mortality. Following surgical demonstrations of underlying pathologic states in the many evidences of digestive disorders, the internists and practitioners have yielded a reluctant acquiescence by referring cases earlier in their course. This has happily resulted in a much lowered mortality and morbidity, incidentally adding years and happiness to both the patients and the surgeons.

Experience has further demonstrated the failure of permanent relief in many cases in which certain surgical measures were executed with temporary improvement, resulting in secondary operations, which are trying to the patient and often difficult for the surgeon. For the elimination of these second operations a proper understanding of the pathology in relation to the symptomatology is essential in the first instance. On the other hand, a failure to

co-ordinate the surgical measures to the resisting powers of the patient and in severe cases limiting operations to the immediate necessities, even though it may leave the patient subject to the likelihood of a second operation, will result in a greatly increased immediate mortality and but a slightly decreased morbidity. The latter statement would seem inappropriate without the qualifying addition of the probable wound infection, prolonged drainage, hernia, etc., resulting from the depleted state of the patient and the advanced organic changes, both local and remote. Emphasis is repeatedly laid by writers and prolific operators like Robson¹ and Deaver² on the frequently unforeseen difficulties of operation in this field and the necessity for adequate equipment, assistance, surgical skill, experience and resourcefulness.

The thorough covering of the important subjects of pathology and symptomatology by the preceding essayists leaves for me but the discussion of the appropriate surgical application to the different types they have outlined.

In acute inflammatory cases we are governed in our action by many factors, all of which must be taken into account. In first mild attacks surgical interference is scarcely called for, appropriate medical treatment usually resulting in prompt subsidence of symptoms.

In repeated mild attacks, the opportunity of an attack may be seized for removal of appendix and removal or drainage of gall bladder, the patient being more amenable to surgical interference under stress of pain, as is so frequently seen in the recurrent appendix inflammations.

In the moderate but more severe cases, there is much difference of opinion, one school waiting for a subsidence of inflammation and the other advocating immediate operation. The middle ground seems to me best: if seen early, operate; if the inflammation is waning, wait. This attitude is much that taken in appendix cases. With early operation the dangers of cholangitis, passage of stones to the ducts, inflammatory adhesions, and the loss of time and disability of a following operation are avoided.

In the very acute or fulminating cases of empyema, rupture, or gangrene of the gall bladder or suppurative inflammation of the ducts, immediate interference is demanded, anticipating, if possible, intra-hepatic or extra-hepatic abscess, crippling adhesions, puncture of

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the stomach, duodenum or colon or a rapidly advancing and fatal peritonitis. These patients are often very ill and the surgical interference is best limited to the essential relief of the pressing trouble, leaving extensive or time-consuming measures to the future. It is here that one displays the best surgical skill and judgment, or the worst; the difference commonly resulting in success on the one hand, or disaster on the other.

The frequency of gall bladder inflammation, so commonly overlooked, in typhoid³, with occasional perforation and death, should lead the practitioner to a more careful routine supervision of this region, recognition and recordation of mild attacks and prompt surgical intervention in case of empyema or rupture.

While the diagnosis of gall stones in the gall bladder is often uncertain and sometimes immaterial, we see them with increasing frequency on X-ray plates or suspect their presence by the symptoms. When not causing or in association with active symptoms, should they be removed?

Are there innocent gall stones?

While a regular and definite percentage of cadavers show gall stones and while there are or may be sterile gall stones or gall stones (unsterile) in sterile gall bladders, nevertheless, the position of Deaver and others that gall stones are nearly always the result of inflammation, predispose to inflammation, are set in motion by inflammation and may and constantly do cause most serious trouble when lodged in the ducts, is undoubtedly correct. Their removal is attended with less risk than their retention, Mayo⁴ saying, "A patient with G. S. has six times as many chances of dying from cancer of the G. B. and liver as he does of dying from an operation for the removal of the G. S. in an early stage of the disease."

I have been struck with the great improvement in certain pelvic operative cases, where gall stones were found and removed at the usual general abdominal exploration attending such operations, whose presence was unsuspected by the history. In reviewing these cases afterward the digestive disturbances had been attributed to the pelvic disorders or had not been emphasized or had been overshadowed by the pelvic symptoms. Peterson⁵ calls attention in an exhaustive study to the same point and shows the percentage giving symptoms or requiring fur-

ther operation when for some reason the stones were not removed.

When should the gall bladder be removed? Around this much discussed subject our whole time could be spent. Between the operators who always remove, and the ones who always drain, there again seems a middle course. That the elephant, rhinoceros, deer, goat, etc., have no gall bladders seems quite foreign to the question. Unlike the appendix, our gall bladders do not atrophy and disappear with old age and they have a very distinct function. That the removal of the gall bladder is done more often than formerly is indicated by reports from all sources, Mayo⁶ saying that, in 7,000 cases coming to operation, in eighty per cent. the gall bladder was removed. This is about the position taken by the majority of conservative surgeons who advocate removal of functionless gall bladders. The important concern is to know when they are functionless. This requires much experience in handling these gall bladders at operation and following the patients' histories post-operatively.

That gall bladder drainage has served us well; that it clears up inflammation of the ducts and of the pancreas (if continued long enough) can scarcely be doubted, and even when a diseased gall bladder is left for future reference because its removal might prove too hazardous, often by drainage the inflammation disappears and no further intervention is needed. Cholecystectomy is distinctly, under any and all circumstances, a more serious operation than simple drainage. It has its very clear indications, which are being gradually enlarged and definitely indicated. They are given by Deaver:

1. In most cases of acute calculous cholecystitis.
2. Hydrops with obliteration of the cystic duct.
3. Chronic empyema.
4. Calcareous degeneration.
5. Cholesterin gall bladder of Movnihan—(the strawberry gall bladder of McCarty).
6. Gangrene of the gall bladder.
7. Carcinoma.
8. In most cases of perforation.

Mayo⁷⁻⁸ adds papilloma of the gall bladder.

As against removal, we have

1. The function of the gall bladder removed.

2. Its aid in locating structures in secondary operations.

3. Its use for forming a fistula in insurmountable common duct obstruction.

Relative to the question of the removal of the gall bladder, and its possible deleterious results, Rost⁹ concludes that in 16 per cent. after drainage and in 27 per cent. after removal there follows vomiting, belching, gastric oppression, constipation and other digestive symptoms. Also that (so-called) pure aseptic gall stones cause the same symptoms. He states that with a good papillary sphincter the gall passages dilate and act as a gall bladder and that a fine nervous mechanism acting on the muscles of the gall bladder and ducts and sphincter of the duodenal papilla controls the flow of bile to the duodenum. This results, after awhile, if the sphincter hypertrophies, in the cessation of the continuous flow of bile and a return to the normal intermittent flow; resulting from psychic and food stimuli, the chief elements of the latter being peptone and fat. There is wide divergence of opinion in this matter as well as the influence of cholecystectomy on gastric secretion. There seems, however, an agreement that no serious disturbance of metabolism occurs after cholecystectomy. These important questions are yet in dispute and it behooves us to scrutinize carefully all new evidence and to avoid taking too pronounced a stand from which we may later have to recede.

The technic employed in the various surgical procedures must be as briefly touched as the indications for their use. For a discussion of the many incisions employed and their relative merits reference is made to the work of Deaver and Ashurst. Mayo Robson confines himself to one incision—the right rectus. Judd¹⁰ and others employ the same incision, extending its upper limits to the ensiform cartilage where more room is needed for gall duct exposure, rotating the liver and making traction on it. Crile deprecates traction and the use of pillows under the back as increasing trauma and the discomfort of the patient. He extends his incisions very low and makes a very large incision. That any incision in the rectus disturbs its innervation and that of the other muscles is undeniable; practically the results are not obviously bad and little or no disability results where wound healing is good. For purposes of drainage a puncture away from the in-

cision is often useful and insures better healing of the operative wound. The crossed incision advocated by McArthur¹¹ and others¹² is of great use in very simple cases not requiring removal of the gall bladder. It conserves the nerve supply to the muscles, is capable of easy closure and adds much to the post-operative comfort of the patient. We find it useful for the removal of stones found during pelvic operations where simple removal and gall bladder drainage are indicated.

It is well to bear in mind that upper abdominal incisions do not heal as promptly nor as securely as those in the lower abdomen. These wounds need good support and suturing for rather a longer time than is sometimes practiced.

Too much emphasis cannot be laid on the importance of gentle handling of tissues in this locality. To the monumental work of Crile on surgical shock, with his definite demonstrations of the underlying pathologic pictures, we owe a great debt which will show further improving results in this field. He deprecates excessive traction and pleads for sharp knife dissection in place of the trauma of blunt dissection, tearing and pulling. Whether or not one carries out the complete anoci technic of Crile, the underlying principle on which it is based is indisputably correct and nowhere finds a more useful application than in this locality, where shock so frequently follows trauma.

Cholecystotomy, or an opening and subsequent closure of the gall bladder, must have a very limited application. It is advocated occasionally as better preserving a functioning gall bladder. I do not see that it does this any better than simple drainage, which has many obvious safe-guards and advantages.

Cholecystostomy, or drainage of the gall bladder, is the operation of choice in simple cholelithiasis with patulous ducts, in simple inflammation with associated pancreatic involvement, and in the face of severe inflammation in obese subjects where the urgency of the acute illness on the one hand, the technical difficulty on the other, or a combination of the conditions make it the most expedient course. Even should a removal of the gall bladder be later necessary, it is conservative surgery to do two operations with a living subject rather than one operation with a fatality. It is here

that we see a high operative mortality at the best, with a rapid increase if too much or untimely surgery is undertaken.

The inversion of a cuff of the gall bladder with firm closure around the dressed tube obviates suture of the gall bladder to the abdominal wall and is thus often preventive of a dragging sensation and discomfort subsequently. While Robson advocates suture of the gall bladder to the abdominal wall in simple cases, most operators in this country confine this procedure to cases calling for very prolonged drainage.

Cholecystectomy is usually best performed from within outward, clamping and ligation of the cystic duct and artery and removal of the gall bladder with closure of the bare space on the under surface of the liver as the organ is removed. Where the tissues are not infiltrated we close over the stump with redundant peritoneum, very much after the method commonly employed after appendectomy. This tends to prevent objectionable adhesions which may later cause symptoms; and, in furtherance of this latter object, the interposition of omentum or loose peritoneal fat between stomach, duodenum and the gall bladder bed is strongly indicated, particularly in case the common duct is drained at the time.

Cholecystenterostomy, or the establishment of a fistula between the gall bladder and the duodenum, stomach, jejunum or colon, may have a definite indication in complete stricture of the common duct, in case of persistent biliary fistula and in very dense, hard condition occasionally seen in pancreatitis.

Terrier¹³ has shown that bile in the stomach caused no damage; it has been used seemingly with advantage by the stomach tube in certain drainage cases; Kehr¹⁴ has done very many anastomoses of the gall bladder with the stomach, and Deaver elects this association next to the duodenum in case the latter is technically not available. It is probable that as soon as the common duct becomes patulous again the stoma closes, as is the case elsewhere in established fistulae. This fact limits the field for this operation very materially, as drainage of the gall bladder or the common duct for three to six weeks is, in the vast majority of cases, sufficient to cure the infection in the gall passages where the ducts are patulous. There are, however, cases of obvious or persistent char-

acter wherein this measure is of great use and of proven material benefit.

That drainage of the gall passages relieves the pancreatic inflammation is not to be gained; furthermore, there is at times an actual drainage of the pancreas as shown by the excoriation of the skin, not infrequently seen.

Cholecystenterostomy is attended with a higher mortality than the preceding operations, and is liable to be associated with more distortion of structures and crippling adhesions, and should, therefore, be reserved for cases with very definite indications.

In the more difficult locations of calculi in the lower end of the common duct and in the ampulla of Vater, mobilization of the duodenum by incision of its right peritoneal attachment and retraction toward the center may give access to the duct, particularly when it traverses the posterior aspect of the head of the pancreas rather than the route through its substance.

The transduodenal method of approach in certain instances of stone impaction is invaluable, and we have successfully made use of it in otherwise seemingly hopelessly involved conditions. Todd¹⁵ has recently recorded numerous cases, and advocates this route. The retro-duodenal route, however, is better when available, and with the Blake forceps most cases can be thus handled. There is always the risk of a duodenal fistula which may be a formidable complication in the trans-duodenal route.

The more difficult operations for the establishment of new common duct, etc., are not within the scope of this paper; the necessity for their performance is becoming less frequent with the recognition of the surgical status of gall tract diseases before the advanced or terminal states of pathology are reached. With the continued dissemination of the knowledge that prolonged stomach troubles, indigestion, dyspepsia and the like are usually based on some definite pathology, which calls for accurate diagnosis and therapy, definitely indicated and directed, earlier surgical reference and relief will be obtained, with the avoidance of dangerous operations in the face of advanced general and local pathology.

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THE PROBLEM OF THE FEEBLE-MINDED— A PLEA FOR ADEQUATE STATE CUSTODIAL CARE.*

By L. T. ROYSTER, M. D., Norfolk, Va.

As civilization advances, there is an ever increasing congestion resulting from the gathering of people into large centers of population, brought about largely by commercial interests; this is termed congregate living. The problems of society in such centers steadily become more numerous and complex. Crime increases rapidly and the number of dependents from this and other causes grows in increasing proportion to the size of population. The question of responsibility has assumed a new aspect. Time was when responsibility was decided largely by two criteria: those whose mentality was obviously so changed as to require the institutional control of the insane for the mutual benefit of themselves and society, and those who were so young that they were considered irresponsible.

These are narrow limits within which to work, and are as inadequate as they are narrow. Responsibility is a relative term, having been based, up to very recently, on the two principles just mentioned; and only during the last few years has it been discovered that relativity did not depend on chronological age, but rather on mental age. The degree of mental defect can be tested by more or less scientific methods. Society has for a long time considered merely the fact that an individual was a law-breaker, and hence amenable

to hard and fast rules, which are based for the most part on erroneous conception. Since that large class of human beings known to-day by the broad term "feeble-minded" has been better understood, our conception of the relativity of responsibility has undergone a marked change. Formerly, the criminal, the truant, the alcoholic, the pauper and the prostitute were considered wilful and deliberate breakers of the law. We know to-day that a very liberal percentage of all of this class is mentally incompetent to exercise judgment and discernment. The feeble-minded, then, present the most serious problem which society to-day is called upon to solve. By careful study and research on the part of very capable men, notably Binet, there has been discovered a method of testing mentality. It has been found that many children who were considered merely backward in school, are in reality incapable of going beyond the study prescribed for a normal child of a certain age. For example, we find a child of twelve years who measures seven or eight years mentally; we find a man or a woman of twenty or more who measures, mentally, twelve years.

We have divided the mental defectives into various classes more or less arbitrary, yet all appear in definite relation to each other. Leaving out of consideration the insane, we have a child who is termed an idiot, a dribbling, drooling, laughing unfortunate, who never goes beyond two or three years mentally, regardless of how old he may be physically; from this state we have gradations passing through the low grade imbecile, the middle grade imbecile, the high grade imbecile to the moron, who is an individual of apparently slight mental defect. Many of these morons are going about among us, some of them actually earning a little, but none of them keeping a position in the community which would be expected of them, all possessing a lowered resistance to immoral influence. Many and varied have been the attempts to solve the problem of dependency, but the efforts have been made to "help those who would help themselves," only to fail because it was discovered that they *would* not help themselves. Little have we dreamed that the majority of these individuals *were unable* to help themselves. It has taken a long time to discover the cause of dependence. For example, in many parts of the South

*Read before the forty-sixth annual meeting of the Medical Society of Virginia, at Richmond, October 26-29, 1915.

a considerable proportion of the population has been considered shiftless and worthless, but with the discovery of hookworm disease and the proper treatment of its cause, many of these citizens have become self-respecting, and supporters of their families. Undoubtedly, analogies exist in the form of other physical defects and diseases which, when discovered, will elevate many more of the ne'er-do-wells to a higher plane. Granted, however, that a still considerable number of dependents are due to physical conditions, a much larger percentage remains which cannot be explained by these means. Feeble-mindedness is responsible for much of this. It has been found that many habitual drunkards and periodical spreers are what they are because of feeble-mindedness, (not the man who merely gets into the habit of taking one or more drinks—for such a man is not infrequently “reformed” by conviction of one kind or another, religious or otherwise, never to touch another drink, and returns to his work and becomes again a wealth producer), but the one for whom apparently nothing can be done.

The discovery that mental defection was the cause of most truancy is so recent in our minds that it needs no further discussion at our hands.

Henry H. Goddard and others have investigated at some length the prostitute class with the result that it has been discovered that a percentage so large that I almost hesitate to state it has been found, regardless of physical age, to be not over twelve years mentally. The same observation applies to paupers, those filling our alms-houses at an immense expense to the community to say nothing of houses of correction and jails, the majority of which are filled by petty offenders who have not been wilfully malicious but lack a normal mentality, without the power to discriminate between good and evil, who have merely followed the line of least resistance, yielding to the first temptation which crosses their path.

The school child who is sub-normal, who does not keep up with his work, but repeats one or more grades, and has been found free from physical defects, such as eye-sight and hearing, may be counted almost universally as feeble-minded. It has been estimated that a safe average of the feeble-minded in our schools is *two per cent*. Much of this I have been able to verify at first hand. The feeble-minded class

to which I allude is that large army which the average citizen would pass over as being just a little backward, but the expert observer finds to be from two to many years younger mentally than chronologically. Arguments in favor of these on this occasion are out of place. Sufficient data may be adduced to prove all such statements and by competent authorities.

Let us glance for a moment at the results of unrecognized feeble-mindedness and the allowing of those thus affected to move about uncontrolled in the midst of society. It is only a short while until these unfortunate people sink to the dregs of degradation or are incarcerated in houses of correction, jails, penitentiaries or alms-houses, to become a burden on the community without being taught to help produce anything themselves. It must be remembered that none of the class to which I allude is wilful or deliberate in their acts or conduct. They are merely people with the same animal instincts and passions that are possessed by normal people, but who do not possess sufficient mentality to control them of their own efforts; therefore, they follow the line of least resistance, are easily led astray, becoming beggars, paupers, prostitutes and drunkards. And this is not the worst feature for, according to the laws of Mendel as applied to human production, mental defectives “breed true.” They almost invariably mate, legitimately or illegitimately, only to propagate their species in ever-increasing numbers, unchecked by an ignorant society.

Having glanced at the condition, its causes and its effect upon society, let us consider for a few moments what can be done to meet the situation. It seems to me that at present there are three main lines along which we should and can work: First and foremost, to prevent the feeble-minded from propagating their species; second, through State control, to so place this class that they can be well cared for and at the same time a certain percentage made self-supporting; third, to relieve indigent parents (from whom come most of this class) of the burden of caring for them. At the present moment there are two methods to be employed in carrying out the first idea, namely, sterilization and segregation. Sterilization undoubtedly meets the requirements necessary to prevent propagation, but does not immediately relieve the State of the burden of their care,

nor does it prevent those sterilized, at least, the females, from becoming dissolute and thereby spreading venereal disease. Besides, the public mind is not quite educated enough to receive sterilization kindly; hence, it seems to me that by adequate State custodial care all three lines I have mentioned may be followed with benefit to all. In order to accomplish anything, the feeble-minded must be detected early. This can best be accomplished through medical inspection in public schools.

By segregation in conformity with legal enactment, propagation can be prevented. A rather liberal per cent. of the feeble-minded can be taught to ply a vocation *under intelligent supervision* which is sufficient to take care of their maintenance and in some instances even to return a small surplus to the institution caring for them. I believe it is possible for this class to be made so productive as to even care for those who can do nothing. In this way, eventually they will cost the State nothing for maintenance.

As already stated the majority of these children come from more or less indigent parents to whom they are a burden. It requires practically the whole attention of the mother for one feeble-minded child; consequently, she neglects her other children and the whole moral tone of the family is lowered.

Virginia has made a small start in this direction. This brief outline has been written merely as a plea for adequate State custodial care, and it is hoped by the author that the Medical Society of Virginia will become sufficiently interested in the subject to work collectively and individually for the benefit of society and this class of unfortunate fellow citizens. It is further hoped that the Society will memorialize the Legislature, asking them to consider the most serious problem in economics and the most dangerous menace to its welfare.

Proceedings of Societies, Etc.

ROANOKE ACADEMY OF MEDICINE.

The regular meeting of this society was held November 1st, Dr. John R. Garrett, President, in the chair. The following was the order of business:

Dr. I. E. Huff gave a very full account of

the happenings at the recent meeting of the State Medical Society at Richmond, at which were present 29 medical men from Roanoke and vicinity. He dealt with the medical side of the program and was followed by Dr. S. S. Gale, who gave a synopsis of the surgical discussions. Dr. Garrett as retiring councillor, and Dr. R. L. Rhodes, as in-coming councillor, related some of the matters taken up by the council.

Dr. E. P. Tompkins read a paper on *Certain Aspects of Social Hygiene*, in which he dealt with the matter of instructing young people in the physiology of reproduction. The paper, it was explained, was written not primarily for the Roanoke Academy of Medicine, but designed to be put into the hands of young people for their instruction and warning, consequently was couched in simple language and dealt with elementary facts.

Dr. S. S. Gale, discussing the paper, related a case, a horrible example, in which the entire penis had been destroyed by poison of syphilis.

Dr. E. T. Brady: "I wish to compliment the essayist upon this paper; it is a hard one to write. I have tried two or three times myself to write such a paper, and failed."

Dr. H. E. Jones: "I don't think this sort of instruction is worth a cent. The boy will not heed. By the time he is six or seven years old he has knowledge of these subjects. I have talked with many boys on this subject. I recall one, the last of a prominent family, whom I talked with and warned. In spite of warnings and admonition he contracted gonorrhoea and was made sterile."

Dr. R. L. Rhodes: "I disagree with Dr. Jones. I think if parents would talk to their children on this subject instead of keeping them ignorant they would get better results."

Dr. W. L. Powell: "I think the paper will do good when distributed. I think fathers should instruct their sons. I expect to take my boys to the G.-U. ward and *show* them; otherwise they will think the dangers are exaggerated."

Dr. J. W. Preston: "I think this is one of the most important fields we have had the opportunity to discuss. It is so far-reaching. All of us have had the experience of parents coming and asking how to instruct their children. Most of us have no definite idea how to do so. Some time ago I sent to the *A. M. A.*, to get

some literature for my families. I could not see though that what I received would be of much value. There is an element of danger in making the heart element too glowing. The problem is to present the subject in such a way as to increase the 'moral resistance.' Along with the dangers teach the boy the necessity of standing bravely against temptation. Few of us have the faculty of reaching the child,—of getting his confidence. We must simply tell the parents. This is the best piece of literature I have heard. There is an awful responsibility on the medical profession in this matter."

Dr. W. S. Slicer, having been called from the hall, his paper was read by the secretary. He made *A Plea for More Careful Work in Diagnosis*. He reported a case diagnosed as hysteria by several, in which pelvic abscess was later found and patient lost her life.

Dr. H. E. Jones, discussing the subject, said: "I think this paper will make us more careful. Instruments of precision should be used and more time devoted to diagnosis, even if you do have to demand fee in proportion. Too many doctors practice with only pad, pencil, and watch."

Dr. J. W. Preston spoke of the advantages of intra-muscular injection of diphtheria antitoxin in certain cases. It does not cause as much pain and is followed by very much less soreness.

Upon report of a committee appointed last session for the purpose, it was voted that the Roanoke Academy of Medicine endorse the Burrell Memorial Hospital for the colored race.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notices.

Radium and Radiotherapy. Radium, Thorium and other Radio-Active Elements in Medicine and Surgery. By William S. Newcomet, M. D., Professor of Roentgenology and Radiology, Temple University, Medical Department; Physician to the American Oncologic Hospital; Fellow of the College of Physicians, Philadelphia. 12mo, 315 pages, with 71 illustrations and 1 plate. Cloth, \$2.25, net. Lea & Febiger, Publishers, Philadelphia and New York.

In his preface, the author says, "another fact that has to some extent discouraged American investigation is that most of the radium brought to this country has been in

the hands of private speculators; and in some instances * * * an exorbitant price was paid for an extremely poor quality of radium." Naturally, the result of its application was disappointing, and the purchaser deserted the field believing it worthless. The author therefore warns those who enter upon this study to either employ a physicist to test the specimens, or to familiarize themselves to some extent with the physics involved, and he has devoted considerable space to the chemistry and physics of the element.

It is refreshing, in this day of extravagant claims, to meet with one evidently as familiar with the ground as one can be at this time, and yet as conservative in his claims as he is thorough.

Even to one who does not purpose using radium, the reading of the work will well repay the time spent.

M. W. P.

The Tuberculosis Nurse, Her Function and Her Qualifications. A Handbook for Practical Workers in the Tuberculosis Campaign. By Ellen N. LaMotte, R. N., Graduate of Johns Hopkins Hospital; former Nurse-in-Chief of the Tuberculosis Division, Health Department of Baltimore. Introduction by Louis Hamman, M. D., Physician in Charge Phipps Tuberculosis Dispensary, Johns Hopkins University. G. P. Putnam's Sons, New York and London. 1915. Small 8vo. 292 pages. Cloth. Price, \$1.50.

The Tuberculosis Nurse contains much that is of interest to the general practitioner as well as to those doing altogether tuberculosis work. It goes into much neglected detail as to the management of such cases, and impresses the importance of attention to apparently little things which, when disregarded, often serve to counter-act more important preventive and curative measures. It will furnish much helpful data for those taking up work in tuberculosis campaigns.

The Practitioner's Visiting List for 1916. Four styles: weekly, monthly, perpetual, sixty-patient. Pocket size; substantially bound in leather with flap, pocket, etc. \$1.25 net. Lea & Febiger, Publishers, Philadelphia and New York.

The record portion of this visiting list contains ruled blanks for noting the usual details of addresses, memoranda, etc., while the text portion has, among other valuable information, a scheme of dentition, table of weights, measures and comparative scales, instructions for examining urine, diagnostic table of eruptive fevers, incompatibles, poisons and antidotes, table of doses, as well as a table of diseases and their remedies.

Editorial.

Pellagra Caused by Insufficient Proteid Diet.

Announcement has just been made that, as a result of continued research and experiments of the Public Health Service, both the cause and the cure of pellagra have been discovered, and it is hoped that the spread of this dread malady, which has been increasing in the United States at a terrific rate during the past few years, may now be checked and eventually eradicated.

Pellagra has been increasing alarmingly throughout the United States during the last eight years, and it is estimated that 75,000 cases of the disease will have occurred in the United States in 1915, and of this number at least 7,500 will have died before the end of the year. In many sections only tuberculosis and pneumonia exceed it as a cause of death.

The experiment which was carried out at the farm of the Mississippi State Penitentiary, about eight miles east of Jackson, Miss., has been in charge of Surgeon Joseph Goldberger and Assistant Surgeon, G. A. Wheeler, of the U. S. Public Health Service. The farm consists of 3,200 acres, in the center of which is the convict camp. The final experiment was undertaken for the purpose of testing the possibility of producing pellagra in healthy human white adult males by a restricted, one-sided, mainly carbo-hydrate (cereal) diet. Of eleven convicts who volunteered for this experiment, six developed a typical dermatitis and mild nervous gastro-intestinal symptoms.

Experts, including Dr. E. H. Galloway, the Secretary of the Mississippi State Board of Health; Dr. Nolan Stewart, formerly Superintendent of the Mississippi State Hospital for the Insane, at Jackson; Dr. Marcus Hause, Professor of Dermatology, Medical College of the University of Tennessee, Memphis, Tenn., and Dr. Martin R. Engman, Professor of Dermatology in the Washington Medical School, St. Louis, Mo., declare that the disease which was produced was true pellagra.

Prior to the commencement of these experiments, no history could be found of the occurrence of pellagra on the penitentiary farm. On this farm are 75 or 80 convicts. Governor Earl Brewer offered to pardon twelve of the

convicts who would volunteer for the experiment. They were assured that they would receive proper care throughout the experiment, and treatment, should it be necessary. The diet given was bountiful and more than sufficient to sustain life. It differed from that given the other convicts merely in the absence of meats, milk, eggs, beans, peas, and similar proteid foods. In every other particular the convicts selected for the experiment were treated exactly as were the remaining convicts. They had the same routine work and discipline, the same periods of recreation and the same water to drink. Their quarters were better than those of the other convicts. The diet given them consisted of biscuits, fried mush, grits and brown gravy, syrup, corn bread, cabbage, sweet potatoes, rice, collards and coffee with sugar. All components of the dietary were of the best quality and were properly cooked. As a preliminary, and to determine if the convicts were afflicted with any other disease, they were kept under observation from February 4th to April 9th, two and a half months, on which date the one-sided diet was begun.

Although the occurrence of nervous symptoms and gastro-intestinal disturbances was noted early, it was not until September 12th, or about five months after the beginning of the restricted diet, that the skin symptoms so characteristic of pellagra began to develop. These symptoms are considered as typical, every precaution being taken to make sure that they were not caused by any other disease. The convicts upon whom the experiment was being made, as well as twenty other convicts who were selected as controls, were kept under continuous medical surveillance. No cases of pellagra developed in camp excepting among those men who were on the restricted diet. The experimenters have therefore drawn the conclusion that pellagra has been caused in at least six of the eleven volunteers as a result of the one-sided diet on which they subsisted.

On the basis of this discovery, the States of Mississippi, Louisiana and Florida have laid their propaganda through their respective boards of health for the eradication of the disease.

The American First-Aid Conference

Was organized at Washington, D. C., August

23-24, when the following resolution was adopted:

"Whereas, There is a great lack of uniformity in first-aid methods, in first-aid packages, and in other first-aid equipment, and in first-aid instruction, and

"Whereas, Many of the aims of first aid are defeated thereby and needless suffering and expense incurred,

"Therefore, *Be It Resolved*: That this Conference recommends to the President of the United States that he appoint a 'Board on First-Aid Standardization,' said Board to consist of one officer each from the Medical Corps of the U. S. Army, the Medical Corps of the U. S. Navy, the U. S. Public Health Service, the American National Red Cross, the American Medical Association, the American Surgical Association, and the Association of Railway Chief Surgeons of America; this Board to deliberate carefully on first-aid methods, packages, equipment and instruction, and to recommend a standard for each to a subsequent session of this Conference to be called by the Permanent Chairman; the creation and maintenance of the said Board to be without expense to the United States."

A resolution was also adopted directing that "the questions noted below be sent to the Chief Surgeons of Railroads, Mines and Manufactures, first, to be answered by them; second, that a copy of these questions be sent by the Chief Surgeons to their Associate Surgeons.

"The object of these questions is to attempt to get the opinion and experience of a number of surgeons and to formulate them for publication.

"Please answer each question on a separate sheet of paper and sign your name to each sheet:

"1. What has been your experience with the most available first-aid package and dressing for small and large wounds?

"2. What has been your experience with the immediate employment of antiseptics in accidental wounds; what antiseptic have you used, in what strength, and how applied? Have you employed tincture of iodine: if so, how and what have been the results?

"3. What in your experience has been the most efficient and most readily applied method of fixation for injuries of the (a) upper and (b) the lower extremity?

"4. Have you considered the construction of a stretcher, which, in addition to serving as a means of transportation of injured, will have appliances for the fixation of the upper and lower extremity, somewhat along the lines of a Bradford splint, or the Gihon naval splint?

"5. Please state your views on some liquid ointment dressing which would be available for first aid in large wounds and burns with the object of preventing the usual dry-gauze dressing adhering to the wound and rendering subsequent dressings painless."

Dr. Joseph C. Bloodgood, at whose instance the Conference was formed, states that he "will welcome answers to the questions from any surgeon of experience in the treatment of accidental injuries, and that these answers will receive full consideration in the deliberations of the Board on First-Aid Standardization."

Surg. Gen. Wm. C. Gorgas, U. S. A., is Chairman of the Conference; Col. Wm. S. Battle, Jr., Roanoke, Va., Treasurer; and Dr. Jos. C. Bloodgood, Baltimore, Secretary.

Physicians' Prescriptions vs. Harrison Anti-Narcotic Law.

We have just noted that "according to a ruling from Judge Henry Clay McDowell, of the United States district court for the Western District, at Danville, there is nothing in the Harrison anti-drug act which can prevent any practicing physician in Virginia from prescribing as much opium, or similar drug, as he may please, in the course of his practice." The opinion of Judge McDowell is especially interesting, as it is in direct conflict with that recently rendered by Judge Waddill, in a case tried in the Federal court in Richmond, which case is to come up for re-trial owing to a hung jury.

The case in Danville was that of a negro physician, charged with prescribing as much as one pound of gum opium for each of two women. Although it was established that the physician had written the prescriptions, it was held by the court that he had not thereby violated or infringed upon the Harrison anti-drug act.

The Petersburg (Va.) Medical Faculty.

At its meeting, November 18, elected officers for the coming year as follows: President, Dr. H. A. Burke; vice-presidents, Drs. J. Boll-

ing Jones and C. S. Dodd; secretary-treasurer, Dr. L. S. Early; corresponding secretary, Dr. A. F. Bagby; court medicale, Drs. H. G. Leigh, W. E. Harwood, J. E. Smith, R. A. Martin and W. C. Powell; committee on papers, Drs. C. T. Jones, D. D. Willcox and E. J. Nixon; committee on supper, Drs. W. P. Hoy, D. D. Willcox and W. H. Crockford.

The South Piedmont (Va.) Medical Society

Held its regular meeting in Lynchburg, November 16, the president, Dr. C. D. Barksdale, Sutherlin, in the chair, and Dr. George A. Stover, the secretary, in his accustomed place. The meeting, which was attended by about fifty physicians, was divided into three sessions, at which a number of papers were presented by members and invited guests. The next meeting will be held in April, 1916.

Southern Medical Association.

At the meeting of the Association in Dallas, Texas, November 9-11, so great was the variety of subjects enthusiastically discussed that it would be hard for a disinterested party to decide which is the most important branch of medicine. The numerous entertainments and cordial treatment given its guests leaves no doubt in the minds of the visitors that Dallas has been rightfully called "The Convention City." Atlanta, Ga., was selected as the next place of meeting, and Dr. Robt. Wilson, Jr., Charleston, S. C., was elected president. Chairmen of the various sections are as follows:—medicine, Dr. K. H. Beall, Ft. Worth, Texas; surgery, Dr. John H. Blackburn, Bowling Green, Ky.; eye, ear, nose and throat, Dr. J. W. Jervey, Greenville, S. C.

Cheap Imitations of Well-known Remedies.

The U. S. Department of Agriculture has found that there are some unscrupulous manufacturers who are attempting to substitute cheap chemicals with no medicinal value whatever, for some of the high-priced patent medicines of foreign origin, which the war conditions have made it hard to obtain. These are being distributed in such a way that it is difficult to trace the preparations to their manufacturers, but, where it can be done, the parties will be prosecuted as far as possible, by either Federal or State authorities, according to the rights of each to act. One of the preparations, put up in imitation of "Neosalvarsan," has been found to be nothing more than

salt colored with a coal tar dye, nine of the genuine neosalvarsan whatever being present. Some other preparations purporting to be acetylsalicylic acid, commonly known as aspirin, have already been seized by officials in charge of the enforcement of the Food and Drugs Act, because an analysis showed them to be worthless imitations.

Married—

Dr. George H. Reese and Miss Anabel Hays, both of Peterburg, Va., November 16.

Dr. J. McNeill Smith, Rowland, N. C., and Miss Roberta Olyvia Andrew, Harman, Md., November 17.

Dr. Edward Martin Brown, Washington, N. C., and Miss Ruth Butler, Lynchburg, Va., November 16.

Dr. Harvey Smith Baker and Miss Gertrude Curle Armistead, both of Norfolk, Va., November 24th.

Dr. Julius Dreher Willis and Miss Mary Butler Evans, both of Roanoke, Va., November 9.

Dr. William E. Price, Meredithville, Va., and Miss Lucy Meade Allen, Kenbridge, Va., November 23.

Dr. Thomas Bruce Anderson, formerly of Charlottesville, Va., but now an assistant surgeon in the U. S. Public Health Service, and Miss Maybelle Kellar Lane, of Charlottesville, November 18. Dr. Anderson is at present on duty in New Orleans.

The Board of Pharmacy of Virginia.

At the examination held in this city October 19 and 20, there were 28 applicants for registered pharmacist. Of this number the following were given certificates as registered pharmacist: G. W. Earles, Christiansburg; H. E. Newman, Norfolk; W. J. Lacy, Fredericksburg; C. A. Cleveland, Phoebus; C. R. Davis, Richmond; J. N. Dickson, Waynesboro; W. C. Gleason, Jr., Portsmouth; C. W. Kerr, Richmond; G. R. Ellington, Richmond, and F. S. Otey, Wytheville; and the following were given the registered assistant certificate: A. B. Garber, Emporia; J. F. McIndoe, Roanoke, and G. C. Robinson, Norfolk.

Of seven applicants for examination as registered assistant pharmacist, G. M. Bell, Norfolk, and J. W. Manlove, Norfolk, were successful.

Harriette B. S. Marble, Norfolk, was grant-

ed certificate by reciprocity from Oklahoma, and Meyer Goldsmith, Baltimore, Md., from Maryland.

The next examination will be held in Richmond, beginning the third Tuesday in January, 1916. All applications shall be filed with the Secretary, Mr. T. A. Miller, Richmond, at least ten days prior to examination date.

The Washington County (Va.) Medical Society

Was organized in October and the following officers elected:—President, Dr. A. Fullen Horne, Glade Spring; vice-presidents, Drs. D. L. Kinsolving and W. L. Gannaway, Abingdon, and W. H. Teeter, Bristol, R. D.; secretary, Dr. Paul Kernan, Bristol.

The Accomack (Va.) Medical Society

Held its last meeting at Onley, Va., October 20, 1915, and elected the following officers for the ensuing year: President, Dr. Edgar W. Robertson, Onancock; vice-president, Dr. Rooker J. White, Keller; secretary-treasurer, Dr. John W. Robertson, Onancock. Dr. T. T. Taylor, of Atlantic, was elected to honorary membership and the following to active membership: Drs. Charles W. Byrd, Parksley; James C. Doughty, Onancock, and Charles Edward Critcher, New Church. Considerable business was transacted and a difficult case of labor discussed. The Society is reported "to be booming." It was decided to have a banquet during the Christmas holidays at Parksley.

The Loudoun County (Va.) Medical Society,

In regular meeting, October 12, elected Dr. I. H. Thomas, Aldie, as president, and Dr. E. V. Copeland, Round Hill, secretary. Meetings are held on the second Tuesdays in January, July and October.

Drugs Much Higher Than Formerly.

The drug market has perhaps been as much or more effected by the European war than any other, and there seems no telling when there will be a let-up in the advance of prices. This is due not only to the impaired commercial relations between the warring countries and our own, but to the fact that a large portion of the chemicals from non-belligerent countries is used in the manufacture of war munitions. American chemists have been working on substitutes, and some efficient ones have already been discovered.

The American Medical Editors' Association,

At its meeting in New York City, October 18 and 19, elected the following officers: President, Dr. E. C. Register, of the *Charlotte Medical Journal*, Charlotte, N. C.; vice-presidents, Drs. W. A. Jones, of the *Journal-Lancet*, Minneapolis, G. Morris Piersol, of *American Journal of Medical Sciences*, Philadelphia; and secretary-treasurer, Dr. Joseph MacDonald, Jr., (re-elected), of the *American Journal of Surgery*, New York.

The Clinical Congress of Surgeons of North America,

Meeting in Boston, the latter part of October, had a registered attendance of about 2,000. Dr. Chas. H. Mayo, Rochester, Minn., presided. A resolution was passed favoring the adoption of a national examining board for physicians to supplant the present system of examination by state boards. Officers for the ensuing year include: President, Dr. Fred Lund, Boston; vice-presidents, Drs. Jasper Halpenny, Winnipeg, Man., and S. M. D. Clark, New Orleans; general secretary, Dr. Franklin H. Martin, Chicago, and treasurer, Dr. A. B. Kanavel, Chicago.

The Post-Graduate Medical School.

Of the Augusta County Medical Association, held its initial meeting for the season in their library rooms in Staunton, November 10, with a large attendance. Several members discussed subjects of importance and interest and a program was arranged for the winter's work, which includes, among other prominent speakers, Dr. Richard Cabot, of Boston. Lectures will be held every Wednesday afternoon until June. The Staunton Post-Graduate School is a pioneer in bringing noted teachers to its members instead of their having to leave their practice for special study. Dr. Harry Wallace, of Greenville, is dean of the school and Dr. A. L. Tynes, of Staunton, recorder.

The Southside Virginia Medical Association

Will hold its next quarterly meeting at South Hill, at which time will occur the annual election of officers. Dr. E. R. Hart, Suffolk, is president, and Dr. E. F. Reese, Jr., Courtland, secretary-treasurer.

Dr. J. Mortimer Lynch,

Cape Charles, Va., who attended the meeting of our State Society in Richmond last

month, as a delegate from the Northampton County Medical Society, was elected a member of the Legislative Committee and not Dr. J. F. Lynch, of Norfolk, as was noted by error in our last issue.

Dr. Henry Carter,

Assistant Surgeon-General, U. S. Public Health Service and well known in this, his native State, has been stricken with dengue in Porto Rico, where he had inaugurated a campaign against the disease. Though seriously sick, his recovery is expected.

New Superintendent for Southwestern State Hospital.

At a meeting of the State Hospital Board in Staunton, November 10, Dr. E. H. Henderson, of Marion, for several years first assistant physician, was elected superintendent of the Southwestern State Hospital, to succeed Dr. J. C. King, who has resigned to found a sanitarium. This was the most important matter before the board except a recurrence of the discussion of sterilization as a means of reducing the number of insane. A thorough survey of the Western State Hospital and its agricultural adjuncts showed everything in perfect order.

Dr. Marion S. Fitchett,

Of the University of Virginia Hospital, visited his home at Cape Charles, Va., early this month.

On Hunting Trip.

Drs. Lewis C. Boshier and Manfred Call, of this city, were guests of Dr. Perkins Glover, of Arvon, a couple of days this month, at which time all three enjoyed a quail and rabbit hunt.

Dr. Thomas W. Edmunds,

Of Danville, Va., is having plans prepared for an apartment house on West Main street, that city, and hopes to begin construction about December 1st.

Dr. Herbert Mann,

Of this city, has been re-elected physician and surgeon to the State Penitentiary, for a term of four years.

Dr. W. B. Folkes was also re-elected physician to the State Farm.

Dr. and Mrs. Thos. S. Richardson

Returned to their home in Waynesboro, Va.,

about the middle of this month, after a visit to Toronto, Canada.

The Mississippi Valley Medical Association,

Which met in Lexington, Ky., last month, selected Indianapolis for the next place of meeting and elected the following officers for the coming year: President, Dr. Willard J. Stone, Toledo, O.; vice-presidents, Drs. Channing W. Barrett, Chicago, and Carl H. Wheeler, Lexington; secretary, Dr. Henry Enos Tuley (re-elected), Louisville.

The Loudoun County Hospital,

Leesburg, Va., has just issued its third annual report which is very interesting. With accommodations for 22 patients, it has a training school with seven nurses and treated 252 patients in the year ending May 31, 1915. Twenty county physicians sent patients to the hospital last year. A lot has been bought on the suburbs of Leesburg and it is planned to build a small, well-equipped hospital on this site shortly. The building committee has \$4,704.75 in bank and about \$2,000 more is already promised. Dr. W. C. Orr, Leesburg, is president of the executive board.

Dr. George Callaway,

Of Norwood, Va., visited Lynchburg for several days this month.

Surgeon General Rupert Blue

Has been recommended by Secretary McAdoo to the President, for reappointment as Surgeon General of the U. S. Public Health Service for another term of four years, beginning January 1, 1916.

New College Magazine.

Students of the Medical College of Virginia have issued a College magazine known as "The Skull and Bones," which is to appear weekly. William A. Simpson, editor-in-chief, has a large staff of assistants and reporters. Drs. T. W. Murrell, W. Lowndes Peple and J. A. C. Hoggan are an advisory board for the students.

New Jersey Working for Strict Eugenic Law.

The Health Officers' Association of New Jersey will petition the next Legislature to enact a law requiring health certificates from both bride and bridegroom, in the form of an oath made by their physicians. If either party's health certificate is found to be false

after marriage, it is proposed to make the physician liable to pay damages to the injured party and also to make him subject to prosecution by the State. It is the desire of the health officers to have declared void the marriages of persons who leave the State to wed.

Hill Top Sanatorium,

An institution for the care of tubercular patients of moderate circumstances, was opened and dedicated in Danville, Va., October 25, several of the local ministers and the city health officer, Dr. C. C. Hudson, taking an active part in the exercises. Applications for admission have already exceeded the capacity of the sanatorium, which has accommodations for eighteen patients.

Dr. and Mrs. Chas. H. Moncure.

Orange, Va., spent several days in Washington, this month.

Dr. and Mrs. Roscoe Spencer

Recently visited the doctor's old home, West Point, Va. Dr. Spencer, who is connected with the U. S. Public Health Service, is at present located in Washington.

Dr. E. A. Waugh,

Of Lynchburg, Va., is having his building on Church street, formerly used as a sanitarium, remodeled.

Two Christian Scientists Imprisoned.

In Berlin, Germany, recently, two practitioners of Christian Science were convicted of criminal carelessness and sentenced to six months' imprisonment for causing the death of two popular actresses. Although the women who suffered, one from Bright's disease and the other from skin fungus, voluntarily placed themselves under the care of the Christian Science practitioners, medical experts testified that, under customary treatment, the lives of both women would have been greatly prolonged.

Dr. J. W. Devine,

Lynchburg, Va., has been on a visit to his old home, Lexington, Va.

Dr. James T. Shelburne,

Of Petersburg, Va., has been visiting relatives in Christiansburg, Va.

Three Internes Resign.

Drs. H. M. Doles and G. G. Rhudy, appointed from the Medical College of Virginia, and Dr. W. S. Aiken, appointed from the Atlanta Medical College, resigned their positions as internes at the Memorial Hospital, this city, the middle of November, previous notice of their intentions having been given the superintendent.

Sterilization for Feeble-minded in Wisconsin.

The first sterilization operations under the new law were performed in the Wisconsin State Home for Feeble-minded, this month, on ten male inmates, whose ages ranged from 15 to 30 years of age. It is stated that no more of these operations will be performed until results have been determined.

Dr. Emmett R. Bradley,

Formerly of Roxbury, Va., has moved to Stop 22, Highland Springs, Va.

Dr. and Mrs. J. C. Wysor.

Of Clifton Forge, Va., were recent visitors in Staunton.

Dr. and Mrs. W. O. Smith,

Of Altavista, Va., were visitors in this city early in November.

The Richmond Automobile Club,

At a recent meeting, elected Drs. R. Angus Nichols and Gerald A. Ezekiel members of its executive committee.

Surgeon Chas. P. Wertenbaker,

Of the U. S. Public Health Service, was directed, on November 9, to proceed to Waynesboro, Va., and await orders.

Dr. Robert S. Preston,

Of this city, is on a trip to San Francisco and other western places.

The Presbyterian Eye, Ear and Throat Charity Hospital,

Baltimore, was the recipient of a bequest of \$10,000 from the estate of William W. Spence, financier and philanthropist, who died in that city, November 3.

Dr. Sidney J. Tabor,

Formerly of Calverton, Va., is now located at City Point, this State.

The Institutional Care of the Insane in the United States and Canada

Is shortly to be issued by the Johns Hopkins Press, in four octavo volumes. We are interested in noting the Dr. William F. Drewry, superintendent of the Central State Hospital, Petersburg, is associated with Drs. Henry M. Hurd, Richard Dewey, Chas. W. Pilgrim, G. Alder Blumer and T. J. W. Burgess, as a special committee of the American Medico-Psychological Association, in publishing these volumes.

Dr. Leonard G. Rowntree.

Johns Hopkins University, has been appointed professor of medicine in the University of Minnesota, to succeed Dr. Chas. Greene, resigned.

Mississippi Wishes a Tuberculosis Sanatorium.

The Mississippi State Board of Health has appointed a committee, Dr. W. S. Leathers, University, chairman, to present a bill to the next legislature asking for a state tuberculosis sanatorium.

The Society of the Cincinnati,

Virginia Branch, has included the following doctors among its officers: Dr. Julian M. Cabell, Washington, D. C., assistant treasurer; Dr. George Ben Johnston, member of executive council of general society; and Drs. B. R. Kennon, Norfolk, and H. Norton Mason, Richmond, alternates to the general tri-annual meeting.

The W. Va. Hospital Association,

At its meeting in Charleston, elected Dr. G. C. Schoolfield, of the Charleston General Hospital, president, and Dr. W. H. St. Clair, of the Bluefield Sanitarium, secretary-treasurer. Drs. O. O. Cooper, Hinton, G. C. Rodgers, Elkins, and W. A. McMillan, Charleston, are members of the executive committee.

Dr. Ray Lyman Wilbur

Has been appointed president of the Leland Stanford, Jr. University, in California, and will take up his duties January 1, 1916. He is at present head of the Medical Department of the University.

The American College of Surgeons

Held its fourth convocation in Boston, October 29, Dr. J. M. T. Finney, Baltimore, was

re-elected president, and Dr. Franklin H. Martin, Chicago, secretary. It is announced that the \$500,000 endowment fund for which the fellows of the College have been working for the past two years was completed at this meeting.

Dr. Granville S. Hanes,

Louisville, Ky., was seriously ill in October with septicemia as a result of the infection of a finger.

The Medical Examining Board of Virginia

Will meet in Richmond, December 14-17, 1915. Applicants should register in advance with the secretary, Dr. J. N. Barney, Fredericksburg.

Chinese Hospital Dedicated.

Dr. Simon Flexner, of the Rockefeller Institute of Medical Research of New York, Dr. William H. Welch, of Johns Hopkins University, and Dr. Wallace Buttrick, director of the China Medical Board, recently attended the dedication exercises of the hospital in Peking, China, erected by the Methodist Episcopal Church of the United States at a cost of \$18,000. The hospital, which has accommodations for 150 patients, is thoroughly modern.

Drs. Flexner and Welch are in China in the interests of the Rockefeller Foundation, which is lending financial aid to a great movement for the modernization of medical practice in China.

Dr. S. S. Goldwater

Resigned as commissioner of health of New York City, November 1, to resume his duties as head of Mount Sinai Hospital. Dr. Haven Emerson has succeeded Dr. Goldwater.

Dr. W. J. Crittenden

Has returned to Orange, Va., after a ten days' visit to New York.

Dr. William Seaman Bainbridge

Returned to New York October 30. He had been to Europe in the interest of the Red Cross work.

Dr. A. E. Turman

Has returned to his home in this city, after a short visit to his old home in Carroll County, Virginia.

The American Hospital,

In Petrograd, Russia, was formally opened, with enlarged quarters, November 14. Opened in October, 1914, with 20 beds, it now has 40

beds and is model in every respect. One hundred and sixty-nine wounded were treated in the hospital during its first year, and \$2,500 of its income came directly from the United States.

Dr. C. M. Hazen,

President of the Richmond Amateur Athletic Federation, was in New York City, the middle of November, attending a meeting of the A. A. U.

Dr. A. L. Martin,

Of Highland Park, this city, has been performing the duties of physician to the Henrico County jail, during the absence of Dr. J. Fulmer Bright, who has been enjoying a Western trip for several weeks.

The American Society for the Study of Alcohol and Other Narcotics

Will hold its annual meeting in Washington, D. C., December 15-16. The secretary, Dr. T. D. Crothers, Hartford, Conn., will be glad to furnish any information desired.

Nurses Graduate.

Eleven nurses were graduated from the Training School for Nurses, at St. Luke's Hospital, this city, in October. Dr. Stuart McGuire presided at the exercises, while Dr. W. L. Peple administered the nurses' oath to each of the graduates.

Dr. Rudolph Matas,

Of New Orleans, will deliver the Mutter Lecture for 1915, in Philadelphia, on the evening of December the 17th.

The Petersburg (Va.) Health Department

Reported a total of 53 deaths, 14 of whom were non-residents, during the month of October. The estimated population of the city is 31,000.

Dr. and Mrs. R. D. Glasser

Have returned to Norfolk, Va., after a visit to New York.

St. Luke's Hospital,

New Bern, N. C., was opened this fall, with the following staff:—Drs. R. Duval Jones, J. F. Patterson, Raymond Pollock, N. M. Gibbs, and J. M. Howard.

College Merger.

Arrangements have been completed by which

the Medico-Chirurgical College of Philadelphia and the Medical Department of the University of Pennsylvania will be merged, the former becoming the graduate school of the latter, and the University having control of the endowment fund of the Medico-Chirurgical.

An Intensive Health Campaign

Was commenced in Hanover County, this State, November 20, Dr. John Collinson, of the State Board of Health, being in charge. This work, which is only made possible by the financial assistance of the International Health Commission, requires an outlay of \$300 from the counties in which the work is done.

The Department of Health,

Of Norfolk, Va., has issued a circular telling parents and teachers how to avoid communicable diseases in the schools. The Department reports fewer cases of communicable diseases in the first month of this school year than in any year since the inauguration of the routine examination of school children on opening days.

The Span of Human Life Longer Than Formerly.

Dr. Victor Vaughan, dean of the medical department of the University of Michigan, in speaking on the problems of social hygiene at a recent conference in Chicago, stated that within the last twenty-five years, the average length of man's life has been increased by ten years. He believes this longevity to be due to the enlightenment of the public on how to live in accordance with the rules of medical science.

A Better Babies Contest

Was held in Lynchburg, Va., in October, at which time sixteen babies were scored. The baby receiving the first prize had a score of 99.2. Two others scored 99 and seven scored more than 98.

How Long Will This Law Last?

The Canadian Medical Association Journal states that a law has been recently adopted by the provincial government of Saskatchewan whereby the sum of \$25 will be paid a mother

each time she gives birth to a child and \$15 will be paid the attending physician.

Child Mortality in New York City.

Investigations made by the New York City Department of Health showed the death rate of native born children under five years of foreign parents to be 71 per 1,000 as opposed to a rate of 79 per 1,000 for native born children of native parents. The mortality rate among colored children of the same age, of native born colored parents, has been exceedingly high, there being 207 deaths per 1,000 of children under five. Contagious diseases were the only ones in which the mortality among colored children approximated that of the white.

Open Air School Gains in Popularity.

The results from the open air schools in this city have been so gratifying that the executive board of the Richmond Education Association in October recommended an increase in the number of these schools. Statistics show that only one child in forty failed to make the grade, while ten in that number made two grades instead of one.

The Southern Association of Railway Surgeons.

Meeting in Dallas, Texas, as an adjunct of the Southern Medical Association, elected Dr. Southgate Leigh, Norfolk, Va., president; Dr. Robt. W. Know, Houston, Texas, vice-president, and Dr. Ambrose McCoy, Jackson, Tenn., secretary.

Obituary Record.

Dr. Samuel Garland Slaughter,

A prominent physician of Lynchburg, Va., died at his home in that city, November 17, after an illness of many weeks, aged fifty-four years. He several years ago in his practice suffered an X-ray burn, to which cause his death was due. After an academic education at private schools and the University of Virginia, he entered the University of the City of New York, from which he received his medical diploma in 1883. For a number of years, Dr. Slaughter conducted a private hospital in Lynchburg. He was a member of his State and local medical societies and was an assistant surgeon for the Norfolk and Western Railroad. His wife and three children survive him.

Dr. Emmett D. Boaz,

Of Coveseville, Va., a retired physician and one of the wealthiest fruit growers of Albemarle County, died suddenly while out driving with his wife on the afternoon of November 8. He was sixty years of age. He was graduated in medicine from the University of Virginia in 1877, and the Medical Department of the University of the City of New York in 1878. He is survived by his widow and several children.

Dr. Francis L. Galt,

Surgeon on the Confederate cruiser, Alabama, during the Civil War, died at his home near Upperville, Va., November 17, aged 83 years. He was a graduate in medicine from the University of Pennsylvania in 1854. For a while after the war, he engaged in practise in Norfolk, during which time he saw service in a yellow fever epidemic. Later he settled in Loudoun County, where he had since made his home and continued active in his profession until a few years ago. He is survived by his widow and two children.

Brigadier-General Geo. M. Sternberg,

Retired surgeon general of the U. S. Army and a Civil War veteran, died at his home in Washington, November 2, aged 77 years. He was a native of New York State and received his medical education at Columbia University, College of Physicians and Surgeons, New York City, from which he graduated in 1860. Gen. Sternberg was the author of several medical books and had seen government service through both cholera and yellow fever epidemics.

Dr. Edward Livingston Trudeau,

The eminent tuberculosis specialist, died at his home at Saranac Lake, N. Y., November 15, at the age of 67 years. About two years after graduating from the College of Physicians and Surgeons, New York, in 1871, he developed tuberculosis and went to the mountains to spend the last few months of his life. So much benefited was he by the open air life, that it suggested the idea of this treatment for all tuberculosis patients and finally led to the founding of his and other sanatoria all over the country, for the treatment of tuberculosis patients. He had written extensively on this subject and was identified with numerous medical associations.

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RECTAL ANESTHESIA,*

By ARTHUR S. BRINKLEY, M. D., Richmond, Va.
Associate Surgeon, St. Elizabeth's Hospital.

Since Gwathmey first introduced the oil and ether method of rectal anesthesia in 1913, much has been said for and against it. I am not in a position to say what the final analysis will be, for I have not had the opportunity to observe a large number of patients anesthetized by this method. We have had thirty-six cases up to and including October 19, 1915, thirty-three of which were done at St. Elizabeth's Hospital, two at Sheltering Arms, and one at Memorial Hospital. All were operated upon by Dr. J. Shelton Horsley, and the substance of my paper will be based on what I have observed from this number. Our first was given March 3, 1914. This was a horrible deformity resulting from a gunshot wound of the face. His left eye, practically all of the nose and superior maxilla were blown away, and the question was what kind of an anesthetic could be given him in order to do a long and tedious plastic operation on the face. Rectal oil and ether anesthesia was decided on and given him with such excellent results that we thought it deserved to be tried out again on cases that showed a special indication for some general anesthetic other than ether by inhalation.

In our series of thirty-six cases the results have been most satisfactory. Only one case of this number was a failure. This was a girl about fifteen years of age, a moral degenerate resulting supposedly from a fracture received in early childhood. She was naturally stubborn, and this, combined with fright, resulted in expelling the mixture as fast as it could be

injected, and ether by inhalation had to be resorted to.

In seven cases ether by inhalation had to be administered to complete surgical anesthesia, ranging in time from a minimum of one minute to a maximum of four minutes, and complete anesthesia prevailed after once being relaxed.

In two cases analgesia was produced, but complete anesthesia was not. One was a recurrent carcinoma of the face, and the other was adeno-fibroma of the breast. The patients were semi-conscious but felt no pain. In the carcinoma of the face, the Percy cautery was used for one hour and ten minutes. In the breast case the tumor was removed, a frozen section made and examined,—all of which required about thirty-five minutes. The patient would answer any question asked but suffered no pain, nor did she remember anything about the operation. I think failure of complete anesthesia in the carcinoma of the face case was due to the fact that the patient had taken a number of anesthetics and had acquired a partial immunity from ether. In the breast case the mixture was not strong enough, six and one-half ounces of a sixty-six and two-thirds per cent. mixture of ether in oil being given.

The remaining cases, twenty-seven in number, were under full surgical anesthesia within from ten to twenty-five minutes after administration, and lasted throughout the operation. In the fourth case, anesthesia was a little deeper than was necessary and from one to three ounces of the mixture were drawn off.

The method described by Gwathmey in the *New York Medical Journal* for November 29, 1913, is used with a few slight variations in technique. The patient is given castor oil, ounces one, the night before operation. This is followed the next morning by soap-suds enema, followed by saline irrigation—usually three hours before the administration of the

*Read before the forty-sixth annual meeting of the Medical Society of Virginia, at Richmond, October 26-29, 1915.

anesthetic. A suppository of from five to ten grains of chloretone is given one hour before, and morphine, grains one-sixth to one-fourth, with atropine, grains $1/120$ to $1/100$, is given hypodermically a half hour before the anesthetic is given. The mixture is given to the patient in bed, on the left side, in Sims' position. A small catheter well lubricated is introduced from three to four inches into the rectum, and any residue that has collected in the bowel since the irrigation is drawn off. Then the mixture, ranging from a 50 per cent. to a 75 per cent. of ether in olive oil according to the age and general condition of the patient, is introduced slowly by gravity. One ounce of the mixture is allowed to every twenty pounds of body weight,—not to exceed a total of eight ounces. Gwathmey gives five minutes for time consumed, but we have found that a little slower than this (from eight to ten minutes) gives the patient less discomfort. While the mixture is flowing in, the funnel is lowered repeatedly to allow escape of gas which the mixture has replaced. This adds decidedly to the comfort of the patient. From ten to twenty minutes, according to the percentage used, should be allowed for the anesthetic to take effect before the patient is moved.

The patient is gently lifted on a stretcher and carried to the operating room. The respirations, pulse and reflexes should be watched just as carefully as in other forms of anesthesia. If there is any cyanosis, the air passages are clear, with loss of pupillary reflex, stertor, or embarrassed respirations, a rectal tube should be inserted about four inches into the rectum and from two to four ounces of the mixture drawn off. If the breathing is easy and regular, the circulation good, with complete relaxation, the patient is in surgical narcosis so far as the operation is concerned. About five minutes before the end of the operation a large rectal tube is introduced and all the mixture is siphoned off; then a Y-shaped tube is connected with the rectal tube at the stem of the Y, with the irrigating can in which the soap-suds solution is contained connected by one arm, and a rubber tube for siphonage with the other. The siphonage tube is clamped and the bowel distended with about one pint of the soap-suds solution. Then the tube is unclamped and the solution siphoned off. This is repeated until the

solution returns with no signs of the mixture in it, abdominal massage being performed over the colon to help empty the bowel. Then, from two to four ounces of olive oil is introduced and the tube withdrawn. The patient is carefully returned to bed. The room is darkened and well ventilated. Cold saline enemas, ounces twelve every four hours, are ordered. With the foregoing technique we have had not a single case of proctitis nor has there been any complaint of rectal discomfort following the anesthetic.

Among the criticisms I have seen of the rectal oil and ether anesthesia, I quote Luke in an article appearing in the *Medical Record*, May 9, 1914, in which he makes the following statement: "The advantages of oil and ether outside of its simplicity seem to be more apparent than real. In fact, with the possible exception of select cases of bronchoscopy, I find it difficult to see any indication for its use that cannot be as well and probably more safely made by the modern pulmonary methods." Also, Coburn, in the *Journal A. M. A.*, January 31, 1914, claims: "The most objectionable feature connected with it is increasing the amount of ether in the circulation; taking the dose for an adult as an example, about six ounces of ether plus two ounces of olive oil, both by volume, are introduced in the rectum. All of the ether introduced reaches the patient's circulation except that which is subsequently withdrawn, as there is no source of evaporation such as occurs in other methods. It requires only one and one-half ounces of ether in the patient's circulation without rebreathing to induce and maintain an hour's surgical anesthesia. The amount of ether withdrawn in the oil and ether rectal method shows that a much larger amount than this reaches the patient's circulation. Not only does more than one and one-half ounces of ether reach the circulation, but there is a decidedly greater tendency toward respiratory paralysis without the corresponding depth of anesthesia that occurs in other methods."

My experience does not bear out Coburn in the foregoing statement. As a matter of fact, we have never failed to get back less than five and one-half ounces of an eight-ounce injection, even in cases which were under the anesthetic for an hour and a half. An analysis of the difference between five and a half ounces

withdrawn and the eight ounces introduced amounts to about the same, or less than one and one-half ounces per hour, the amount prescribed by Coburn. Of course, a small allowance has to be made for the amount of fluid in the rectum which cannot be withdrawn at the time of administration, but, at the same time, allowance must be made for that amount washed out by the soap-suds solution, so I think they will evenly balance. As to the greater tendency to respiratory paralysis, it has not occurred in my series of cases.

I do not recommend oil-ether anesthesia as a general routine anesthetic because it is a very slow procedure and requires a great deal of preliminary and after-treatment, but I do think it has its field and distinct advantages over other methods in this field, some of which I will enumerate:—First, in those cases about the head and neck in which a smooth anesthetic by ether inhalation is almost impossible. Second, exophthalmic goiter cases, when the least little excitement, as the sight of an ether mask, makes ether anesthesia more dangerous. In these cases a small soap-suds enema with a few drops of ether is given every morning for three or four mornings before the operation, explaining that this is a part of the treatment and that you want them to retain the enema for a short while. The few drops of ether is added in order to accustom them to a slight odor of it. Third, those patients who have taken ether by the older and cruder methods as well as highly nervous individuals who have a great deal of apprehension and fear caused by placing a mask over the face and by the odor of ether. Fourth, a more even plane of anesthesia is maintained: the patient is not in and out of anesthesia as in inhalation methods. Fifth, the after-effects of the anesthetic are reduced to a minimum. The patients suffer very little if any nausea and vomiting. The comparative clinical and microscopical appearance of the urine following the anesthetic, I have found to be about the same in both the inhalation and rectal methods of administration. I will give a short report of three cases.

Mr. P. C., white, male, aged 28 years, Italian, clerk in confectionery store. Diagnosis, tubercular adenitis of left cervical glands. Operated upon March 19, 1914. Operation, enucleation of diseased glands. The patient was given eight ounces of a 75 per cent. mixture of

ether in olive oil. This was one of our first cases and no suppository of chloretone was given, and the patient complained of cramp-like pains in the rectum but not enough to expel the mixture. The mixture was allowed to run in slowly, about eight minutes being consumed. Two minutes later the patient was under full anesthesia. A radical dissection of the glands of the neck was done, lasting one hour and ten minutes with perfect anesthesia throughout. The patient returned to his room with pulse 100, and three hours later the pulse was 72. He vomited once three hours after operation. He had slight nausea that afternoon, but no nausea or vomiting afterwards. Highest pulse rate next day was 88 and temperature 99. Fourth day, the highest pulse rate was 80 and temperature 98. He had a very comfortable day and was given calomel on the third day. On the sixth day, the highest pulse rate was 78 and temperature 98; had a very good day. He has never complained of discomfort in the rectum. Patient left for home in good condition on the tenth day.

Urinalysis day before operation: color, amber; transparency, cloudy; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1020; microscopic examination, negative. First day after operation: color, amber; transparency, cloudy; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1025, and microscopic examination, negative. Third day after operation: color, amber; transparency, slight cloudiness; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1035, and microscopic examination negative. Sixth day after operation: color, amber; transparency, slight cloudiness; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1025, and microscopic examination, negative. A chloretone suppository was given to every one after this, and no further trouble with rectal cramps has been experienced.

Mr. H. T., white, male, aged 19 years, student. Diagnosis, brain tumor with severe intracranial pressure. Operated upon November 23, 1914. Operation, sub-temporal decompression. Patient was given seven and one-half ounces of a 66 $\frac{2}{3}$ per cent. mixture of ether and olive oil preceded by a suppository of ten grains chloretone. The mixture was allowed to run in slowly, eight minutes being consumed, and no discomfort was experienced. The patient

was quite a long time becoming relaxed, so after thirty minutes had passed ether by inhalation was administered for one minute only. The mask was removed and the patient remained under perfect anesthesia for the entire length of operation, which was forty-five minutes. The patient returned to his room with pulse 78 and respirations 18. Three hours later the pulse was 78 and temperature 98.4, and respirations 20. He vomited once nine hours after operation. There was no more nausea or vomiting. Highest pulse rate next day was 100. Patient was very restless and semi-delirious. He had been in this condition since entering the hospital. On sixth day, pulse was 86 and temperature 98.4, and he was much quieter than usual. He left for home on the fourteenth day apparently much improved. He never complained of discomfort in the rectum.

Urinalysis day before operation: color, straw; transparency, cloudy; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1022; diacetic acid, negative; microscopic examination, few pus and blood cells. The first day after operation: color, straw; transparency, cloudy; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1012; diacetic acid, negative; and microscopic examination, few pus and blood cells and calcium oxalate crystals. Third day after operation: color, straw; transparency, cloudy; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1014; diacetic acid, negative; and microscopic examination, few pus and blood cells. Sixth day: color, straw; transparency, cloudy; reaction, acid; sugar, negative; albumen, negative; specific gravity, 1018; diacetic acid, negative; and microscopic examination, occasional pus and blood cells.

Mrs. H. A. R., white, female, aged 42 years, housewife. Operated upon October 11, 1915. Diagnosis, fibro-cyst adenoma of left breast. Operation, amputation of the left breast. This patient had taken anesthetic by open method before, and she had a great deal of apprehension and fear about taking it again. Sixty-six and two-thirds per cent. ether and olive oil was given, preceded by chloretone suppository—grains ten. Mixture was introduced slowly, ten minutes being consumed. The patient was under surgical anesthesia in eighteen minutes. A tumor-like mass was removed and frozen section made confirmed diagnosis of fibro-cyst

adenoma. Then a sub-cutaneous excision of the left mammary gland was done. The operation was completed, including examination of frozen section, in forty minutes with perfect anesthesia throughout. The patient returned to her room with pulse 84 and respirations 20. Three hours later her pulse was 72 and respirations 20. She was slightly nauseated and vomited three times during the first six hours, but had no nausea or vomiting afterwards. Highest pulse rate next day was 90, temperature 99, and she had a very comfortable day. Fourth day, she was given calomel. Her pulse was 74 and temperature 98.6. She was a little uncomfortable from the calomel. Sixth day, pulse was 70 and temperature 98, and she had a very comfortable day. She never complained of any discomfort in the rectum. She left for home on the 12th day in good condition.

Urinalysis day before operation: color, amber; transparency, clear; reaction, acid; sugar, negative; albumen, faint trace; specific gravity, 1020; diacetic acid, negative; and microscopic examination, few blood cells and calcium oxalate crystals. First day after operation: color, amber; transparency, clear; reaction, acid; sugar, negative; albumen, faint trace; specific gravity, 1024; acetone, very faint trace; and microscopical examination, one or two hyalin casts, few blood cells, and vaginal epithelium. Fourth day: color, amber; transparency, cloudy; reaction, acid; sugar, negative; albumen, very faint trace; acetone, negative; microscopic examination, few blood cells. This patient was a very intelligent woman. She had taken ether by inhalation four times previously and said she would suffer a great deal with nausea and vomiting at the beginning of every anesthetic and this would persist for from two to three days afterwards. With ether and oil rectal anesthesia she suffered with neither at administration, nor other discomfort. She had no nausea whatever after the first six hours. She said she would never care to take an anesthetic any other way.

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617 West Grace Street.

REMINISCENT HISTORY OF THE MEDICAL SOCIETY OF VIRGINIA.*

By J. N. UPSHUR, M. D., Richmond, Va.
Charter Member, Medical Society of Virginia.

In a paper of similar character to this one read before the Richmond Academy of Medicine and Surgery many years ago, the writer thus expressed himself, and what was then said is even truer today: "To recur to the past and review the events that have transpired in history, if pondered in the right spirit, cannot fail to be profitable. The attitudes of youth and age are the antithesis, the one of the other; in the former all is hope, ambition to be gratified, success to be attained. The sun, as it climbs toward the meridian of life, throws a glorious halo over the coming years. Expectation of work to be accomplished and happiness to result therefrom take possession of the whole being, and stimulate to earnest efforts. When the meridian is passed and we start down hill, when the shadows lengthen and perchance the goal has been reached, our memories become busy with the events of the past: we seek to live over the fresher days of our manhood as we pass in review the events of life, the familiar faces of friends who have been the actors on its stage before the mind's eye; often we thrill with pleasure as we live over these scenes; or the eyes moisten with unshed tears as some long-forgotten event filled with pathos and sorrow comes before us.

In reviewing the history of the Medical Society of Virginia,

"I feel like one
Who treads alone
Some banquet hall deserted,
Whose lights are fled,
Whose garlands dead,
And all but him departed."

This is almost literally so, when on November 2, 1870, the Convention, comprised of members of the profession of Richmond, Lynchburg and Abingdon, assembled in the chemical lecture room of the Medical College of Virginia in this city to organize this society. Ninety-two fellows registered; of these only seven of us are left. The years that have passed since this society came into being have been full of advances in the science of medicine, and the work of its members has been earnest, painstaking and fruitful of results. They have seen the

enactment of the Anatomical law, establishment of the Medical Examining Board, and the development of Health Boards, both State and local, and it took hard, laborious and persevering work to accomplish this.

The work of preventive medicine has established control in all infectious diseases, diminished mortality, and is hopefully working along lines for the prevention and cure of tuberculosis.

The early organization of this society saw established a systematic method for reports on advances in every department of medicine each year. Such well-known helps to diagnosis as the thermometer, the hypodermic syringe in therapy, the discovery and perfection of asepsis and anti-sepsis, the adding to materia medica of many useful remedies, the discovery of many antitoxins and an entire change of view as to the causation of disease and pathology, have wrought miracles within these forty-five years of this society's life. And those who have made up its membership have all been earnest workers.

The introduction of Listerism, though very faulty, was the pioneer for development of the almost perfect asepsis of today, making possible the brilliant and life-saving methods of modern surgery. The improved methods of obstetric management, and more advanced knowledge of chemistry and physiology, have very materially advanced the successful treatment of internal diseases. Nor is the valuable work of the bacteriologist in the development of a rational causation of diseases to be forgotten. The microscope has opened wide, interesting fields, and solved problems heretofore misunderstood. Truly, in no period of the history of medicine have such wonderful strides been made in development of life-saving means, and the reduction of mortality rates have been so great as to seem almost miraculous.

The men of whom I shall speak have been no laggards in this forward movement of progress. Hospitals and sanitoriums have immensely multiplied, and throughout the State are conducted by members of this Society, with results that will parallel the accomplishments of any others, no matter where else situated.

At the second annual session of the Society at Lynchburg, we find an act recommended for adoption by the State Legislature, establishing a State Board of Health. For years it strug-

*Read before the forty-sixth annual meeting of the Medical Society of Virginia, at Richmond, October 26-29, 1915.

gled on, accomplishing little, but, by the persistent influence of this Society along educational lines, it has developed into the organization of today. No man can measure its beneficent work in the control of infectious diseases. It is controlling typhoid fever, malaria, diphtheria, etc., furnishing at a price within the means of all the antitoxins for diphtheria, tetanus and hydrophobia. On the low standard of money value, it is a priceless boon to the people of this State, and don't forget, it is the first born offspring of the Medical Society of Virginia.

At the same meeting no uncertain expression was given on the subject of advertising, condemning circulars and other advertisement of specialties as contrary to the letter and spirit of our Code of Ethics, and, says the resolution, "Should be discountenanced by all good men." Today,—what? One does not have to go very far to ask, have we retrograded in this respect—has the standard been lowered—in these modern times, when the dollar is so mighty, has the taint of commercialism infected the body of the profession, and do men look at the great work from a different view-point?

One of the acute subjects which agitated the society in its early days was *women doctors*. Dr. Fannleroy, in his Presidential Address at Staunton, its third meeting, quotes the lines of some then recent writers:

"She would blunder in physic no worse than the rest,
She could leave things to nature as well as the best;
She could feel at your wrist, she could finger your
fee,
Then why should a woman not get a degree?"

An answer may be found in the experience of a traveling man sick at a hotel in Brazos, Texas. He went to bed and asked that a doctor be sent for, and when she came she had on a Gainsboro hat, elbow gloves, French heels, and otherwise dressed in the tip of fashion. The hat and gloves were removed, and, seating herself by the bed, she asked to see the patient's tongue. "I wouldn't let you see a tongue like I have got, not for a quarter a look," he said. She felt his pulse; it went up to 200; she percussed his chest, and then proceeded to auscult it, with her face turned toward his. He remarked, "It is no use." He kissed her in the mouth, and told her to charge it in the bill. Comment, fact is, I don't believe in women doctors, anyhow. In these latter days they have come to stay, and have their mission.

"They talk about a woman's sphere,
As though it had a limit;
There's not a place in earth or heaven,
There's not a task to mankind given,
There's not a blessing or a woe,
There's not a whisper, yes, or no,
There's not a life, or death, or birth,
That has a feather's weight of worth
Without a woman in it."

At the fourth annual session we find the question of the Medical Examining Board suggested for the first time, to be established several years later. An interesting discussion at the meeting in '73 was the causation of malaria. A letter from Chicago states that the writer has learned of the extensive prevalence of ague about Richmond, and wishes an ague plant sent him. What a contrast to the known causation of today through the agency of the mosquito!

The act of incorporation of the Society was approved January 14, 1874, being four years after its founding. At this same meeting of the Society is an earnest appeal from Dr. James L. Cabell for co-operation of the Society to obtain an appropriation to make the Act establishing the State Board of Health efficient. At this day, our law-makers seem more keenly alive to do everything that will preserve and conserve the health of all the people.

At the sixth session we find an interesting discussion on uterine supports, a prominent speaker being Dr. Marion Sims. The error in all the opinions then expressed in view of the progress and development of gynecology of the present day are almost comical. In reports of progress in gynecology much time is given to section of the cervix for the cure of dysmenorrhea, and freely quoted are Sims and Simpson and their compeers. Science of today long ago abandoned such crude procedures, both because of the ineffectiveness and risk. It shows how great men of that day were groping for the light.

The law for the better education of druggists originated with this Society. It is not necessary to point out to you the existing pharmacy board, and the good it is doing in this State.

As one of the subjects of progress, emanating from no less an authority than Gaillard Thomas, was the proposition of intravenous injection of milk as a substitute for transfusion of blood; I am not aware that it had much following; cases are reported, the operation was successful, *but* the patient died, like some cases

of the present day. These intravenous injections of milk were recommended not only in cases of exhausting hemorrhage but in typhoid fever, pneumonia, cholera, etc. In the discussion, Hutchinson, of New York, suggested what we now know as normal salt solution; its usefulness in the experience of all is too well established to need further comment.

In the transactions of the tenth annual session is found a paper on "Diagnosis of Abscess of the Liver," by Dr. J. Marion Sims; also historical papers by Dr. Toner on the "Life and Character of Dr. James Craik and Dr. Dick," the friends and physicians of Washington, the latter being the consultant in his last illness. There was also a paper by Dr. H. P. C. Wilson on "Protective Device for Use of Paquin's Cautey in Operation on Uterine Cancer of the Cervix," with report of cases and reviews of treatment of that day, advocating at least one view of the present day, the importance of early operative interference.

In 1885 Dr. George Harrison read a paper before this Society on "Puerperal Septicæmia," bringing strongly and forcibly to the attention of the Society the infective nature of the trouble by infection from the outside. Observation since that time has confirmed his conclusion; but bacteriological research has classified them most decidedly by discovery of the infective germs causative of the trouble, and pointed out the serious results to be apprehended for the innocent wife by the reaping of the crop of wild oats sown by the husband in his bachelor days. Is there no response to the appeal to manhood, no sense of equal justice, of chivalry for the other sex, of high ideals of manhood which should establish and enforce the single standard for every one, the outcome of which would be health, happiness, and a more virile race?

Dr. Harrison concludes his paper in these words: "I call upon you one and all to aid to the best of your ability in the noble task of protecting women from the risks that menace her at a time of her existence when the most touching and tender attribute of her sex—maternal love—is unfolding its tenderness and loveliness; and may we not hope that our efforts in this direction will command better and better success, and that our progress will be onward and upward, to cease only when the Sun of Righteousness, in undimmed luster, shall shine upon a world redeemed from the

evils of sin and suffering." Amen—so mote it be.

But time would fail me to continue in minute detail all that this Society has done in these forty-five years. Deepest interest will develop if you wander through its transactions and note the development of our science, the able and earnest work of the men who have been its fellows; especially is prominent its high ideals, its lofty standard of ethical professional honor, and the devotion to the accomplishment of every end which has meant the relief or prevention of human suffering. Notable is the fact of the large number of distinguished men of the profession who have attended its meetings and been its honored guests and have become its Honorary Fellows.

A paper of this character would not be complete without a personal sketch of some of the men who have been conspicuous on the stage of its activities:

James B. McCaw, the presiding officer of the Convention which organized this Society, was a man of distinguished presence, magnetic and successful, and most charming as a conversationalist. He often made lighter the burden of the sufferer by his entertaining recital of anecdotes and events. To the younger members of the profession he was ever courteous and considerate. As chief surgeon of Chimborazo Hospital during the Civil War, as editor, teacher and practitioner, he has left his impress on the generation in which he lived.

Landon B. Edwards, with the exception of one year, was the honored secretary from its organization to his death. He had no deeper, profounder, earthly interest than the success and welfare of this Society. He labored for its advancement in season and out of season. He was a man of large heart, filled with love of his fellowmen, and a charity so broad that it always threw the mantle of charity over a brother's failings and weaknesses. He probably did more for the Society than anyone who has ever been connected with it.

Dr. Socrates Maupin died from accident at the second meeting in Lynchburg. He had a solid and widespread reputation as a professor, teaching the Chair of Chemistry and Pharmacy in the University of Virginia, and, being chairman of the Faculty for thirty years, he was engaged in moulding and directing the minds of the youth of the South as well as

those of Virginia. Few men of his day exerted a more extended and beneficial influence.

Dr. John P. Mettaur, one of Virginia's most distinguished sons in the medical profession, his reputation extending beyond the bounds of the State, was distinguished particularly as a surgeon. It was said of him that he wielded an influence solid as granite itself, and departing left behind an example of hard labor, self-abnegation, truth and honor.

Dr. Levin S. Joynes was the very personification of honor and justice, the learned, instructive and accomplished teacher; a perfect encyclopedia of knowledge; an authority on all medical subjects, rarely questioned; and never within the writer's knowledge worsted in debate. He was indeed a brave man who dared to cross swords with him. His strongest point was in diagnosis. He was one of the best teachers I have ever known.

Dr. Orlando Fairfax was one of nature's noblemen, an accomplished physician, tender, gentle and devoted as a woman; of conspicuous moral courage; a consecrated Christian, and faithful in the discharge of every duty.

Dr. Robert B. Tunstall and Dr. Herbert Nash: I group these two names because they are two of the heroes of the profession.

In the dreadful epidemic of yellow fever in Norfolk in 1855, undaunted and unafraid, they nobly did their duty. A Sabbath calm over all, no sound in the streets of the stricken town but the rumble of the doctor's buggy and wheels of the hearse stacked full of coffins, the dead buried in long trenches, and the grave-diggers falling to sleep on their tools, they were like soldiers sleeping on their arms, till the rising sun awakened them to further toil. Many of the profession slept as martyrs in humanity's cause in that dreadful epidemic. No greater love hath any man than that he lay down his life for his friends. No granite shaft on marble pile, no bronze tablet in sacred edifice commemorate their deeds, and to succeeding generations perhaps their names are not known. These two men were the friends of my youth and manhood, and were of most engaging manners and attractive personality. I would pay them the warmest tribute of a loving heart, and reverence them as true heroes in life's battle.

Dr. Francis D. Cunningham, I knew well, absolutely free from all sham, a true and skilful

physician and surgeon, scholarly, and unswerving in his devotion and principle. Under a brusque exterior he bore a heart as tender as a woman's. I have seen the sympathetic tears streaming down his face as he endeavored to bring every resource of our art to thwart the dread destroyer, and restore to health and strength some loved one. He was most attractive as a teacher, and possessed the rare gift of imparting knowledge to his pupils with whom he was most popular.

Dr. John Staige Davis was "A man whose life was one of extraordinary usefulness and beauty, adorned by attainments, literary and professional, of a high order." He was the Christian physician devoid of petty jealousy and envy. No worthier name adorns the roll of this Society, and he left an example to his brethren of the profession they would do well to follow.

Dr. A. M. Fauntleroy, third president of this Society, was an accomplished gentleman and physician. He did his most useful work as the Superintendent of the Western State Hospital, but was removed as the victim of political greed, and died having scarcely passed middle life.

Dr. James L. Cabell: It was said of him when he died, that, "A luminous star in the constellation of eminent physicians and scholars had been extinguished." A man of rare dignity of manner and charm of demeanor, he "lived well, and happy, neither poor nor rich," learned enough: eloquent enough: ever with a sound mind in a sound body; delightful to his friends, and eminent in his piety.

Dr. John G. Skelton, whom none could know and not love, was in every sense of the word God's noblest creation: a man spiritually, mentally, professionally, illustrating all the virtues in a lovely life, and going to his reward at a ripe old age, an honor to his profession and an example to his professional brethren of a well spent life, which they would do well to emulate. It was inspiration to have known him and called him "friend."

Dr. Wm. Otway Owen was a man of unusual endowments, one who had few equals and no superiors in the State in which he lived. The *Lynchburg Virginian* said of him, "He was a Virginian to his heart's core, and loved his State with all a Virginian's devotion and unselfishness." In his character he despised sham and everything that savored of pretense, reli-

gious cant, or hypocrisy. He had a deep reverence for holy things, and a profound respect for religion pure and undefiled, but it was in his home life his virtues shone the brightest.

Dr. Wm. B. Towles was one of the most distinguished anatomists that this country has produced.

"When hearts whose worth are proven
Like his are laid in earth,
There should be a wreath woven,
To tell the world their worth."

* * * * *

"To live in hearts we leave behind
Is not to die."

Dr. William C. Dabney, my classmate and intimate friend, was an eminent physician and teacher, a close student, a sympathetic kind-hearted, cheerful and skilful Christian physician. He was an enthusiast for higher medical education and labored earnestly for the attainment of that end. He was the first president of the Medical Examining Board of Virginia.

Two names conspicuous on the roll of honorary fellowship are those of Battey and Toner, both of national reputation and frequently honoring the Society by their presence and contributing interesting and instructive papers to the proceedings.

Dr. William W. Parker was one of the most unique figures in the profession. He always rode on horse-back and did an enormous practice chiefly among the poor and people in moderate circumstances. Probably no man ever did so much work for humanity and for such poor remuneration. He was a man of great courage, both physical and moral. He served his country during the Civil War as commander of the famous Parker Battery of Artillery, winning great distinction as an officer for his daring and courage. He founded the Magdalene Home of Richmond, and to the end of his life labored for its welfare. He was a man of most decided convictions and fearlessly upheld the position which he took until convinced of his error. He was withal an humble and conscientious Christian, and consecration to the Master's service was the main-spring of his life. He sleeps well, life's fitful fever ended, and I doubt not has received a rich reward for the deeds done in the body.

Dr. Hunter McGuire, the most distinguished member of the profession of his day and generation in the South, Medical Director of Stonewall Jackson Corps, was professor during his life in three medical colleges, and with

the highest honors the profession in city, State, and nation could give him. Ambitious, intelligent, aggressive, indefatigable, original, it is not to be wondered that he obtained wide reputation, both State and national. But the qualities which in no small degree contributed to his success were his wonderful intuitive knowledge of human nature and the magnetism of his personality. He enlisted the confidence of his patients as soon as he entered the sick room, which subsequently developed into a devotion and loyalty seldom equaled and never excelled in a case of any other man. Of large and tender heart, the readiness with which he gave his services was only commensurate with his opportunities.

Dr. Oscar Wiley: On every hand men and women spoke of him as a doctor of the old school, a second Ian McLaren, always ready for service to suffering humanity. He was in its truest sense a good physician, a consecrated Christian, exceptional as a husband, father, friend, citizen and soldier. I greet you in memory, friend of past years: your falling asleep has left a vacancy that cannot be easily filled.

Dr. William S. Christian: His was a life of service to others such as few men enjoy. During the Civil War he rapidly rose to the rank of Colonel, and subsequent to the War, he served in many positions of trust and honor. It was a privilege to have known Dr. Christian. Attractive in personality, the warm grasp of his hand and genial smile made one feel how genuine was his friendship.

Dr. John Spottswood Wellford was a man of mark, an earnest and conscientious physician, a man of most versatile cultivation, and with a memory so retentive of what he read that he was a veritable encyclopedia on almost every subject and an accomplished conversationalist and most charming companion.

Dr. Rawley W. Martin: It was said of him, "He never acted a part to gain a friend, or carry a point." Simple, natural, unaffected, pure, lofty, unselfish, there was no need in him that charity should cast a veil over his faults. Desperately wounded on the blazing crest at Gettysburg, when the war was ended, he returned to the pursuits of peace, and in his life exemplified the fact that Peace hath even greater victories than War. When the end came, wrapping the mantle of his couch about him, he laid him down as to pleasant dreams and fell asleep.

John Herr Musser was an honorary fellow of this Society. He was an accomplished internist, a fine diagnostician and a consultant of national reputation. He was a voluminous writer, and his works are among the recognized authorities of the profession. The transactions of this society have been enriched by contributions from his facile pen.

Dr. Samuel Preston Moore was not a member of this Society, but he was so unique a figure in the profession of this State that the record of his death has been inserted in the transactions. Before the war he was a distinguished surgeon in the army; when the war came, he threw his fortunes with the Confederacy; after the war he devoted his energies to the material development of educational interests in Richmond. It was his matchless executive ability in organizing the Medical Corps of the Army of the Confederate States, and his resourcefulness in procuring immediate supplies which made up the efficiency of that army. A half century has passed and the people of the South have vied with each other in the raising of enduring monuments of stone and bronze to the men and officers who fought in that struggle. The doctors of that struggle were just as heroic, suffered the loss of life and limb on the battle field, and faced added danger in the exposure to infection from wounds and diseases. So far as external evidence goes, their labors have been forgotten, and appreciative gratitude for their services is lacking. Conscience approved patriotic duty well performed and hardship and suffering borne with a sublime courage.

"Creeds fade; faiths perish; empires rise and fall,
And, as the shining sun goes on his way,
Oblivion covers with a dusty pall
The life of man predestined to decay;
Yet is there one thing that can never die,
The memory of the dead for truth and liberty."

Time fails me to call the roll of all the worthy names of those men who have lived and labored in this Society, many my own classmates, Logan, Painter, Preston, Moncure, and those dear friends, Robinson, Trevillian, Tabb, Walker, and a host of others. These men have finished their course and left us the heritage of their example.

I realize how imperfectly I have told you the story of the past years in my feeble way. I stand here tonight between the dead and the living. With fate for pilot, I have sailed over

the waves of time in company with all of them. As I have gleaned the transactions of the past years, memory has freshened and, in my imagination, I have heard the music of their voices, clasped hands in kindly greeting and looked into the faces of all these—my brothers of other days. The glad expectancy of annual meetings renewed fellowship. In my heart of hearts is the longing for the sound again of those voices that are still and the touch of the vanished hands. I am reminded how richly applies to them what a writer has well said: "I dare not place any gift, however beautiful, nor any service, however brilliant, above the talent or the skill which can relieve a single mortal pang, and the self-devotion which lays it at the feet of the humblest fellow creature."

"Though from the hero's bleeding breast
Freedom her pulses drew,
Though the while lilies in her crest
Sprang from that scarlet dew,
While valor's haughty champions wait
Till all their scars are shewn,
Love walks unchallenged through the gate
To sit beside the throne."

In my own generation the shadows are lengthening, life's sun is declining to its setting in the West. For myself, I have only, after all these years, a feeling of thankfulness for the privilege of being a member, though humble, of our noble profession, and thank God for the opportunities it has given to me for service in the cause of humanity.

To my younger brethren I would say, have always high ideals, strive ever to lift the profession higher and higher above the plane of sordidness, selfishness, and commercialism; realize its awful responsibilities, and

"Go join, head, heart and hand,
Active and firm to fight the bloodless fight
Of Science, Freedom, and the Truth of Christ."

1103 West Franklin Street.

APPENDICITIS IN WOMEN.*

By JOSEPH DECATUR ROGERS, M. D.,
Washington, D. C.

My reason for choosing this subject is not that I have new or extraordinary facts to disclose, or a brilliant series of cases to report, but to me this has always been an interesting subject. To judge from my observation of cases, there is much room for improvement in

*Read before the Hippocrates Medical Society, Washington, D. C., February 11, 1915.

diagnosis and earlier treatment of appendicitis, especially in women; and I hope to learn something from the discussion, which I know will be given a paper on this subject by our Society, composed as it is of men well versed in their various specialties.

A study of hospital records in general shows a much greater mortality rate than one would suppose, to judge from the mortality of one per cent. or less in the hands of some of our best surgeons who are capable of making an early diagnosis and operating promptly.

Although I have always exercised the greatest caution and employed all the diagnostic methods available before operating for appendicitis, I have often been embarrassed at finding other diseased conditions than those anticipated, and in some cases no pathologic condition at all present to account for symptoms of what before operation appeared to be a clear case of acute appendicitis. Pain in the right iliac fossa is a suggestive and often alarming symptom. Since operations for appendicitis have become so frequent and fashionable, the public is now quick to ascribe all pain in this region to appendicitis, and often it is difficult to keep from operating for appendicitis. The family physician is often misled and, unless the surgeon goes carefully into the case, considering the other possibilities, a needless operation is performed and the patient continues to have pain as before. Surgeons who do not follow up their cases are apt to class as cured those patients who leave the hospital in good condition after their appendicularphobia operations. These patients, however, do not stay cured and the pain often returns worse than before.

Operations that do not do good do harm. In advising against a hasty erroneous diagnosis of appendicitis, I do not advocate postponing operation when a diagnosis is made. I believe, with rare exceptions, that when appendicitis is diagnosed, an operation should be performed at once. Exceptionally, it may be permissible to operate on cases of suspected appendicitis, but exploratory operations have been greatly, and should be more, reduced by better diagnosis. What to do with the desperate cases that have delayed coming to the surgeon, or refused operation earlier, is an unsettled question. Shall we operate even though there is little hope, or deny them the aid of surgery

lest the public, ignorant of the condition, might lay death to operation. I believe we should operate if indicated and there is any chance whatever. The pernicious and frequent habit of giving strong purgatives to women with acute abdominal conditions cannot be too vigorously condemned.

Rectal examination is a valuable aid, frequently overlooked, especially in girls or unmarried women in which a vaginal examination is undesirable. I have several times been able to clear up cases that were puzzling without this examination.

I would advocate a liberal right rectus incision in all operations for appendicitis in women. The advantage of exploration more than offsets the slight tendency to post-operative hernia, as there are often other conditions present which need attention that were not suspected before operation.

Regarding removal of the appendix when the abdomen is opened for other conditions, if the operation is not too prolonged or severe, I would usually remove it if readily found. I believe the added shock to some operations would be enough to turn the tables for the patient; although the function of the appendix has never been discovered, we cannot say positively that it has none.

Pain and tenderness in the right iliac fossa, especially in young women, has often been a very difficult condition for me to diagnose, and I have several times made the error of operating upon these women when pain was of purely neurotic or hysterical origin. Beware of the neurasthenic with right-sided pain and appendicitis on the brain. General splanchnoptosis or disequilibrium of the abdominal viscera in this class of patients is possibly the cause, in many cases, of this pain, for which there is no satisfactory operation yet devised. Experience has taught that pain and tenderness in the right side with absence of fever, leucocytosis and muscular rigidity, especially in young women, is usually not appendicitis. Possibly there is some other surgical condition, but more likely not, when it is best treated by the internist. Often the condition is one of appendicular hypochondriasis. Many an innocent little appendix is massacred by the ruthless scalpel of the hasty surgeon.

One or more of the cardinal symptoms—pain, fever, acceleration of pulse rate, nausea

and vomiting, local tenderness, tumor, often leucocytosis, are usually sufficiently characteristic to diagnose acute appendicitis if the case is gone over thoroughly. In chronic appendicitis there is usually local tenderness on pressure, slight right rectus rigidity, constipation and other gastro-intestinal disturbances. The improvement in the technique and the more frequent use of X-ray in gastro-intestinal conditions during the past five years have given us more useful information about the appendix, and been at times of great diagnostic value.

Right-sided renal calculi simulate closely appendicitis, but absence of blood or pus in the urine, and tenderness over the kidneys, together with skiagraphy and cystoscopy, should eliminate this condition.

Acute cholecystitis presents fever, pain, tenderness and tumor, usually above rather than below the navel; jaundice usually is, or has been, present. The patient has in a great majority of cases had typhoid fever or given birth to children; very often both gall bladder and appendix are involved. The diagnosis can usually be made between these conditions, but nevertheless mistakes will occur, sometimes due to incomplete examination.

Typhoid fever may closely simulate appendicitis and I have seen several cases operated on that ran a typhoid course afterwards. I have several times come near making this mistake. Dr. John B. Murphy lays down the valuable axiom on this point that pain always precedes fever in appendicitis, and fever always precedes pain in typhoid fever. The Widal test will, if present, often aid us greatly.

Diseases of the female reproductive organs are usually differentiated if the examination is made thoroughly. The presence of gonococci should be carefully investigated and a history of the patient taken with the social condition of a patient considered, for in a certain class of women we should expect gonorrheal salpingitis rather than appendicitis, until we can prove that the pelvic organs are not the source of trouble. Price claimed that 90 per cent. of all pelvic infections are of gonococcal origin. Norris places the proportion at 80 per cent.; Pozzi and Frederic at 75 per cent., showing the importance of eliminating this by careful bacteriologic examination and consideration of the patient.

The vermiform appendix is involved secondarily in a considerable proportion of inflammatory diseases of the pelvis, especially when the appendages on the right side are involved, the condition taking the form of a peri-appendicitis. Exacerbations of chronic appendicitis are apt to occur at the monthly period as a result of the congestion which occurs at this time. Congestion of the ovaries at menstruation when the woman is forced to stand on her feet much of the time may cause pain severe enough when associated with a neurotic temperament to mislead us if we do not study the case. An instance of this kind came under my observation some years ago. A pupil nurse was taken ill while on duty at a hospital and the attending physician was called to treat her. He called in a gynecologist, who pronounced case appendicitis and advised operation. I was called by the family to see the case, and the only symptoms I could find were pain over the right ovary and a rapid pulse rate, due to fright. There was no nausea and vomiting, nor was there fever or rigidity. Leucocyte count, though suggested by me, was not made. Although these two men were prominent in the profession, they persisted in removing a normal appendix. I would like here to remark that, of the nurses taking training at many hospitals, few leave without the hospital stamp left after an abdominal operation. While visiting a large clinic recently, where every case is thoroughly studied before operation and but few exploratory operations are sanctioned, I asked what proportion of nurses were operated upon and was told that two of the graduating class of thirty had had abdominal operations.

Ovarian cysts and dermoids are often mistaken for disease of the appendix, but a history of previous or present menstrual disorders, together with pelvic examination, should as a rule suffice for discrimination. At times we have more than one condition present. Last summer I was called to see Mrs. M. G., aged thirty-five. She had a typical attack, apparently of appendicitis, with pain, mild fever, nausea and vomiting, rigidity in the right side, pulse 100, and leucocytosis (12,600), and the condition was so diagnosed by a very competent consultant and myself. Operation revealed an acutely inflamed appendix laid back upon the caecum; there was an ovarian cyst about the

size of goose egg in the right side and papilloma of both ovaries. Appendix, cyst and both tubes and ovaries were removed. The fear that a malignant condition might follow papilloma was one of the few conditions that would cause me to remove both ovaries in a comparatively young woman.

Tubercular peritonitis also requires differentiation. The gradual invasion and the existence of tuberculosis elsewhere offer valuable clues. Tuberculosis of the tubes occurs more frequently in girls than women. Leucocytosis is usually less pronounced in tubercular conditions.

Perforating ulcers of the stomach and duodenum usually give pain and tenderness in the left upper quadrant, and there is a history of hematemesis and characteristic digestive symptoms.

Embolism and thrombosis of the superior mesenteric artery are occasionally encountered, but the rapidity with which grave symptoms develop should put us on our guard. Acute pancreatic conditions also act similarly.

Intestinal obstruction gives many of the symptoms of appendicitis, but the persistence of vomiting often becomes fecal (appendicitis cases vomit two or three times, never continuously). The presence of marked borborygmi and frequently outlines of the intestine on the abdominal surface with tumor often in some region other than appendicular region, and the known presence of hernial pockets, are usually sufficient to allow of diagnosis. Meckel's diverticulum, in addition to the danger of a pocket, may also act as a band by becoming adherent and producing intestinal obstruction.

Jackson's membrane or Lane's kink occasionally cause symptoms closely simulating, and are often diagnosed appendicitis before operation. They must be considered, but I believe that many lay too much stress on these conditions.

Cases of pneumonia and diaphragmatic pleurisy give symptoms so resembling appendicitis that we should never be satisfied about diagnosis until the chest has been carefully examined to rule out these conditions.

Extra-uterine pregnancy shows a rather characteristic previous history of irregular or scanty menstruation, morning sickness, breast changes, attacks of colic, and vaginal examina-

tion elicits the presence of a mass to the side of the uterus of a peculiar doughy feel to the touch, which is almost pathognomonic. Fever is usually absent. If the tube ruptures, then are added the symptoms of collapse. Never do an exploratory puncture to make diagnosis.

The coincidence of appendicitis and pregnancy deserves mention, because this is a very serious condition and has a mortality that is fearfully high, greater than gastric or duodenal perforation. Palmer Findley, in 1913, reported fifteen cases of appendicitis complicating pregnancy. Of the fourteen operated upon there were three deaths, a mortality of more than 20 per cent.

DeLee estimates 40 per cent. mortality in perforated appendix peritonitis cases. No other surgical condition has so high a mortality. Peritonitis due to appendicitis in non-pregnant women has about 4 per cent. mortality.

Fortunately, we do not encounter this condition often, as primary appendicitis is very rare, the recurrent type slightly more frequent. I have had two cases only in my practice: one who was two and a half months pregnant, was operated within the first 24 hours and had an uneventful recovery; the other, three months pregnant, was not seen by me till the third day and, after removal to hospital, was operated upon the fourth day of disease. Her condition was serious for the first 48 hours, but she made a prompt recovery. Both were delivered of healthy children at term.

The question arises as to why we do have this fearful mortality in appendicitis associated with pregnancy?

1. The inflammation is more severe due to the increased blood supply of the part.

2. Protective adhesions are less apt to be formed as the caecum, omentum and intestines are pushed up by the pregnant uterus and there is nothing to cofferdam or wall in as in non-pregnant cases, when the appendix ruptures. Infection is thus suddenly thrown into the general peritoneal cavity.

3. Suppuration takes place at a higher level in the abdomen and the resistance in that portion is less and drainage is not so good. Infection of the blood is the result, followed by abortion, after which the micro-organism in the blood becomes arrested at the placental site in the uterus. From here, infection spreads to the uterine veins, followed by septic throm-

bosis and phlebitis, with death to close the scene. Many women complain of pain over the appendix in the first months of pregnancy, which is probably due to stretching of peritoneal adhesions as the uterus rises out of the pelvis. This fact must be remembered, else we will make the mistake of removing a normal appendix, as is often done.

We must admit that we are still losing too many cases of appendicitis, due to the fact that we do not make an early and accurate diagnosis. The argument has been set forth that the public is slow to heed operative advice, but I think the fault is still with the profession, for people know in an intuitive way when we recommend operations that we are not sure ourselves of the diagnosis. Also, they remember the mistaken diagnoses of our hasty members of the profession.

In conclusion, I would say: Study out your case thoroughly, diagnose at the earliest possible moment, and operate at once, if indicated.

1400 M Street, N. W.

SOME T. B. HINTS.*

By B. L. TALIAFERRO, M. D.,
Catawba Sanatorium, Va.

Seeing at the Sanatorium from year to year so many far advanced and often hopeless cases of tuberculosis, I am impelled whenever the opportunity presents itself to speak on the importance of early diagnosis. When a competent physician takes a careful history, examines carefully his patient stripped to the waist, has the sputum examined, and has a two-hourly temperature taken for a week, he cannot be censured if he is then unable to make a diagnosis. Too often, however, in the hurry of general practice the patient is permitted to pass from the incipient curable stage to the far-advanced often hopeless stage, because of lack of attention to details rather than from lack of knowledge. One who has done general practice can easily see how this can happen. The patient is given a tonic after a superficial examination and told to report in a week. Or, perhaps, the diagnosis of malaria, run down condition, cold, or bronchial trouble is made, when an examination of the sputum might make the diagnosis T. B. The patient drifts

from one doctor to another to be told later that he has far-advanced T. B.

Just a little more time and care given to details might save the patient and prevent the infection of other members of the family. In taking a history recently, the patient remarked that his family physician was a good doctor on colds and minor complaints, but he did not go to him, himself, because he seemed always in such a hurry. He went to another physician and was told at once that he had tuberculosis. It pays to take time.

It is not the object of this paper to go into details, but simply to lay emphasis on a few points which may help someone to get an early diagnosis. If asked what we most desired in the diagnosis of incipient T. B., we might truthfully say: "more light." If, however, we used the light, the knowledge we already have and the measures at our command, many patients would be saved and much suffering and misery prevented.

In making the diagnosis, of greatest importance is a *carefully-taken history*—family and personal, past and present.

Blood spitting, unless clearly due to some local conditions, should be ascribed to tuberculosis of the lungs until otherwise proven. When a patient spits blood, he is lucky if he fall into the hands of a doctor who takes this view. Hawes mentions in his little book on Early Pulmonary Tuberculosis the case of a man who, after spitting blood, was examined by a throat specialist who said that he could see that the blood was coming from a tonsil. Examination of the sputum showed T. B., and the man later died of this disease.

Pleurisy, especially with effusion, is nearly always due to tuberculosis. The same may be said of *rectal fistulae*. *Night sweats* are very suspicious.

The temperature should be taken every two hours for several days, and recorded. The patient should be warned to keep the thermometer in the mouth for at least five minutes.

Repeated examinations of the sputum should be made in every case reported negative at the first test. We must bear in mind, however, that negative sputum means "bacilli not found", nothing more. Many cases of undoubted tuberculosis never give a positive test. In fact, in a certain number there is no sputum. Don't wait to find the bacilli to make a diagno-

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sis. The case cannot be considered incipient, in the strict sense of the word, when ulceration has taken place and bacilli have appeared in the sputum.

A case in point.—A physician, aged twenty-three, in 1900, two years after graduation, developed evening fever, anorexia, languor, cough, expectoration, loss of weight and strength, night sweats. Maternal aunt and uncle died of T. B., and there was intimate association with both during infancy and childhood. Physical examination showed slight consolidation in right apex, temperature ran 97 to 101 for three weeks. Sputum negative for T. B. on three examinations. A very careful and conservative physician refused to make a diagnosis of T. B. He treated the case with liquid peptonoids and creosote and liquid diet and rest in bed. Patient regained weight and strength after a month's stay in the mountains. Up to 1912 this patient continued at work. Was subject to cold, which would hang on for weeks. In February, 1912, he developed a cold (?) and cough, which continued for six weeks, during which time there was no loss of weight and no evening fever, but appetite was poor and patient felt tired out after his day's work. This was in March, 1912, a busy month. He felt that he was getting lazy, was irritable, nervous, could not sleep well. Pulse was 80 to 90. Was examined by a colleague March 1st, and advised to take ammonium chloride—no diagnosis made, no hint of T. B. One month later, slight evening fever was noticed and bacilli found in sputum. Three months' rest at Catawba put this man on his feet again, with weight above normal, and the disease apparently arrested. How much better it might have been if he had been told in 1900 that he had T. B., in spite of the negative sputum. He would probably have so arranged life and work that the second breakdown might have been prevented.

Insist on examining the chest stripped to the waist. If you go about it in a business-like manner, with a little tact you will have no trouble with women in this respect. It is often hard enough when the chest is bared to find the trouble. A superficial examination through the clothing is worse than useless. If you have examined your patient carefully and cannot make a diagnosis, do not be afraid to say "I don't know". If you have done your best, you

have done your duty. Let some one in whom you have confidence go over the case. Some of the best men in the country are not afraid to acknowledge their mistakes. Do not make a negative diagnosis because you fail to elicit definite physical signs. They are not present in the incipiency. It is perfectly possible for a deep-seated, symptom-producing lesion to give no physical signs. To the man who is looking for bacilli in the sputum, marked dullness, changed breath sounds and distinct rales, this statement will seem rank heresy. It is true, however, and it is to be hoped such men will study the question carefully and change their opinions. The cock-sure man is not always the safe man.

One point I would like to emphasize—the *examination for rales after cough*. Make it a part of your routine examination, and you will never regret it. Instruct your patient after deep exhalation to cough or hack and immediately to take in a fairly deep breath. Go over the chest with your stethoscope, moving it after each cough and inspiration.

A point about treatment.—Do not underestimate the value of absolute rest—rest in the recumbent posture. Dr. Lawrason Brown, in June, 1912, in an article on Rest in Tuberculosis, advised that, when the diagnosis had been made, the patient should be put to bed and kept there for at least two months whether symptoms were present or not. Rest is all-important in the beginning. Graduated exercise comes later, and, as a rule, the later the better.

A word about prevention.—Give your patient careful and detailed instructions about the care of the sputum, instruct him to cover the mouth and nose when coughing or sneezing. Dr. C. L. Minor gives each of his patients printed instructions for their guidance, and it is safe to say that these little booklets make a deep and lasting impression on their future life and conduct.

In conclusion, I would again emphasize the importance of the history, the *danger of waiting for bacilli* in the sputum, the fact that a *negative chest examination does not rule out tuberculosis*, and last, but not least, the importance of giving the patient *careful and repeated instructions* in how to prevent infecting his family and those with whom he comes in contact.

THE ACCURATE DETERMINATION OF FŒTAL PRESENTATION AND POSITION AS WELL AS THE SIZE OF THE OS WITHOUT VAGINAL EXAMINATION.*

By GREER BAUGHMAN, M. D., Richmond, Va.
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It is manifest that a plan of delivering without a vaginal examination would be a great step forward, provided the presentation and position of the fetus as well as the size of the os could be accurately determined.

The danger of sepsis could be almost entirely eliminated and meddling mid-wifery would be reduced.

By presentation we mean the relation which the long axis of the fetus bears to that of the mother and we differentiate between the longitudinal and transverse presentations.

By the term position we mean the relation of some arbitrarily chosen portion of the child to the right or the left side of the mother.

The determination of presentation and position by external examination is accurate and, can be carried out without any discomfort or danger to the mother.

While the degree of flexion of the fetal head, the depth of the head in the pelvis, and the quantity of show will give to the accoucheur who is constantly practicing external examinations, a certain amount of knowledge of the size of the os, the determination of the size of the os by this method alone is not absolutely accurate.

For many years I have been using external examination and the character of show to determine the size of the os. In the last few years I have added to this plan the making of rectal examinations with a gloved finger.

After one has become somewhat skilled in the use of these three methods, vaginal examination is necessary only when one is about to operate.

I will discuss the technique of rectal examination and the importance of the show in determining the size of the os, and then discuss the subject of external examination.

For rectal examination the woman is placed in Sims' position, and the finger, protected by a suitable finger cot or a whole glove, well anointed with vaseline, is introduced into the rectum, the palmar surface of the finger

feels for the coccyx. The degree of motility of the coccyx and curve of the sacrum is noted.

After the coccyx and sacrum have been studied, the finger is turned with palmar surface towards the presenting part of the fetus.

The presenting part can readily be determined. If it be a vertex presentation, the fontanelles and sutures can be made out almost as easily as with vaginal examination. The outline of the os can be readily determined, but in order to be absolutely certain as to the size of the os, it is wise to wait until the uterine contraction takes place, at which time the bulging of the bag of waters can be felt pressing through the dilating os.

This rectal examination causes very much less discomfort than the vaginal examination and there is absolutely no danger of infecting the woman. The knowledge gained by the examination is almost as accurate as with vaginal.

The use of the show in determining the size of the cervix has never been commented upon as far as I have seen in literature. When the show begins, I assume that the cervix is beginning to tear a trifle; particularly is this true when the red discharge is accompanied by mucus. As long as the show continues, I think we are justified in believing that the cervix is still dilating.

We almost always find a time when the show ceases. I think we are justified in assuming that the show ceases because the presenting part has past through the cervix. In the case of vertex presentation the cervix contracts down around the neck, while in the case of breech presentation it contracts around the waist, thus preventing any further discharge of blood and mucus.

As long as the show is pronounced, I assume that the os is not completely dilated. When the show ceases, I assume that not only has the os dilated, but that the presenting part has passed through.

It is important, in making use of external examinations for the purpose of determining presentation, position, and size of the os, to use a series of examinations accurately carried out in their proper sequence, in order that nothing may be overlooked.

The series that I have used for many years have been as follows:

(a) The accoucheur sits on the side of the

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bed facing the patient's face. The abdomen is bared of clothing. The accoucheur's hands are brought together, the tips of the fingers touching each other. The hands, with the fingers extended, are swept over the abdomen from the symphysis to the fundus of the uterus; not only do the hands touch the abdomen, but the forearm as well. With this grip one may ascertain in a general way the height of the uterus, the number of finger-breadths below the ribs, and whether the infant is lying lengthwise or crosswise in the uterus.

(b) After the hands have encircled the fundus of the uterus, the finger-tips are allowed to fall apart and, with one hand and forearm holding the uterus firmly upon one side, fingers, palms of the hands, and the forearm of the other are pressed into the uterus upon the opposite side. The fingers are manipulated separately with movements as if one were playing upon the piano. The hand that is manipulating passes down the side of the uterus until the whole uterus upon that side has been investigated. The same arm and hand then act as a support to the uterus, while the other fingers, hand and arm go over the other side of the uterus with similar manipulation. With this second method it is expected that the small parts of the infant may be ascertained. The long curved back may be clearly differentiated. A means of differentiating between legs and arms is that, if the leg be pressed upon suddenly it will kick, while if it is the arm, the arm will be withdrawn.

(c) In order for this examination to be effective, the bladder must be completely emptied. If the examiner be right-handed, he should use his right hand for making this examination; if left-handed, he should use his left. The thumb is spread far apart from the fingers of the examining hand, and the other fingers held in contact with each other. With palm surface down, a widely spread thumb upon one side and fingers upon the other, the hand is pressed into the abdomen just above the symphysis. After marked resistance has been felt, the thumb and fingers are approximated to each other. With this method, the presenting part may be felt unless it has descended to the mid strait. If the head presents, the degree of flexion can be readily made out. The pointed sinciput and the

rounded occiput can be easily detected by the degree of flexion and by the relative height of sinciput and occiput. By this grip we can determine the position of the child, whether it is engaged or not, how far it is engaged, what sort of resistance it is meeting, and experience will teach us the approximate amount of dilatation of the os.

(d) The physician stands facing the patient's feet. Fingers and thumb are brought close together and pressed on each side of the uterus just behind the symphysis until resistance is found. This method can detect the presenting part after it has passed to the mid strait. If it be the case of a vertex presentation, it can ascertain the degree of flexion, and an opinion can be ventured upon the degree of resistance, and, likewise, the approximate size of the os.

(e) After the four methods have been carried out according to the routine that I have laid down, a confirmatory diagnosis must be made with the stethoscope.

26 North Laurel Street.

SOME OBSERVATIONS ON DRAINAGE OF THE PERITONEAL CAVITY.*

By S. S. GALE, A. B., M. D., F. A. C. S., Roanoke, Va.
Surgeon to Lewis-Gale Hospital.

Having recently had our attention called to the very prompt recovery of four cases of diffuse peritonitis following perforative gangrenous appendicitis after the early removal of the drainage tubes, it convinces us that in our work we had been in the habit of draining these cases too long, thus prolonging the patient's disability and laying the foundation for the formation of organic adhesions with their long train of subsequent discomforts. Being convinced that the rapid recovery of these four cases was due to the early removal of drainage, we felt that this subject was of sufficient importance to bring it to the attention of this Society, because, possibly, there are others among us who have been guilty of the same practice.

The striking feature of these four cases was that, notwithstanding they were all very sick and all had diffuse peritonitis with perforative gangrenous appendices, they were all able to leave the hospital at the end of fourteen days

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in good condition and with their wounds practically healed. Having had this satisfactory experience with the early removal of our drainage, we began to investigate the subject of drainage of the peritoneal cavity, and found the following reference to drainage in Volume 1, *Abdominal Operations* by Moynihan, page 56, Third Edition, 1915:

"Prolonged drainage of the general peritoneal cavity is a physical impossibility. The tube or wick of gauze is almost immediately isolated and it is not long before it is encapsulated. It provokes a copious thin discharge from the serous surfaces which surround it, forming, as Yates terms it, 'a potential cavity which is speedily converted into an actual cavity' by the action of a plastic fibrinous exudate, forming encapsulating adhesions. Yates, after a very comprehensive discussion of the whole question, comes to the following conclusions:

"Drainage of the general peritoneal cavity is physically and physiologically impossible.

"The relative encapsulation of the drain is immediate.

"The absolute encapsulation occurs early (less than six hours in dogs) and can be retarded, but not prevented.

"The serous external discharge is an exudate due to the irritation of contiguous peritoneum by the drain.

"There is a similar inward current from the potential into the general cavity.

"This external exudate diminishes remarkably with the formation of encapsulating adhesions.

"These adhesions, under approximately normal conditions, form about any foreign body.

"Their extent and density depend on the degree and the duration of the irritation of this body.

"Primarily fibrinous, these adhesions become organized in a few days (three days in dogs).

"If the irritation persists, they become progressively more mature fibrous tissue.

"After irritation ceases, their disappearance depends principally upon a mechanical factor,—the ability of the involved surfaces to pull themselves or to be pulled loose.

"Drains should be the least irritating, and should be gradually and finally removed as soon as possible.

"Irrigation through drains is futile to prevent adhesions, and dangerous.

"After a drain is inserted, all intra-abdomin-

al movements should be reduced to a minimum.

"As soon as the drain is removed, intra-abdominal activity should be stimulated, to aid in the disappearance of the remaining adhesions.

"Peritonitis, if not too severe, possibly aids in the rapidity of the encapsulation of the drain.

"A drain in the presence of infection is deleterious to peritoneal resistance, and should only be introduced to exclude more malign influences.

"Postural methods, unless destined to facilitate encapsulation, are both futile and harmful, as far as drainage is concerned.

"Peritoneal drainage must be local, and unless there is something to be gained by rendering an area extraperitoneal, or by making from such an area a safe path of least resistance leading outside the body, there is, aside from hemostasis, no justification for its use.

"It is therefore clear that the use of gauze or rubber protective or tubes of any sort left in the abdominal wound should be restricted to those cases where it is necessary to exercise pressure to arrest bleeding; or to isolate a part of the peritoneum when a known infection has occurred; or when the escape of a fluid along a track isolated from the peritoneum is anticipated (as in choledochotomy); or for temporary drainage of the general peritoneal cavity. The length of time during which drainage of the general peritoneum is possible has not been accurately reckoned, but it is almost certainly very brief, probably not more than twelve hours as a maximum."

THE WOMAN PHYSICIAN.*

By SUSAN A. PRICE, M. D., Williamsburg, Va.
Assistant Physician Eastern State Hospital.

Needless to say it gives me pleasure to read this short paper before the Medical Society of Virginia and to make this feeble effort to interest you in the topic that your Secretary and Chairman so kindly allow me to present to you this afternoon, namely, "The Woman Physician." It is a pleasing contrast today from the lonely days of the past, when it was looked upon as a questionable experiment for a woman to study medicine, when discussion was aroused as to the propriety of a woman searching for information to acquire wisdom of matters medical—although so vital to her well-being, her

*Read before the Medical Society of Virginia, at its forty-sixth annual meeting, at Richmond, October 26-29, 1915.

happiness and often her life itself—and to have insight into the laws of nature from the simple to the most profound, to these prosperous times when there is a better and I may say a universal understanding and more harmonious feeling toward the medical woman.

There are now few accessible parts of the world to which the woman physician is not penetrating, and with success, steadily holding her own with that tenacity of purpose generated in that trying period of her first days in the modern medical college. These were far from being days of pleasure, of misleading glamor, of social successes—for so many ages considered vital to the happiness and contentment of woman,—but days of struggle and unceasing sacrifice, when the student must give every force of which she is capable to laborious patient research, sacrificing much pleasure, often comfort and encouragement and recognition. mental and physical health, sometimes life itself.

All through the ages woman has been most closely connected with the healing art. Ages ago, it is recorded in that sacred and supreme text-book for physicians, a woman had a box of ointment and anointed the head and feet of her Lord, and did not that Master Physician approve and say that wherever the Son of Man should go, that act would be a memorial to her? A psychologist makes the statement that without memory there can be no imagination. We remember that incident of the woman with the box of ointment, and I imagine that woman has always taken a most active and honorable part in the art of healing. An authority on the history of medicine was surprised to find that to woman the field of medicine is a lost heritage. The first hospital in the world was built by a woman in Rome in the fourth century A. D. In the sixteenth century it is said that woman had the obstetrical field to herself, and a woman of Paris wrote a book on that subject, which was an authority in those days, and no doubt could be relied upon at the present day to some extent. After that man took up the scientific and notable profession of medicine. Universities and schools of medicine were established; rules and regulations for study accomplished the evolution of medicine, making it a science and an advanced profession. These conditions, coupled with prudence and caste, raised for a time a formidable wall which many women hesi-

tated long to scale. Some remnants of that barrier still persist, but I am glad to say that every year sees this barrier steadily growing less and less, until now it only presents enough difficulty to overcome to add zest to the performance. More encouragement is being given women to take up medicine as a profession now than ever before. Laws in favor of the woman physician have been passed to employ her in insane hospitals, infirmaries, epileptic colonies, asylums for the mentally deficient of all kinds, and as medico-legal experts. In fact, everywhere there are enlightened people it is recognized there are problems presented in medicine among patients that are distinctly problems for women without in any way encroaching upon the domain of the man physician. A mistaken extraordinary opinion prevails chiefly among women that it requires extraordinary mental and physical endowment to study and practice medicine. This distorted view is often the cause of many women not entering the profession, or else coming to grief in its accomplishment, and I think it is the outcropping of ideas prevailing in the past that women are not sure enough of themselves. Just here I am reminded of a young woman who had long desired to study medicine but was continually discouraged by friends in her desires, being repeatedly told she could never succeed on account of delicate health and nervous temperament in the gigantic task to be undertaken. In this case the friends were more correct in their views than they themselves knew, for she never could have spent her days in a medical school. She was uncommonly bright and a perfect student, but she had one obsession, and that was passing the state board of medical examiners four years away. She was often talking about the state board and its terrors which seemed to loom ahead of her day and night. A dear old professor, hearing of these fears, sought to comfort her by telling her that Hippocrates, Aesculapius, or even the professor himself could not pass the state board of any state, and not to worry until she came to it. The professor meant well, but she was never to go through that ordeal. She suffered a physical and mental collapse and passed from sight. This is a rare occurrence, I am sure, for women as a whole have succeeded in the medical profession and have not allowed future terrors to beset them. They are now admitted into scientific medical asso-

ciations, and some of them contribute to the most reputable medical journals in the land. It grieves me that so many fail to avail themselves of the opportunities open to them, that they fail to follow the lead of the women pioneers in medicine who, by dignified and womanly conduct, firmly established themselves in history and their work.

The problems concerning the study of medicine for woman have interested and concerned no one more than the woman herself who often under great difficulty and stress of one sort or another, decides on this profession. Many anxious hours are spent in questioning if it is for the best, if the difficulties in the way are worth the struggle, or if it is worth while to set aside so many interests and pleasures for that life which at the very best must be a life of struggle. In this connection, I can do no better than to quote from Dr. Florence Bruce Sherborn, President of the Iowa State Society of Medical Women this year, who says, "I am glad I am a medical woman; that I can look into your faces and sense that fellowship which comes with the sharing of searching and profound experience; glad for the unique opportunities and obligations for human service which come to medical women even though these lead deep in to the naked actualities of life." Quoting further, "The world has long taken the stand that a good woman must know as little as possible of the hidden things of the world, but to the medical woman there is little hidden. The skeleton in the closet may escape the eye of the friend, the relative, the priest, but there comes a time when to the physician the door must open and she beholds its hideous face, gibbering, mocking form, and does what she can to heal the venom of its wounds. She then goes forth with sealed lips and learns in time to go from scenes which stagger her philosophy and weigh down her soul, with a serene brow and a calm word for the next sufferer." In these good words I think the woman physician finds the key to her success and happiness in her profession. At the recent meeting in July, of the Alienists and Neurologists of the United States, given under the auspices of the Chicago Medical Society, when prominent physicians from all over this country took part, there were three women physicians on that notable program, one from New Jersey, one from Wisconsin, and one from Virginia,

and the Virginia representative read the first paper on the program. In that audience there were many women physicians, many taking active part in the discussions. Following the celebrated surgeon, Dr. Ochsner, who read a masterly paper on the care of the mental defectives not admitted to state institutions, a small and delicate looking woman led in the discussion; and her good handling of the subject won the most respectful attention. Dr. Madeline Hallowell, of Vineland, New Jersey, read a paper, with lantern slide illustrations, on the modern training and treatment of mental defectives and epileptics and all who heard the paper declared it a masterpiece on that subject. Here I would like to make a personal tribute for the great kindness and consideration I myself have received from the medical fraternity from the day I entered the medical school in 1899 to the present day, especially from the men with whom I have been associated in my work in the several hospitals with which I have been and am now connected. All the courtesy and fraternal consideration possible has been extended to me and I am encouraged and greatly helped thereby.

And so I am sure the woman physician has found her place among the people; women who have had to face difficult and perplexing problems so intimately associated with the daily life of the doctor of today, "Women who," quoting from a recent issue of the *Women's Medical Journal*, "like the prophets of old, dreamed dreams, and saw visions, and to whom the still small voice called as it called to Samuel and as it made itself known to Esther, "Who knoweth whether thou art come to the kingdom for such a time as this?"

Women are often backward about coming forward. We see this in the shrinking of many intelligent and educated women from advocating woman's suffrage, and this is so thoroughly incomprehensible to her more aggressive suffrage sister. No doubt they too have heard the wee small voice like Samuel or like Esther, and they too doubt its significance. "Who knoweth whether thou art come to the kingdom for such a time as this?"

I know little about woman's suffrage as far as votes for women are concerned, but I do know that these days certainly represent the woman physician coming into her kingdom.

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

Reported by A. J. ZOBEL, M. D., San Francisco, Cal.

(Continued from page 355.)

The Ultimate Nervous Results of Acute Angulation of the Sigmoid, and the Consequent Fecal Stasis.

By WM. H. AXTELL, M. D., Bellingham, Wash.

Dr. Axtell divides the nervous end results into three general types:

(a) Severe type, including acute mania;
 (b) Moderately severe type, including melancholia, chronic sciatica, chronic lumbago, trophic corneal ulcers;

(c) Mild type, including eczema, the apathetic, the neurasthenic.

He was not prepared to say whether or not the angulations found were the cause of the fecal stasis, or the stasis the cause of the acute angulation. These conditions, however, were found in all of those cases, and the nervous conditions which were produced disappeared upon correction of the angulation and stasis.

Dr. Axtell's conclusions are:—

(1) Many cases treated as typhoid fever are simply cases of constitutional and systematic infection from putrefactive toxins of the alimentary canal.

(2) If the true condition were recognized at the outset, and if the colon were thoroughly cleansed of the soil for the growth of typhoid bacteria, there would be fewer cases of typhoid fever.

(3) Physicians do not as a whole examine the rectum and colon with the same degree of precision that they do other parts; they do not have a true appreciation of its importance; nor do they comprehend what persistence is required to empty the colon.

(4) We are all too much inclined to cling to precedent rather than to act according to the conditions found.

Report of Case of Carcinoma of the Sigmoid; With Stereo-Radiograms.

By WALTER I. LEFEVRE, M. D., Cleveland, Ohio.

Patient, male, age 55 years. Suffered with abdominal pain in the left iliac fossa for one and a half years. Complained of constipation, becoming gradually worse until a natural pass-

age was impossible. Use of enemas, resorted to but difficult to retain.

Stereo-roentgenogram was made by injecting barium sulphate emulsion (consisting of barium sulphate, 6 oz., pulv. gum tragacanth, 2 drams, aqua, 40 oz.). This would start to be expelled when about 10 oz. was injected, but by repeated efforts 30 oz. was finally injected and retained long enough to get the pictures. Some of the emulsion passed to the upper end of the ascending colon; the transverse colon was filled; the descending partially filled; the sigmoid and rectum entirely filled. The pictures show the sigmoid loop bound down in the pelvis and almost occluded. Operation confirmed the findings. Condition hopeless. Patient died.

The Present Status of Local Anesthesia in Surgery of the Lower Bowel.

By LOUIS J. HIRSCHMAN, M. D., Detroit, Mich.

Nowhere has the real value of local anesthesia been demonstrated more conclusively than in entero-proctologic surgery.

Dr. Hirschman employs local anesthesia in the surgical treatment of the majority of his cases of anal and rectal diseases, as well as in a small proportion of cases involving surgery of the colon. The results in both classes of surgical operations have been so satisfactory to both the patient and the surgeon that the author advocates with great earnestness the further employment of local anesthesia not only in the field of intestinal surgery but also in every branch of surgical activity where absolute unconsciousness of the patient is not a strict necessity.

The technique which Dr. Hirschman uses in his ano-rectal operations and in his work on the colon is given in detail.

Which is the Best Anesthesia to be Used in Anal and Rectal Surgery?

By Wm. H. KIGER, M. D., Los Angeles, Cal.

Dr. Kiger was prompted to write this paper on seeing a statement in a recently published book on "Diseases of the Rectum and Colon" which read, "Spinal anesthesia has a very limited field of usefulness. Indeed, one is hardly ever justified in using it in rectal work."

After a personal experience in over five hundred rectal operations without a single unpleasant result, the writer of this paper is constrained to differ from the textbook author, and is forced to the opinion that the latter has

not given spinal anesthesia a fair trial, or that he, perhaps, did not use the proper agents.

Dr. Kiger called attention to the ease of administration of spinal anesthesia; that it may be given without the assistance of an expert anesthetist; that it saves time by doing away with the delay incident to an operation under a general anesthetic; that by its use the dangers of chloroform and ether are eliminated, as are also their after effects; that when it is employed there is no need to dilate the sphincters as all the operator has to do is to ask the patient to strain and the gut will easily protrude through the relaxed sphincters; and finally that it avoids shock.

He uses novocain or tropococain and gives in detail his technique for spinal anesthesia.

(To be continued.)

Editorial.

Chemical and Microscopical Diagnosis in Relation to the Clinician.

As time passes, greater emphasis is being laid upon laboratory procedures and greater dependence on them is being manifested by clinicians. Indeed, to such an extent is this true, that clinicians are constantly in danger of minimizing the clinical examination and of undervaluing the importance of history and subjective symptoms, relying upon the laboratory to fill in the gaps and supply the data necessary for diagnosis. In only a few instances is this perfectly attainable on the part of the laboratory; for example, in connection with venereal sores, the matter in text-books concerning the clinical differentiation of these sores might as well be omitted altogether, since the dark ground illumination has demonstrated that, for all practical purposes, there is no such thing as the classical Hunterian chancre. Here the laboratory can be depended upon to furnish the highly important differentiation without any aid whatever from clinical observation and experience. Or, again, in the case of ulceration or membrane in the throat, laboratory methods alone can clear up the diagnosis. A few more such instances might be added where the isolated laboratory procedure, undertaken independently, may be relied upon absolutely to furnish the diagnosis; still many more instances could be cited where the laboratory

findings constitute only one link in the chain of clinical evidence, obviously incomplete without this link and depending upon it for strength and conclusiveness. However, the laboratory is often called upon to supply unaided, the data that should be largely accumulated through careful clinical observation, needing, if at all, confirmation only from the laboratory.

Practically all laboratory evidence should be considered merely in the light of symptoms and should be dealt with accordingly in accumulating the clinical data and in building up the diagnosis. For instance, in a case of suspected syphilis, the Wassermann should be considered merely as a symptom, almost absolutely conclusive when present, but incapable of completely nullifying the clinical diagnosis when the clinical evidence is strong.

Interpretation of laboratory findings is a matter that has been done no little violence at times at the hands of clinicians. Proper and accurate interpretation under all circumstances would appear to be uniformly possible only with clinicians who have themselves received laboratory training or who have taken the pains to correct their short-comings, to some extent, by reading and by study of the methods, application and results of laboratory work.

W. A. SHEPHERD, M. D.

American First Aid Conference.

On November 9, President Wilson appointed the following as members of the Board of Standardization, to report on various subjects to the American First Aid Conference: Maj. Robt. U. Patterson, to represent the Army and Red Cross; Surgeon A. M. Fauntleroy, the Navy; Asst. Surgeon Gen. W. C. Rucker, the Public Health Service; Dr. J. Shelton Horsley, Richmond, Va., the American Medical Association; Dr. S. C. Plummer, Chicago, American Association of Railway Surgeons, and Dr. Richard H. Harte, Philadelphia, American Surgical Association. The Commission is to investigate first aid methods and packages with a view to standardizing first aid equipment and establishing an identical course of instruction to be followed throughout the country and is to report on these subjects to the Conference.

Surgeon General Wm. C. Gorgas, U. S. A., is chairman of the Conference and Dr. Jos. C. Bloodgood, Baltimore, secretary.

Habit-Forming Drugs a National Curse.

The above is the caption of a piece appearing in the October Report of the Norfolk, Va., Department of Health. Dr. Schenck, the Health Commissioner, states that, though the drug habit was comparatively unknown in this country twenty-five years ago, it has multiplied until in some localities there are as many as one in one hundred of the population who are addicted to the drug habit. In Norfolk, it is estimated that there are at least 500 drug habitues, and investigation shows that a very large percentage of the habitues "owe their habit to the unwise, careless and indiscriminate prescriptions of some doctors." Although it was thought that the number of drug habitues was being reduced after opening the free clinic for them, it was found that these dope fiends were getting the drug from unscrupulous people as often as they could raise the "almighty dollar."

The law has been interpreted as meaning that "the prescriber must show to the satisfaction of the authorities that they are making an honest endeavor to 'cure' the patient" and not as a money-making business. As the United States inspectors are investigating the matter more thoroughly each day, it is believed the situation will shortly be improved.

The Shenandoah Valley (Va.) Medical Association

Held its regular meeting in Woodstock, the latter part of November, the president, Dr. Wm. P. McGuire, Winchester, being in the chair. The secretary-treasurer, Dr. E. C. Stuart, of Winchester, was also at his post of duty. There was a good attendance and a number of interesting papers were read and discussed. It was decided to have the next meeting in Winchester in February.

Seaboard Medical Association.

As we go to press, the Seaboard Medical Association of Virginia and North Carolina is holding its annual meeting in Norfolk, Va., Dr. Israel Brown, of that city, presiding, Dr. Clarence Porter Jones, Newport News, Va., is secretary. The program shows a number of interesting papers and several pleasant entertainments for the doctors and the ladies accompanying them. Dr. E. C. S. Taliaferro was chairman of the local committee of arrangements.

The Rockingham Memorial Hospital,

Harrisonburg, Va., had the graduating exercises of its Nurses' Training School, November 30, in the Town Assembly Hall, at which time four nurses were graduated. Addresses were made by Dr. J. H. Deyerle and Rev. B. P. Wilson, and the Nightingale oath was administered by Judge Hawse. Statistical reports were read by the treasurer and by the president of the Ladies' Auxiliary Society.

The Hopewell (Va.) Medical Society

Was organized by the practicing physicians of that place, November 3, and Dr. James H. Hargrave was elected president and Dr. B. L. Naiman, secretary-treasurer. Only thoroughly eligible practitioners will be permitted to join.

Dr. Lokie M. Futrell,

Who, upon his graduation from the Medical College of Virginia in 1914, was appointed an interne at the Protestant Hospital, Norfolk, Va., is now located at Murfreesboro, N. C., for the practice of his profession.

Dr. and Mrs. H. B. Mahood,

Of North Emporia, Va., were recent visitors to this city.

Doctors Among Delegates.

Drs. S. H. Price, Montvale, and B. B. Bagby and Fred Steere, West Point, were among those appointed by Governor Stuart as delegates from Virginia to the Southern Commercial Congress, convening in Charleston, S. C., December 13.

The Stereopticon Loan Library,

Established by the U. S. Public Health Service, consists of over 2,000 views, dealing with the aspects of various public health problems. Additions are constantly being made to the collection. The following is a list of the subjects shown, with anywhere from 10 to 500 slides under the various divisions: Alaska, children and children's diseases, health exhibits, hookworm, Indians, leprosy, living conditions, malaria, milk, mouth hygiene, parasites and organisms, pellagra, plague, rural schools, general service, smallpox, trachoma, tropical diseases, tuberculosis, typhoid fever, yellow fever, and miscellaneous subjects.

Stereopticon lanterns are not loaned but, as the slides are of standard size, 3½ by 4 inches,

any lantern may be used. Slides are loaned to physicians, health organizations, educators, welfare workers and others, without cost. Persons desiring slides should advise the Bureau as to what subjects they are interested in, so that the proper catalogs may be forwarded. In correspondence, address the Surgeon General, U. S. Public Health Service, Washington, D. C., using the reference letters, "D. Q."

Dr. George E. Wiley,

Bristol, Va., had the misfortune to have his home badly damaged by fire on the afternoon of December 5.

Tablet Erected at Memorial Hospital.

As a memorial to Mr. John Langbourne Williams, founder of the Memorial Hospital, this city, the operating suite of the Hospital was completely renovated and equipped with new apparatus in September 1915 through the generosity of his friends, and a tablet to this effect has been erected in the main corridor of the operating floor.

Dr. M. O. Burke,

Of this city, recently broke his wrist while cranking his automobile. His suffering did not, however, deter him from continuing with his professional duties.

Dr. Cary T. Grayson,

Washington, D. C., was among those attending the anniversary celebration of the Alpha Chapter, Phi Beta Kappa Fraternity, at William and Mary College, this State, on the evening of December 4.

The Association of Southern Medical Women,

At its annual meeting in Dallas, in November, elected Dr. Mary E. Lapham, Highlands, N. C., president, and Dr. Rosa Gantt, Spartanburg, S. C., secretary-treasurer. Drs. Mary Parsons and M. Louise Strobel, both of Washington, D. C., were selected first and second vice-presidents, respectively.

Dr. and Mrs. Lewis Allen,

Gaylord, Va., are spending some time in Washington, D. C.

Dr. and Mrs. G. G. Hankins,

Williamsburg, Va., spent a week visiting in North Carolina, late in November.

Dr. Mark W. Peyser,

Of this city, was among the one hundred receiving a prize from the Electrical Manufacturers' Exhibit, at the Chamber of Commerce, during Electrical Prosperity week.

The Dog as a Disease Carrier.

The U. S. Department of Agriculture has issued a bulletin declaring the dog, especially in rural districts, to be a carrier of disease to human beings as well as stock. In the case of foot and mouth disease, the dog may easily carry, in the dirt on his feet, the virus of the disease from one farm to another and, likewise, parasitic diseases may be carried to human beings. In localities where there is foot and mouth disease, dogs should be kept chained and never allowed off the farm except on leash.

The Department states that it is as essential that dogs be properly fed as that they be kept clean to prevent the carrying of infection. Improper feeding on carrion or raw viscera of slaughtered animals may engender tapeworms in the intestines of the dog and it is possible for the worms to get into the systems of persons who allow dogs to lick their hands.

Dr. Mary R. Fleming,

Daughter of the Rev. Dr. R. H. Fleming, for many years a preacher in Lynchburg, Va., is in charge of the hospital for women, at Tabriz, Persia, to which place she was sent as a medical missionary of the Presbyterian Church. Dr. Fleming is a graduate of the Randolph Macon Women's College, Lynchburg, and of the Johns Hopkins Medical School.

Annual Reports of the State Hospitals,

Recently submitted to the Governor, show an increase in the number of insane in this State and the superintendents were unanimous in recommending additional accommodations and increased appropriations, in order that the insane may not be compelled to stay in jails and almshouses awaiting commitment. The superintendent of the Eastern State Hospital especially recommended that a separate building be erected to be used as a pellagra infirmary, as the majority of patients have a fearful dread of this disease and it has a depressing effect on them when housed with this class of patients. The superintendent of the Central State Hospital again recommended a social service department to look after the furloughed

and discharged patients as a means of preventing readmissions. He also calls attention to the fact that only a few patients have taken advantage of the voluntary commitment plan as a means of avoiding publicity by legal commitment and a stay in jail until admission at the hospitals. There was a total increase this year of 313 patients in the State hospitals. More than 5,000 patients received treatment in the four insane hospitals, irrespective of the 355 inmates under treatment at the Epileptic Colony.

Dr. Geo. T. Collins,

Highland Springs, Va., visited Norfolk, the latter part of November.

Expert Anesthetist Unnecessary.

The medical staff at the Virginia Hospital, this city, has decided that it will be unnecessary to employ at the hospital a man to give his whole time to the administration of anesthetics as the internes who do this work have received especial training along this line.

Dr. J. H. Garlick,

Of Staunton, Va., visited Richmond, the latter part of November.

The State Board of Pharmacy of Virginia,

In its annual report to the Governor, has recommended that graduation from a standard high school should be the minimum preliminary educational requirement for entrance to their examinations. This requirement is endorsed by the National Association of Boards of Pharmacy and also by the Virginia Pharmaceutical Association.

Dr. Thos. Lee Bondurant,

Garrett, Va., has been a patient at the University of Virginia Hospital.

The Plan to Create Great Medical Center in New York Fails.

It is announced that Columbia University failed to obtain the sum of \$1,000,000 with which to join the Presbyterian Hospital in creating a great medical center in New York. The two institutions held an option which expired November 20, on the old American League ball grounds on Broadway between 165th and 168th Streets. Though another site will have to be found, it is believed the project will not be given up, as the Hospital raised its \$1,000,000.

Dr. and Mrs. J. E. Clagett

Have returned to their home in Hamilton, Va., after a visit to Winchester, Va.

Red Cross Xmas Seals on Sale.

Proceeds from the sales of the Red Cross seals, which went on sale on Thanksgiving Day, are to be used in the fight against tuberculosis, in large part to purchasing milk and eggs for consumptives. The movement is endorsed throughout the country. In Virginia, certainly, the need of funds for this cause is most apparent as there seems no decrease in the number of sufferers and deaths from this disease. Last year, there were 3,727 deaths from tuberculosis alone in Virginia, and it is estimated that there are 20,000 cases in the State. Help the cause all you can. The bulk of the money collected from this sale goes to the local Anti-Tuberculosis Association and a small proportion each to the State and National Associations.

Dr. Floyd Gregory,

Keysville, Va., visited his sister in Chase City, early this month.

Radium Produced at Lower Cost.

Secretary of the Interior Lane announces that radium is now being produced by the U. S. government at one-third of its former cost, or \$37,000 a gram. It is not believed that the selling price will materially decline, however, as the amount of radium in nature is exceedingly small.

In this connection, we note that a radium dispensary, backed by local philanthropists, was opened in New York City, December 2. Its object is to fight malignant diseases and to carry on research work with the X-ray and in surgery and the use of radium.

Capt. F. R. Hill, M. C.,

Of the U. S. Army, has been detailed for duty at Ft. Myer, Va.

The Sheltering Arms Hospital Training School,

This city, held its commencement exercises November 30, at which time four nurses were awarded their diplomas of graduation by Dr. McGuire Newton. Dr. Chas. R. Robins, presided, Dr. Robt. C. Bryan gave the address of the evening and Dr. C. C. Coleman administered the oath.

Dr. W. E. Harwood

Has again been elected surgeon of the A. P.

Hill Camp of Confederate Veterans, Petersburg, Va.

Cholera Afflicts Armenians.

The Presbyterian Board of Foreign Missions announced, early in November, that cholera had attacked the Armenian refugees from the Tigris and Euphrates valleys to Tabriz and that mortality from this one disease averaged 100 per day at this place. It is thought also that 700 deaths which have occurred recently at Tiflis, Russia, not far distant from Tabriz, were due to cholera, although the name of the scourge was not given.

The Pan-American Scientific Congress

Is to hold its second conference in Washington, D. C., December 27, 1915, to January 8, 1916, at which time a number of medical subjects are to be discussed. Information in regard to this Congress may be obtained of Mr. John Barrett, secretary general, at the Pan-American Union, Washington, D. C.

To Aid Montenegrins.

Twelve physicians and nurses, residents of the United States, have been sent by J. W. Frothingham, of New York, to aid suffering Montenegrins. A large supply of food, medicine and other supplies has also been sent for the relief work in that country.

Suicide on the Increase.

A life insurance statistician reports that the suicide rate in 1,800 cities in this country last year was 20.3 for each 100,000 population, or higher than for any year since 1909. The rate was apparently higher on the Pacific Coast, San Francisco, San Diego and Sacramento showing the three highest suicide rates, respectively. The figures also show that three times as many men as women commit suicide. The report calls attention to the fact that suicide by poison is nearly as frequent as by firearms, which would seem to indicate that laws governing the sale of both poisons and firearms are not properly enforced in many communities.

Diphtheria

Has been epidemic at Martinsburg, W. Va., the commissioner of health of that city reporting November 19, that from August 21 to November 19, inclusive, there had been 120 cases with two deaths.

Dr. J. A. White,

Richmond, president of the Medical Society of Virginia, received some scratches and bruises in an automobile collision, December 6, but was not otherwise hurt.

Obituary Record.

Dr. Edward Cummings,

A prominent tuberculosis specialist of Hinton, W. Va., died suddenly November 25, as the result of a severe hemorrhage from the lungs. So unexpected was his death, that he had been at his daily duties throughout the day prior to the end. Dr. Cummings, who was forty-four years of age, spent his early life in Knoxville, Tenn. After completing his academic education, he engaged in journalistic work until he enlisted for service in the Spanish-American war, but upon his return from Cuba, studied medicine at the Medical College of Virginia. After graduating in 1903, he became an interne at the Hinton Hospital, later locating in that city. He was identified with several medical associations. On a number of occasions he contributed articles and short stories to some of the popular magazines. He is survived by his wife, a brother, Dr. John Cummings, of Anniston, Ala., and a sister, who is the wife of Dr. O. O. Cooper, of Hinton.

Dr. James W. Baird,

A retired physician, whose home was near Waverly, Va., committed suicide by shooting himself, November 30. Dr. Baird, who was about 65 years of age, had been in bad health for sometime, and this is believed to be the cause of his act. He received his medical diploma from the College of Physicians and Surgeons, Baltimore, in 1874. He is survived by his wife and several children.

Dr. Henry McKee Tucker,

Raleigh, N. C., died at the Rex Hospital, that city, November 25, aged forty years. A few days previously he had undergone an operation for mastoiditis and death resulted from a complication of this trouble with meningitis. He graduated in medicine from the University of Maryland, Baltimore, in 1899, and was for several years professor of gynecology at Leonard Medical School, in Raleigh. His wife and three children survive him.

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FEEDING THE SICK, THE WELL, AND ECONOMIC FEEDING.*

By PHILIP S. ROY, M. D., Washington, D. C.

Complete scientific feeding in disease is not yet possible, but so many important factors have been solved by the physiologists, chemists and clinicians that feeding in disease has attained the highest therapeutic importance. Feeding in health and feeding economically are both on a firm scientific basis. The history concerning the knowledge and beliefs pertaining to foods is very interesting. Paracelsus in the 16th century believed the stomach was controlled by a spirit who separated the good from the bad food. Lavoisier in the 18th century gave the first insight into the combustion of foods, which revolutionized the subject. Lavoisier lived at the time of the French Revolution, and the guillotine ended his brilliant life, which he asked to have spared two weeks to enable him to complete some experiments. During these troublous times he wrote: "Does it not seem a great injustice of Nature that the poor laborer uses more of his body substance, while superfluity, which is unnecessary for the rich, should be his portion?" Carl Voit, in the latter part of the 19th century, wrote the fundamental principles of nutrition, and since his time there have followed Chittenden, Benedict, Rosa, Atwater, Bryant, Rubner, Osborne, Lusk, Mendel, Folin, DuBois, Abderhalden, and others equally as brilliant. Quotations from these writers are used in many parts of this paper.

In considering the substances necessary for body growth, maintenance, and energy, Mendel says, "There is a factor in body growth that is inborn, and, in part at least, not subject to

regulation at will," or, as Rubner expresses it, "Growth is a function of the cell; it can be rendered latent by insufficient proteid, but proteid can not raise the rapidity of growth above the level set by nature." The final products of proteid assimilation, before being converted into tissue, are amino acids, whether the proteid is from beef, fish, or vegetable, and the fish eater on Friday is eating the same proteid and purins as the beef eater, and, like the man who will not eat pork, is not in touch with the light God gives us today. Some eighteen or more amino acids are formed from the proteid molecule, and this knowledge has greatly aided us in studying proteid nutrition. It is known that some proteids are not complete, lacking in one or more amino acids. Gelatin, for instance, does not contain tryptophan, an amino acid which is essential for the maintenance of body nutrition. Zein, one of the proteids of corn, likewise, does not contain tryptophan. Glutelin of corn is a complete proteid, but it does not occur in sufficient quantity to balance the deficient zein, therefore corn is not a complete proteid. Another amino acid necessary for growth—lysin—is lacking in zein of corn, gliadin of wheat, and hordein of barley. In feeding children, barley water is an incomplete proteid unless mixed with milk or white of egg. Some of the proteids have such small quantities of all essential amino acids that only if fed abundantly will they maintain growth. This is true of the proteid of hemp-seed—edestin—which is comparatively poor in the lysin groups, and casein of milk which is poor in the sulphur bearing amino group—cystin,—while lactalbumin of milk is rich in cystin. Enough has been drawn from the writings of Mendel and others to make us feel the importance of knowing the proteid composition of foods, and how to mix them in order to obtain a sufficient quantity of complete proteid.

*Read before the Medical Society of the District of Columbia, October 20, 1915.

Turning to the fats of foods, it is only recently that we have learned that fats differ in their growth producing qualities. Mendel, Osborne, and others have found that fats *per se* do not promote growth. There are at least three fats that contain some principle that does promote growth—cod-liver oil fat, egg fat and butter fat. What important information is this! The physician of fifty years ago believed that cod-liver oil had some special quality that would aid the growth of the young. This view was swept aside, and olive oil substituted for cod-liver oil, which we know now was wrong. The “growth-promoting” ingredient contained in cod-liver oil, butter, and egg fat can be obtained even from their soaps by a chemical process, and, when mixed with lard and other fats, will impart their growth-producing qualities. Text-books on feeding often contain the statement that fats can replace carbohydrates without any detriment to the body, and that carbohydrates can replace fats. In answer to this, we quote from Men-
del: “Without carbohydrates in the diet, the nutritive functions of a growing individual are menaced quite as readily as they are during adult life. Metabolism exhibits pathologic manifestations in the lack of carbohydrates.” We find in one of our most widely-used text-books on feeding the statement that eggs constitute a complete food. Eggs contain no carbohydrate. The inorganic constituents of the animal body are as important proximate principles as those we have already mentioned, iodine, potassium, calcium, sulphur, iron and other minerals being constantly needed in the tissues of the body. Calcium, which is absolutely essential to growth, is not contained in sufficient quantity in the zein of corn. Harnsberger and others have recently called attention to the danger of demineralized foods—foods that by their process of manufacture have had removed from them many of their mineral constituents. But even with the proper mixture of fat, proteid, carbohydrate and salts, the body will not remain in a complete physiological state without the addition of certain other chemical substances, and, although we know that their presence is necessary, their exact action in the body is yet in doubt. Funk has extracted from rice polishings a crystallized substance to which he gives the name of vitamine. He believes that it belongs to the

group of pyrimidine compounds. So important a constituent of the body is this vitamine that nations living largely on polished rice, which is deprived of its vitamine by polishing, are subject to polyneuritis. Feeding unpolished rice cures the neuritis. There are other substances necessary to maintain perfect health—activators, and the products of internal secretion. Epinephrin, the active constituent of the suprarenal gland, is present in the blood only 1 to 100,000,000, yet it is essential to life.

Let us now consider briefly the digestibility of foods. Stomach digestion had so long been uppermost in the mind of the physician that usually, when we spoke of the digestibility of foods, we meant how long they remained in the stomach. In reality most of the digestion is in the small intestine. Many substances leave the stomach without any change at all, such as fats. Digestion in the stomach is influenced far more by the fat in the meat than by the kind of meat, and in stomach cases such diet as roast young turkey, quail, snipe, squab, and other meats usually out of the reach of those in moderate circumstances, is a fad. The only reason that can be given for prescribing these high-priced foods is that they may be most savory, and we all know that a juicy mouth makes a juicy stomach. The physical character of the food plays a very important part in its digestibility. As a rule liquid foods, such as milk, broth, gruels, and soft eggs; solids that become liquid at the body temperature; meats that have been finely minced, and stewed meats are more easily digested. Cooked vegetables are more digestible than raw, and we know that the kind usually spoken of as fodder, or green vegetables, containing large quantities of cellulose, are only slightly digested. Their usefulness is in furnishing salts to the body, and in their mechanical action.

In many directions the instruction of the well in matters of food is of the utmost importance, especially the warning against eating raw foods which are sources of constant danger.

Raw milk has been so extensively discussed that nearly all dealers now are furnishing pasteurized milk. The handling of breads and other exposed food constitutes a source of incalculable danger. Vegetables and fruits often are laden with disease-bearing germs. Raw

meats convey tapeworm, trichina and other parasites, and also bacterial infection.

One of the infections, botulism, caused by the bacillus botulinus, was for a long time supposed to grow only in meat, but has since been discovered in canned peas and beans. A true antitoxin has been made for this disease, and it is so important that we recognize this infection that some of its symptoms are here given. The symptoms do not point at all to the gastro-intestinal tract, but to the central nervous system. The muscles of the eye are early involved. Disturbances of accommodation, diplopia and strabismus occur. There is general muscular weakness. There may be dysphasia or epiphora, and there is usually great difficulty in swallowing. These symptoms gradually increase and death follows, unless the antitoxin is administered.

Now, coming to the proper quantity of food; it is certainly a very common practice in this country to eat more than is necessary, but we can not help laying stress upon the fact that there are many underfed persons, especially in proteid. With some, this is due to poverty; with others it is due to mental and physical strain which deprives them of the desire for food. This is most common in women who have to work, especially those whose household cares are heavy. It is always important to consider the diet before other therapeutic agents. I have known headache and other symptoms of fatigue rapidly disappear with an increase of food and without the aid of drugs.

ECONOMIC FEEDING.

In time I believe the value of foods will be taught to children in school so that it will not be necessary to consult the physician in the matter of economical feeding. With the rapidly rising prices of food products it is one of the most important economic questions. Snyder's Human Foods and Their Nutritive Value, Gephart-Lusk's Analysis and Cost of Ready-to-Serve Foods and Agricultural bulletins giving the cost of foods and their chemical composition, should be in every household. Gephart and Lusk have drawn their data from studying the menus of Child's restaurants in different parts of the country. They calculated the cost of foods as found in these restaurants on the basis of 2,500 calories a day, which is the usual amount of food required for those not doing

hard manual labor. These restaurants are run at great expense, yet 2,500 calories of good, wholesome food can be gotten for 30 to 40 cents a day. To obtain in these restaurants 2,500 calories from soups, tomato and lettuce salad, and fruit such as canteloupe, the cost would be from two to nine dollars. Snyder studied the living of a number of families in the Northwest, and found that some secured better food at \$11 a week for a family of five than other such families were getting for \$23. There is no more important subject for the general and local governments of this country to teach than food economics.

FEEDING IN DISEASE.

A number of diseases may be cured by diet; in all diseases it is an important curative agent. A physician who does not know the caloric value of foods, and their chemical composition, can not intelligently feed the sick. It is through ignorance that many wrong opinions have grown up in the matter of feeding; and a common belief still exists that fruits and potatoes are not good foods in gout. Many fruits, particularly apples and raisins, are base forming foods, and the potato is one of the foods richest in alkaline salts; therefore, the chemistry of foods teaches us that potatoes and many fruits are curative agents in gout if we consider gout a uric acid disease. Although the analysis of red and dark meats show practically the same amount of purin as in white meat, the fallacy is still prevalent that white meat is harmless, and the other meats injurious, in gout. There is another common belief that food will increase fever. There is no food that can have any such effect, for in fevers, metabolism has carried heat production far beyond any point that can be influenced by highest proteid feeding. It is known that proteids influence heat production more than either fats or carbohydrates, and it is for this reason that heavy meat eaters suffer from heat in hot weather.

Typhoid Fever: In no other disease has starvation reaped a richer harvest of death. Graves saw the error of starvation in this disease, 75 years ago, and tried to introduce more liberal feeding in Europe. Shattuck of Boston was one of the pioneers in this country in liberal feeding in typhoid; and his name will ever be remembered for the good work he has done. Since many observers have determined

that digestive power in typhoid fever is within 85 or 90 per cent. of normal, it seems indeed strange that liberal feeding has been so slowly accepted. Often in the first week of typhoid fever there is some nausea which makes feeding rather difficult, but with a little encouragement on the part of nurse and physician, even during this first week, a fair amount of both liquid and solid food can be given. After the nausea has disappeared, both liquid and solid foods may be continued in more liberal quantities, and if the solid foods are properly prepared they do not cause distress. Typhoid fever patients do not have an appetite, but if we feed them liberally, particularly with solid food, we find that at feeding time a feeling of emptiness makes them willing to eat.

Some of the solid foods that we give in typhoid fever are bread, potatoes, rice, baked custard, tender meat minced, stewed meats, breakfast bacon, calf brains, baked apples, peaches and cream, ice cream, rice pudding, bread pudding, eggs in any form, etc. Milk is still one of our most useful diets in typhoid fever, giving half cream and half milk, or milk with cocoa, and when given with cocoa, adding to each six ounces of the mixture five teaspoonfuls of sugar of milk. It is possible to reach 2,500 to 3,000 calories a day in feeding typhoid fever patients; and 4,000 calories can be given in some cases. Many complete articles have been written on feeding in typhoid fever, one of the very best by Dr. J. B. Nichols of this city. Concerning the general opinion that the feeding of solid foods in typhoid fever causes irritation of any intestinal ulcer, with resulting hemorrhage, we feel certain that no such danger exists and that the bleeding of ulcers in typhoid is often due to sloughing, following low vitality from under-feeding.

Gout: A diagnosis of gout or excess of uric acid in the blood is sometimes made in an off-hand way without any of the chemical methods being used to determine the correctness of the diagnosis, and it is largely for this reason that I mention the subject. After a correct diagnosis, the diet treatment is very simple elimination of all foods that contain purins. We know of no condition that is more completely in the hands of the physician through diet. As we have mentioned, the physician must know the chemical composition of foods to know whether his patient is taking purins or

not. Recently a man informed us that several years ago he had suffered from a severe attack of gout that lasted six weeks, "although the physician kept him during the whole time upon beef tea," a diet rich in purin.

Diabetes Mellitus: Allen considers diabetes a pancreatic disease. What part is played by the internal secretions of the adrenal, thyroid and pituitary glands in carbohydrate metabolism, is not definitely known. In the last two years probably the best work in this disease from a dietary standpoint has been done by F. M. Allen. He uses the starvation method, removing all food three or four days, allowing a little coffee or whiskey and giving plenty of water, after this gradually adding carbohydrates to the diet. The proper feeding in diabetes has been so splendidly handled by Allen that we feel it is unnecessary to add to the subject. H. A. Christian has written an interesting article, "The Starvation Method versus the Gradual Carbohydrate Reduction as a Time Saver in the Treatment of Diabetes."

Arterial Hypertension: The two essentials of diet in arterial hypertension are low proteid and purin and a diet rich in base-forming foods. Eustis of New Orleans has shown that tyramin, which is yielded by the amino acid tyrosin, in its putrefaction, is capable of raising the blood pressure in a dog from 110 to 250 mm., while in man it has produced a rise to 180 mm. He recommends in arterial hypertension, proteids that are poor in tyrosin.

It may be well to mention here that the substances once known as ptomaines are reallyamins, made both outside of the body and within the alimentary tract by the action of microorganisms, which produce putrefactive changes in amino acids. Putrescin, cadaverin, tyramin and histamin are derived from the amino acids, arginin, lysin, tyrosin, and histidin, respectively. The intestinal poisons, indol and skatol, are formed from the tryptophan group of amino acids by putrefaction; while phenol and cresol are formed from tyrosin, by putrefaction. As we have mentioned, tryptophan is not found in gelatin; therefore, it is fed when indol and skatol are in excess.

The length of this paper prohibits going further into the subject of feeding in specific diseases, its purpose being suggestive rather than specific. Beri-beri, rickets, scurvy and

pellagra are in many cases curable through diet alone.

Recently a pellagra case under my care was symptomatically cured by diet, the patient gaining 14 pounds in six weeks.

With proper feeding we may add to the length of human life and make health more perfect, although the words of Shakespeare still hold true, "Uncertain life and sure death."

1200 *Massachusetts Ave., N. W.*

UTERINE CURETTEMENT.*

By R. L. PAYNE, M. D., F. A. C. A., Norfolk, Va.
Gynecologist to St. Vincent's Hospital.

On such occasions as this it is usual to present papers detailing rare conditions or presenting for consideration unusual and difficult procedures, or not infrequently, the speaker goes into labor and gives birth to premature and half-baked theories. Departing from custom then, let me ask your attention to a well known method which should demand your interest not only because it is sometimes of much use, but, especially, because its use is oftentimes much abused and fraught with disaster.

By the profession at large curettement of the uterus is regarded not only as the simplest but also the safest of all surgical procedures and many a doctor, who would not dare amputate a finger, does not hesitate to bring a woman to the edge of the bed, and without anesthesia and almost nothing of antiseptic precaution, proceed to scrape out the uterus *secundum artem*.

The indications for the operation are too often regarded as unlimited—uterine hemorrhage regardless of cause; any variety of acute or chronic uterine discharge; any case of dysmenorrhea or amenorrhea; septic conditions of the uterus following parturition; sometimes for causes imaginary, without rhyme or reason, the womb is curetted, and I would not have you regard me as a "calamity howler" when I say the last stage of the woman is too frequently worse than the first. In my own experience it is not infrequent that patients coming to operation for pelvic lesions have had their causal symptoms in an ill-advised or ill-conducted curettage.

Let us then call this operation into account. We must recall, first, that the womb is, per-

haps of all the organs in the body, the most easily infected. Rich in blood supply and abounding in lymphatics, the uterine mucosa has been spoken of as "an open lymphatic gland," or we may regard it as a lymphatic surface interspersed with blood-vessels, the lymphatics being, not mere vessels, but great spaces lying between bundles of connective tissue, and communicating freely with the dense net-work of lymphatic vessels which enmesh the muscularis. So it appears, no organ in the body may more readily take on infection, and from no other does infection more easily spread.

Let us consider the conditions in which curettage of the womb is indicated; the conditions in which it is often used but is strongly contra-indicated, and, finally, the dangers inherent to its use.

INDICATIONS FOR CURETTEMENT.

1. In hemorrhage from the womb due to incomplete abortion if the organ be too small to permit the introduction of gloved fingers.
2. Curettage is indicated in hemorrhage due to polypoid conditions of the endometrium and in the so-called hypertrophic condition of the uterine mucosa.
3. Curettage is indicated in certain cases of fibromyoma of the uterus in an effort to arrest hemorrhage temporarily and permit the patient to recover somewhat from the anaemia before hysterectomy is done.
4. The curette *may* be used to remove pieces of tissue from the body of the uterus for purposes of diagnosis in cases of suspected cancer, but in such cases, the microscopic examination of the tissue should be made at once, in frozen section, and if malignancy be found radical operation must be done immediately.
5. Curettage is indicated to remove cancerous tissue, preceding the use of the cautery, in carcinomatous uteri when the disease is too far advanced to admit of hysterectomy.

CONTRAINDICATIONS FOR CURETTEMENT.

1. Curettage is useless, and therefore contra-indicated, in uterine hemorrhage due to any of the numerous systemic causes.
2. Curettage is dangerous, and therefore contra-indicated, in hemorrhage due to pelvic peritonitis, or inflammation of the adnexa. In pelvic abscess or ectopic pregnancy, unless it is to be followed at once by appropriate operation for the existing condition.

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3. Curettement can do no good and is contra-indicated in hemorrhage due to congestion from displacement of the womb.

4. Curettement is capable of doing little good and may do great harm, in cases of submucous fibroid.

5. Curettement is a highly dangerous operation in septic conditions of the uterus such as is due to tents, gonorrhœa, and infections of the puerperium.

6. Curettement is rarely of use in the more or less doubtful operation of dilatation of the cervix for dysmenorrhœa. A very large number of surgeons seem to think it necessary to curette in all these operations but this is usually unnecessary and frequently disastrous.

It would seem then that uterine curettement has a distinctly limited use.

It is curative in only three conditions of uterine hemorrhage and palliative in one other.

It is palliative in cases of advanced cancer if followed immediately by thorough prolonged desiccation of the tissues by the cautery, and it is possibly of some diagnostic use in early cancer of the body of the uterus but of this matter we will speak later.

It is capable of doing no good in at least a dozen other conditions giving rise to the symptom hemorrhage, and is positively dangerous in many of these as well as in all septic conditions of the endometrium.

One word as to the dangers of the operation: No man should do the uterine curettage unless he is trained to do good surgery, for, although he may not know immediately the harm he has done, there is no operation in which imperfect technique more surely breeds a train of evils. In a consultation not long ago with a surgeon of some repute, he remarked "the patient had some temperature as they always do after a curettage," and thereby hangs a tale.

The most rigid asepsis that is possible should obtain, and no patient should be curetted who is not under the control of anesthesia. The mouth of the womb must always be freely and fully dilated for, with an operation so generally imperfectly done, the freest possible drainage must be provided. When we recall how admirably the uterus is constituted to take on infection and then remember that the operation is done without the aid of the eye—scraping blindly in a closed sac, never completely removing the mucous membrane but leaving raw

surfaces interspersed with islands of infected mucosa—one can readily understand how the operation is full of danger under the best conditions and in the most skilled hands. There is no man whose touch is so delicate that without the aid of the eye he can tell when he has thoroughly scraped away infected tissue, and the risk of curetting the various infections of the uterus is so grave that the operation has no place in their treatment; this is especially true in the infections of the puerperium. Such cases too frequently end in disaster, and to curette a streptococcus infection is so nearly always fatal that it might well be classed as manslaughter. And yet I have been told that men do curettements in their offices without anesthesia and without any dilatation of the cervix worthy of the name, and then allow these patients to travel long distances to their homes. I have known physicians to do this operation in the home of the patient without assistance and almost without pretense of cleanliness.

The use of the curette in the hemorrhage from submucous fibroids is bad because in a considerable percentage of these cases grave infection is apt to follow. I have said that in the early history of cancer of the body of the uterus the curette may be of use in establishing the diagnosis, but even this is open to question. There may be an area of infection which we entirely miss in our scrapings and so we are lulled into false security: certainly the curette is an invitation to new danger in these cases unless we are prepared for an immediate microscopic examination and, if the suspicion of cancer be confirmed, immediate hysterectomy, for it is a very hazardous thing to open up an area of cancerous infection and leave it *in situ* even for a few hours. No one can know how quickly under such circumstances the infection may be carried to other tissues.

Finally, in view of the fact that the operation must be done beyond the ken of the eye, it must be done with the greatest gentleness.

The unskilled man who must operate should never use anything but the dull curette. In fact, in the majority of cases no one need use anything but the dull curette, and in the few conditions that require the sharp instrument the cutting edge should be set slanting inwards rather than straight up and down as it is so often used.

It is no infrequent occurrence that the uterus is punctured by the curette, carrying infection

into the peritoneum, and, while this is not necessarily fatal, the accident calls for immediate laparotomy to repair the injury.

Many times the unskilled operator, thinking he was scraping away diseased tissue, has broken so large a hole through the body of the organ that loops of intestines have presented at the os, and in some instances the injury has been so extensive that resection of the bowel was necessary. This danger is especially great in the softened uterus of the puerperal state, and I have known the accident to occur not infrequently in other conditions of the uterus.

Pardon me if I seem to have consumed your time with a well-worn subject. My plea is for conservatism, recognizing the great dangers which surround an operation too often considered so safe that it may be recklessly done; too often attempted without the requisite skill, and more often done for conditions in which it cannot possibly do good but may cripple or kill the poor woman who puts her trust in the doctor.

PROPHYLAXIS AMONG SCHOOL CHILDREN.*

By H. U. STEPHENSON, M. D., Toano, Va.

With the advanced methods of diagnosis and new means of treatment, the responsibility of the physician for the welfare of his patient and the public, has proportionately increased, but in few directions has the responsibility advanced so rapidly as in that of the proper management of the child from infancy to puberty.

During this period of phenomenal development, the foundation of those factors which make most for success in after-life are a well-trained mind, a well-developed body, sound health, and a good digestion. Insofar as these fall short of the normal, just so far does the individual miss his full effectiveness in the world's work. The mere consideration of this matter would seem to smack too much of idle speculation were it not for the indisputable fact that we are already in the possession of prophylactic measures of everyday medicine which, if conscientiously applied to each child of our schools, would produce incalculable results.

Since the foundations of a sound physique are laid in infancy and childhood, and, if neglected, cannot be rebuilt, we have at the start

a concrete problem worthy of our most earnest consideration. Prophylaxis among children should begin a hundred years before their birth that there might not remain either disease or effect of hereditary disease.

There is no period in life where prophylaxis or preventive medicine can be practiced with as much good result as during the period of school life. Instances could be multiplied almost indefinitely in which trained observation and prompt interference by the physician may stand between the child and lasting consequences.

There is less glory to be attained by patient prophylaxis and early resort to conservative measures than by later successful intervention when the threatened damage is generally apparent; but the reward of honest satisfaction is the greater for the knowledge that dangers have been forestalled and the normal progress of the child secured.

Prophylaxis is and ever should be, the highest ideal of our profession, and its silent and unheralded victories are worthy to be ranked even higher than the more evident conquests of therapeutics and surgery.

The army of laboratory workers is constantly putting new weapons in our hands. These focus our efforts when disease threatens, and aid in the reduction of mortality, but in our enthusiasm for new modes of diagnosis and treatment, however important, let us bear in mind that the most effective power for human good lies in prevention, and that to conserve a healthy body is a greater achievement than to cure a malady which our timely efforts might have averted.

Present conditions offer a wonderful opportunity to the medical profession to lead the way in the campaign for prophylaxis among school children. If we fail to do our duty, it will be taken up by others. If we embrace the opportunity, the debt of the public to the medical profession, as well as our influence with the people, will be greatly increased.

Recognizing the constantly growing importance of preventive medicine and the duties of the medical profession to the public in this respect, the Medical Society of Virginia should pass a resolution, urging the Legislature, which meets next January, to pass a bill providing medical inspection of our school children. In no way will the medical society so clearly

*Read before the Medical Society of Virginia at its forty-sixth annual meeting, at Richmond, October 26-29, 1915.

demonstrate its reason for existence or so readily secure the support and confidence of the people.

Sanitary and medical inspection of our schools should be made general, constant and systematic. Not information only, but reformation of abuses might then be expected.

A physician, who should also be an accomplished chemist and acquainted with sanitary science, properly paid for devoting his whole time to the work, and clothed with the proper authority, could immensely benefit the rising generation in our schools. If kept wholly free from the contamination of politics, carefully and wisely made, and earnestly supported, such an appointment should be productive of incalculable good.

THE MANAGEMENT OF NORMAL LABOR.*

By E. G. HALL, M. D., Cootes Store, Va.

By normal labor we understand instances where the natural efforts are consistent with the strength of both woman and foetus, and where the foetus enters the pelvic inlet and passes through the pelvic outlet after a fashion in accordance with the normal mechanism of labor.

Before considering particularly the management of normal labor, it is necessary to consider certain essential factors, such as the preparation of the surroundings of the patient and the patient herself, in order that the labor—and particularly the period following—may proceed in a normal fashion.

Labor being a physiological process, any complication which may arise should only be one which cannot be foreseen or forestalled.

The nearer the ideal conditions are approximated the better the ultimate result for a smooth delivery and a smooth puerperal state.

We should lay especial emphasis on the preparation of the lying-in-room which, in my opinion, is of great importance. The room should be prepared even as would the ward of a well appointed hospital. The characteristics which the room should possess are fresh air, cleanliness, and sunshine.

The lying-in-woman is exceedingly susceptible to infection, or the absorption of contagion, and, therefore, a room which has been occupied by a case of any infectious disease should re-

ceive proper attention before using. This procedure may prove unnecessary, but I am of the opinion we are duty-bound to guard against contagion as much as possible. It is often from neglect of some of these small details that our efforts result in serious trouble.

The simpler the arrangement of the lying-in-bed, the better. We are all familiar with the double rubber sheet arrangement, but in cases where the rubber sheeting is not available, sheets made of ordinary oilcloth or clean newspapers answer the purpose well. The top layer of sheet and rubber sheeting is removed immediately after the completion of delivery, thus filling two purposes:—first, relieving the patient of unnecessary worry; and, secondly, the saving of the clean bed linen.

One of the most important things is the preceding care of the woman about to be confined—or during the whole process of gestation. If the urine has been carefully examined at intervals, if the pelvis measures up to the possibilities of delivery at term, if the hygiene of the intestinal canal has been attended to, the woman reaches term in a good condition, to undergo without undue strain the phenomena of labor.

Every preparation should be made to meet the possible emergencies of labor. Of course, the amount of preparation or material for a case will depend upon the means of the individual case, and the physician will probably have to furnish the necessary articles, so should therefore hold himself in readiness at all times.

The well appointed lying-in-room should contain douche pan, bed pan, fountain syringe, gauze, cotton, ergot or preparation of same, anesthetics and catheters. It goes without saying that these articles should be carefully sterilized before using.

Immediately preceding the onset of labor, the bowel should be thoroughly cleansed by laxative and enema, because the normal mechanism of labor proceeds to best advantage with the bowel free of feces.

As soon as true labor pains begin, the external genitals should be washed with bichloride and covered with a vulvar pad which should be replaced often with a clean one. Ordinary absorbent cotton may answer for the purpose. In case cloths have to be used for this purpose they should be carefully boiled. A very few physicians take all these precau-

*Read before the Rockingham County Medical Society, at Harrisonburg, Va., November, 1915.

tions, but the woman is entitled to every protection at the hands of her attendant.

Now, just a few words about anesthetics:—It is always desirable to have anesthetics at hand, although it by no means follows that they need always be resorted to. Much depends upon the individual case.

We now admit that anesthesia during labor, administered short of the surgical extent, carries no risk; on the other hand, we may save the patient much suffering, forestall impending exhaustion, and also protect the integrity of the soft parts. I think we may dismiss the idea that anesthesia tends to favor post-partum hemorrhage, unless it be given for a prolonged interval. If it is desired to extend the anesthesia to the surgical degree, or for a long term, ether should be selected. Anesthesia given to the non-surgical degree does not abolish contractions, and it is thought that ether tends to reinforce them. I believe it a good plan to always administer a few whiffs of chloroform, especially to a highly nervous woman, when the presenting part reaches the pelvic outlet. This serves a double purpose:—first, it saves the woman the intense agony of the final expulsive act; and, second, it guards the integrity of the soft parts.

The presence of another physician is always requisite where the anesthetic is to be given to the surgical degree. Ordinary obstetrical anesthesia may be given by the attendant himself, or by the nurse, or in emergencies the woman herself may be allowed to anesthetize. A convenient method is to pack an ordinary goblet with cotton or handkerchief and hand it to the woman with instructions to hold it over her mouth and nose during the height of contractions.

Other minor anesthetics or analgesics of use during labor are chloral and opium or its alkaloids. During the first stage of labor when the pains are nagging and ineffective, chloral administered in 15 grain doses, repeated every half hour for three or four doses, regulates the contractions and affords a period of rest between pains.

Opium or its salts should rarely be used in labor, its chief value being to allay reflex nervous excitability, when the woman is becoming exhausted from ineffective pains, thus holding out a means of relief by giving a period of sleep.

The first duty now of the physician is to satisfy himself as to the presentation—by external methods if possible. On acquiring this knowledge, he may dismiss himself from the room with a word of encouragement to the patient, also advising her not to waste her strength in futile bearing-down efforts until labor has progressed further.

The physician should repeat his visits to the sick room, and each time, under careful asepsis, make examination until dilatation is complete or the membranes have ruptured. As long as the clinical course of labor is proceeding after a normal fashion, the physician's policy should be a waiting one. As a rule, the diagnosis of position having been determined, the fewer the examinations the better, as each examination carries its risk of infection.

During the stage of dilatation, the position of the woman may vary according to her desire, but the contractions of the uterus act to a better advantage if she is erect or sitting.

When dilatation has become complete, or when the membranes have ruptured, the position should be recumbent, on the side, or back, the back being preferable in most cases.

In some instances, after rupture of the membrane we may have a complete inertia of the uterus. The child is apt to suffer if this be allowed to continue; also, the effect upon the woman is bad. Massage of the uterus and administration of quinine in 10 to 20 grain doses, may be of benefit; if not, the forceps should be resorted to.

When the presenting part reaches the pelvic floor, the resistance to be overcome is that offered by the muscles and fascia of the introitus. This resistance must yield in a gradual manner or else the structures will be damaged.

The attendant may materially assist by retarding progress of the presenting part and by maintaining the proper relation of the part to the diameter of the outlet. The head must remain well flexed in order that its favorable diameter may approach this diameter of the pelvis. Slow extension must take place in order that the head may emerge without damaging the structures. It is the head that must be delayed in its progress until the muscular structures have relaxed. This having been accomplished, the patient may be slightly anesthetized and the head allowed to shell out over the perineum. Should the perineum es-

cape rupture during delivery of the head, it may yet be torn during passage of the shoulders. This may be prevented by lifting the head and neck upward and backward so that one shoulder goes behind the symphysis pubis while the other escapes at the coccyx. This enables one shoulder to be born at the time, produces less strain upon the perineum than when both are pulled out together with rude haste, which must be avoided.

After expulsion of the child, see that it breathes; cleanse the mouth and nostrils of mucus, and, if necessary, slap the buttocks, rub the spine, or dash cold water in the face or on the chest, which will usually suffice.

There should be no haste in tying and cutting the cord unless there be a relaxation of the uterus, flooding, or some other condition of the mother which may require immediate attention of the physician. In case the child is born asphyxiated, it is necessary to tie the cord as rapidly as possible in order that some measure of resuscitation may be adopted.

Two ligatures should be placed upon the cord.—the first, close to the foetus, the second two or three inches beyond. Boiled silk-worm gut forms an excellent material for ligature, but whatever material is used should be thoroughly sterile. The object of the second ligature is two-fold: first, a second foetus may lie in the uterus and if the cord is not ligated toward the mother the life of the twin would be imperiled; second, it aids the placenta in becoming filled with blood, thus facilitating the uterus in the expulsion of a firm instead of a soft flabby mass.

As a rule, there is a decided interval between the end of the second and the beginning of the third stage of labor. Premature attempts, such as pulling on the cord, etc., should not be made to hasten the third stage, as the result may be of an untoward nature. The course to pursue is for the attendant to keep his hand on the uterus for a few minutes to guard against relaxation; when the uterus is felt to contract and harden under the hand, assist the expulsion by manual compression known as Crede's method. After delivery, the placenta should be carefully inspected to see that no part of it has been torn off and remains behind.

When the uterus has been emptied it will ordinarily contract and remain so, but for

sometime it may undergo relaxation; therefore, a good rule is to keep the hand on it for at least one-half hour after delivery in order to guard against relaxation and post-partum hemorrhage.

When satisfied that the uterus is empty, ergot should be administered by mouth. The necessity for the ergot is disputed. Unquestionably, under physiological conditions, the uterus will contract after delivery and remain in that state which is so essential to the smooth course of the puerperal state. But the drug can do no harm, and its administration assists in maintaining contraction, and it hastens involution.

The placenta and membranes having been delivered, the next step is to cleanse the woman's genitals and apply an abdominal binder. There is no need for the administration of a vaginal or intra-uterine douche if the delivery has been conducted in a strictly aseptic fashion. If, on the other hand, there is any reason to doubt the strict asepsis of the delivery, it is wise to administer one douche, which may consist of 2 per cent. creolin or 1 to 5000 bichloride. The external genitals should then be washed with bichloride solution, after which a sterile gauze pad should be applied, this being pinned back and front to the abdominal binder.

The abdominal binder preferably is made of unbleached muslin, and should be pinned firmly around the abdomen. For a considerable time the abdomen has been subject to the strain of distension, and the sudden relief of this distension seems to call for some support.

The binder and pad having been applied, and the draw sheet removed, the woman lies in a clean bed, and the puerperal state begins.

MATERNAL IMPRESSIONS.*

By W. B. BARHAM, M. D., (Univ. of Penn.),
Newsoms, Va.

My theme, "maternal impressions," formed the concluding paragraph in the paper, "Superstition in Medicine," which I read at the meeting of our State Society in Washington last October. It was, I think, the best part of that paper, if it really had a best part, but, in the parlance of our neighbors down home, I did not "get to read it." We all know our old

*Read before the Medical Society of Virginia at its forty-sixth annual meeting, at Richmond, October 26-29, 1915.

friend, Steve Harnsberger, with unerring precision and impartiality ruled that body with a mailed hand, calling down friends and foes alike at the expiration of the allotted twenty minutes, and then, with his strong arm coiled affectionately around my slender waist, he assured me that there was nothing personal in his ruling, that my paper was just a "leettle" too long drawn out; that I had really gotten into the war-zone, and that such trespassers were always liable to be torpedoed. Now those of us who have contracted that pernicious habit of writing papers know, full well, what it is to have our literary offspring, the product of our gray matter, ruthlessly sat down on. Well, perhaps that paper was too long, but how hard it is for the writer to assume the viewpoint of the hearer we all know. The plain fact is, writing within the last few years has become almost a craze with me, an indication, as Allison Hodges and Tom Williams would doubtless tell you, of mental decrepitude incident to old age.

"Maternal impressions," says DeLee, "are those impressions on the mind and body of the child *in utero*, which result from similar impressions on the mind and body of the mother, and the belief that, if any pregnant woman should see an ugly or terrifying object, it would be reproduced in the offspring, dates from the remotest antiquity, and is spread over the world, even in darkest Africa." It is one of the vexed questions in medicine, some eminent authorities believing in the reality of such conditions, while others, equally eminent, characterize it as the veriest superstition and nonsense.

All Bible students know how Jacob euchred old Laban in a certain cattle deal, because of the way he was treated in his love affairs with Leah and Rachel. In Genesis, 30th Chapter, 37 and 39 verses, we find these words: "Jacob took him rods of green poplar and of the hazel and chestnut trees, and pilled white streaks in them, and made the white appear which was in the rods, and he set the rods which he had pilled before the flocks in the gutters in the watering trough when the flocks came to drink, that they should conceive when they came to drink, and the flocks conceived before the rods, and brought forth cattle, ring streaked, speckled and spotted."

Parvin, who gives this condition,—fallacy,

vagary, delusion, superstition, whatever you chose to call it,—his endorsement, quotes Quatrefages as saying that it has been long observed that children begotten by drunken fathers often permanently present the characteristic signs of that state: "Obtuse senses and almost entire absence of intellect." We have all heard of the remark of Diogenes to the stupid and provoking youth: "Young man your father was very drunk when your mother conceived you." Plato advised that the environment of the pregnant woman should be adorned with objects of beauty, because they conduce to the better health on the part of the mother, and would react in a more beautiful, because a more healthy offspring, and in his seventh book of Laws, after speaking of the susceptibility of the new-born infant to impressions, he continues: "Nay more, if I were not afraid of appearing to be ridiculous I would say that a woman, during her year of pregnancy should, of all women, be most carefully tended and kept from violence and excessive pleasures and pains, and that, at that time, she should cultivate gentleness and kindness."

And says Montaigne, "Is it not marvelous that this drop of seed from which we are produced should bear the impressions, not only of bodily forms, but even of the thoughts and inclinations of our fathers? Where does this drop of water keep this infinite number of forms? And how does it bear these likenesses through a progress so haphazard and irregular, that the great-grandson shall resemble the great grandfather?" It has been said that had Montaigne lived after the important discovery made by Ham he would have substituted spermatozoid for drops of seed, and declared the marvel vastly greater.

There are many reported cases of maternal impressions that only amuse us by their very absurdity. Burton, in his "Anatomy of Melancholy," mentions several, and Montaigne is responsible for this one: "There was presented to Charles, the Emperor of Bohemia, a girl from about Piza, all over rough and covered with hair, whom her mother said to be so conceived by reason of a picture of St. John the Baptist, that hung within the curtains of her bed."

Thus, from almost prehistoric ages, the belief in the doctrine of maternal impression has come down to us. As we all know, many emi-

ment authorities give it the seal of their condemnation.

But when we find such eminent men and teachers as Rokitansky, Stoltz, Montgomery, Tyler Smith and Meadows abroad, and For-
dyce Barker, Busey, Dabney, Spitzka, Hirst, Penrose and Parvin within our own borders, giving the doctrine their unstinted endorsement, we cannot entirely ignore their opinion.

It was my good fortune when a student at the University of Pennsylvania, to sit at the feet of that Gamaliel in obstetrical teaching, Dr. R. A. F. Penrose. In his lectures on maternal impressions, he gave two cases which impressed all who heard them.

Case I: A pregnant woman accompanied her husband to the theater. During the performance, in a fit of anger, he caught her finger, on which there was a ring, between his elbow and the rim of the opera chair. The pain was so intense that she fainted. In due time the child was born, and on the finger, exactly corresponding to the one on the mother's hand, which was injured at the theater, there was a round, dark discoloration.

Case II: A pregnant woman sitting on the doorstep of a residence on Chestnut Street, saw a policeman pass with a man whom he had just arrested for engaging in a street fight. The man had sustained a frightful incised wound over the right frontal bone, about three inches above the orbit. When the child was born there was on its right frontal region a red line exactly corresponding with the wound the woman had seen on the man. Both these instances occurred in the early months of pregnancy and they were in the practice of Dr. Penrose.

Theophilus Parvin also gives several cases illustrating this subject, but for lack of time I will give only two selected at random:

Case I: "Dr. H. Woodbury Coleman, of Newton, New Jersey, has communicated to me the following history of a case that came under his observation: 'Mrs.—, of this city, 23 years old and about two months pregnant, was one day very badly frightened by her son two years old, nearly cutting off with a butcher's knife his left thumb, the member hanging apparently but by a shred. She without anyone to assist her, dressed the injury as best she could. In two hours I saw the child, and she assisted me in that and subsequent dressings. Her mind constantly dwelt on the accident. In due time she gave birth to a boy who, to my

great surprise, had his left thumb hanging to the hand by only a thin pedicle of flesh.'"

Case II: "Dr. W. H. Knipe, while a student at the Jefferson Medical College, last winter, gave me the following statement as to one of the cases of confinement he attended in connection with the Philadelphia Dispensary: 'Mrs. A. W., primigravida, burned herself with a fire poker upon the wrist of the right arm. The burn being in a line with the index finger. This occurred on March 5th. On the 7th she burned herself again, but on the wrist of the left arm. She was delivered on the 19th. The child was a girl, and had on each wrist marks in the same location and presenting the same general character of the burns upon her mother's wrists.'"

These cases seem convincing, but Dr. Parvin, with characteristic caution, warns us against accepting every case reported by the old women and mid-wives as genuine.

In a foot-note in his "Science and Art of Obstetrics," we find these words: "Up to the 18th century, physicians adopted the opinion of Hippocrates and the philosophers admitted with Empedocles, not only that the strong emotions experienced by pregnant women could cause deformities of the foetus, but also the desires." No less an authority than Herbert Spencer says that some years ago he quoted Lotz, one of the most eminent of German philosophers of the century, as believing in the probability of this influence.

Lillias, on conversation with her brother Darsie, exclaims: "See brother," pulling off her glove, "these five blood specks on my arm are a mark by which mysterious nature has impressed on an unborn infant a record of its father's violent death and its mother's miseries," and Sir Walter Scott adds to this quotation the following: "Several persons have brought down to these days the impressions which nature has thus recorded when they were yet babes unborn. One lady of quality whose father was long under sentence of death, previous to the Rebellion, was marked on the back of the neck by the sign of the broad axe. Another, whose kinsmen had been slain in battle or died on the scaffold to the number of seven, bore a child spattered with blood on the right shoulder and down the arm with scarlet drops, as of blood." Many other instances might be quoted.

An eminent American authority, Spitzka,

gives the theory of maternal impressions his unqualified endorsement, giving two cases, one from the domain of zoology, and the other from an alienist's experience: "At a meeting of the Zoological Society of London, held February 24, 1863, Dr. C. A. Gray, the Curator of the British Museum, presented the body of a chicken whose beak and feet closely resembled those of a parrot. The sender of the specimen reported that several such instances had happened in his poultry yard, and he attributed this to the fact that one of the hens had been frightened by a parrot, which was kept in a cage in the same yard, and which had the habit when the hens approached near for their food, of screaming loudly at them." More remarkable in many respects is the case described by Wille. A healthy woman, while pregnant by a healthy husband, experienced a sudden fright at seeing a man without a nose. When her child was born its nose was flattened, there was a hare-lip, besides other evidences of an early defect in the germ axis' epiblast. The cerebral hemispheres were confluent in the middle line." Bear in mind, gentlemen, that these cases are reported in all good faith by one of America's foremost alienists and his words cannot be lightly considered.

In 1886, Fordyce Barker, quoting from the *British-American Journal*, says: "When in the early weeks structural development is proceeding at no tardy rate, an interference to nutrition of the mother cannot but impress the foetus detrimentally, and the organ interfered with would be that one in the condition of the most active development, or that which could less easily bear any arrest, however transient, with impunity." Again, he says: "Then too, although no nervous connection has been demonstrated to exist between the mother and foetus, yet the latter possesses nerves, and alterations of the nutrient power of the mother cannot but act on the nerves that are governing, though it may be only to a slight extent of the growth of the foetus itself." And, if in growth, why not other ways?

In polite literature we find abundant endorsement of this theory,—Goethe in his *Elective Affinities*, Walter Scott in the *Fortunes of Nigel* and *Red Gauntlet*, Oliver Wendell Holmes in *Elsie Venner*, Dickens in *Barnaby Rudge*, and Hawthorne in the *Scarlet Letter*, have built entertaining romances making the

doctrine—maternal impressions—the cornerstone of their structures.

But there is a reverse side of the picture. Men prominent in the medical world and literature have assailed it, bringing to bear all their resources of wit, sarcasm and logic (!).

Perhaps the strongest indictment has been drawn by Dr. Cadwallader of the University of California. After asserting that a majority of the obstetrical teachers of America either endorse or dodge the doctrine, he boldly asserts that he denies its possibility for the following reasons:

"1. The foetus is practically formed before the woman is aware of her condition. The rule is for the sight to have occurred late in pregnancy.

"2. There is no nervous or blood connection between the mother and the child. It is a parasite, pure and simple. In fact, I believe fright is transmitted much more readily to the child, after birth, than before, even as an emotion, much less a physical change.

"3. The nervous, easily frightened woman is no more liable than any other to this phenomenon.

"4. It is no more frequent during scenes of rapine and blood-shed, as in the reign of terror, than at other times.

"5. They occur about once so often in nature, regardless of time, events, species or outside influences of any kind, nor are they inherited.

"6. No cases were ever predicted. It is only after the child is found marked that the retrospective mind recalls a shock that is assumed to be the cause. No woman can live nine months without some start. It is the old error, *post hoc, propter hoc*.

"7. When the cause is assigned it is usually the fifth month or later, while to change the foetus it would have to be in the first two months. At the eighth week the clefts are closed, the neck is formed, eyes, ears, nose, joints, extremities, fingers and toes and all but sex are perfectly differentiated.

"8. The very organs, as of sex, last to develop, are the least seldom affected by supposed fright, when the ones earliest formed are more subject to errors of cell arrangement and are the ones most often defective.

"9. Impressions are not inherited: continued sight does not alter the offspring. For example: Sheep have had their tails cut off for genera-

tions, yet the lambs have tails. Three thousand years of circumcision have not bred out the foreskin among the Jews; The house cat dates from Egypt, yet it is the same in instinct that it always was, no more affectionate, no less feline.

"10. Timid animals, as the deer, or hare, that save themselves by their easily alarmed fears, mark their offspring no more frequently than others."

"As one writer puts it," says Dr. Cadwallader, "either extraneous influences will mark a child or they will not. Assuming that the first is true," he continues, "then it follows that, if responsible, it must anti-date the defect or be prior to its development; then these are merely accidents of development. At least, then, the advocates of marking must be certain when they see a hare-lip, that the split-nose pointer dog that jumped on a woman did so before the eighth week. Still further," says the doctor, "it will be firmly believed in as long as people continue to plant potatoes by the moon." And Dr. Cadwallader draws a pitiful picture of the frail, sensitive, over-conscientious woman, brooding and sorrowing over the fear and dread of a child marked because she has greatly over-estimated some shock to her nervous system. She has a competent physician to look after her physical welfare, but the question arises, can he "minister to a mind diseased?" Yes, says the doctor, and nothing gives him more real satisfaction than to expose this horrible belief and to see the relief it brings.

No less severe in his denunciation is Dr. J. G. Fisher. He boldly asserts that the medical profession is largely responsible for the propagation of this traditional superstition. And one of the strongest arguments against it was made by Norman Bridges in a paper written some years ago in which he says: "To endow the blood with such a wierd intelligence as this would require too great a load for our credulity. There is no philosophy in it. There is, however, possibly enough in this theory, so that, on account of the comfort of the pregnant woman, we should advise her not to indulge in violent emotions, or to see peculiar sights, or to do anything which is outside of the proprieties of life." It must be conceded that this is most excellent advice to any woman, whether pregnant or not, and, if it teaches anything, it teaches that Dr. Bridges is an "artful dodger" of a very pronounced type.

Walsh, in his excellent work on "Psycho-Therapy," gives three cases which, seemingly, on first reading, would make him a believer in the doctrine, but, in his conclusion, he gives it what some would consider a "knock-out blow." In his first case he states that a husband, in a playful mood, threw a frog at his wife, who was in the early stages of pregnancy. "The woman," says the doctor "had a mortal fear of frogs and, being terribly frightened, she put up her hand to ward off the animal. When the clammy thing struck the palm of her hand, she felt a shiver go through her. When the baby came there was a curious growth in the palm of its hand, having some pigment in it, the palm corresponding to the hand of the mother which the frog struck. It took, of course, no great stretch of the imagination among the old women and midwives in the community to trace out a resemblance to the frog in question. But," says Dr. Walsh, "as there was a total lack of any nervous or direct blood connection between the mother and child, the story is simply absurd."

In his next case, a farmer in cutting hay, amputated his finger. His pregnant wife dressed the stump. When the child was born, it was bereft of a finger, corresponding exactly with the one on the father's hand. This delightful author gives still another case of a pregnant woman, a great admirer of the elder Sothern, the actor. During her early pregnancy she went to see this gifted actor in his delineation of Lord Dundreary, the English degenerate, in the comedy, "The American Cousin." It will be recalled that this play was on the boards of the old Ford's Theater in Washington when Mr. Lincoln was murdered by that hare-brained fanatic, J. Wilkes Booth, and it will also be remembered that this unfortunate incident proved to be the Iliad of many of the woes in our Southland. It was a drama of only mediocre merit before Mr. Sothern touched it with his genius and imparted new life to it. It was during that period, four decades ago, when Dundrearyism was almost a craze. There were Dundreary pantaloons, Dundreary neckties, Dundreary whiskers, Dundreary everything. When this lady's baby was born and began to walk, it showed that peculiar skip, a hybrid between the old-time waltz, so dear to the hearts of many of us, and the modern hesitation dance. This skip, which was only one of the means by which the actor so delighted his audiences,

was especially pleasing to the fond mother, when she imagined that she saw it in her child. It was my good fortune to see Mr. Sothern in this role several times, and if anything could impress the foetus in utero, it would be the actor's delineation of this character.

Dr. Walsh, it seems to me, certainly explains this phenomenon in a very "far-fetched" manner. He says that "the mother was hysterical, and, wishing in a morbid way to attract attention to herself and child, taught the boy this peculiar skip. Or, perhaps, some curious little skip once taken by the child attracted her attention on account of her recollection of the actor, and her surprise at the act of the child impressed the peculiar action on the child's mind to such an extent that he proceeded to attract further attention by repeating it."

Dr. E. P. Davis, of Philadelphia, says that cases of alleged "maternal impressions" must be considered as examples of coincidence rather than of cause and effect. It is possible, however, says he, to interfere greatly with foetal development by disturbance and shock to the patient, and this must be kept in mind in dealing with pregnant women." And the writer gives an account of a specimen that was presented to him by Dr. George W. Spencer. It was the head of a foetal pig. In contour it resembled an elephant. From its forehead projected an appendage, closely resembling an elephant's trunk. This specimen was obtained by Dr. Spencer's father, who was a physician, and he gives the following history of the case: "A gravid sow was greatly frightened by a circus parade, in which several elephants were featured. After seeing the elephants, the sow rushed in great alarm into a stable and hid persistently from the sight of the procession. When the litter of pigs came, one pig showed the curious malformation described and was obtained as a specimen."

But, say the gentlemen who oppose this doctrine, these are all cases of coincidence. Well, if they are, they are surely very, very striking ones. The writer believes in the doctrine of coincidence in many cases apart from those given in this paper, but, search through all the realms of nature and tell me frankly, can there be such examples of coincidence as we have here in the cases I have given? Those who fall back on this method of accounting for these phenomena are surely hard-pressed.

I do not claim that all cases of alleged maternal impressions are genuine. Some, and doubtless many, are cases of coincidence. In many their very absurdity puts the seal of condemnation on them. But are we, following in the wake of Virchow, Henry Foster Lewis, DeLee and others, justified in asserting that all are cases of either superstition or coincidence? I think not. This way of accounting for these phenomena prevails among the younger teachers of the profession. They appeal, they tell us, to the more recent studies in biology, physiology, and psychology, to discredit the teachings of the older men who have given their sanction to this theory. But "there were brave men before Agamemnon" and there were wise men before the day of these zealous students, who so bitterly assail the theory of maternal impressions. We are not always able to prove or give satisfactory reasons for the faith that is in us, admits Dr. DeLee. The older men of our profession are not all fossils and "back-numbers." In Coleridge's "Table-Talk," it is stated that Dr. Parr said to a young man who asserted that he would not believe anything he could not understand: "Then, young man, your creed will be the shortest of any man's I know."

"There are more things in Heaven and earth than are dreamt of in our philosophy." Let us hope that further studies in biology, physiology and psychology may clear up many problems that now confront us,—real problems that pertain to the weal or woe of the human race. When the Master had restored the sight of the blind man, the multitude marvelled and asked Him how it was done: "He answered and said, 'whether he be sinner or no, I know not: one thing I know: whereas I was blind, now I see.'" Remembering these arguments *pro* and *con*, let us as guardians of the welfare of the human family "prove all things and hold fast to that which is good."

Proceedings of Societies, Etc.

ROANOKE ACADEMY OF MEDICINE.

Reported by E. P. TOMPKINS, M. D.

At a regular meeting of the Roanoke Academy of Medicine, December 6, 1915, the following was the order of business. Dr. John R. Garrett, president, in the chair. Members present. 32. Visitors, Dr. Alex. G. Brown, Jr.,

Richmond: Dr. Guy Denit, Radford; Dr. Mitchell, Grayson Co.; Dr. Folkes and Dr. Cundiff, Roanoke.

Dr. I. E. Huff gave a talk on *Blood Pressure in Pregnancy*, reading quotations from a similar paper by Dr. Franklin S. Newell, with data collected from observation of 400 cases in the last 2 to 4 months of pregnancy. He stated the average blood pressure was 118, with tendency to rise toward the end of pregnancy, and emphasized the importance of taking blood pressure readings.

Dr. A. G. Brown, invited guest, read a comprehensive and exceedingly interesting paper on *Blood Pressure*, which held the undivided attention of the fellows, and was discussed by a number. He said, "I have nothing new to offer; I have only come to talk it over, and if possible get a new view-point. In the registration area last year occurred over two hundred thousand deaths from heart disease, cerebral hemorrhage, and nephritis, all of which have to do directly with high tension, and the toll of death from these increases yearly. Instruments of precision have been devised, and by use of them impending trouble may be discovered in time. The systolic has approximate ratio of 3 to 2 diastolic, the diastolic 3 to 1 pulse pressure, the pulse pressure being the difference between the systolic and the diastolic. The time of day, work, food, fluids, smoking, etc., influence. In meningitis alone of the infectious diseases is blood pressure raised.

Treatment. This is a present-day problem; at times it should be treated very little. Drugs often hasten the fatal changes. Iodides offer the best results in many cases, as they arrest the sclerotic changes; the doses should be large and progressively increasing. Potassium carbonate should be combined. Romberg believed potassium iodide reduced the viscosity of the blood. As to thyroid extract, its chief value is in its iodine. Of Trunek's serum, I do not think much. The nitrites act by vaso-dilation; and between nitroglycerin and sodium nitrite, nitroglycerin is the more lasting. Spirit of nitroglycerin is the better form to use a long time. Erythrol, dose 1/3 to 1 grain, theobromine, and theocine are commended by some. Theobromine acts on the kidneys. Prophylaxis is of great importance."

DISCUSSION.

Dr. E. T. Brady, "I think the doctor brought out a matter which I have always maintained, and been thought a crank for advocating, and that is that high tension *per se* claims no treatment, but high pressure when one of a symptom complex is of great importance, and does need to be treated. Hypertension and hypotension may both be entirely due to psychic causes."

Dr. R. M. Wiley, Salem. "I would like to ask a practical question: In your opinion, in a life insurance examination, a man who is otherwise perfectly sound, but who has hypertension, is he an undesirable risk?"

Dr. R. L. Rhodes. "Trenching upon the essayist's prerogative, I would say of a series of thirty thousand cases tabulated by life insurance authorities, of those who had tension ten points above 150 m.m. mercury, the mortality was twenty per cent. above the average, and of those with an increase of twenty points, the mortality was forty per cent. above average."

Dr. R. W. Brown cited three cases of interest on this subject.

Dr. W. L. Powell. "I think this is the most comprehensive paper on this subject I have ever heard. I have often been at sea. I think we have thought too much about simply reducing the pressure, without regarding the cause. I have seen patients go into collapse. I was glad to hear him refer to hypotension, and hope there is something in his theory of supra-renal insufficiency."

Dr. Geo. Maxwell. "This is out of my line, but one phase of it struck me, as Dr. Brady brought out. High blood pressure may be a good thing; the heart is trying hard to do its work, and keep the body from auto-intoxication. We take a man with high pressure and stop him from work, when a certain amount of exercise is necessary to blow out the clinkers, and keep the system in order. Blood pressure cases are generally in those of sedentary habit, though sometimes of course due to alcohol or other poisonous drugs. I think we should put them to bed and on a milk diet only for a short time, and then put out at moderate exercise. I think we use drugs too much,—give Nature a chance, which is better than iodides and nitrites. I believe when we stop hunting so much for albumen in pregnant women and

get them out in the air more, etc., we will get better results."

Dr. Walter Slicer. "I am a whole lot like Dr. Maxwell about taking a man off his feet and off his feed. I think when we have a man who has been gorging himself and taking abundant exercise, we should let him down gradually."

Dr. Watson, Salem. "In tuberculosis work we have many hypotension cases. We take routine readings on admission, and those whose tension shows increase from time to time show improvement. When I was a student, thirty of us had blood pressure taken; three of this number, one being myself, had very low tension. Within eight months two of us developed tuberculosis, and the third within eighteen months."

Dr. S. J. Gill reported a recent case, and remarked, "If I had taken the blood pressure, I would have known what was coming."

Dr. Brown, in conclusion: "I like to think of the heart and blood vessels, the brain, the kidneys, the splanchnic nerve system,—all as one organ, so to speak. The intima, the endothelium, the elastic tissue, the nerve terminals, go through the entire vascular system. If it is thickened in one, it is in all. Of certain parts of the brain, if pressure is increased too much, an awful catastrophe is apt to follow,—it breaks. If the coronary arteries of the heart are sclerotic, high blood pressure is necessary to get food through to the heart. If there is ischemia, we have angina pectoris. Likewise, in the renal system, if we have thickened blood vessel walls, we need high pressure to carry on osmosis. But if the pressure is too great we have stasis, so we are between the devil and the deep sea. We cannot set up a standard as to when to reduce and how much. A man may have 240 m.m. mercury; you cannot say at what point he would be safe. It is a compensatory act of nature, but sometimes carried too far. I think we all agree on this. I think if you have a high blood pressure, with nervous symptoms, headache, etc., it is safe to lower the pressure some, but not too far.

"As to the life insurance examination, the companies have arbitrary rules which they will not change. As to the supra-renal theory, it is fanciful maybe, but we know that in Addison's disease we have hypotension. Suppuration about the teeth and gums, tonsils, in the gall

bladder, etc., causes low pressure. Remove the cause and the pressure comes up. Syphilis is often the cause of high blood pressure, without any other cause. Men who work in tobacco factories, in steamy atmosphere, absorbing nicotine, have high blood pressure. Malaria may cause high pressure by reason of enlarged spleen and liver. I think it is not wise to say to a patient with high blood pressure, 'take exercise, play golf, cut wood, etc.' Better lower the pressure first, and then take exercise. Cut down the proteids, give him massage first, and then give exercise."

AMERICAN PROCTOLOGIC SOCIETY.

Reported by A. J. ZOBEL, M. D., San Francisco, Cal.

(Continued from page 440.)

Fecal Abscess in Pouch of Douglas, Following Typhoid; Report of Case.

By ALFRED J. ZOBEL, M. D., San Francisco, Cal.

The author of this paper stated that for the past thirty years very few cases of fecal abscess have been reported in the literature. Only one of the more recently published textbooks of surgery gives even brief mention of the subject.

A fecal abscess is distinctly different from an abscess in which the pus has been so tainted by a growth of colon bacillus that from the odor it may be mistaken for fecal matter.

It may occur in connection with any portion of the intestine, and originate either externally or from within. When it originates without, it may subsequently burst into the gut, empty its purulent contents, and have it replaced wholly or in part with fecal matter.

A fecal abscess which originates from within the gut usually results from a slow, progressive ulceration of the mucosa, due either to general conditions, such as typhoid fever, dysentery, tuberculosis, or cancer, or to local causes, such as chronic intestinal catarrh, stricture, a hard fecal accumulation, or a foreign body.

The writer of this paper reports a case of fecal abscess which not only filled the cul-de-sac of Douglas, but also had invaded the tissues between the rectum and the vagina. The patient, a woman of forty-two years had had a miscarriage eight years previously, and was told at that time that some kind of a swelling could be felt in her rectum. However, this gave her no trouble then, nor subsequently, and it had been entirely forgotten. When her present

trouble began, two and a half months after an attack of typhoid fever, the history of this former condition complicated the diagnosis. On digital examination, a large, smooth, immovable brawny mass, beginning about 2½ c. m. above the internal sphincter, and extending beyond reach of the finger, was felt bulging from the right-lateral and anterior sides of the rectum. The mucosa was freely movable over it. No sign of fluctuation could be elicited. No particular pain was caused by deep pressure. The temperature and pulse rate were normal. It had been aspirated through the rectum by her physician, and a slightly turbid fluid had been withdrawn. The mass began to swell into the vagina, and in two days so occluded the passage that it almost prevented the entrance of the examining finger beyond the portal. Slight fluctuation was then felt. There was severe rectal pain. The temperature was still normal; the pulse 90. An exact diagnosis was not made before the operation. An incision was made through the postero-lateral vaginal wall. Upon blunt dissection a tense sac presented. When this was punctured the contents gushed out in a thick sluggish stream which kept flowing for some little time. From its strong fecal odor and brownish-yellow, lumpy appearance, it apparently consisted wholly of semi-liquid, mushy feces, similar to what is found in the lower end of the ileum and cecum. Nearly two pints of this foul material was evacuated. Fecal drainage ceased entirely eight hours after the abscess was opened. The turbid discharge which remained rapidly decreased in quantity and in less than four weeks after the fecal abscess was evacuated, the wound was completely healed.

Dr. Zobel said that although a fecal abscess is met with so rarely, the possibility of it being present should be taken into consideration in the differential diagnosis of obscure intra-abdominal tumors. He concluded by quoting from Fenwick: "Where there is a localized abdominal swelling, immovable by the respiration or by a moderate amount of pressure of the fingers; whose size and shape alters when diarrhoea occurs: in which light percussion gives a tympanitic, and a more forcible stroke a dull sound; or in which an emphysematous sensation is communicated to the fingers, or a gurgling sound produced by percussion; it will be probably of fecal origin; and this more prob-

ably when there is a history of anything apt to produce ulceration."

Ischiorectal Abscess in Nine-Day-Old Infant; Report of Case.

By ALFRED J. ZOBEL, M. D., San Francisco, Cal.

The abscess was first noticed on the ninth day after the birth of the child. No cause could be discovered for its formation. It was incised on the twelfth day without anesthesia. It was curious how the abscess cavity, which was quite large, filled up so rapidly, complete healing taking place at the end of a week.

Analyses, Selections, Etc.

OTO-LARYNGOSCOPIC LITERATURE ABSTRACTED.

By J. J. RICHARDSON, M. D., F. A. C. S.,
Washington, D. C.

Theory of Tonsillectomy; Result in Pediatrics.

S. Blum, M. D., *Laryngoscope*, St. Louis, 1915, XXV, No. 9. pp. 661-666.

The author presents the results of an inquiry among the laryngologists of San Francisco with regard to statistics, indications, results, etc., of tonsillectomy. Sixteen throat specialists reported that since 1905 they had collectively performed 10,014 tonsillectomies; 7,486 patients were children under 14 years, 2,528 were over 14 years old. Among the indications for the operation were mentioned mouth breathing, hypertrophied or inflamed tonsils, enlarged cervical glands, rhinitis, earache, deafness, etc. But the author states that this list of morbid conditions attributed to the tonsils and of the indication for their removal is not complete. In literature we find many more morbid conditions mentioned, such as diseases of the nervous, respiratory, digestive, genito-urinary, circulatory systems, local and general infections, etc., and it is claimed that as the tonsils are the source of these morbid processes, tonsillectomy will cure or alleviate them. Dr. Blum contradicts this view. He himself performed tonsillectomy only in 22 children in a series of 100 unselected cases. He lays special stress on the fact that removal of the tonsils is frequently followed by middle ear and mastoid disease. The tonsils in infancy and childhood are essentially functioning organs. They play especially an important

role during dentition. He comes to the conclusion that the practice of tonsillectomy in children should be restricted. There are some cases, especially in adults, where tonsillectomy is indicated. In pediatric practice this operation may be indicated in recurrent peritonsillar abscess. It may cure some cases of chronic otorrhea. It should be the operation of choice in malignant disease of the tonsils. It should never be performed in infants.

A Case of Laryngeal Papilloma Treated and Cured by the Roentgen Rays.

I. G. Shallcross, M. D.—W. D. Bayley, M. D., *Journ. Ophthalmol., Otol., and Laryngol., Cincinnati*, 1915, XXI, pp. 873-876.

A lady, 24 years old, consulted Dr. S. about an aphonia which had been troubling her for about 6 or 8 months. The condition had gradually grown from a slight hoarseness to complete aphonia. There was no pain and no dyspnea, but a feeling of fulness in the throat. Examination revealed a small papilloma resembling in form and size a grain of barley, attached directly under the middle third of the right vocal cord, close to its free edge. All known treatments were tried. The tumor was removed three times by operation, but always recurred. The thuja treatment was without success as well as galvanic cautery. At last Dr. Shallcross sent the patient to Dr. Bayley to try the Roentgen rays. Under this treatment the tumor became, after a few weeks, lighter in color and diminished in size. Twice the treatment had to be interrupted on account of severe X-ray burns, and the tumor grew to its former size. After 15 months' more treatment the new growth disappeared leaving only a small thickened spot beneath the site of the original tumor. This spot was now treated with a solution of argyrol twice a week for about a month, when all traces of the tumor disappeared and the patient's voice was again normal.

Acute Leukemia as First Manifested in the Tonsil.

G. J. Alexander, M. D., *Journ. Ophthalmol., Otol. and Laryngol., Cincinnati*, 1915, XXI, pp. 780-786.

The patient was a woman of 42 years. Her health had gradually been failing for the past nine months. Recently she had a succession of furuncles on hands, arms, axillae and neck.

For six days before seeking treatment she had pain in her throat referred to the thyroid cartilage, with dyspnea and dysphagia.

Examination: Temp. 100° F.; pain on pressure in the region of the right tonsil; the anterior cervical gland on the same side enlarged and hard; tonsil bluish-red and swollen, with little gray patches over the lacunae, which later coalesced and formed a membrane in the centre of the lower half of the tonsil which bled slightly when touched. Under this membrane an ulcer formed, with irregular sharply outlined edges. During the following seven days the ulcer increased in size, forming a deep gangrenous excavation covered by a foul-smelling, thick, grayish-yellow membrane. A bacteriological examination showed streptococci and staphylococci in large numbers. A bad-tasting secretion in the mouth caused the patient much nausea and vomiting. After an intermission of a few days the weakness, emaciation and anemia greatly increased. The patient was sent to the hospital where an examination showed an increase of the white blood cells, pneumococci in the sputum, spleen and liver enlarged and severe dyspnea. The patient sank rapidly and died. The post-mortem showed a grayish-red marrow in sections of the ribs, vertebrae and lower third of the femur, which is typical of acute myeloblastic leukemia.

Death From Hemorrhage Following Peritonsillar Abscesses.

T. E. Carmody, M. D., *Colorado Medicine*, Denver, 1915, XII, No. 9, pp. 216-269.

The author first gives a brief review of the cases reported in literature in which death occurred from hemorrhage in peritonsillar and retropharyngeal abscesses. His own case was as follows:

The patient was a boy of three years. He was a mouth breather, and had had several attacks of tonsillitis and sore throat. When first seen the child was in the third day of an attack of acute follicular tonsillitis; temp. 102.2° F., pulse 120.

Treatment: Local application of tinct. of iodine, internally aspirin, salophen and phenacetin, calomel; cold applications to throat; rest in bed. The child gradually improved and on the sixth day was dismissed with the advice that the tonsils and adenoids be removed as

early as possible. Three days later the boy had a sudden profuse hemorrhage after drinking some milk. When he was seen he was very weak. Examination of the throat showed a large opening in the upper portion of the anterior pillar with some yellow pus draining from it, but no blood. The patient gradually improved. Eighteen hours after the first hemorrhage he spat a small amount of blood, but no help was called. Twenty-two hours after the first hemorrhage the third and fatal hemorrhage took place. Contrary to orders, the child had been given some milk to drink, which was followed by a spell of coughing leading to hemorrhage and death.

Congenital Heart Disease and Ulcerative Sore Throat.

J. D. Rolleston, M. D., *Brit. Jour. Children's Dis.*, Lond., 1915, XII. No. 141, pp. 274-279.

A boy, 11 months old, was admitted to Grove Hospital, suffering from diphtheria. Child was very ill. There was a membranous deposit on the tonsils, pillars and uvula, and profuse nasal discharge. The heart showed some right-sided enlargement; heart sounds clear and rapid. A large dose of anti-toxin was given and repeated on the following day. A throat culture showed a few organisms resembling the diphtheria bacillus, but cocci were predominant. Both tonsils showed extensive ulceration which spread over uvula and palate. The general condition of the child became rapidly worse until he died from bronchopneumonia.

The post-mortem showed superficial ulceration of the tonsils, soft palate, fraenum epiglottides and deep ulceration of laryngeal portion of pharynx. Areas of broncho-pneumonia were found in left lung. The heart showed the following anomalies:

Transposition of the great arterial stems, aorta arising from infundibulum of right ventricle and the pulmonary artery from left ventricle; walls of both ventricles very much hypertrophied. There was marked deficiency of the interauricular septum, a widely patent foramen ovale, and an interventricular foramen 1.2 cm. in diameter in the "undefended space." The pulmonary artery had only two cusps and showed stenosis and hyperplasia.

The duration of life in complete transposition of the aorta and pulmonary artery is usually very short. In the present case the

prolongation of life must be attributed to the defects in the auricular and ventricular septa, which allowed a free mixture of the arterial and venous blood.

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

Appleton's Medical Dictionary. Edited by Smith Ely Jelliffe, A. M., M. D., Ph. D., Adjunct Professor of Diseases of the Mind and Nervous System, New York Post Graduate Hospital and Medical School. Assisted by Caroline Wormeley Latimer, A. M., M. D., formerly Instructor in Biology, Women's College of Baltimore. With special Contributing Editors. New York and London: D. Appleton and Co. 1915. 8 vo. 945 pages, with 64 pages of Charts, Tables, etc. Flexible Leather. Price, \$3.50 net.

Appleton's Medical Dictionary is an attractive and inexpensive volume containing the "living terms of medical nomenclature." It avoids as far as possible the obsolete, which, while occasionally useful, too often serves only the purpose of filling a book with unnecessary pages. Initial letters of all words are small type, except in instances where words should begin with capitals,—a matter of much service on numerous occasions. Definitions are as brief as they can be made to bring out the meaning clearly, and strike us as being quite satisfactory. An appendix contains much information relative to the examination of urine, blood, sputum, stomach contents, feces, and cerebrospinal fluid, how to determine blood pressure, dietary, the more common poisons, their symptoms, antidotes and treatment, besides other data of every-day use. The book undoubtedly merits a convenient place on the desk of the student and practitioner.

Digest of the Case Law on the Statutory Regulation of the Practice of Medicine. Compiled by the Medico-Legal Bureau of the American Medical Association. Press of the American Medical Association, 535 N. Dearborn St., Chicago. 1915. Size 6½ x 9½. 504 pages. Bound in legal buckram with stamped leather labels. Price, \$6, postage prepaid.

This is said to be the only complete compend in print on the regulation of the practice of medicine. It contains: 1. A list of all Supreme Court decisions, both State and Federal, on this subject, arranged chronologically by states, with reference to the Court Reports in which

each decision may be found. 2. Abstracts of 26 of the most important decisions, arranged chronologically by states. 3. A digest of the subject, considered topically, with copious references to ruling cases under each head. 4. An analytical index, giving references to appropriate sections on each topic.

The standardization and regulation of the practice of medicine by the State is one of the most important questions in the medico-legal field, and its proper solution is of the utmost importance and value to the medical profession. The book should prove of much interest to the profession generally, and especially to medical organizations, to secretaries of State Medical Boards, as well as to members of the legal profession.

Editorial.

Christmas Greetings and a Happy and Prosperous New Year to all of our Readers.

The Surgeon General of the U. S. Public Health Service,

In his annual report, records the largest amount of work performed in the history of that organization. Since the passage of the law of 1912, the public health functions of the Service have materially broadened, thereby increasing greatly its usefulness to the American people. Throughout the report the economic importance of disease prevention is made apparent.

A most important achievement of the year was the discovery that pellagra is a deprivation disease, resulting from a faulty diet containing an excess of carbo-hydrates. This discovery is the culmination of investigations extending over a period of seven years, principally in Georgia, Mississippi, and at Spartanburg, S. C.

A new national quarantine station was opened at Galveston, Texas, and the control of the Boston station was transferred to the Public Health Service. The number of cases treated at Marine Hospitals and relief stations exceeded 55,000, 15,000 of which were hospital patients, a considerable increase over previous years. The Coast Guard Cutter, "Andros-coggin," was fitted up as a hospital ship and now affords relief to deep sea fishermen on the Banks of Newfoundland.

The Public Health Service took charge of

the fight against plague at New Orleans, and the exclusive rat-proofing and other anti-plague measures undertaken, resulted in the eradication of the disease from among human beings, and the practical extermination of the rodent infection.

Great reduction in the incidence of malaria was obtained in localities where surveys were conducted. Scientific investigations of malarial infection showed that in the latitude of this country the most important agent in carrying the infection through the winter season is man, and not the infected, hibernating, *Anopheles* mosquitoes, as was previously supposed.

Studies of occupational diseases and industrial hygiene were instituted at several places during the year. The investigations relating to the migration of tuberculous persons were completed.

Upon the request of the health authorities of five states, the organization and operations of the respective boards of health were studied and recommendations advanced for improvement in the powers and duties of these bodies. The health organizations of several cities were likewise investigated.

Investigations of the pollution of streams and the examination of shellfish were also conducted.

Trachoma was combated in the Appalachian Mountains, where it is most prevalent, over 12,000 cases being treated. Surveys in certain states during the year showed that the disease is not an uncommon infection.

Rural sanitation work was conducted in six different states and everywhere resulted in the reduction of typhoid and other communicable diseases.

Public health laboratories for the prevention of the interstate spread of disease were established at Chicago, Seattle, and numerous other railway centers.

Because of the greatly increased health functions of the Service, an increase in the personnel is recommended. An additional building for the Hygienic Laboratory and the establishment of a National Leprosarium for the proper segregation and care of leprosy are also recommended.

The Seaboard Medical Association of Virginia and North Carolina,

At its annual meeting in Norfolk, Va., early this month, Dr. Israel Brown, of that city, pre-

siding, selected Washington, N. C., for the next place of meeting and elected the following officers:—President, Dr. David T. Tayloe, Washington, N. C.; vice-presidents, Drs. Kirkland Ruffin, Norfolk, J. B. Ruffin, Powellsville, N. C., R. L. Williams, Norfolk, and William E. Warren, Williamston, N. C.; secretary, Dr. Clarence Porter Jones, Newport News, Va., and treasurer Dr. George A. Caton, Newbern, N. C.

The Annual Report of the State Health Commissioner

Shows that the past year has been the healthiest on record in Virginia, with the smallest number of cases of typhoid fever, tuberculosis and diphtheria reported in any year. Intensive campaigns for better sanitation were conducted in Southampton, Prince William, Giles, Russell and Franklin Counties, in addition to which a number of towns made improvements in their systems of water supply and sewage disposal. As further evidence of the good work done by the State Health Department, school children of five counties and two cities were medically examined for communicable diseases and physical defects; more than 15,000 disease specimens were examined in the State Laboratory; 69 persons were given free anti-rabic treatment, and a temporary trachoma hospital was opened at Coeburn, where 1,882 treatments were given.

Despite improved diagnosis and its consequent assistance in the recognition of early cases of tuberculosis, there was a notable decline in the number of new cases of this disease. This is attributed to the greater public information regarding the means of preventing tuberculosis. During the year, 511 persons received treatment at Catawba Sanatorium, all but 77 of whom showed improvement. A table prepared by the resident physician of the State Sanatorium, Dr. John J. Lloyd, and incorporated in the report, shows the economic condition of patients treated at Catawba in the fact that 47 per cent. of all former patients have returned to their vocations and have a combined earning capacity of \$194,772, or more than the Sanatorium has cost the State in its entire history.

The Richmond Academy of Medicine and Surgery,

At its annual meeting held December 14th, elected the following officers for the ensuing

year:—President, Dr. W. Lowndes Peple; vice-presidents, Drs. St. Julien Oppenheimer; O. F. Blankingship and Ramon D. Garcin; secretary, Dr. Mark W. Peyser; assistant secretary, Dr. E. H. Terrell; treasurer, Dr. Jas. H. Smith; librarian, Dr. G. Paul LaRoque. The four last named officers were re-elected. Drs. C. M. Miller, M. D. Hoge, Jr., H. H. Levy, A. L. Gray, McGuire Newton and Robt. C. Bryan were elected members of the judiciary committee.

The annual reports of the secretary and treasurer showed the affairs of the Academy to be in a good condition financially and otherwise with a membership which includes practically all eligible practicing physicians in the city. Drs. E. L. Flanagan and John Booth, were elected to membership at this meeting. Drs. A. L. Gray and E. H. Terrell reported interesting cases.

The Conference on Medical Education, Public Health and Legislation

Will hold its twelfth annual meeting at the Congress Hotel, Chicago, February 7 and 8, 1916, under the auspices of the Council on Medical Education and the Council on Health and Public Instruction of the American Medical Association. Monday, the 7th, will be devoted to medical education, and Tuesday, the 8th, to medical legislation and public health.

All State Licensing Boards, State Boards of Health, State Medical Societies, Associations of Universities and other organizations interested are invited to send representatives. Dr. N. P. Colwell is secretary of the Council of Medical Education, and Dr. Frederick R. Green is secretary of the Council on Health and Public Instruction.

On Wednesday, February 9th, the Federation of State Medical Boards of the United States and the Association of American Medical Colleges will meet.

Dr. J. C. Bodow,

Formerly of Roanoke, Va., has recently moved to Hopewell, this State.

Dr. Bodow wishes to correct an impression which seemed to have gained currency with some of his friends and acquaintances to the effect that he was advertising in a way inconsistent with the code of medical ethics. It seems that when he moved to Hopewell, where he knew no one, he put a card in the daily paper

merely stating his name and address, with possibly his office hours—such a sign as many physicians have on their houses. He states that, although he did nothing unethical, when report of this reached him from Southwest Virginia, he withdrew the notice, for fear his motive might be misconstrued.

As the matter appears to us, we feel sure there must have been a misunderstanding on the part of those who criticised Dr. Bodow, as the Principles of Medical Ethics of the American Medical Association states that "The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not *per se* improper." While the practice of putting advertisements in the daily papers has not been customary, so far as we know, in Virginia cities, it is done by some of the best men in certain localities in other states. The unusual circumstances created by the mushroom growth of Hopewell—a place that has grown from corn fields to a town of nearly 30,000 in less than a year—would seem, in our opinion, to fully justify Dr. Bodow in taking the action that he did.

The Southern Surgical and Gynecological Association

Convened in Cincinnati, December 14th, for a three days' meeting, under the presidency of Dr. Bacon Saunders, of Ft. Worth, Texas. White Sulphur Springs, W. Va., was chosen for next year's place of meeting, and Dr. Thos. S. Cullen, Baltimore, was elected president.

Dr. J. Shelton Horsley, Richmond, was among those who attended from Virginia and presented a paper. The Association went on record as favoring a national board of medical examiners, as outlined at the last meeting of the American Medical Association.

The Dinwiddie County (Va.) Medical Society,

At its annual meeting in Petersburg, December 9th, after the transaction of routine business, elected officers for the ensuing year as follows:—President, Dr. D. C. Mayes, Church Road; vice-president, Dr. C. T. Jones, Petersburg; secretary, Dr. W. C. Powell, Petersburg; treasurer, Dr. A. F. Bagby, Petersburg. The Society will have its annual banquet at the January meeting.

The Lynchburg (Va.) Health Department

Reported a total of 52 deaths, including non-

residents, or a rate of 19.2 per 1,000 population, and seventy-three births, for November. During the month, 15 cases of diphtheria were reported, three of which came from one school-room. The throats of all children in the room were swabbed. Sixteen, who were found to be carriers of the disease though they were never sick, were kept secluded until their throats were free from the germs. Prompt action on the part of the Health Department prevented what at first threatened to be an epidemic.

The Interstate Psychiatric Association

Met at Towson, Md., the latter part of November, at which time the following officers were elected:—President, Dr. Henry A. Cotton, Trenton, N. J.; vice-president, Dr. Edward N. Brush, Towson, Md., and secretary, Dr. Sam'l T. Orton, Philadelphia. Meetings will be held semi-annually. Specialists in the care and treatment of nervous and mental diseases in New Jersey, Pennsylvania, Maryland, Virginia and the District of Columbia, whether doing institutional or private practice, are eligible to full membership though others may be admitted to associate membership.

Dr. E. G. Moore,

Elm City, N. C., has been named as a member of the State Board of Medical Examiners of North Carolina to succeed the late Dr. Charles T. Harper, of Wilmington. June 26-30, 1916, were selected as the dates for the next examinations of applicants to practice medicine in that State.

Dr. Johnson Complimented.

On October 28th, a complimentary dinner was given by members of the Medical Society of the District of Columbia for Dr. Joseph Taber Johnson, an ex-president of the Society, as a testimonial of his having reached seventy years of age and fifty years of practice of medicine.

The Southwest Virginia Medical Society

Held its semi-annual meeting in Bristol, December 15 and 16, Dr. W. K. Vance, of that city, presiding. There was a good attendance and a number of interesting papers were presented. The Bristol doctors entertained the visitors at a banquet on the first evening of the meeting. Dr. A. B. Greiner, Rural Retreat, is secretary.

Tennessee to Have Tuberculosis Sanatorium.

Drs. Jere Crook, Jackson, J. B. Richardson,

Murfreesboro, Geo. L. Berry, Rogersville, W. A. Shipp, Centerville, and Olin West, Nashville, have been appointed by the Governor of Tennessee as a commission to look into the location and building of a State Hospital for the treatment of pulmonary tubercular patients. The sanatorium will most probably be located in the middle or eastern part of the State.

Registration of Patent Medicines.

The Department of Health of New York City recently formulated regulations which provide for the compulsory "registration of patent, proprietary or secret formula medicines with the Department of Health," the law to become effective January 1, 1916. The following information must be given: 1. Name of preparation; 2. Name of applicant (whether manufacturer, proprietor, importer or distributor); 3. Location of manufacturer; 4. Form in which preparation is marketed; 5. Therapeutic effects claimed for preparation; 6. Names in English (not quantities) of ingredients to which the therapeutic effects claimed are attributed, and the names in English (not quantities) of all other ingredients except such as are physiologically inactive; 7. Exact text of all advertising matter and every statement set forth upon or contained in package, box, bottle or container as sold, and of all advertising matter relating to the said preparation contained in any circular, leaflet, or book sold or distributed with or in connection with such preparation. All such information is to be regarded as confidential, and not open to inspection except by authorized officials. The regulations formulated will not apply to any medicine or medicinal compound prepared or compounded upon the written prescription of a duly licensed physician, provided that such prescription be written or issued for a specific person and not for general use, etc.

The above regulations, which are intended to get at fraud and to fight patent medicine fakirs, should aid materially those duly authorized to prosecute the Federal, State, and City Statutes.

Dr. R. Lindsay Robertson,

Who has been health officer of Charlottesville, Va., for the past few years, has been commissioned surgeon in the medical reserve corps on the active list and re-enters the service with the rank of first lieutenant.

Dr. Thomas Alsop,

A former Richmonder and a graduate of the University of Virginia in the class of 1895, has moved to Atlantic City, N. J., and has offices at 1700 Pacific Avenue. Dr. Alsop frequently visits his family in this city.

Dr. Thomas E. Wright,

Monroe, La., who attended the Southern Medical Association in this city, in 1914, and read a paper on the intravenous injection of quinine in the treatment of malaria, has been presented with a medal by the Fifth District Medical Society of Louisiana, for original research work in this line.

Married—

Dr. Fred Jefferson Kellam, formerly of Princess Anne, Va., but now of Mineral, and Miss Dorothy Anne Minter, Richmond, December 14th.

The George Crocker Cancer Research Fund Laboratory,

At Columbia University, New York, made use of 64,500 animals for its investigations concerning cancers during the past year. Work with radium developed the results that the amount of radium, length of exposure and distance between the radium and the tissue were the three factors concerned in the action of radium on cancer cells.

Dr. Fred M. Hodges,

Of this city, announces that he has associated with him Dr. Baxter L. Crawford, who graduated from the University College of Medicine in 1912.

Dr. S. S. Gale,

Roanoke, Va., delivered an address on December 18th, at the B. Merrill Ricketts Experimental Surgical Research Laboratory, in Cincinnati.

Fresh Air Cars in Chicago.

During the latter part of November, the surface street car company of Chicago, put into operation a number of cars which will be unheated and have their windows and doors open for the benefit of the fresh air advocates.

An Institute of Medicine

Has been organized in Chicago by some 150 leading doctors, with the hope of establishing

in that city a research center which will be open to college professors and country practitioners alike. Dr. William E. Quine has been elected president, and Dr. J. G. Wilson, secretary of the Institute. The board of governors includes Drs. Frank Billings, William A. Pusey, E. Fletcher Ingals, W. H. Wilder, Thos. J. Watkins, Robt. Preble and Frank Cary.

The Virginia Road Builders' Association

Will hold its annual meeting at Murphy's Hotel, this city, January 18 and 19, 1916. Drs. L. D. Batkins and R. A. Nichols are among those appointed to attend the convention as delegates from Richmond.

Dr. A. W. Freeman,

Formerly of the Virginia Health Department, but now epidemiologist with the U. S. Public Health Service, attended the conference of health officers at Louisville, Ky., December 8-10, and presented an address on Rural Sanitation.

Dr. Leslie B. Wiggs,

Of this city, has been commissioned by President Wilson, an assistant surgeon in the Naval Medical Reserve Corps, with the rank of first lieutenant, effective November 30, 1915.

Dr. G. A. Hankins

Was elected treasurer of the Williamsburg, Va., Lodge No. 5, A. F. and A. M., at its meeting on December 9th.

Teachers Balk.

A rather singular situation arose in Atlanta, early this month, so we are informed, when the doctor in charge of the medical inspection of the school teachers announced to them that the Board had authorized him not only to make tests of the eyes, ears, nose and throat, but also to include examinations of the heart and lungs which would call for a baring of the body from the waist up. Certificates of family physicians were barred. We do not know why the Board overlooked requiring pelvic examinations for venereal diseases! It is needless to say the matter was taken to a higher court.

Dr. Thomas D. Merrick,

After a short stay in Philadelphia, has returned to his home in this city.

The Tuberculosis Catechism,

First issued by the Virginia Health Department in 1910, for use in the schools of this State, has been completely revised and rewritten and, with this year's edition, will bring the total number of copies printed up to 215,000.

Dr. Robert S. Preston

Has returned to his home in this city after a visit to California.

The Military Surgeon,

The official medium of publication of the Association of Military Surgeons, announces the removal of its editorial offices from Chicago, to Army Medical Museum, 7th and B Streets, S. W., Washington, D. C. The new secretary-editor, Lt.-Col. E. L. Munson, of the Medical Corps, U. S. A., will assume his editorship duties with the January 1916 issue.

Dr. Ennion G. Williams,

State Health Commissioner, delivered an address on "Thrift in its Relation to Health," at the meeting of the local chapter of the American Institute of Banking in this city, December 15th.

Dr. James T. Leftwich,

Formerly of the Medical College of Virginia, who is now located at Harvey, W. Va., was among the successful candidates who recently appeared before the West Virginia State Medical Examining Board.

Dr. H. G. Stoneham

Has returned to his home in Waverly, Va., after a several days' visit to Lancaster County.

Dr. N. Thomas Ennett,

Addressed the Richmond City Normal School Parent-Teacher Association at its regular meeting on December 8th.

Instruction in Diseases of Children.

As an aid in assisting teachers to promptly detect symptoms of diseases common among school children and thus safeguard others against them, the Radford Normal School, this State, will, after Christmas, give a course on diagnosis and detection of mumps, measles, tonsillitis, diphtheria and other contagious diseases.

St. Luke's Hospital, Tokio.

At a meeting held in Washington, D. C., December 13, in the interest of St. Luke's International Hospital, Tokio, substantial subscriptions were made for its support. The emperor of Japan has alone given \$25,000 for the hospital. Dr. Rudolf Teusler, formerly of this city, but now superintendent of the Hospital, was among the speakers at this meeting.

The Petersburg (Va.) Hospital,

With a capacity of 70 beds, reported at its annual meeting held early this month, that 1,214 patients had been admitted to the hospital during the preceding year, 644 of whom were operated upon. Twenty-three nurses are enrolled in its training school.

The State Board of Examiners for Nurses

Will hold its semi-annual examinations January 19-21, 1916, at the Medical College of Virginia, this city. Further information may be secured of the secretary, Miss Julia Mellishampe, 821 Westover Ave., Norfolk.

Physicians Drug News and Office Practitioner

Has been acquired by the Critic and Guide Company and will be consolidated with *The Critic and Guide* beginning with January, 1916. The consolidated journal will remain under the editorship of Dr. William J. Robinson.

The U. S. Civil Service Commission,

Washington, D. C., announces open competitive examinations January 18, 1916, for men only, for assistant surgeon, at a salary of \$1,800 a year, and for bacteriologist and pathologist at a salary ranging from \$2,000 to \$2,500 a year. to fill vacancies in the Bureau of Science of Manila, P. I. Full information may be obtained upon application to the above named Service.

Doctor Wanted, -For a good practice in Valley of Virginia, on State pike, near Staunton. Good roads generally, high school, churches and best people. Doctor making offer wishes to specialize and has nothing to sell but office supplies, horse, buggy and phone stock in two lines. Good chance for young man to start practice. *Address No. 99, care of this journal.*

Obituary Record.

Dr. George W. Haislip,

Of Lorton Valley, Va., died at the Sibley Hospital, Washington, D. C., December 5th. He was born in Fairfax County, Va., 57 years ago, last March, and after completing his academic education, studied medicine at Jefferson Medical College, Philadelphia, graduating in 1882. He was well known in Northern Virginia and was a member of his local medical society and of the Medical Society of Virginia, having joined the latter in 1885. He is survived by his wife and three children.

TRIBUTE TO DR. E. S. TRUDEAU.

1848—1915.

By CORNELIA W. BROWN.

A sadness broods o'er Saranac!
The very sunshine seems to lack
Its cheering brightness, and the breeze,
Seems whispering among the trees
That Edward Trudeau is no more.
The balsams murmur o'er and o'er
The plaintive, sorrowful refrain,
"He never will return again.
The wise, the good, the peerless one
Is silent now—his work is done."
He came into "the wilderness"
Long years ago—in sore distress;
But in the pure and bracing air
He lost the feeling of despair;
Then in his heart a longing grew
A great and helpful work to do.
This purpose all his being fired
And others, coming, were inspired
To follow where he led the way
The white plague's ravages to stay.
Humanitarians gave their wealth
To aid him in restoring health.
Then cottages, among the trees,
He built to treat the dread disease;
And very near his little church
A laboratory for research.
To these he gave his heart and mind
In willing service to mankind.
From far and near the sufferers came,
And many live to bless his name;
And all were comforted who heard
His cheery voice and kindly word.
His rare, magnetic presence drew
All hearts to love and trust him too.
A leader in the healing art,
How nobly he has done his part!
How worthily has won a place
With benefactors of the race!
But Edward Trudeau's work is done,
Our country mourns her gifted son!
Lynchburg, Va.

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Original Communications.

MANIC-DEPRESSIVE MENTAL VARIATIONS: NORMAL AND ABNORMAL.*

By JAS. K. HALL, M. D., Richmond, Va.
Westbrook Sanatorium.

Mania and melancholia are old medical terms. For many years they were used, however, merely in a general way, to describe two opposite abnormal mental conditions, without reference to the cause, nature, or course of the aberration. The maniac is the classic type of the insane individual. The disregard for personal appearance, the wild glaring eyes, the piercing shrieks, the foolish laughter, the incoherent speech, the flightiness of ideas, the exhibition of homicidal outbursts, the inclination to destroy everything within reach, the unceasing mental and physical activity, the uncanny responses to imaginary sounds and sights, the egotistical feeling of well-being, the extremely mutable emotional state—all these symptoms in a group were long suggested by one word, mania. No other condition marks such extreme and terrible departure from the mental normal. The maniac incarnates the layman's idea of insanity. Nebuchadnezzar, an ancient representative of the Lord's displeasure, is a biblical example of man in the world's highest station brought down by mania to the level of the beasts of the fields.

Melancholia presents a departure from the mental normal almost as striking, but in exactly the opposite direction. The depression may be so extreme as to cause inhibition of all physical activity. The individual may sit unmoved for hours at the time, the face is immobile, disturbances in environment are unnoticed, speech may be abolished, the im-

pulse to eat and to swallow may be lost, and tube feeding by the nose may become necessary. Inattention to the demands of nature are not unusual, and such patients require constant care. If speech be not abolished, expression is given to delusions of the most distressing nature. The patient relates with pronounced conviction the belief that his soul is forever lost; he tells of the awful crimes he has committed; he may experience peculiar bodily sensations, which lead to the belief that his stomach has grown up, his heart has ceased to beat, the bowels have decayed, there is no room for food, an evacuation is impossible, and the brains have turned to sawdust. Accompanying this distressed state of mind there is not infrequently great physical agitation; the patient paces the floor, wrings his hands, pulls his hair, bites his nails, bemoans his fate, and often becomes noisy. The impulse to commit suicide is sometimes uncontrollable.

Within the past year, a young man of thirty-six, who had for several years been in the service of the Federal government, was brought to me in a state of great excitement. At times he had to be confined to his room because he would not wear his clothing. For two or three weeks he was noisy, profane, destructive to clothing, untidy in habits, and unceasingly active. He heard the Lord's voice, saw angels, the devil, and many other strange sights, in an absolutely plain room. He did not know where he was, there were no inquiries about his family, he lost from memory the day, the month and the year; it was difficult to induce him to remain quiet long enough to take sufficient food; he lost weight, sleep was almost abolished, and emotional instability was extreme. Within a few moments he would pass from good-natured playfulness into the most troublesome pugilistic mood. Gradually the psychic and the

*Read before the Medical Society of Virginia at its forty-sixth annual meeting at Richmond, October 26-29, 1915.

physical excitement subsided, normal sleep returned, the appetite reasserted itself, increase in weight was rapid, and after ten weeks he was in normal mental health. He has resumed his responsible position, and he now laughs at his strange capers and his queer delusions. The Wassermann was negative, the physical condition seemed perfect, and in the material domain nothing could be found to account for the mental disturbance. The paternal mental heredity was not sound, however, and some undiscovered cause probably aroused a latent mental instability. This young man's condition represented a fairly typical case of acute mania.

True melancholia, as that referred to above, occurs only during the involutorial period of life, and it is much more common amongst women, but profound mental depression, not always differentiable from melancholia, may be encountered at almost any age, and in either sex. Some of the most prominent symptoms of such a condition are suggested by the compound word, psycho-motor depression. In well-marked cases, comprehension is lessened, the surroundings are not fully understood, the sense of time may be lost, the least complicated statement may not be understood, but the most prominent feature of this type of depression is the individual's inability to respond promptly to a stimulus. Mental processes are converted with great difficulty and with much delay into motor manifestations. This peculiar condition of delay in the response to stimulation is known as psycho-motor retardation. It is the most prominent symptom of this type of depression. When, for instance, the patient is asked his name he may sit perfectly still for half a minute or for several minutes, as if he did not hear, but he then replies correctly, by giving his name. If asked to stand up he seems for a few moments not to have heard, and then he stands up. Somewhere in the process between the request or the command and the motor response there is difficulty in conversion. This type of depression has other features not unlike those of genuine involutorial melancholia. For instance, the countenance is often immobile, or, it may look troubled; activity is generally lessened, and it may be abolished; the patient

may sit or stand like a statue; frequently, forced feeding is necessary; there may be inattention to the discharges, and interest in the environment may be entirely absent. Such patients may be described as depressed, mute, stoical, indifferent and untidy.

Three years ago, a boy of eighteen, of previous good health and habits, became gradually depressed; after only a week he became mute, he would not eat, absolute untidiness developed, he would respond in no way to requests or commands, and, after having been in this condition for two weeks, he was brought to Westbrook. All these symptoms became even more pronounced for three or four weeks, but improvement came about slowly, and within ten weeks from the beginning of the departure he was again at work as the trusted secretary of a bank president of this city. For several weeks the boy was absolutely speechless, and any movement had to be initiated by a brain other than his own. After recovery he told me that he thought I was the Lord, that for a long time he believed the meat served him was human flesh, and he believed the blastings to be heard in the quarries several miles distant from Westbrook, were efforts to blow him up. His physical condition had always been good; the mental heredity was not bad, although a sister was hysterical. The real cause of his rather sudden mental collapse is unknown. I might add in all truthfulness, too, that the cause of his restoration to the mental normal is likewise hidden from me. But the facts are that once the boy seemed to be mindless, but since recovery his employer states that he is able to do more efficient work than ever before.

The two cases presented above in some detail illustrate opposite phases of marked mental abnormality—one, the condition long known as mania; the other, the condition manifesting profound mental and motor depression. In recent years the tendency has been to regard both conditions as manifestations of the same underlying disorder, and this peculiar mental make-up, exhibiting even in the same individual at one time great elation and excitement and at another time profound depression, is now referred to by the embracing

term, manic-depressive mental disorder. Individuals manifesting this peculiar form of mental unstableness are extremely common, and most cases of so-called mania, and most of the cases of depression not due to organic or extraneous causes, come in this category. However pronounced the mental disturbance may be, whether manifested by excitement or by depression, if the physical condition be good, the tendency is towards recovery. Most of the cases discharged, as recovered, from State hospitals belong to this group.

In one individual the attack may always be one of maniacal excitement, and the return to the normal may take place without subsequent depression. In another individual of unstable make-up the disorder may always show itself in depression, and recovery may follow without a period of exhilaration. In many weakly-stable persons, however, attacks of so-called mania may rapidly follow periods of profound depression, or *vice versa*, but between these abnormal states there may be periods, varying in length from weeks to years, in which the individual may be altogether normal.

In a paper read before the meeting of the Tri-State Association in Charleston last February, Tucker, of Richmond, described the condition both diagrammatically and by text. Jelliffe has also written interestingly about the disorder. The opinion of all observers is that the outlook for recovery from the individual disturbance is good. The probability of recurrence, however, is strong. In other words, the immediate prognosis is good; the permanent prognosis is bad. The reason is that in most of these cases there is bad mental heredity, and the individual disturbance, maniacal or depressive, are outbursts of a deep-seated, latent, mental instability.

The old statement that it never rains but it pours cannot be made use of literally in the field of mental medicine. Many bad conditions occur in modified form. The cases that I have made use of above for illustrative purposes were so clearly abnormal and so clear-cut that the layman, absolutely ignorant of psychiatric conditions, would have guessed the correct diagnosis. These same mental disorders, however, in larval form, if I may use the term, are not recognized by a great many

physicians. The world has in it, for instance, many mildly maniacal people—people who are unceasingly and often purposelessly active, restless, stirring, egotistical, nosing, prying, disagreeable, euphoric busy-bodies. Many of these individuals are investigators and the leaders in reform causes. They never suffer from physical or mental fatigue, but instability of purpose is often prominent. For a little while they do one thing, only to tire of it and take up some other line of endeavor. But they never despair; they are always just about to succeed at last; failure is not among their words: hope is their guiding star. Mr. Wilkins Micawber is one of them. Generally they do not succeed because they manifest, in a mild way, what the maniac exhibits more strikingly—unstableness of purpose. They do not stick to any one thing long enough to command success. Such an individual, I am quite certain, each of you are acquainted with. But not all such mildly elated and exhilarated persons are nuisances or failures. Many of the world's leaders are of this kind.

Such men are constantly keyed up. They are buoyant and hopeful, cheerful and inspiring, untiring and undismayed; they see no obstacles, fear no consequences, and are not disheartened by any number of failures. In their hearts success always abides. In this group belong, probably, Solomon, Saint Paul, Julius Caesar, Napoleon, Byron, the Kaiser and Colonel Roosevelt—brilliant, restless, irrepressible, tireless, ambitious, versatile, many-sided men.

In marked contrast with the personality outlined above is the individual who is habitually and persistently dejected and gloomy. The particular way in which the depression may express itself is variable. In one person the manifestation may be through the physical domain. There may be complaint of hyperacidity, indigestion, kidney affection, spinal trouble, or sexual disorder. The digestive or the sexual apparatus serves in many individuals as a basis for a hypochondriasis. Not infrequently the complaint is lodged against the eyes, and glasses are changed again and again in an effort to right a wrong with which the eyes have nothing to do. Many women of this depressive temperament locate the cause of their unhappiness and anxiety in diseased pel-

vic organs, and many of them succeed, without much difficulty, in having their pelves thoroughly cleared out.

These gloomy, pessimistic, distrustful, unhappy patients go from physician to physician; these are they from whom the patent medicine vendors reap their rich harvest; these unfortunates support the quacks and the humbugs. Chronic mental depression does not always elect, however, to exhibit itself by a physical hypochondriasis. Many of these pessimistic and gloomy folk feel in excellent physical trim, but they manifest their peculiar and unfortunate temperament by arraying themselves against all that is—they are the chronic objectors. Whatever is, is wrong, whether it be in politics, in religion, in industry, or in the home. Mothers of this unhappy disposition criticise the minister, gossip in unseemly fashion about their neighbors, chase away the servants, array their children against their teachers and drive their husbands to drink. Men who are so constituted rejoice in nothing. They criticise all in authority, oppose progress, glorify the past, and shake their heads dolefully about the future—they are prophets of evil.

Still more interesting, however, than the individual confirmed in elation or fixed in chronic dejection and pessimism, is the person whose emotional status passes through regular phases characterized, at one time, by mild excitement, great activity and hopefulness, and, at another time, by lessened activity, a tendency to isolation, and marked despondency and pessimism. All of us know such individuals. They seek medical advice only when depressed, and the physician is most fortunate who chances to have such a one under his care just when the depression is lifting, for then he is credited with a cure. A man of such temperament is often successful during his period of elation, but his gains are frequently lost during his period of depression. Such emotional instability is generally the causative factor undelying frequent changes in business, religion, or politics, and lay people are inclined to place little trust in a man so unsettled. I know one man, now past middle life, who was at one time a hardware merchant, at another time a bookkeeper, still later a school teacher, and for a while he

was a very active and acceptable minister, but when I last heard of him he had withdrawn from the church, because it would not prohibit its ministers from using tobacco, although he had used it for twenty years, and he precipitated a storm in a church meeting when he staunchly asserted his belief that no chewer of tobacco could find a place in heaven. Some of his acquaintances applied to him the very best psychiatric terms they could think of—queer, peculiar, eccentric. I knew in North Carolina a young man who preached periodically for years as an evangelist, only when elated; when depressed, he felt unfit for the ministry, but during these fits of dejection he was active as a carpenter. In that same State I knew, in his old age, an uneducated man, who was a bricklayer, and a drunkard in his younger days, but in middle life he became converted, and for many years he went about the State as a street preacher, bitter always in his assaults on alcohol. No one doubted his sincerity, but his diction was so unique that the newspapers always gave him much space. He preached, however, spasmodically, and there were frequent intervals characterized by a feeling of sinfulness and unworthiness so marked that he felt it sacrilegious to lift his voice in prayer. During these periods of dejection he attempted suicide more than once, and in an insane asylum he finally succeeded in ending his turbulent life by hanging.

The mildest of such mental and emotional disturbances are spoken of ordinarily as "the blues," and the individual of mercurial disposition is known to all of us. In these unstable characters are often developed bad habits, which remain throughout life. A man who has periods either of marked elation or depression is much more likely to become an alcohol or drug habitue than is a stable, level-living man. Resort may be had to the substance either when elation looses the bonds of normal restraint, or, voluntarily, in an effort to drive away gloom and despair. The tendency—and I am sure it is sound—is in favor of looking upon these habit-cases as fundamentally unsound, and the contraction of the habit is an evidence of mental abnormality, as well as a cause of mental and moral deterioration. Sexual outbursts occur at times, I am thoroughly convinced, in absolutely mor-

ally-minded men and women during an emotional elation which the world does not recognize as abnormal. Many a woman, on the contrary, during a fit of depression, accompanied by the feeling of jealousy and suspicion, has made her husband unhappy by unjust charges of infidelity. Criminality of various kinds, I do not doubt, is often a manifestation of an uncontrollable emotional and moral outburst. But I must not tire you with other illustrative cases and interpretations which may not be acceptable.

Neither the time nor the requisite knowledge is at my disposal to enable me to talk intelligently to you about causes and about satisfactory treatment. In most of these manic-depressive cases causes long antedating the birth of the individual are active. The mental heredity is often bad. Environmental disturbances are often factors in upsetting an unstable mechanism. Pain and discomfort, sorrow and despair, want and distress, excitement and dejection affect even the most stoical. When treatment is thought of, my usual optimism is tempered by the knowledge of the fact that these symptoms are generally but evidences of constitutional instability, and I ponder long before venturing to answer cheerfully and hopefully in the affirmative the great question of the great apostle, "Shall the thing formed say to him that formed it, Why hast thou made me thus?" But the environment, as far as possible, may be made more fit to live in by the particular individual through such changes as can be made. Excitement can be avoided, worry can be lessened, and anxiety can be mitigated. The physical being may properly be regarded as a part of one's environment, and it should, of course, receive first attention.

Finally, benevolent domination of such individuals by a personality stronger than their own, with the help that comes through re-education—through knowing themselves as they really are—constitutes the most important therapeutic measure.

GOOD FOR MEDICINE MEN.—Admiral Dewey, on being complimented on his superb health, smiled and said: "I attribute my good condition to plenty of exercise and no banquets. One-third of what we eat, you know, enables us to live."

"In that case," said his friend, jestingly, "what becomes of the other two-thirds?"

"Oh," said the Admiral, "that enables the doctor to live."

THE SYNDROME OF MUCOUS COLITIS AS A PRACTICAL PROBLEM.*

By J. W. PRESTON, M. D., Roanoke, Va.

Two distinct erroneous impressions prevail as to mucous colitis. The one, as its name implies, that aside from the disorder of the large intestine due to some intangible nervous cause, there is little else of importance connected with it. The other, that it occurs so rarely, and its treatment is so rebellious, that it is worthy of but little consideration at the hands of either the general practitioner or the surgeon.

Both of these impressions are in a measure true of the clean-cut, classical cases, but a widening knowledge makes it evident that the intestinal lesion, if it be so termed, is but the end result of a symptom complex, involving the nerve supply of practically all the smooth muscles of the body, the constipation, discharge of mucus, and crampy pains being mainly a result of over-stimulation of the vagal system. All of these may be, certainly in the milder cases, so much overshadowed by the cardiac, digestive, sensory, and psychic symptoms as to be entirely overlooked, thus varying in degree from cases so severe as to make life a burden, to the slighter forms to which the newer term vagotomy is very appropriately applied.

As to its frequency, it may be profitable to quote a recent statement of Spitzig¹ to the effect that it is probable that two-thirds of all young adults are at times affected. This may be an over-estimate, but one needs only to have his attention directed to it to realize that its frequency of occurrence and importance in daily work is too little appreciated.

However this may be, it is my purpose in this paper to deal chiefly with fairly well-marked cases; and its object is to focus a greater share of attention upon these unfortunates, who, if my conclusions are correct, make up a surprisingly large per cent. of patients who drift from one physician to another, and are but too often roughly classed as simple neurasthenics and hypochondriacs and given scant attention. Or, worse still, they are diagnosed according to the one of the multiple symptoms which at the time happens to pre-

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1. Spitzig, B. L., Vagotomy and Its Relation to Mucous Colitis. *Jour. Amer. Med. Assn.*, Jan. 31, 1914, Page 365.

dominate, and are given treatment varying from heart stimulants to drastic surgical procedures. Of these I speak freely, for I am conscious of my own mistakes in some of my cases, twenty-three of which have been under my care within the past few years, and are the basis of the observations presently to be made.

Through the work of Epinger, Hess, Langley, and others we now know that, like the heart, the abdominal viscera and blood vessels have two sources of nerve supply—the sympathetic proper, and the vagus—the two together constituting the autonomic nervous system. There is, however, one important difference in the function of the sympathetic and vagal branches, for in the case of the heart we know that the vagus is the rein holding in check, and the sympathetic is the whip to accelerate. This is exactly reversed in the supply of the intestines, so that the vagus produces a spasmodic condition when over-stimulated, and the sympathetic the reverse. In so far as our present knowledge goes, the delicate balance between the two opposing forces is partly maintained by the secretions of the adrenal, thyroid and pituitary.

This rough sketch gives a hint as to how, in this syndrome, we have in the same patient, at one time a brady-cardia and at another a tachycardia: likewise, how constipation and diarrhea may alternate. It also gives a suggestion as to the value of belladonna, epinephrin, and other agents as diagnostic and therapeutic measures.

As a practical application I wish to briefly review some of the salient features of my series of cases above referred to. Ten were males, thirteen females; the youngest was aged thirty-three, the oldest eighty. It has been a source of interest to observe that, while in each of these the syndrome of symptoms has been complete, how it has varied under different conditions and at different times. Contrary to the observations of some, practically none of these have been strictly robust in appearance, although at least one was of a florid type, and certainly would not have been taken for an invalid.

In relation to nervous heredity my data is incomplete, but at least four of them have belonged to definitely neurotic families.

There has been nothing abnormal in the blood picture except in one patient in whom the hemoglobin fell as low as 40; she presented,

while under observation, many of the characteristics of chlorosis. As a rule, the hemoglobin has ranged from 60 to 80.

All of these patients habitually passed mucus, though in some cases there were periods in which it was scant and not particularly noticeable. It has varied in quantity from almost pure mucus of a tenacious character, passing with the fecal matter or following it, to, at times, very little, mixed through or clinging to hard, dry, shotty, scybala. The latter have been present in the majority of cases, though varying in consistency. It should be noted, however, that but few of these cases came under treatment primarily because they had observed mucus in their bowel movements, but rather from cardiac, digestive, or nervous disturbances, in some instances of a vague, indefinite character.

All of them suffered in varying degrees from bloating, and the majority, at intervals, from crampy pains and soreness at different points along the track of the colon, suggesting diagnoses according to the location at the time affected. In one, a woman, the bloating was so constant as to lead her to believe she was pregnant, from which illusion she could not be dissuaded until she had gone two months over her gestation period, and finally a fluoroscopic examination convinced her to the contrary.

Some of the series have suffered from pains so closely simulating appendicitis as to leave one in doubt. In these a normal blood count has aided materially in clearing up the situation, although I have the impression that in some cases of this class the spastic condition may in reality extend into the appendix. Four had been operated upon for the removal of the appendix, and had been benefited little, if at all. In addition, two of them had a tentative diagnosis of tuberculosis made, although there had never been pulmonary symptoms. On this account one had been sent West, returning later but little improved.

The ovaries of two females had been removed in earlier years,—before the onset of bowel trouble, so far as I can ascertain,—so whether there was any relation between the loss of the ovaries and the disorder in question is only a surmise.

One of the most severe cases in the list is a woman who has been under observation for some four years, in whom a moderate sized

uterine fibroid has recently been made out. Another suffered from a cervical polypus.

The stomach symptoms noted have been mainly those of hyper-acidity. In at least three, the character of the symptoms complained of would have led to a diagnosis of probable gall stones had not later observation disclosed the passage of mucus of such character and constancy as to clear up the question, although, as may be readily understood, without an exploration no one would be able to absolutely exclude them.

It has been a source of interest to me to note the rather large proportion of these patients in whom the heart symptoms attract most attention. I have had an opportunity to follow two of these through several attacks in which the pulse rate was so rapid it could not be counted. Practically all of the series have suffered at times from either palpitation or arrhythmia. The prevalence of low blood pressure has been most noticeable, some cases running as low as 95, systolic, suggesting to one the poor functioning of the adrenal.

A most noticeable feature of a number of cases has been the frequent attacks of headache, and of neuritis, especially in the cervical region. One is subject to hay fever and asthma; another to severe attacks of urticaria.

The mental depression to which most of these patients have been subject is a most noticeable feature; and I was deeply impressed by the tragic end of one of these, a young married woman, a typically severe case, who, discouraged and weary of treatment, put an end to her suffering by a self-inflicted gunshot wound of the abdomen.

Two patients were found to suffer from fistula in ano, and one from suppuration of the Fallopiian tubes. Two suffered from abscessed teeth, and one from a severe pyorrhea; one from a chronic frontal sinusitis, and one, an ethmoiditis.

The apparent cure of three of these, reported elsewhere,² by the removal of the suppuration foci, suggested to me that they possibly bore a causative relation in certain cases; and in passing I may say that in this article I called attention to the close analogy of the nervous symptoms manifested in Mucous Colitis, to those in other conditions in which a

sensitization is conceded to play an important part, and suggested that toxins or other poisons of a protein nature absorbed from a purulent focus might serve as a sensitizing agent here. While no such focus can always be found, the researches of Vaughan³ have shown conclusively that if the digestion of a protein be stopped at a certain point in the intestinal tract, poisonous products are likewise developed. Many, if not most of these patients suffer from ptoses, adhesions, or other abnormalities, of a like nature, tending to stasis, just the condition best suited both for the formation and absorption of such poisons. So it would seem not unreasonable that we may have here a similar protein to that of a purulent infection reaching the circulation from a different source. Of very great interest as bearing on this are Meltzer's⁴ experiments and conclusions relative to the role of sensitization in bronchial asthma, a phenomenon having so much in common with the syndrome under consideration. Also those of Longcope⁵ relative to the heart. Such speculations lead one into a fascinating field, but as intimated at the onset, are aside from the real purpose of this paper.

Time does not permit a full discussion of treatment, but may I not urge the importance of a study of the early symptoms leading to the severer cases, as well as a careful search for the underlying cause, and the institution of prophylactic measures?

Until the cause be proved therapeutics must in a measure be empirical. As unfair as it may seem, we now know that there are inborn predispositions and lack of resisting power in certain directions, as well as acquired idiosyncrasies. Here it is generally thought that the nervous system is at fault and that our first duty is to fortify it.

However these things may be, the study of tuberculosis has taught us the importance of raising the immunity in any disease by proper rest and feeding, and since many of these patients practically starve themselves by contin-

2. *Jour. Amer. Med. Assn.*, Nov. 27, 1915, page 1872.

3. Vaughan, Victor C., Protein Poison and Its Relation to Disease. *Jour. Amer. Med. Assn.*, Nov. 15, 1913, page 1761.

4. Meltzer, S. J., Bronchial Asthma as a Phenomenon of Anaphylaxis.—*Jour. Amer. Med. Assn.*—Sept. 17, 1910, page 1021.

5. Longcope, W. T., *Arch. of Int. Med.*, Vol. 1, page 1078.

ually cutting off some article of diet which they have eaten just preceding crampy pains, they are astonished to find that when put upon a full diet they suffer no worse, and get the benefit of increased nutrition.

In the way of drugs, I have found that an occasional dose of blue mass, colocynth, and hyoscyamus, is most helpful. In belladonna, which is theoretically the best drug of all, I have been somewhat disappointed; likewise in ichthyol. Of all drugs, as paradoxical as it may seem, I think I have found nux vomica best,—given in increasing doses, and then decreased, as first advised by Musser in hyperacidity. I believe there is some benefit in combining this with small doses of belladonna and arsenic, and occasionally with creosote. Instead of these, bromides along with such tonics as indicated in the particular case have done good service.

In the anemic cases, I have found the hypodermic use of cacodylate of iron, and soda with glycerophosphates beneficial, though rather painful.

For the constipation, oil by the bowel has disappointed. But few would take mineral oil, or agar continuously. Phenolphthalein has acted well with some. Magnesia oxide has served a double purpose of counteracting the hyperacidity, and as a laxative. Compound liquorice powder has served well in the worst cases.

After removal as far as possible, of underlying causes, best of all has been the encouragement and absolute assurance of the patients that they have no serious organic lesion, and the advising of frequent vacations for those who could arrange it; together with the institution of hygienic measures, and teaching them to live within the limits of their strength, thus storing up a reserve of nerve force, which is a matter of very greatest importance to them.

In conclusion, I wish to state that little has been said of the cases of vagotomy which have not progressed to the point of passing mucus. This for the reason that most of them present many symptoms in common with ordinary neurasthenia, thus making it difficult to differentiate; but patients thus affected are sufferers no less than many others with perfectly obvious medical and surgical diseases, and if we do our

full duty as physicians we cannot afford longer to ignore them.

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THE ALLEN TREATMENT OF DIABETES.*

By E. E. FEILD, M. D., Norfolk, Va.

The Allen treatment of diabetes has been so successful as to mark an epoch in the therapeutics as well as the physiology of the disease. Allen's method followed his brilliant experiments on pancreatectomized dogs, at the Rockefeller Institute, in which, by removing varying amounts of the pancreas, he could produce at will a corresponding degree of artificial diabetes. He found that removal of nine-tenths of the gland resulted in severe diabetes. If seven-eighths were removed, milder types resulted, extending over a period of months, but with a fatal outcome. As to the technique and physiology of these experiments, you are referred to his articles on this subject, as they are not embraced in the scope of this paper. Further experiments showed that a diminished diet of carbohydrates, corresponding to the lessened amount of pancreatic tissue, would usually keep the urine free from sugar. He says: (*Jour. A. M. A.*, September 12, 1914, page 941) "After removal of sufficiently large fractions of the pancreas * * * dogs develop a severe diabetes, in which they show heavy glycosuria on meat diet and also during considerable periods of fasting.

"The condition progresses steadily downward to a fatal end. When the remnant of pancreas left in situ is slightly larger, a condition may be produced in which the fate depends on the diet. On meat feeding such a dog is free from glycosuria and remains so for months, eating his fill every day and maintaining full health and nutrition, with no sign of downward progress; but subcutaneous tests show that the dextrose tolerance is very low, and bread feeding readily produces glycosuria. A return to meat diet stops the glycosuria; but if the bread diet and accompanying glycosuria are maintained for too long a time, the glycosuria then continues even on meat feeding. The diabetes thus produced is not inferior in severity to that resulting from simple removal of larger fractions of pancreatic

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tis-ue, and the downward course and fatal termination are similar.

"When the pancreas fragment is still larger, glycosuria is absent on meat diet; and on bread diet may be absent or transitory. Such animals may remain in excellent condition indefinitely on bread diet, free from glycosuria or any downward tendency; but if sufficient sugar is added to the diet glycosuria can be produced and maintained. After a period of such glycosuria, the animal reaches a condition in which it is glycosuric on bread diet.

"By prolonging the glycosuria on bread diet the dog finally reaches the conditions of severe diabetes, with glycosuria on meat diet, and continuous downward progress. * * *

"When the pancreas fragment is still larger, sugar feeding may produce transitory glycosuria, but it cannot be made to continue. The sugar tolerance is lower than in normal dogs, but nevertheless the doses of sugar necessary to produce glycosuria are higher than can be tolerated as a daily routine by the gastrointestinal canal. Persistence in the attempt to maintain glycosuria causes diarrhoea and illness.

"It is impossible to produce diabetes in the normal dog by an excess of carbohydrate feeding, since, if too much sweet or starchy food is taken, indigestion results and automatically stops the ingestion. But in dogs after operation, and in predisposed human patients, pancreatic weakness may reverse the normal relation, so that the organism can digest and absorb more carbohydrate than it can combine and assimilate; and in this condition, the production of diabetes by improper diet is possible. The question of diabetes may then be regarded as a balance between the digestive and assimilative functions."

Allen found that dogs in which artificial diabetes had been induced and which had been afterward rendered sugar-free by starvation, lost flesh if cautiously fed on protein and fat, although they remained in good physical condition, but that any attempt to increase their weight, resulted in a reappearance of glycosuria.

Allen then applied these principles to human subjects with the brilliant results now so well known.

Allen's treatment is briefly this:

1st. Starvation of the patient for a period of

from one to ten days, until his urine is sugar-free. Alcohol, in the form of brandy or whiskey, is given to conserve the patient's strength, and does not produce glycosuria. It also seems to have considerable effect in reducing ketonuria.

2d. After the patient becomes sugar-free, food is given in form of green vegetables of 5 to 10 per cent. carbohydrate content, or such vegetables freed from carbohydrate by thrice boiling; or proteids are given unless sugar again appears. In such case, another period of fasting is observed. When carbohydrate tolerance is established, the patient is kept on a diet just below this plus proteids and some fats. Loss of weight is of little importance, and should give no concern. In fact, it is rather expected with the necessarily restricted diet, and one would fain exclaim with the Prophet, "Verily, they shall eat bread by weight and with care, and drink water by measure and with astonishment."

Where acidosis is present, soda is often required, but is usually discontinued in a short time. Acidosis is a condition in which the acetone bodies occur in the blood and urine of a patient, and are known as beta-hydroxy-butyric acid, aceto-acetic acid and acetone.

They are produced mainly from the catabolized fats; although the proteins which contain leucin and tyrosin contribute to some extent to their formation. Hence, the need of care in administration of fats in these cases.

The urine is examined daily, of course, and the diet is carefully administered by weight and quality.

The details of Allen's method will be given by my colleague, Dr. Silvester, to whom the greater part of the credit belongs for our work on these cases.

The cases we have treated have all been benefited, but the time has been too short to forecast results. Still we are greatly encouraged, and are better satisfied with this treatment than with any we have used heretofore.

Taylor Building.

A snobbish young Englishman visiting Washington's home at Mount Vernon was so patronizing as to arouse the wrath of guards and caretakers; but it remained for an aged gardener to settle the gentleman. Approaching him, the Englishman said:

"Ah—er—my man, the hedge! Yes, I see, George got this hedge from dear old England."

"Reckon he did," replied "Shep." He got this whole blooming country from England."—(*Public Service News.*)

THE ALLEN TREATMENT OF DIABETES—

By W. W. SILVESTER, M. D., Norfolk, Va.

In order to recall to those who are, and for the benefit of those who are not, familiar with the Allen treatment of diabetes, I will endeavor briefly to summarize his method:

"The first step is to fast till glycosuria ceases, and then for twenty-four or forty-eight hours longer. At the same time, the ketonuria falls steeply. It quickly approximates what a normal individual would show under similar conditions, and the aim is to keep it constantly down to this level. Plain fasting suffices for the purpose; but since alcohol is a food which does not produce glycosuria and is said to diminish ketonuria, it is generally given during fasting, especially if there is danger of coma. Its use or omission in later treatment depends upon individual conditions. Alkalies may be useful for the first few days if coma seems imminent, but are then no longer needed. Continuing the sodium bicarbonate may cause the ferric chloride reaction to remain positive longer than it otherwise would, with no benefit to the patient, as far as I have seen.

"When the fasting patient has been free from glycosuria for twenty-four to forty-eight hours, the next step is to begin feeding very slowly and cautiously. There need not be a fixed program. It is desirable to individualize the diet to suit the needs of different patients, and various physicians may have personal preferences of their own. The one requirement is that the patient must remain free from both glycosuria and acidosis. Any trace of sugar is the signal for a fast-day, with or without alcohol. The original fast, to clear up the urine in the first place, may be anything from two to ten days, but after that no fast need be longer than one day. The things to be considered in the diet are carbohydrate, protein, fat, and bulk. Frequently the first thing given after the fast is carbohydrate. No distinction is necessary between different forms of starch, but there are advantages in using vegetables, following Joslin's convenient classification on the basis of carbohydrate content. The first day after fasting, the only food may be 200 grams of vegetables of the five and six per cent. classes. This is increased day by day until a trace of glycosuria appears, which is

checked by a fast-day. The purpose of such a program is to learn the carbohydrate tolerance and to clear up the last traces of acidosis. After this carbohydrate period, or sometimes in place of it, protein is given. On the first day, perhaps one or two eggs are given—nothing else. More protein, generally as eggs and meat, is added day by day, until the patient either shows glycosuria or reaches a safe protein ration. The purpose here is to learn the protein tolerance and to cover protein loss as quickly as possible. Fat is somewhat less urgently needed, except in very weak and emaciated patients, and it can be added gradually, as conditions seem to indicate. An element of bulk in the diet is necessary to give the comfortable feeling of fulness and to prevent constipation. This is the great advantage of green vegetables. When they are fed raw, or cooked in steam, or boiled and evaporated so that no water is thrown away, they contain a definite quantity of carbohydrate, besides valuable salts; and this is the only form of carbohydrate that patients thus treated ordinarily receive. Some cases are so severe that even green vegetables cannot be tolerated. Under these conditions the vegetables may be boiled through three waters, throwing away all the water. Nearly all starch is thus removed, and the most severe cases generally take these thrice-cooked vegetables gladly and without glycosuria.

"One result of the initial program here described is the loss of weight. This is the thing which physicians have been accustomed to dread most, but which, according to present indications, is beneficial in itself. In subsequent treatment, the patient is welcome to gain weight up to a certain point, provided he can do so without glycosuria or acidosis. The attempt to put on weight, according to the time-honored tradition of diabetic treatment, is one of the surest ways of bringing back all the symptoms and sending the patient down-hill. It is probably one of the chief causes of past failures in treating severe diabetes. In the severe cases it is found necessary to restrict all classes of food, and to test the tolerance of each patient for each particular class. Carbohydrate is given if possible, but is kept safely below the limit of tolerance. Protein must be kept fairly low, sometimes very low. With a dangerously low protein tolerance the work-

*Read before the Medical Society of Virginia at its forty-sixth annual meeting at Richmond, October 26-29, 1915.

ing rule has been to exclude all carbohydrate, then feed as much protein as is possible without glycosuria."

In the most severe cases, the addition of a few grams of protein or fat makes trouble. The margin is so close that great care has to be exercised.

Joslin, in a very recent article on the present day treatment of diabetes, gives due credit to Allen for the recent advance in treatment. A summary of the general plan of treatment has been worked out by Joslin which can most readily be used by the general practitioner as a basis for treatment, and is as follows:

"Fasting.—Fast until sugar-free. Drink water freely and one cup tea and one cup coffee, if desired. If sugar persists after two days of fasting, add in divided portions 300 c. c. clear meat broth.

"Carbohydrate Tolerance.—When the twenty-four hour urine is sugar-free, add 150 grams of 5 per cent. vegetables, and continue to add 5 grams carbohydrate daily up to 20 grams, and then 5 grams every other day, passing successively upward through the 5, 10 and 15 per cent. vegetables, 5 and 10 per cent. fruits, potato and oatmeal, to bread, unless sugar appears or the tolerance reaches 3 grams carbohydrate per kilogram body weight.

"Protein Tolerance.—When the urine has been sugar-free for two days, add 20 grams protein (three eggs) and thereafter 15 grams protein daily in the form of meat until the patient is receiving 1 gram protein per kilogram body weight, or if the carbohydrate tolerance is zero, only 3-4 gram per kilogram body weight. Later, if desired, the protein may be raised to 1.5 gram per kilogram body weight.

"Fat Tolerance.—While testing the protein tolerance, a small quantity of fat is included in the eggs and meat given. Add no more fat until the protein reaches 1 gram per kilogram (unless the protein tolerance is below this figure), but then add 25 grams fat daily until the patient ceases to lose weight or receives not over 40 calories per kilogram body weight.

"Reappearance of Sugar.—The return of sugar demands fasting for twenty-four hours or until sugar-free. The diet preceding the reappearance of sugar is then resumed, except that the carbohydrate should not exceed half the former tolerance until the urine has been

sugar-free for two weeks, and it should not then be increased more than 5 grams per week.

"Weekly Fast Days.—Whenever the tolerance is less than 20 grams carbohydrate, fasting should be practiced one day in seven; when the tolerance is between 20 and 50 grams carbohydrate, 5 per cent. vegetables and one-half the usual quantity of protein and fat are allowed upon the fast day; when the tolerance is between 50 and 100 grams carbohydrate, the 10 per cent. and 15 per cent. vegetables are added as well. If the tolerance is more than 100 grams carbohydrate, upon the weekly fast day the carbohydrate should be halved.

"Bread is seldom prescribed, because it is so easy for a patient to overstep the limits."

The first case, a male aged forty-six years, onset of diabetes in 1914, or probably a year earlier. First consulted physician because he was drinking anywhere from twenty to twenty-five soft drinks during the day. I first saw patient on July 7, 1915, and he had all symptoms of an ill man—emaciated, weak and nervous: polyuria, polydypsia and polyphagia: cramps in the calves of legs, feet and toes. Also had some genital inflammation and tongue was beefy. Usually weighed from one hundred and thirty-six pounds to one hundred and thirty-eight pounds. Present weight one hundred and fourteen pounds.

Urine—

Reac.	Sp. Gr.	Tot. Quan.	Sugar	Acetone	Diacetic
Twenty-four hours on unlimited diet.					
Ac.	1.040	3600 c. c.	235 gms.	+++	+++
Following first fast day.					
Ac.	1.030	980 c. c.	30.66 gms.	++	++
Following second fast day.					
Ac.	1.010	1895 c. c.	1.57 gms.	+	+
Following fourth fast day.					
Ac.	1.012	2900 c. c.	0 gms.	+	—

Patient had a tolerance for sixty grams of carbohydrates. Diet was gradually increased, and improvement was satisfactory. In the course of six weeks that this patient was in bed, he had four periods of fasting. Each period after the first never required more than twenty-four hours to clear up the glycosuria. Patient was so much improved mentally and physically that I could not restrain him from returning to his occupation. To-day he is faithful about his diet, weighs one hundred and twenty-one pounds, which is fifteen pounds below his normal. This increase in weight was accomplished with a diet not exceeding 2200 calories. Six days after getting out of

bed, glycosuria developed, and due to the fact that he is very busy and suffering no inconvenience, I have not been able to get him to undergo another period of fasting.

I feel that it would be well if this type of case really felt sick enough to make them realize their condition.

One very interesting feature in this case was noted. While on a diet below his carbohydrate tolerance, due to considerable worry about some business affair, glycosuria developed almost immediately.

Second case: Male, 65 years old, lighthouse keeper. Time of onset not positively known. Marked symptoms noted following a slight attack of pneumonia in March, 1914. General malaise, polyuria and polydipsia, also some slight itching of skin. Normal weight one hundred and fifty-five pounds. Weight when first seen July 7, 1915, one hundred and thirty-four pounds.

Urine—

Reac.	Sp. Gr.	Tot. Quan.	Sugar	Acetone	Diabetic	Blood Sugar.
Twenty-four hours on an unlimited diet.						
Ac. 1.032	2900c.c.	45.81	gms.	++	+-	0.212
Following first fast day.						
Ac. 1.006	3625c.c.	0	gms.	+	+	0.196
Following second fast day.						
Ac. 1.008	1600c.c.	0	gms.	-	-	0.143

This patient was very anxious to leave the hospital as soon as possible, and, accordingly, on some days I increased his carbohydrate 20 grams. Patient developed glycosuria twenty days after he became sugar-free. This patient tolerated one hundred and thirty grams of carbohydrate, and glycosuria developed when carbohydrate was increased to 150 grams. Another fast day, and patient became sugar-free. The patient's diet was then gradually increased until he was getting 110 grams of carbohydrate. The patient is now up and about, fairly active, feeling better than he has for two years past, has gained eight pounds in weight, and there has been no return of glycosuria.

Third case (interesting from a surgical standpoint).—Female, aged 43 years. Never known to have glycosuria. Was operated on March 5, 1915, for prolapse of uterus, and developed glycosuria the following day. Urine prior to operation showed no sugar. The glycosuria which developed following the operation cleared up spontaneously within forty-

eight hours, and the incision healed nicely. March 22, 1915, symptoms of perforation developed, patient again operated on and glycosuria followed. The wound healed very slowly and it was found that glycosuria persisted. From this incision a hernia developed. Operation for hernia on August 4, 1915, and on August 18th, the first time I had seen patient, the incision from the last operation showed very little tendency to adhere. Patient starved on August 19th, became sugar-free on the 20th, and was kept sugar-free until the incision had completely healed. There is no doubt that rendering this patient sugar-free facilitated healing of the incision.

Fourth case: A negro woman, much emaciated, entered hospital to have a fibroid removed, and was found to have sugar. Patient put on Allen treatment.

Urine—

Reac.	Sp. Gr.	Tot. Quan.	Sugar	Acetone	Diabetic	Blood Sugar.
Twenty-four hours on unlimited diet.						
Ac. 1.036	3130c.c.	67	gms.	++	+	0.182
Following first fast day.						
Ac. 1.026	2620c.c.	0	gms.	+	+	
Following second fast day.						
Ac. 1.012	2040c.c.	0	gms.	0	0	0.136

Carbohydrate diet was gradually increased and found she could tolerate 185 grams. Ten days after patient was sugar-free a phlebitis developed in the left leg. This condition was slow to improve, and as soon as practicable patient was removed to her home. At home she seemed to be in good spirits and good condition other than her chief complaints (fibroid and phlebitis). Five days after returning home, her attendant left the room for a few minutes only, and upon returning found the patient dead. This sudden death was attributed to an embolus.

At the present time I have four cases in various stages of treatment, and am sure that rendering them sugar-free will prove beneficial.

My results so far show that diabetes can be greatly benefited, but requires close co-operation between patient and physician. As Allen says, "However specialists may feel, there is no doubt that a majority of average practitioners feel bewildered and helpless concerning diabetes. The widespread use of drugs, proprietary nostrums, and various irrational treat-

ments, probably indicates not so much confidence in these things as ignorance of other means to use. Granting that the principle is correct, there should be considerable value in impressing physicians at large with the idea that diabetes is merely the weakness of a bodily function—not a progressive fatal disease. Many physicians fear to withdraw carbohydrate, if the withdrawal causes any marked ketonuria. Accordingly, they give carbohydrate, and thus send the patient down hill with continuous glycosuria. The treatment above described will stop glycosuria very promptly, and instead of producing ketonuria will abolish it if it already exists. It will be beneficial if the general medical profession comes to realize that the interest of the patient requires the stopping of both glycosuria and ketonuria, and that it is possible to stop these things within a very few days."

I am including diet lists, taken from Joslin, which the general practitioner will find very convenient in the treatment of diabetes.

Strict diet. Meats, Fish, Broths, Gelatine, Eggs, Butter, Olive Oil, Coffee, Tea and Cracked Cocoa.

Foods arranged approximately according to per cent. of carbohydrates.

VEGETABLES.

5 per cent.

Lettuce	Cauliflower
Spinach	Tomatoes
Sauerkraut	Rhubarb
String beans	Egg plant
Green celery	Leeks
Asparagus	Beet greens
Cucumbers	Watercress
Brussels sprouts	Cabbage
Sorrel	Radishes
Endive	Pumpkin
Dandelions	Kohl-rabi
Swiss Chard	Broccoli
Sea kale	Vegetable marrow

10 per cent. 15 per cent. 20 per cent.

Onions	Green peas	Potatoes
Squash	Artichokes	Shell beans
Turnip	Parsnips	Baked beans
Carrots	Canned lima beans	Green corn
Okra		Boiled rice
Mushrooms		Boiled Macaroni
Beets		

FRUITS.

5 per cent.
Ripe olives (20 per cent. fat)
Grape fruit

10 per cent.	15 per cent.	20 per cent.
Lemons	Apples	Plums
Oranges	Pears	Bananas
Cranberries	Apricots	
Strawberries	Blueberries	
Blackberries	Cherries	

Gooseberries	Currants
Peaches	Raspberries
Pineapple	Huckleberries
Watermelon	

Nuts.

5 per cent.		
Butternuts		
Pignolias		
10 per cent.	15 per cent.	20 per cent.
Brazil nuts	Almonds	Peanuts
Black walnuts	Walnuts (Eng.)	
Hickory	Beechnuts	
Pecans	Pistachios	40 per cent.
Filberts	Pinenuts	Chestnuts

MISCELLANEOUS.

Unsweetened and unspiced pickles, clams, oysters, scallops, liver, fish roe.

Reckon actually available carbohydrates in vegetables of 5 per cent. group as 3 per cent.; of 10 per cent. group as 6 per cent.

Contain approximately	Prot.	Fat	Carbo- hydrates grams	Calo ries
Oatmeal, dry weight....	5	2	20	110
Meat (uncooked).....	6	2	0	40
Meat (cooked).....	8	3	0	60
Broth	0.7	0	0	3
Potato	1	0	6	30
Bacon (cooked).....	5	15	0	155
Cream 40 per cent.	1	12	1	120
Cream, 20 per cent....	1	6	1	60
Milk	1	1	2	20
Bread	3	0	18	90
Butter	0	25	0	240
Egg (one)	6	5	0	75
Brazil nuts	5	20	2	210
Orange (one)	0	0	10	40.
Grape fruit (one).....	0	0	10	40
Vegetables, 5-10 per cent groups	0.5	0	1	6

1 gram protein, 4 calories.

1 gram fat, 9 calories.

6.25 grams protein contain 1 gram nitrogen.

30 grams (g) or cubic centimeters (c. c.) equal 1 ounce.

1 gram carbohydrate, 4 calories.

1 gram alcohol, 7 calories.

1 kilogram equals 2.2 pounds.

A patient "at rest" requires 25 to 30 calories per kilogram body weight.

QUANTITY OF FOOD REQUIRED BY A SEVERE DIABETIC PATIENT WEIGHING 60 KILOGRAMS.

Food	Quantity grams.	Calories per gram.	Total Calories
Carbohydrate	10	4 equals	40
Protein	75	4 equals	300
Fat	150	9 equals	1350
Alcohol	15	7 equals	105
Total			1795

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 Joslin.

OUR DUTY TO THE SURGICAL CONVALESCENT.*

By MATT OTEY BURKE, M. D., Richmond, Va.

In this paper we shall not consider the time spent in the hospital, for during that time the patient is so well cared for that he is loath to leave and occasionally gets sick as an excuse to return. The real convalescence begins when the patient leaves the hospital, and continues until he is able to resume the usual duties of life with comparative comfort.

The acute case has a much shorter convalescence, and usually a more complete recovery than the chronic case.

The invasion is generally so overwhelming that nature's forces are completely overpowered and the invader firmly establishes headquarters on the first battle-field; the dead combatants from both sides tend to form a wall around the field, thus for a time checking further invasion. Usually the effect is so great that the family and patient recognize the gravity of the situation and are anxious for surgical intervention. If the invasion is still localized, the surgeon removes the part or parts affected, together with the invading army, and nature quickly rebuilds the destroyed parts and soon resumes her usual trend of affairs.

The patient and the family are sufficiently anxious to give nature ample time to complete her work, and the family physician does not find the case dragging over such a long period as to become monotonous.

It is the chronic case that tries the physician's soul, wears out the family, and often wrecks the life of the patient. He has usually been a complainer, or semi-invalid, for years, constantly losing reserve force. The family is over-anxious or unduly reticent; the family physician has about exhausted his armamentarium. At last it is found that an operation is indicated, and all parties concerned feel relieved. The comfort after the effects of the anesthetic have worn off, the satisfaction of knowing the cause has been removed, the anticipation of a respite from pain, and the freedom from care while in the hospital, all tend to make the patient oblivious of the fact that a period of convalescence is necessary. He too often goes home thinking that he is well. After the

strain of meeting anxious friends and the enthusiastic return to work, he feels many of the old symptoms, and becomes doubtful and discouraged, or a new train of symptoms may appear which are equally discouraging. The family physician is sent for; he finds no definite cause for the trouble and does nothing, thinks some new trouble has arisen and treats it as such, or advises him to write to the surgeon, stating that he does not know the details of what was done, or what was found, and does not like to assume the responsibility. Just what is the condition of the chronic convalescent—if you will pardon the term?

We assume, that at some time there was an acute attack; the patient may have been advised at that time to have an operation, or the attack may have been so mild that a physician was not consulted.

The invading host evidently entrenched itself and nature built her fortifications around the enemy's camp, but the constant battering from time to time broke through the fortifications, and the long drawn out struggle upset the digestive organs, impoverished the blood, weakened the vital organs, impaired the nervous system, and practically destroyed the reserve force.

So the chronic convalescent is a patient of long suffering *from whom the cause has been removed, and in whom the effects are deeply stamped on every organ and tissue of the body.* Such a patient, like the confirmed inebriate, is anxious to get well, but has not the moral courage to suffer the physical tortures while nature is readjusting herself, nor has such a patient the knowledge of how to get well. These patients need the services of the family physician as much during convalescence as they needed the surgeon during the operation.

Unfortunately, the family physician has not the time, nor often the patience, to take complete control, and direct their entire lives until the effects have been overcome. In this part of the country not many patients have the means to remain in a convalescent hospital, nor to spend their time with a specialist until cured, so the family physician *must bear* the burden of these cases.

How are we to treat the surgical convalescent?

First, we must know what was done for the

*Read before the Medical Society of Virginia, at its forty-sixth annual meeting, at Richmond, October 26-29, 1915.

patient during the operation. This is cheerfully supplied by the surgeon.

Second, we must know the patient,—we must examine the heart, the blood, the blood vessels, the lungs, the digestive organs, the eliminative organs, the assimilation and resistance, the mental as well as the physical condition.

Third, we must gain the confidence of the patient and assume complete authority.

Fourth, we must be sympathetic and encouraging, at the same time, firm.

These patients require very little or no medicine but a great deal of directing. They must have regular hours for sleep, for meals, for exercise, for company, and for rest. They are easily discouraged and hard to reassure. They will have good days and bad days. Their symptoms will vary, and their treatment should be frequently altered for a short time, and changed often enough to break the monotony. Get them interested in some special work, constructive work. The greatest good comes when we see results from our work. Each patient will constitute a rule unto himself and must be managed accordingly.

By constant care, sensible, systematic diet, exercise and rest, we can re-establish the digestion, build up the impoverished blood, strengthen the vital organs, repair the nervous system, correct the secretions, and restore a life to usefulness and happiness, that would otherwise have been a wreck.

204 East Franklin Street.

Clinical Reports.

A SPECIFIC CASE GIVEN ENERGETIC PERSISTENT ANTI-SYPHILITIC TREATMENT, WITH NO EFFECT ON THE BLOOD TEST.*

By H. G. FULLER, M. D., Washington, D. C.

Mr. E. M., male, white, age 34, good physique. Case referred to me by Dr. W. E. Clark, November 1914 for specific treatment. Had been under his care for several weeks for some condition of the stomach and intestines. Patient complained of uneasiness and discomfort over the left hypochondriac region and the epigastrium. He also had lost weight. None of the symptoms were marked. As he

failed to improve, an X-ray study was resorted to, which brought out some tumor-like mass in the pyloric end of the stomach.

This observation led to a blood test, which was found double plus. All venereal history was absolutely negative and the patient to this day has no knowledge of ever contracting syphilis.

On November 12, one injection of 0.6 gms. salvarsan was given intravenously and three such injections were given in the next three succeeding weeks—four in all. This was promptly followed by inunctions of mercury for two weeks and, after a two weeks' interval, the blood test was still ++.

Beginning the following week, four injections of "606" were given at seven-day intervals. Blood taken just a few minutes before the third injection showed ++, and a week later still ++. This time a spinal puncture was made by Dr. Hough for examination of the spinal fluid,—the report coming back perfectly normal.

After this series of injections, the patient was given ten injections of insoluble mercury salt, intermuscularly, at seven-day intervals. In two weeks the blood reaction was the same, and as he was about to leave town I decided to put him on sajodin, beginning 10 grains three times a day, to be increased 5 grains daily until he had some physiological symptoms or got up to 75 grains a day.

On the patient's return to the city after two months' absence, I gave him three injections of salvarsan and six intermuscular injections of "606," one decigram each dose. After two weeks the blood test remained unchanged. Patient's condition, however, at this time was greatly improved; he was freed of symptoms he had at commencement of treatment, his general appearance was markedly improved and he had gained twenty pounds in weight, and an X-ray picture showed no evidence of trouble.

As the patient was now to leave the city for several months (from June), I insisted upon his taking mercury and mixed treatment during practically the whole time, giving him explicit written instructions to be deviated from only in case of some change not understood by him, when he should seek the advice of some syphilographer.

Word received by mail during the past two

*Read before the Medical and Surgical Society of the District of Columbia, November 4, 1915.

weeks was to the effect he was still improving.

I cite this case to show the obstinacy of some luetic cases where the patient seems to be in such good condition and apparently giving no symptoms of syphilis—certainly showing no outward manifestations of it,—and the importance of taking frequent blood tests, but we should go on with more treatment, if necessary, instead of discontinuing because of no symptoms, feeling that some organs or tissues of the body must yet be involved.

This case is of interest to me in that it resembles so-called Wassermann fast cases. I have always felt there were present the toxins of the disease.—not yet reached fully by the salvarsan and other treatment, and that a continuation of active, persistent and energetic treatment was indicated. As long as I could keep the patient under my care it was my intention to insist on his taking as much anti-syphilitic treatment as possible—at least for a while,—for I am convinced that some destructive syphilitic change is going on somewhere, either in the gastro-intestinal tract, blood vessels, or nervous system.

There is some difficulty in explaining the situation to a patient who has no symptoms, yet is urged to go on with treatment. From the doctor's standpoint, he is not cured and needs more treatment. How much more and how long cannot be accurately determined by us, but he should be given regular courses of treatment, and, if necessary, for life—say annually.

The Farragut.

Analyses, Selections, Etc.

The Treatment of Biliousness.

There is no condition which nags at the therapeutic resources of the practitioner more provokingly than the average case of bilious-headache and general biliousness. True, a great many cases which the patient calls biliousness (and the doctor used to) are nowadays attributed to other causes; and, doubtless, in his modern zeal to avoid being fooled by the "biliousness" fallacy, the latter-day medical man frequently falls into the other extreme and allows his patient to suffer from a real absorption of bile, which he could easily

relieve, while he searches for more profound troubles.

But granted the condition of bilious toxemia, whether primary or secondary, calling urgently for relief, the practitioner is often disappointed in his trusted "liver stimulants," because he fails to grasp the simple necessities of the case.

A mere liver stimulant is no use, because it simply stimulates the secretion of a more abundant and diluted bile, which is absorbed quite as readily as, if not more so, than the original article. The duodenum must be stimulated to discharge the diluted bile; and even this is not enough, for the bile will frequently linger in the lower bowel and give trouble.

Podophyllin, mercury, and iridin are all excellent hepatic stimulants, but they must be combined with or accompanied by a duodenal stimulant and an evacuant, in order to relieve the excess of stagnant bile, and it is this lack of judicious combination that is responsible for such frequent failure and disappointment in handling this condition. Of all hepatic stimulants, perhaps the most powerful is sodium salicylate, and an ideal prescription for the above purpose is:

Sodii salicyl. gr. x.
Ipecac. gr. 1/4

Sig. One such t. i. d.

Follow next morning with one ounce dose of sodium sulphate in hot water.

After the excess of stagnant bile has been removed by this treatment, a healthy secretion of new bile may be promoted by the following, which is a very elegant combination, both from a pharmacal and a therapeutic standpoint:

Ac. Nitro-hydrochlor. Dil.....5j.
Sp. Chloroformi5i.
Tinct. Aurantii5ij.
Tinct. Nuc. Vom.m. xx.
Aquæ q. s5vj.

Sig., one ounce t. i. d.

This remedy not only acts as an hepatic tonic, but as a general pick-me-up, and makes the patient feel bright and vigorous.

Lauder Brunton points out—and cites cases in support of his assertion—that retching and vomiting is often of service in stagnation of bile, even though little or nothing be evacuated from the stomach, by simply squeezing

the liver and gall-bladder between the diaphragm and the abdominal walls, and thus mechanically driving the bile, mixed with mucus, out through the hepatic duct into the intestine. He considers this a far preferable mechanical measure to that of the massage of the gall-bladder, which he regards as too risky for general use.—(*Critic and Guide*, December, 1915.)

Intestinal Antisepsis in Typhoid.

Notwithstanding the assertion of some modern critics that intestinal antisepsis is a wild chimera, it has an enthusiastic endorsement and practical contribution from so sane and conservative a therapist as Yeo, of King's College, London. One of the most valuable items in his altogether valuable book on clinical therapeutics is the excellent prescription he gives for a general disinfectant for the bowels and blood in cases of enteric fever and similar intestinal infections. His formula is as follows:

Into a 12-ounce bottle put 30 grains of powdered potassic chlorate, and pour on it 60 minims of strong hydrochloric acid. Chlorine gas is at once liberated. Fit a cork into the mouth of the bottle, and keep it closed until it has become filled with the yellow gas. To hasten this, you must shake the bottle or stand it in hot water. Then pour water into the bottle, little by little, closing and well shaking at each addition, until the bottle is filled. You then have solution of chlorine, some undecomposed potassic chlorate, hydrochloric acid, and probably one or two by-products.

To 12 ounces of this solution add 24 to 36 grains of quinine, and one ounce of syrup of lemon, and give half an ounce to an ounce every two, three, or four hours, according to the severity of the case. Smaller and more dilute doses must be given to children.

Dr. Yeo believes that we have here a disinfectant which not only passes in part unabsorbed, into the small bowel, furnishing an intestinal antiseptic, but is in part absorbed into the blood, thus acting as a general germicide.

At all events, the writer's experience with this mixture coincides with that given by Dr. Yeo, namely, that patients put *early* upon it never have thickly or dirtily coated tongues,

are always much brighter and clearer, and the fetor of the evacuation is considerably reduced. Yeo claims the following advantages for it, all of which the writer corroborates:

(1) Modification of temperature, (2) maintenance of physical strength and intellectual clearness, lessening the need for stimulants, (3) greater power of assimilating food, (4) clean tongue, (5) deodorization of stools, (6) more rapid convalescence.—(*Ibid.*)

Botulism.

This condition, says T. J. Dean, Nashville, N. C., is due to the toxin of the anaerobic bacillus, botulinus, which causes degeneration of the bulbar nuclei. The bacillus occasionally flourishes in thick sausages and large pieces of meat, in preserves, etc.—wherever there is a lack of oxygen. The infected meat may have an almost entirely normal appearance and taste.

The symptoms are paresis of accommodation, mydriasis, immobility of the pupils, and paralysis of the ocular muscles, most frequently ptosis. There is dryness; absence of the saliva, dysphagia, aphagia, aphonia, bradypnea, more rarely paralysis of the facial and hypo-glossal nerves; severest constipation from intestinal paralysis; diaphragmatic paralysis, and, often, great muscular weakness. Cerebral disturbances, disturbances of sensibility, convulsions and atrophy of the muscles are not seen. Death occurs from paralysis of respiration, or from marasmus. Convalescence requires a long time; the visual disturbances persist a long time.

Treatment consists of the administration of animal charcoal, of evacuation of the stomach and intestines (no calomel), of the use of botulism antitoxin (diphtheria antitoxin is also effective), and, if necessary, of artificial respiration.—(*Author's Abstract.*)

Very Dilute Silver Nitrate Solution as an Antiseptic.

Maurice Cazin refers to the investigations of Danysz, who has clearly shown the advisability and advantage of using for antiseptic purpose in the treatment of infected wounds, only such solutions as will spare or actually excite the tissue cells themselves, while killing the germs. Many of the antiseptics commonly used not only fail to arrest infection, but by

killing the tissue cells favor its progress and retard healing of the wound.

Silver nitrate, while capable of rendering sterile a heavily infected water, even in a 1-1,000,000 dilution, was found to have no appreciable coagulating effect on defibrinated blood in a 1-50,000 dilution. Danysz has, therefore, recommended that silver nitrate be used in a 1-200,000 dilution, and mercury bichloride in a 1-300,000 solution, to avoid all deleterious influence on the tissue cells. Czazin applied this principle in the treatment of severe wounds by firearms with most satisfactory results. The 1-200,000 silver nitrate solution was prepared each morning by diluting a standard concentrated solution (kept protected from the light) with distilled water.

Among the illustrative cases given are several severe wounds of the elbow, with exposure or comminution of the bones in this locality.—(*Bulletins et memoires de la Societe de medicine de Paris*, March 26, 1915.)

The Value of Aromatic Spirits of Ammonia in Anesthetization.

The basis for the use of aromatic spirits of ammonia in anesthesia is its physiological action (Parsons, *Ther. Gaz.*, April, 1915). It accelerates the rate and increases the depth of respiration, increases the pulse rate, pulse force and arterial pressure as long as administered. It may be administered through the same apparatus as is used to administer the anesthetic. In the first stage of narcosis, when the patient's breathing is so slow or shallow as to greatly delay the influence of the anesthetic, a few drops of the drug cause the patient to breath more deeply and more rapidly. Near the end of the first stage, when the breathing becomes very irregular, respiratory action is improved by the vapor of the aromatic spirits of ammonia. Or if at this time obstinate coughing or gagging or vomiting is present, the administration of the ammonia quickly overcomes these unpleasant conditions. When in the transition from the first to second stage, the patient may become cyanosed or the muscles of the jaws spasmodically contracted, aromatic spirits offers a most valuable aid.

During the second stage of anesthesia in those of unfavorable conditions or children,

the co-administration of ammonia tends to lessen the degree of danger and is quite as efficient if not superior to oxygen. If a rapid thready pulse and quick, shallow respiration should develop, a suspension of the anesthetic and a drop by drop administration of aromatic spirits substituted, the patient's condition will improve. In other words, should the patient's condition become alarming at any time, use aromatic spirits. Finally, in the last stage of anesthesia, when the operation is almost completed, the use of aromatics will bring a patient from under the influence of the anesthetic as steadily as the ether causes him to go under.

Post-operative nausea and vomiting can almost without exception be prevented and controlled if the patient be allowed to inhale aromatics while coming out of the anesthesia. The nurse may continue this procedure at the bedside as long as the nausea exists. Finally, in children or old people or those weakened by long operation, or where post-operative congestion of the lungs is to be feared, ten or twenty drops by mouth every few hours will result in unobstructive breathing.—(*Medical Review of Reviews*.)

The Cure of Goiter by the Injection of Boiling Water into the Substance of the Enlarged Thyroid.

The technique employed in a recent case at the Polyclinic Hospital by John A. Wyeth (*Medical Record*, May 29, 1915), was as follows: The skin and the area to be injected were thoroughly anesthetized by the injection of a free quantity of a 1/2 of 1 per cent. novocaine solution. A steel syringe, taken out of the boiling cauldron, was filled with boiling water, which was immediately injected by inserting the needle well into the substance of the mass. To prevent scalding the skin, the contiguous surfaces are shielded by a covering of towels, leaving only the point of injection exposed. As the steam or water is apt to escape from the needle, as it approaches the skin, a gauze swab is held as a shield in front of the needle, which latter is thrust through and into the skin when the contact is made. From 10 to 20 minims are forced out in one spot. The needle is then partially withdrawn, and the point carried to a new field, and the injection repeated.

Three or four such areas may be injected at one sitting, and these may be repeated as required, in one or two weeks, and so on, until the tumor disappears.

In the case in question, five injections were made in ten weeks, and in three months the goiter had entirely disappeared. The pain was insignificant. —(*The Med. Review of Reviews.*)

Sodium Bicarbonate in Hay Fever.

K. E. Kellogg (*N. Y. Med. Jour.*) has treated a series of fifty cases of hay fever during a period of three years. The first patient presented a general acidosis with a mild and transient glycosuria; the second a high specific gravity of urine with a marked acidity. Acting on the theory that the general condition served as a primary cause by reason of certain irritating qualities of the blood, making the mucous membranes hypersensitive, the author gave both patients sodium bicarbonate in dram doses three times a day. There followed such a marked relief from symptoms of rhinitis that the author felt justified in administering the same treatment to the remaining forty-eight. Reviewing the records, he finds that 90 per cent. of the patients enjoyed a marked amelioration of symptoms, and 70 per cent. complete relief after a few days' treatment; the remaining 10 per cent. were not as markedly benefited, although they all seemed to show some improvement. The improvement of the local symptoms seemed to be independent of the exciting cause. Some suffered from the inhalation of cotton weed; some of rag weed; some of wild rose; others of golden rod; and a few presented precedent lesions of the nasal interior. The alkali acted nearly the same in the majority of cases regardless of local or general conditions. It appeared to have a desensitizing action upon the mucous membranes. Possibly it may also have had some influence in keeping the toxins of the pollen from becoming soluble. In three cases the author found it necessary to supplement the treatment by the administration of a nasal spray of sodium bicarbonate solution.—(*Medical Record*, New York.)

Plastic Operations for Acquired Deformities of the Face.

Dr. J. Shelton Horsley, in a paper read before the Southern Surgical and Gynecological Association, Cincinnati, December, 1915, called attention to the fact that plastic operations on the face are usually not life-saving procedures, but they do relieve the discomfort and mental anguish of the patient, as also the patient's associates who must daily view the deformity. Plastic surgery of the face requires a kind of ingenuity to meet unusual conditions and to make things fit. The age and health of the patient must be given due weight. While general principles can guide in certain groups of cases, each case is a law unto itself. Therefore, a paper on such a subject must deal largely with reports and illustrations of individual cases. Dividing the face regionally, he reports three cases of deformity of the forehead following the loss of a portion of the anterior wall of the frontal sinus. The infundibulum is probed, and, if not sufficiently large, gauze is run through it. Then small skin flaps are taken from the margins of the defect and turned in, cutting the pericranium farther out than the skin, so it can be overlapped like a double-breasted coat. The raw surface is covered by sliding flaps from other portions of the forehead. A deformity of the eye caused by fracture and displacement of the portion of the bone to which the inner canthus was attached, was corrected by replacing the bone and shortening the upper lid. Deformities of the nose are corrected by grafting bone from the rib or by sliding a flap, including mucous membrane and cartilage, from the septum of the nose. Large openings in the cheek are closed by transplanting a flap from the forehead with the attached anterior temporal artery dissected out and transplanted in the new position. Defects in the lip are corrected by various methods. When the whole thickness of the lip was involved, as after noma, flaps which include mucous membrane were slid up from the cheek. In other instances, flaps were transplanted from the neck or from the arm. When the arm was used the pedicle was cut in about two weeks. The paper was illustrated by numerous photographs and drawings.—(*Author's Abstract.*)

Editorial.

Fee Splitting.

The division of fees by specialists in medicine with the general practitioner who refers patients to the specialist is a matter that is now receiving grave consideration everywhere. This practice has never obtained much vogue in this portion of the South, though it has been quite prevalent in some of the Northern and Western States. In a few States laws have been passed by the legislatures, making it a criminal offense for a surgeon to divide his fee with the physician who refers the case. Whether legally wrong or not, there can be no question about the moral iniquity of such a procedure that logically must lead to selling the patient to that surgeon or specialist who secretly gives the highest commission. Here careful training, earnest scientific work, conscientious and skilful efforts count for nothing; the saving of life is of secondary importance. The prime object of this vicious circle of a bribe-giving surgeon, a bribe-taking doctor, and a sick patient is for the surgeon to get the case and for the physician secretly to get the best commission he can from the surgeon. With them, nothing else really counts.

How can such a practice be broken up? Chiefly by publicity. As fee-splitting must be done secretly without the knowledge of the patient, it is sometimes difficult to detect the practice. There is probably no one sure method of diagnosing the condition. A physician may admire a certain surgeon and insist that his patient go to this surgeon from the most honorable motives, namely, because he believes that this particular surgeon does the best work, and that the patient in this surgeon's hands will have the greatest chance of recovery. The surgeon should treat the physician who refers him a case with reasonable courtesy and deference. A cordial and close relationship between the surgeon or specialist and the general practitioner does not necessarily mean that there is anything improper in such a relationship. On the contrary, this state of things should be fostered.

Probably the surest method of detecting fee-splitting would be by a careful study of the personal character of the surgeon and of the

physician. Professional accomplishments cannot always be relied upon, though specialists and practitioners who split fees are usually not competent from a strictly professional standpoint, because secret fee-splitting is in a sense an admission of inability to secure patients by legitimate and open methods. The moral obliquity of the surgeon who gives a commission or of the physician who receives it makes either of these men untrustworthy in any grave crisis that might arise. The patient is likely to be deceived in other things if he is deceived in the matter of splitting fees. A surgeon who splits fees would probably not hesitate to strain a point and do an unnecessary operation, and the doctor who receives the commission will scarcely refuse to recommend an operation on a patient who can stand the price. The obvious lack of common decency and honesty in such practices will not stop merely at giving and receiving a commission, but must sooner or later riddle every moral fibre of the giver and the receiver of the commission, and make them truly a "whited sepulcher."

As we have said, a careful study of the character of the surgeon and of the physician will probably throw light upon the situation. It is easy to find grateful patients who will give the highest testimony as to the character of their attending physician or of the surgeon who operates upon them. It is easy for the fee-splitting men to contribute to public charities. But a close study of the ethics they practice, of the details of their daily lives, of their activities in the medical societies of which they are members will at least be suggestive. If in doubt, the patient should have a heart-to-heart talk with his doctor and with the surgeon or specialist, and ask the direct question if the physician or surgeon believes in giving or accepting portions of the fee as a commission for a referred case. This can be done in a tactful way that will not offend the innocent, but may alarm the guilty. This subject should also be agitated in the public press, not with the idea of condemning the whole profession for the sins of the few, but with the view of purging medicine of a blight which, if permitted to increase, will destroy the very life of what is most worth while and honorable in medicine. The public should re-

alize that fee-splitting will make the practice of medicine a sordid trade, about on a level with the lobbyist who secretly bribes legislators to pass a law that is favorable to the corporation in which he is interested. Publicity, then, of the right kind will cause the patient to inquire more fully into the personal character of his physician or surgeon and into the kind of work they do. This cannot be objected to, but, on the contrary, will be encouraged by every doctor who wishes to build his practice upon a basis of real merit.

There is another practice that should be mentioned in connection with the secret division of fees. Occasionally a family physician will represent to the specialist that the patient is very poor and can only pay a certain amount. The fee is frequently specified, and the surgeon is often told that he has been committed to this fee and the patient cannot pay more. This, of course, may happen a few times in the practice of any general practitioner, but when it becomes the rule rather than the exception, suspicion should be aroused. In such instances it will usually be found that the physician lets it be known in his community that if the patient will give him a certain amount he will go with the patient to the surgeon, and can have the operation done for a smaller fee than if the patient went by himself. The surgeon here is entirely innocent. The physician may offer the patient to several surgeons or specialists and take the one who does the work cheapest, without any very serious regard for the quality of the work done. Such a physician will have the reputation that he can save the patient money, and neglects his true function of securing the best services for the patient while becoming a bargain-hunter. No honest surgeon would do an operation any cheaper for the physician than he would for the patient if he were aware of the patient's financial ability to pay, and no surgeon worthy of the name would refuse to operate upon a needy patient merely because the patient was destitute. This practice of bartering neglects the quality of the service secured, and puts the work on a purely commercial basis, selling the patient to the lowest bidder.

For every disease there should be a remedy, but there are a few specifics either in medicine

or for the body politic. The attitude of the surgeon or specialist should be to desire to deal no undue hardship on the patient in the matter of fees, but in each case his ideal should be to do the best work that can possibly be done. He should bring every scientific resource to bear that he commands where such is needed. He should remember that if the patient's finances are limited, he has no right to charge fees which will so pauperize the patient as to render him unable to pay the general practitioner, and he should ask from the general practitioner who referred the case, whether the patient is able to pay the regular fee, or if he should be placed on the charity list. The general practitioner should be properly rewarded for his services by the patient himself. Every one knows that no doctor can afford to take two or three days from his practice to accompany a patient, and yet receive no financial reward. Often the presence of a physician at an operation is unnecessary, but as a rule it is desirable, particularly if the patient can afford it, because it not only inspires the patient with moral courage, but often gives the practitioner an insight into the pathology of the case that he could obtain in no other way. The physician should frankly tell the patient that he has gone over the case carefully, that in his judgment an operation or some special treatment is necessary, that he recommends the patient to go to some surgeon or specialist, that he thinks it would be better for him to accompany the patient, but that he cannot afford to leave his practice unless he charges for his expenses and loss of time, in addition to a fair fee for the diagnosis made and professional services already rendered. If this plan is adopted, the general practitioner will have less cause to complain of the surgeon or specialist absorbing all the compensation, and there will be no reason why the physician should not choose a surgeon or specialist solely with reference to his efficiency and to the results to be obtained; for, after all, this in the long run will be to the best interest of the family doctor in building and holding his practice. And last, but by no means least, the dishonest and dishonorable element will cease, and the conversion of the innocent confidence of the patient into

dollars and cents by means of receiving a secret commission will be eliminated.

J. S. H.

Endowment of \$500,000 to American College of Surgeons.

Mr. John G. Bowman, director of the American College of Surgeons, announces that the college has secured from its Fellows an endowment fund of \$500,000. This fund is to be held in perpetuity, the income only to be used to advance its work. The college now lists about 3,400 Fellows in Canada and in the United States. Its purposes are concerned directly with matters of character and training, with the betterment of hospitals and of the teaching facilities of medical schools, with laws which relate to medical practice and privilege, and with an unselfish protection of the public from incompetent service.

Since the whole problem of the training of specialists for the practice of surgery is the primary purpose of the College, the Regents propose at an early date to present a clear conception of the College to the undergraduate medical students of this continent. They will further ask each senior student of this group who has in mind to specialize in general surgery or any branch of surgery to register with the College. As these students serve later as internes and as surgical assistants, they will be requested to report these facts to the College. The College, in turn, will systematically seek information as to the ability and character of such men; and the information thus obtained becomes the basis of admission to Fellowship in the College. In addition to this procedure, the Regents will insist upon the proper keeping of case histories, and they will endeavor to stimulate in these men in training right ideals of medical practice. In this program they ask the active co-operation of the faculties of the medical schools and all practitioners of medicine.

Inasmuch as proper training in surgery is inseparably involved with the conduct and efficiency of hospitals, the College will seek accurate data on all matters which relate to hospitals. From time to time it will publish studies upon hospital problems, the purpose being always to be helpful to the hospitals. These publications, further, will inform recent medi-

cal graduates as to where they may seek adequate general or special training in surgery.

The College will further issue readable monographs, educational in nature, to the press, to the general public, to hospital trustees, and to the profession of medicine upon subjects of medical procedure and the whole meaning of fitness to practice surgery.

The State Commission of Tuberculosis

Met in Richmond, December 18 and 19, with Dr. Ennion G. Williams, at the headquarters of the State Health Department, and prepared their report to be submitted to the Governor and the Legislature. The commission, composed of Dr. Harry T. Marshall, University, and Messrs. I. E. Spatig, of Brunswick County, W. L. Andrews, of Roanoke, Edmund Strudwick, of Richmond, and A. T. Lincoln, of Smyth County, was appointed by the last General Assembly to compile facts and figures as to the spread of tuberculosis in Virginia and the methods in vogue for fighting the disease.

The Commission found, among other things, that more than twice as many persons died in this State of tuberculosis during 1914 as of typhoid fever, smallpox, measles, scarlet fever, diphtheria, whooping cough and malaria combined; and that the death rate among the negroes is more than twice that among the whites, about half of these being among negroes employed as domestic servants who were in a position to spread the disease more generally. Among the recommendations, they suggested the appropriation of \$40,000 for the establishment of a sanatorium for negro consumptives.

The Warren, Rappahannock and Page County (Va.) Medical Society

Held its regular meeting in Luray, the middle of December. Besides routine business and the annual election of officers, interesting papers were read by Drs. A. L. Stavely, of Washington, D. C., E. C. Stuart and Hunter McGuire, of Winchester, and J. J. Lloyd, of Catawba Sanatorium. Dr. D. M. Kipps, of Front Royal, in his presidential address, gave a history of the Society and told of its work.

The following officers were elected for the ensuing year:—President, Dr. W. L. Hudson, Luray; vice-president, Dr. R. B. Cullers, Bentonville; secretary-treasurer, Dr. Geo. H. Long, Luray. The Society adjourned to meet in Front Royal in April.

Surgeon C. P. Wertenbaker,

Of the U. S. Public Health Service, was retired from active service and placed on waiting orders, January 1, 1916, on account of his health, which has not been good for the past eighteen months. He has located at the University of Virginia—his boyhood home.

Deaths of Physicians in 1915.

The Journal of the A. M. A. announces that it reported for 1915 the deaths of 2,451 physicians in the United States and Canada, or an estimated mortality rate of 15.71 per 1,000. The largest number of deaths occurred between the ages of 61 and 70 years. The chief causes of death were senility, heart disease, cerebral hemorrhage, pneumonia, accident and nephritis, in the order named. There were 400 deaths from senility and, of 104 deaths from accident, 23 were caused by automobiles.

The Tucker Sanatorium, Inc.,

The private sanatorium of Dr. Beverley R. Tucker, of this city, formerly located at 102 and 104 East Grace Street, had its formal opening in its new quarters, Madison and Franklin Streets, December 30th, the affair proving of decided interest to numerous visitors. Located on a large lot one block from the Jefferson Hotel, the property was formerly the home of General Bradley T. Johnson. The old mansion has been completely remodelled and a three-story building with basement added. The building contains a medical gymnasium, electric light baths and an electrotherapeutic room, a massage department, and a complete hydro-therapy arrangement in charge of experienced assistants. There is a training school for nurses run in connection with the institution. The Sanatorium, with every convenience and large verandas opening on a spacious lawn with magnificent trees and shady walks, is ideally prepared to furnish rest and recuperation for nervous patients. Dr. Tucker will have his offices in the building.

Dr. J. Blair Spencer

And family, of Washington, D. C., spent the Christmas holidays with relatives in Williamsburg, Va.

Dr. Clarence Porter Jones

Of Newport News, Va., has been named an assistant surgeon on the official staff of the Sons of Veterans of the Army of Northern Virginia.

The Medical Society of D. C.,

At its annual meeting, elected the following officers:—President, Dr. E. Y. Davidson; vice-presidents, Drs. Jos. D. Rogers and I. S. Stone, and recording secretary, Dr. Henry Macatee.

Dr. J. F. Armentrout

Has moved his office and X-ray laboratory from Ferguson Building to apartment No. 430, MacBain Building, Roanoke, Va.

Dr. John F. Anderson,

Who was for a number of years connected with the Hygienic Laboratory of the U. S. Public Health Service, has become director of the Research and Biological Laboratories of E. R. Squibb & Sons, of New York.

The Tri-State Medical Association of the Carolinas and Virginia

Is to hold its annual meeting in Richmond, February 16 and 17, 1916, under the presidency of Dr. James H. McIntosh, of Charleston, S. C. Dr. Rolfe E. Hughes, of Laurens, S. C., is secretary-treasurer.

The following have been appointed by the Richmond Academy of Medicine and Surgery as the local committee of arrangements to select the place of meeting and make arrangements for the entertainment of the visitors:—Dr. J. Allison Hodges, chairman, and Drs. J. A. White, A. Murat Willis, B. H. Gray, Charles R. Robins, Robt. C. Bryan, L. T. Price, J. Garnett Nelson, Paul V. Anderson, Manfred Call, Thos. W. Murrell and Wm. F. Mercer.

Dr. and Mrs. S. M. Cottrell,

Of Louisa, Va., were visitors in Richmond shortly before Christmas.

Dr. Cary T. Grayson, U. S. N.,

President Wilson's private physician, spent the last week in December in doing research work at the New York Polyclinic Hospital.

Dr. Robert Whitehead,

Of this city, spent a portion of the Christmas holidays at his old home in Amherst.

Whose Overcoat is This?

Dr. Samuel Lile, of Lynchburg, Va., states he has just discovered that in some way he exchanged overcoats with some one during the meeting of the Medical Society of Virginia in Richmond. The coat left him is "right much worn," and has on an inside pocket the name, "L. Alder Bros. & Co., Rochester, N. Y.," while his coat, comparatively new, is a black cheviot, with the name of a Lynchburg cloth-

ing house on an inside pocket. He would be glad to locate his coat.

Dr. and Mrs. Harry W. Porter

Returned to their home in Louisa, Va., about the middle of December after a visit to St. Louis, Mo., and Lexington, Va.

Dr. Paul W. Howle

Announces the removal of his offices from 701 West Grace to 1015 West Franklin Street, this city.

Dr. Robert E. Chumbley,

Of Belspring, Va., has been elected assistant superintendent at the Southwestern State Hospital at Marion.

St. Elizabeth's Hospital,

Richmond, has not waited for the promised appropriation from the finance committee of the city council, but has itself put up signs establishing the boundaries of its hospital zone.

Dr. S. S. Simpson,

Of Clarendon, was the recent guest of friends and relatives at his old home, Manassas, Va.

Married—

Dr. Walter M. Brunet, formerly of Petersburg, but now of Lynchburg, Va., and Mrs. Emily Armstrong Brown, of Brooklyn, N. Y., December 28th.

Dr. J. Lynn Deitrick,

Of Ellerson, Va., has been appointed by Governor Stuart as one of the delegates from Hanover County, to the Road Builders' Associations in Richmond, January 18 and 19.

The Retreat for the Sick,

Richmond, has been the recipient of a bequest of \$3,000 from the family of the late John P. Branch, banker and philanthropist of this city.

Dr. M. S. Brent

Has returned to Petersburg, Va., after spending the holidays at his old home, Heathsville, Va.

Dr. Greer Baughman

Addressed the Richmond Nurses' Club, at its regular meeting December 27th.

Dr. Harvey W. Wiley

Has accepted an invitation to deliver an address before the Sphinx Club, in Lynchburg, Va., at some date to be named later, in either February or March.

"Kidney Cures" Seized.

Action against several so-called "kidney

cures" has recently been taken under the Food and Drugs Act by the United States Department of Agriculture, on the charge of falsely and fraudulently misbranding the product. Some manufacturers of kidney medicines, which contain considerable quantities of alcohol, advise their customers to abstain from all alcoholic drinks, showing in this way that they know the harmfulness of alcohol in kidney diseases, even though they use it in their own preparations. It is the opinion of the medical experts of the Department that such so-called "kidney remedies" as those recently seized are not only worthless, but actually harmful, because of the amount of alcohol which they contain.

Dr. D. N. Twyman,

Appomattox, Va., was elected senior warden of Monroe Lodge 301, A. F. and A. M., at its meeting in December.

Dr. Hubert Haywood, Jr.,

Raleigh, N. C., has been elected physician to the A. & M. College, in that city, *vice* Dr. Henry M. Tucker, deceased.

The American Association for the Study and Prevention of Infant Mortality

Elected Dr. S. McC. Hamill, Philadelphia, president; Dr. Wm. C. Woodward, Washington, president-elect; Dr. Philip Van Ingen, New York, secretary, and Miss Gertrude B. Knipp, Baltimore, executive secretary. The next annual meeting is to be held in Milwaukee.

Dr. W. A. Newman,

Manassas, Va., on December 17, entertained the members of Prince William County Medical Society at his residence.

Dr. G. T. Divers,

Buena Vista, Va., was called to Richmond, about the middle of December to be with his brother, who was ill with pneumonia.

Examination of Candidates for Assistant Surgeon.

Boards will be convened at the Bureau of Public Health Service, 3 "B" Street, S. E., Washington, D. C., and at a number of the Marine Hospitals of the Service, on Monday, January 24, 1916, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of Assistant Surgeon in the Public Health Service.

The candidate must be between 23 and 32

years of age, a graduate of a reputable medical college, and must furnish testimonials from two responsible persons as to his professional and moral character, together with a recent photograph of himself.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Passed Assistant Surgeons after twelve years' service are entitled to examination for promotion to the grade of Surgeon. Assistant Surgeons receive \$2,000, passed assistant surgeons \$2,400, surgeons \$3,000, senior surgeons \$3,500, and assistant surgeon-generals \$4,000 a year. When quarters are not provided, commutation at the rate of \$30, \$40, and \$50 a month, according to the grade, is allowed. All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty-years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitation to appear before the board of examiners, and particulars, address "Surgeon-General, Public Health Service, Washington, D. C."

Dr. Robert F. Williams,

Resident physician and lecturer at Woodberry Forest School, spent a portion of the holiday season visiting his sister in Richmond.

The American Association of Clinical Research,

At its annual meeting, elected Dr. Warren Coleman, New York, president, and re-elected Dr. James Krauss, Boston, permanent secretary.

Dr. and Mrs. Lurty N. Harris,

Of Jenningston, W. Va., spent the holiday season with relatives in Harrisonburg, Va.

Dr. Chas. U. Gravatt,

Of Port Royal, Va., a member of the State Senate, was a visitor in Richmond, the latter part of December.

Dr. H. Page Mauck

Has returned to his work at Johns Hopkins Hospital, after spending the holidays with his parents in this city.

The Death Rate

For the registration area of the United States in 1914, according to a statement recently made by the Bureau of Census, is 13.6 per 1,000 estimated population of the registration area, or the lowest rate on record. The total

number of deaths in the registration area for 1914 was 898,059. This area comprises 25 states (in one of which, North Carolina, registration was limited to municipalities which had 1,000 population or over in 1900), the District of Columbia, and 32 cities in non-registration states. The registration area for 1914 contained two-thirds of the estimated population of the United States, whereas for 1900, it included only about two-fifths of the estimated population of the United States.

Typhus Fever

Continues to rage in Mexico and many thousand victims have already been claimed. The minimum number of cases reported to the middle of December was said to be 20,000 though estimates run as high as 60,000 cases. Few homes and offices in Mexico City have not had a victim. To the middle of December, however, only thirteen cases had been registered in the American and French colonies.

Common Towel Prohibited.

Beginning October 1, 1915, the Public Health Council of West Virginia announced that the common towel could not be used in any public school in that State. Paper towels were recommended or pupils could furnish their individual towels.

Requirements for Practice.

The Rhode Island Board of Health will require that all physicians who register in that State after January 1, 1917, to have served at least one year as interne in a hospital of not less than 50 beds, and to have attended at least 10 maternity cases.

West Virginia will require that all matriculants of medical schools who propose applying for license to practice in that State, beginning with the 1916-17 session, shall give evidence of having had one year of collegiate work in addition to a four-year course in an accredited high school.

Decrease in French Mortality.

The director of medical statistics of the French army states that the mortality among the sick and wounded in hospitals is only 18 in 1,000, whereas last year it was 53 in 1,000. In peace times, the Paris hospitals show a mortality of 106 in 1,000.

For Sale— Well established medical practice, with desirable dwelling house and other buildings, on railroad in famous Shenandoah Val-

ley. Macadam Roads; collections the best; climate and social advantages unsurpassed. Will introduce successor, who must have some money. *Address*, Box 32, Rockingham, Va.

Obituary Record.

Dr. Granville T. Collins,

Of Highland Springs, Henrico County, Va., was fatally injured when his automobile was struck by a train at Laundry Crossing, on Christmas Day, and died December 26. Dr. Collins, who was fifty-seven years of age, upon graduating from the Medical College of Virginia in 1894, at once located at Highland Springs to practice and had become one of its most prominent citizens and active leaders in public affairs. He was one of the founders of the Methodist church at that place, had served on the county school board and as physician to the county poor house and, had for the past several years been chief health officer of Henrico County. His wife and three children survive him.

The following resolutions were adopted at a meeting of the Richmond Academy of Medicine and Surgery held December 27th:

Whereas, in the providence of the Almighty we are called upon to mourn the untimely death of our colleague and fellow-member of the Richmond Academy of Medicine and Surgery, Dr. G. T. Collins, we take this occasion to express our appreciation of his high character, mental attainments, and eminent qualities as a physician.

Dr. Collins graduated from the Medical College of Virginia in 1894, and passed the Medical Examining Board the same year. He immediately located in Highland Springs, where, until his death, he practiced successfully his profession. He was, at one time, associated with the University College of Medicine; had been physician to the county almshouse, and at the time of his death was secretary and executive officer of the county board of health. He was not only the leading physician in his community, but he was also active in religious affairs, being one of the founders of the local Methodist church, and was an active Mason and Odd Fellow. We have learned of his death with profound regret, and be it

Resolved, that these resolutions be spread upon the minutes of the Academy; that a copy be sent to the bereaved family; and that they be published in the daily press and the medical journals of this city.

(Signed) CHAS. R. ROBINS, *Chairman*,
W. S. BEAZLEY,
RAMON D. GARCIN,
Committee.

Dr. Thomas Lee Bondurant,

Of Garrett, Buckingham County, Va., died December 30, aged 82 years. A native of Buckingham County, he received his academic education at Hampden-Sidney and Princeton Colleges, after which he graduated in medicine from the University of Virginia in 1857 and the University of Pennsylvania in 1858. He was an assistant surgeon in the Confederate States army.

Dr. Frank Ellett Bell,

A popular young practicing physician of Wilmington, Va., died at his home, December 18, after a lingering illness. He was the son of Mr. and Mrs. A. O. Bell, of Fluvanna County, and was a young man of brilliant mind. He graduated from the Medical College of Virginia in 1908. His burial occurred on his thirty-first birthday.

Dr. Charles Ware,

A former Virginian, but for many years a practicing physician of St. Louis, died suddenly of heart trouble, December 23, while visiting at the home of his sister in Berryville, Va. He was seventy-four years of age and had graduated from the Medical College of Virginia in 1863. He was unmarried.

Dr. John Alfred Collins,

A well known North Carolina physician, died at his home in Enfield, that State, December 23, aged 79 years. His wife and daughter survive him. Dr. Collins received his medical education at Bellevue Hospital Medical College, of New York City, from which he graduated in 1869.

Mrs. Lucy Kemper Lynch,

Wife of Dr. Junius F. Lynch, a prominent physician of this State, died at her home in Norfolk, December 23, after a long illness. Mrs. Lynch was a daughter of Gen. Kemper, of the Confederacy, who, after the war, became governor of Virginia. Her husband and a daughter survive her.

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CANCER INVESTIGATIONS.*

By JOSEPH COLT BLOODGOOD, M. D., Baltimore, Md.

In my own sphere of observation there is no question that great changes have taken place in the clinical picture of diseases which we formerly saw in later stages. In spite of our increased experience and in spite of the great help from instruments of precision our diagnostic dilemmas seem to be increasing. This must be due to the fact that we are seeing things which perhaps we rarely ever saw before. Patients are seeking our advice for things that they can see and feel and for certain sensations to which in the past their ancestors paid little, if any, attention. Probably many of these signs and symptoms were associated with conditions which had a tendency to spontaneous recovery.

There is no doubt about the *disappearing tumor*. We have observed it chiefly in the breast and in the thyroid, but disappearing tumors of the abdomen, other than those due to pregnancy, have been recorded. Then there are symptoms which come and go without apparent reason. There are many diseases which have a tendency to spontaneous recovery, whether they are treated or not.

Undoubtedly in the past these disappearing tumors, the diseases which have a tendency to spontaneous recovery and the discomforting sensations which leave of themselves, have been largely responsible for the success of various methods of treatment, both within and without the medical profession. All sorts of cures have thrived on the treatment of these troubles which required no treatment.

Today we have sufficient knowledge of these

conditions to justify the statement that one who claims a cure in such instances is either a knave or a fool.

In the future, however, we are going to be called upon to differentiate these disappearing tumors and these diseases which spontaneously recover, from the early stage of lesions which, if they are not already cancer, will probably later develop into cancer.

Our recent investigation and more accurate records, our accumulating experience and deeper study—all tend to prove the statement which has been made again and again, and which is: *The beginnings of things that are not cancer and will never be cancer are apparently not at all different from the things that are cancer, or will later be cancer.*

Uterus.—The irregularities of menstrual discharge before menopause and the appearance of bleeding after the menopause are in the beginning not a bit different in the simple conditions which spontaneously recover, nor in the benign lesions, such as papilloma, which may later become malignant, nor in the early cancer. In this early stage there is but one method of differentiation—the finding of a definite simple cause to explain the bleeding, or the microscopic examination of tissue cured by one having expert knowledge and experience.

Breast.—The lump which a woman feels in her breast is as much the same kind of a lump to her finger as it is in the majority of cases to the palpating sense of the most expert surgeon. The solid and cystic tumors of the breast, the adenoma, the adenocarcinoma—all feel very much alike in the beginning. When there is only a lump to be made out no one can really tell the nature of that lump by feeling it a short time after it has been discovered by the patient. In the great majority of cases the decision must be made by the surgeon on the

*Read before the Medical Society of Virginia at its forty-sixth annual meeting at Richmond, October 26-29, 1915.

operating table by cutting down upon the lump, inspecting it and, if necessary, making a frozen section.

In some cases the woman feels a lump, but the surgeon does not. He surely cannot operate for a lump that he cannot feel, and he must not be too much influenced by what the patient tells him.

It is my plan now in early cases to examine both breasts carefully before the history is taken and without allowing the patient to tell me in which breast she thinks she feels the lump. Your sense of palpation is therefore uninfluenced by any suggestion from the patient.

Again, there may be lumps which both the patient and the surgeon feel, but of such an indefinite character that experience teaches us that they are not tumors and that operation is not indicated. As a rule these lumps are multiple in one or both breasts. The one the patient feels is usually the one that is painful, but it may be in a different area or in a different breast from the one which the surgeon would pick out as the most distinctive.

These breast conditions, in which operation is not indicated and in which there is no danger from delay, will undoubtedly increase in number as women are educated to seek advice in the beginning of things.

In regard to the breast, the symptoms which attract the attention of women are pain, lump, discharge from the nipple, retraction of the nipple, ulceration of the nipple, and a lump in the axilla. Now, if the woman heeds these warnings at once and seeks your advice at once, how are you going to differentiate the patients on whom operations are not indicated, because this group is getting to be a large one? A mistake in this stage is a very serious one, because proper treatment should give the best result—even over 85 per cent.—if the lump is a fully developed cancer.

This differentiation cannot be made complete in a few sentences, but my investigations would lead me to say that the following rules are most important; and if these rules are followed few mistakes will be made:

If the surgeon feels a single lump and the woman is over twenty-five, the operation should be done at once. The object of this operation is not so much to get at the benign lesion as to expose cancer at a period in which

the probabilities of a cure are greatest. For this reason such an operation should be done in a hospital, the patient should be prepared for the complete operation for cancer, and no surgeon should undertake this operation unless he is prepared to make the differential diagnosis. It is the consensus of opinion of all surgeons that in all doubtful tumors the operation for cancer should be performed.

If a lump *cannot be felt*, pain alone, or discharge from the nipple alone are not indications for operation, and often disappear without the later appearance of a lump. However, retraction of the nipple, unless it appears during some lactation irregularity, should be looked upon as a sign of cancer, even if no tumor is felt. In my experience, the operation should be performed without exploring the breast.

In ulceration of, or about, the nipple, we should always think of Paget's disease, which is really cancer of the breast and should be treated as such. When the woman is nursing, fissures and ulcers have no such significance; if she is not nursing we must exclude Paget's disease at once. Syphilis is possible. In such cases the Wassermann reaction should be positive, and the ulceration should heal rapidly under local and general treatment. In some cases the ulceration is simply due to dirt, and rapidly disappears after the copious use of soap and water. In the majority of cases of this kind the nipples are congenitally depressed and are not kept clean by the ordinary methods.

In the ultimate result investigation which is going on in the Surgical Pathological Laboratory of the Johns Hopkins Hospital, we are tremendously stimulated in our rather irksome task by the definite signs of a change for the better. Our number of breast cases is so large and our studies in this group have been so complete from the beginning of the Hospital in 1889 that we are better able to use this group for purposes of demonstration.

In previous communications we have shown that in the five years between 1908 and 1913 the inoperable group of breast tumors has fallen from 27 to 18 per cent., while the five-year cures increased from 35 to 42 per cent. The figures for 1915 which are not yet absolutely concluded show an apparent greater improvement in the last two years over the pre-

vious five years than the previous five years did over the preceding eighteen years.

In brief, these investigations show that the number of women who, after careful examination, are advised not to be operated on for their early symptoms are increasing.

Of the single lumps explored the per cent. of benign tumors is greatly increased—it is now apparently over fifty per cent.

The number of early adenocarcinoma in which the probabilities of a cure in this stage are over one hundred per cent., are on a most definite increase.

We are also seeing a great many more scirrhous and medullary carcinomas in which there are preserved small and large areas of adenocarcinoma.

There is absolutely no question that among the cases recorded in the laboratory there is a distinct decrease in the number of fully developed cancers of the scirrhous and medullary type, and in the inoperable cancers of the breast. The per cent. of five-year cures has again increased. There seems to be but one explanation for this progress and that is early intervention.

Apparently there has been no improvement in the surgery; in fact, it seems difficult to imagine how one could improve the principles of the Halstead operation. This operation may be varied in some unessential features, but in my experience these features have no relation whatever upon the ultimate cure nor the better function of the arm.

I cannot but mention here that there may be a difference of opinion in the microscopic diagnosis of border-line breast tumors among the very best pathologists. I have submitted fifty such border-line cases to over thirty pathologists in this country. All of them do not agree on a single case. But as far as I can make out this disagreement would have had no deleterious effects on the patient, because in all of these fifty cases the patients were free from evidence of recurrence in spite of what operation had been done—removal of the lump, or of the breast, or the complete operation for cancer. I shall dwell on these cases in a separate paper.

In the great majority of cases the surgeon can decide what is best to do at the exploratory incision, with or without the frozen section, and if all things are carefully considered, no

surgeon should make the mistake of performing an incomplete operation for cancer of the breast. In about 10 per cent. of the cases he will perform the complete operation for cancer in border-line lesions which some pathologists will call cancer, and others will not. But these patients fortunately will not die of cancer. (*Penn. Med. Jour.*, July, 1915; Results of the Recent Propaganda of Cancer Control).

Abdomen.—The so-called “indigestion,” the vague abdominal discomfort, the sudden appearance of constipation or diarrhoea may be the symptoms of almost anything from nothing to the first expression of an almost hopeless cancer. If we are to educate the public to answer these warnings, we must be prepared for a slight avalanche of patients in which there is nothing serious, in which operation is not indicated and which, as a matter of fact, get well of themselves. How are we to differentiate this large group? If the patients come at once, in a number of cases, after the ordinary history and examination, we can say: “Keep quiet, eat moderately, and if the symptoms do not pass away, return for a more careful examination.” In other cases the symptoms will be sufficient to justify a more careful examination. This investigation consists of a careful clinical record, X-ray studies and certain examinations; in gastric lesions, of the chemistry of the gastric contents and the residuum; rectal examinations with the proctoscope; pelvic examinations in women; the use of the cystoscope and catheterization of the ureters. I do not believe we are prepared as yet to discuss the relative value of the different examinations. It is a mistake to neglect any, and if one has them all properly recorded, it is very difficult to know which helps most. Then, again, the number of these early cases so carefully investigated is not sufficiently large to draw definite conclusions. There is no doubt that when patients wait in the presence of such symptoms, their mistake may be fatal. However, if they come to us in the earliest stage and we make a mistake in the interpretation in the history or examination, our mistake is rarely, if ever, fatal to the patient.

From my own investigation, I cannot as yet make the same statements in regard to the abdomen as I have about lesions of the breast, lip and tongue. But in a future paper I trust to be able to give some very interesting new

data with regard to the stomach, colon and gall-bladder.

In a recent article (*Jour. Amer. Med. Assoc.*, June 19, 1915, vol. lxiv, p. 2031) I have shown that in the records of the Surgical Pathological Laboratory of the Johns Hopkins Hospital the per cent. of operable stomach cancers has increased in the past five years from 16 to 39 per cent.

Figures in regard to the lip, tongue, skin and bone will be given in another paper. However, our investigations show the same favorable progress, no matter where the local lesion may be situated. The number of patients who seek our advice for simple conditions having no relation to cancer are increasing; the number of precancerous local lesions on the skin and mucous membrane which can be healed without operation by removing the cause is distinctly on the increase, especially leukoplakia and stomatitis from smoking and lesions due to bad teeth; simple burns on the lips from smoking are on the increase. Again, the local lesions which must be excised, because they cannot be differentiated from cancer, are decidedly on the increase, and, perhaps, most gratifying of all, cancer in its earliest stages is being seen, recognized and properly treated with increasing frequency each month. When I say cancer, I mean a local lesion in which microscopically no pathologists will disagree as to the diagnosis.

At the same time, we must recognize the possible danger in this new condition with which we are confronted.

Individuals with a cure for cancer, both in and out of the profession, could easily tell every individual that he or she has cancer. These patients think that they have cancer, the majority of them have signs and symptoms of things that might be cancer, and it requires careful investigation to differentiate.

In what great danger would these people be if they fell into the hands of an enthusiast or quack with a cancer cure. Probably no harm would be done to those who did not have cancer, but precious time would be lost in those who had early cancer, or lesions with a tendency to become cancer, and, if the so-called cancer cure were at all irritating to the lesion, the danger would be greatly increased.

While the investigations in this laboratory have shown the progress already outlined, we

have also observed and recorded the effect of so-called cancer cures and the number of these cases is not, especially in the last eighteen months, relatively small. This will be considered in a separate paper.

904 North Charles Street.

TREATMENT OF CANCER OF THE TONGUE AND MOUTH.*

By J. SHELTON HORSLEY, M. D., Richmond, Va.

The treatment of cancer of the tongue and mouth, like the treatment of cancer in other regions, must depend upon the destruction of the malignant cells by local remedies. The ideal method of injecting a serum, a chemical, or a vaccine, which shall inhibit the growth of the cancer and cause it to be absorbed has not been attained. Some of the lower animals, particularly rats and mice, react to cancer much as man does, so extensive experiments of immunization against cancer have been performed on mice. These experiments have thrown much light on the growth of cancer in man. Briefly, the experimental treatment of cancer in the lower animals may be divided into two classes: first, the serum treatment, in which antibodies are supposed to be introduced directly; and, second, vaccination in which antibodies are supposed to be constructed within the body of the host. Both of these methods have failed to produce results that can give much encouragement to the use of similar methods clinically. The injection of chemicals, such as preparations of selenium, colloidal copper, etc., has also failed, and we must come back to the local treatment of cancer as the chief, if not the only, means of salvation.

The treatment of cancer in any region must always be based to a greater or less extent upon the anatomy of the region involved. Some organs or tissues may be excised without danger. Others are vital or close to vital structures. Some tissues are soft, succulent, and richly supplied with lymphatics, while others may be dense and have a poor lymphatic supply. Naturally, a malignant growth of the same virulence can be circumscribed more readily within tissues of the latter class, whereas the indications for extensive removal and the prognosis for recurrence are greater in

*Read before the Medical Society of Virginia at its forty-sixth annual meeting at Richmond, October 26-29, 1915.

tissues that are soft and richly supplied with lymphatics.

The general proposition holds in the treatment of cancer of the tongue and mouth that wherever possible the malignant growth should be excised in one mass. It is the following out of this principle that has produced such excellent results in modern operations for cancer of the breast as compared with the older method of treatment. It is advisable, as has been frequently pointed out by Bloodgood, that an operator who does much cancer work shall have sufficient laboratory experience to be able to make a microscopic diagnosis of the tissues he removes. Other things being equal, that surgeon is best fitted to deal with cancer who follows tumors he removes in the laboratory, who gets a mental picture of the structure of the tissues and the relation of the cells and can consequently recall this mental image when at the operating table he meets tissue that looks and feels like the tumor he examined under the microscope.

We must recognize that cancer of the tongue and mouth is in a region which is not only succulent and richly supplied with lymphatics, but where the mucous membrane is thin and offers much less resistance to the inroads of cancer than does the skin on the face. It is this probably more than any difference in virulence that causes cancer of the mouth and tongue to pursue a rapid and fatal course, whereas a cancer microscopically of the same type may exist on the skin of the face for years apparently stationary in growth.

During the past four years I have had a series of eight cases of squamous cell cancer involving the tongue, or mucous membrane of the mouth. In one of these cases the mucous membrane from which the cancer originated was probably included in a dermoid tumor in the submaxillary gland. This series includes all the cases of this nature that I have operated upon during this period. Malignant growths of the bone, as sarcoma, or epulis, are, of course, not included, nor are any doubtful or very early lesions in this list. They are all advanced cases; seven are late cases with either pronounced involvement of the glands of the neck, or marked recurrence after some previous operation, or incision, and three had both. All were white, seven male and one

female. The ages varied from forty-six to eighty-one years at the time of operation.

Methods of Treatment.—When an excision of cancerous tissue was done it was removed in one mass whenever possible. The glands of the neck were removed in block dissection, clearing one or both submaxillary areas, or doing the Crile operation of beginning at the clavicle and dissecting up the sternomastoid muscle, the internal jugular vein, and the neighboring fat, fascia, and glands in one mass to the mastoid process. At the upper part of the neck the contents of the submaxillary fossa should be included in this mass if this fossa has not previously been cleared out. This operation of Crile was done three times. On one other occasion the dissection was carried out as described except the internal jugular was left, for the complete Crile operation had been done on the other side of the neck and as both external jugulars had been severed, it was thought too risky to remove the remaining jugular. In four patients the block dissection of the submaxillary space was done. In one patient (case 2) this was done on both sides and later the Crile operation was performed on the left side for a recurrence in the glands farther down in the neck. This patient has been well and without recurrence for two years and nine months since the last operation. When possible to do so, the primary growth was removed with a cautery, or the surface left after excision with the knife was thoroughly cauterized. The Paquelin cautery was not used about the large vessels in the neck, but in most instances these wounds were swabbed out with pure carbolic followed by alcohol. During the process of dissection, the wound was frequently flushed with salt solution in order to wash away any cancer cells that may have been spilled. The carbolic and alcohol are used not only for the same purpose but to destroy loose cancer cells and to close the lymphatics.

Anesthesia.—Anesthesia in these cases has been general anesthesia by inhalation or by rectum, or local anesthesia under cocaine or novocaine. Rectal anesthesia according to the method of Gwathmey has been used in the later cases whenever a general anesthetic was required. Its advantages are very obvious and have been pointed out in a paper by my associate, Dr. Arthur S. Brinkley, on the programme for this meeting.

The operator has full freedom without the interference of a mask, and the cautery can be used without danger of ignition. This method of anesthesia, particularly in this type of cases, has in our experience been very satisfactory. It is given in the room and there is none of the fear of suffocation that sometimes follows inhalation of an anesthetic in patients with lesions about the mouth, even when given by most expert hands.

Percy Cautery.—The Percy cautery has been used in two of the worst cases of this series. This cautery, which will develop a low heat under electricity, was devised primarily for the treatment of cancer of the uterus, and it has so far been used chiefly for this purpose. In fact, as far as I know, these two cases are the first instances in which the Percy cautery has been used in cancer of the mouth. Naturally, it cannot be applied to the average case because the continued heat in the mouth might not only destroy the surrounding healthy tissues, but the aspiration of hot air for a half hour or more might be harmful. In late recurrent cases where, after extensive excision, there is an external wound through which the Percy cautery can be inserted, it is admirable, and in my judgment superior to even a block dissection in this type of cases. In a patient who had been pronounced practically hopeless by one of the best northern surgeons, the last of five applications was made only two weeks ago, and, while, of course, he is still in great danger of recurrence, there is yet a chance for his permanent recovery. The cauterization should be continued for at least thirty minutes. In one instance I used it for seventy minutes. If the tissues are hard from old scar tissue following previous operations, the Percy cautery is applied for ten minutes, then the involved tissue is excised and the Percy cautery applied to the raw surface for thirty minutes. In this way much greater penetration can be had than by any other method, and in this type of cases some hope is given, when otherwise there could be no hope.

Results.—Of these eight patients, in seven of whom there was either recurrence from previous operation or incision or else marked involvement of the glands of the neck, four are living today. In three of these eight patients there was both a recurrence following a previous operation or incision and marked in-

volvement of the glands of the neck. Of the four patients who are now living, three are in good health and have been without signs of recurrence for thirteen months, two years and nine months, and three years and eleven months respectively. One had a recurrence for which he was operated upon about two weeks ago. At present he is doing well and has a chance for permanent recovery. Of the four who are dead, two died of recurrence, one died suddenly from stoppage of the heart, though leaving the table in good condition, an hour after operation for plastic closure of the defect in the mouth. There was apparently no recurrence in this case, but a small lump containing some necrotic material was found under the chin. This was excised and a frozen section made which showed no cancer, but celloidin sections examined ten days later and made from different portions of the nodule showed distinct cancer. The mass was not more than one-half inch in diameter and apparently well localized. This patient died with a recurrence but not because of it. The fourth death was due to some pulmonary lesion. The cause of death was not definitely ascertained, as no post-mortem was held. Dr. L. F. Barker, of Johns Hopkins, examined the patient a few weeks before his death and found no evidence of cancer, nor could I find any sign of cancer when I examined him about the same time. His family physician, however, thinks that death was due to cancer though, as no post-mortem was held, central pneumonia due to difficulty of expectoration following extensive operations on both sides of his neck cannot be excluded.

To sum up the results of the four patients who are dead, two died of recurrence, one died with a small recurrence present which was not the cause of death, and one of a pulmonary lesion of an undetermined nature. Four patients are now living, one with a recurrence within the last few weeks which has been removed by operation, and three are well and without recurrence at periods varying from thirteen months to three years and eleven months.

A classification of this series from another standpoint is interesting. Many lives are needlessly sacrificed by the failure to apply well known pathological facts of cancer to the clinical management of this disease. Blood-

good and others have often called attention to the disastrous results that follow the practice of excising a piece of the growth for microscopic examination and operating a few days later. Such a practice always tends to spread the cancer through the freshly opened lymphatics. If microscopic examination is necessary, it should be made with frozen section after the patient is prepared for operation, which should follow immediately if the microscope shows cancer. The "popping out" of a cancerous gland in the neck has also many victims. The region of the neck should be cleared by a block dissection, including fat, fascia, glands and muscle in one mass. This series again demonstrates the disastrous effects of preliminary incision or of incomplete excision followed some days later by radical operation. Of the four deaths and one patient with a recent recurrence, three had had a preliminary incision for diagnostic purposes, the operation being done several days later, and the other two had incomplete operations which were followed by rapid recurrence. In one of these latter patients upon whom I operated, the cancer originated probably from a dermoid of the submaxillary gland containing mucosa and the diagnosis was tuberculosis. Microscopic examination showed cells apparently identical with those of many cancers from the mouth. This patient gave a history of having had a lump in this region for fifteen years. He was about forty years of age at the time of operation. He responded positively to the von Pirquet test for tuberculosis. The first operation was for tuberculosis and was consequently less complete than it should have been. The recurrence was operated upon more radically, but a second recurrence was followed shortly by death.

On the other hand, of the three patients who are now well and free from recurrence from one year to nearly four years, the first operation was done by me in two of these cases, and in the third patient a recurrence followed the application of a paste. While a paste is often unsatisfactory so far as cure is concerned, it has the virtue of closing the lymphatics like a cauterly instead of leaving them open for the absorption of the cancer cells, as is the case when an incision is made up into the cancerous tissue, or an incomplete operation is done. In none of these

three patients that are now living and have been free from recurrence for sometime was there a preliminary incision made, while in the remaining five, four of whom are now dead and one has had a recent recurrence, a preliminary incision, or an incomplete operation, was done in each instance at least several days before the radical operation.

617 West Grace Street.

RECENT ADVANCES IN THE DIAGNOSIS AND SPECIFIC TREATMENT OF LOBAR PNEUMONIA.

By FREDERIC M. HANES, M. D., Richmond, Va.
Professor of Therapeutics, Medical College of Virginia.

Acute lobar pneumonia is the most important infectious disease with which the physician has to deal, for, as a course of death, it leads all other acute infections. Dramatically rapid in its onset, the disease runs its course so quickly that the usual symptomatic treatment is pitifully futile. If by treatment we mean the use of therapeutic remedies which will favorably influence the termination of a disease, the physician is indeed optimistic who claims to *treat* pneumonia at all. Pneumonia is nursed, not treated.

If this is true, it must mean either that pneumonia is an impossible disease to treat or that a successful treatment has not been devised. Practically all recent advances in specific therapy have been in the realm of infectious diseases, and since pneumonia might well be taken as the prototype of an acute infectious disease, there can certainly, *a priori*, be no grounds for therapeutic despair. There is, on the other hand, every reason to believe that pneumonia can be successfully treated specifically, and in this communication the methods which have been devised for the specific, in contradistinction to the symptomatic treatment of pneumonia, will be briefly reviewed.

These methods are purely immunological and hence demand for their successful application trained bacteriological assistance. Perhaps it will be asserted that they are too complicated for practical application, but the same might be said of the treatment of appendicitis. The practicing physician calls immediately for assistance in the face of surgical danger; then why should a medical emergency be viewed differently? The Wassermann test is the most complex immunological reaction with which

we are familiar and yet it is employed very widely today in general medical practice. The method of serum-treatment of pneumonia, as developed at the Rockefeller Hospital, is no more difficult or complicated than is the serum diagnosis of syphilis and its treatment with salvarsan.

The principles of the treatment are simple and demand only that an exact bacteriologic diagnosis of the type of pneumococcus causing the pneumonia be established. This is necessary, because it has been proven beyond question that acute lobar pneumonia may be caused by several different strains of pneumococci, and a serum which is potent against one strain is absolutely impotent against the others. Cole, Dochez and others have shown that there are four groups, or strains, of pneumococci which cause pneumonia in man. Studying 145 cases of lobar pneumonia, they found that Group I caused 38 per cent., Group II 28 per cent., Group III (pneumococcus mucosus) 10 per cent., and Group IV 22 per cent. Having grouped their organisms by means of immunological reactions, they immunized horses against Groups I and II, and it is these anti-pneumococcic horse-sera that are used to establish a passive immunity in patients suffering with pneumonia.

It was found impossible to develop efficient anti-sera against Groups III and IV, but Group III (pneumococcus mucosus) causes only about 10 per cent. of pneumonia and Group IV produces a type of pneumonia which is as a rule not at all severe, so that the two sera obtained are sufficient for the treatment of nearly all severe types of the disease. This is well shown by the mortality caused by the various groups. At the Rockefeller Hospital, Groups I and II caused nearly three-fourths of all deaths from pneumonia, whereas Group IV, composed of organisms of low virulence, caused only one death. From statistical results such as these we see that by studying our cases of pneumonia from the standpoint of the exact organism causing the infection we obtain data for prognosis as well as treatment.

In the identification of the organism causing a given case of pneumonia one proceeds as follows: A specimen of sputum raised from the patient's lungs is washed several times in sterile saline solution, emulsified, and about 1cc. injected into the peritoneal cavity of a

white mouse. After twelve hours the mouse becomes very sick and "droopy" in appearance, and if a drop of peritoneal fluid, obtained with a capillary pipette, be examined, myriads of pneumococci are found. The mouse is now killed and the peritoneal cavity carefully washed several times with salt solution. The several washings are centrifugalized, and a sufficient number of pneumococci thus obtained to form a fairly dense suspension with salt solution. Parts of this suspension are mixed in equal quantity with each of the immune-sera I and II, as obtained from horses, and the tubes are incubated at 37° for thirty minutes or longer. If the pneumococcus suspension is agglutinated by serum I or II, the identification is made and treatment is begun with the serum indicated.

The pneumococcus mucosus (Group III), is easily distinguished from other organisms by the very tenacious mucoid exudate produced in the mouse's peritoneum, and with this organism excluded, if no agglutination results in either the Group I or Group II tube, the organism is diagnosed by exclusion as belonging to Group IV. Considering the complexity of the problem involved, the technique of identifying exactly the infecting organism in pneumonia is seen to be remarkably simple.

Having arrived at an exact bacteriologic diagnosis by the means described, the patient is given from 50 to 75 c.c. of the serum indicated. The technique is exactly that of salvarsan administration. Here, as in all serum treatment, it is wise to inject a small amount of serum hypodermically an hour or two preceding the first intravenous administration as a test for serum hyper-sensitiveness. A second treatment with from 50 to 75 cc. of serum should be given within six hours, for animal experimentation, as well as clinical experience, has shown that large, frequent doses of serum are necessary to maintain the desired concentration of anti-bodies in the blood. Further treatment becomes a matter of clinical judgment. Some cases do excellently with two injections, but as much as 700 cc. have been used in the treatment of one case.

Patients treated with immune-serum feel no ill effects referable to the serum; indeed, they almost invariably experience an alleviation of their distress, and symptoms of intoxication diminish. Sleep is frequently induced where

a restless insomnia has prevailed. When treatment is begun early the lung lesions remain stationary, as a rule, but there is no demonstrable acceleration of resolution. The temperature tends to fall by lysis, though true crises not infrequently follow the serum injections.

The most striking evidence of the beneficial effect of serum therapy is seen in the rapid sterilization of the blood. Clinicians have long known that severe septicemia in pneumonia is of very somber significance, and that a large proportion of fatal pneumonia cases develop a septicemia towards the end. The clinical difference in the state of a patient without septicemia and in that of one with severe blood infection is sufficient to impress upon us its grave danger. *Experience in the serum treatment of pneumonia has proven conclusively that one large dose of active specific immune-serum given intravenously is sufficient absolutely to sterilize the blood.* It likewise has been found that serum treatment prevents the development of septicemia. In ten cases at the Rockefeller Hospital, from which pneumococci were cultured from the blood before treatment, the blood was constantly rendered sterile by one serum injection. The importance of this finding cannot be over-estimated. Dochez has shown, furthermore, that following the intravenous injection of immune-serum, the protective power of the patient's blood for mice rises very considerably, reaching a higher level than it has been found to do in the natural course of pneumonia.

It must be obvious from what has been said that recent researches on pneumonia have utterly changed our viewpoint in regard to this disease. We are no longer satisfied with the diagnosis "pneumonia" any more than we should be satisfied with the diagnosis of "fever" which made no attempt to differentiate between typhoid, malaria or other acute infections. Specific treatment is impossible in pneumonia in the absence of a specific diagnosis.

Lobar pneumonia, when specifically diagnosed and treated, is a curable disease. Here, as in diphtheria, it is of the utmost importance that the immune-serum be used as soon as possible. It is obviously unfair to pursue "expectant treatment" until the event expected is imminent before resorting to specific therapy.

No surgeon would be willing to be judged by his operative record upon appendicitis cases that had been patiently observed until general peritonitis developed before he was called upon to operate. And yet we are inclined to make demands just as unreasonable upon serum-treatment. The death rate in diphtheria rises enormously each day that specific serum is withheld, and if this is true of an antitoxic serum, how much more harmful must delay be in dealing with an anti-bacterial serum. In the one instance we attempt to neutralize an inanimate toxin; in the other, to rid the body of living, growing organisms.

The sera which are being prepared at present at the Rockefeller Hospital are very potent. In the cases which I have studied within the past two months the agglutinating powers of these sera in vitro has been truly remarkable. If one adds serum I, for example, to an emulsion of pneumococcus I, obtained from the peritoneum of an infected mouse, agglutination results immediately with almost the rapidity of a chemical precipitation. Bull has shown recently that this agglutinating power of the serum plays a considerable part in its bactericidal action, preparing the organisms in the blood stream for phagocytic ingestion.

Pneumonia is a disease of such frequency and fatality that no physician should be uninformed of the splendid work which has been done by research workers toward its control. The specific bacterial diagnosis is helpful in prognosis, and for the first time gives the physician a true insight into the nature of this formidable disease.

403 East Franklin Street.

VACCINES—THEIR VALUE AND CLINICAL APPLICATION.*

By W. A. SHEPHERD, A. B., M. D., Richmond, Va.

The word "vaccine," derived from the Latin word meaning a cow, owes its derivation to the well-known fact that, historically, the first material ever used for vaccination was obtained from the lesions of cow-pox. By extension, the term has come to designate living or dead bacteria or virus administered one way or another for immunizing purposes. Some confusion has arisen concerning the term ap-

*Read before the Medical Society of Virginia at its forty-six annual meeting at Richmond, October 26-29, 1915.

plied to material employed for the artificial production of immunity by vaccination. The term "bacterial vaccines" is more specific as designating the nature of the material referred to and should be employed whenever reference is made to a vaccine consisting of dead or living bacteria, and is the sense in which the term is used in this paper. The term *bacterin*, as a synonym for the preceding, is less acceptable because of the fact that it would seem by association to refer to some product or extract *derived from* bacteria. Also, it does not seem to be clear in the minds of all as to just what constitutes the difference between an immunizing serum and a vaccine. It may, therefore, not be out of place to draw the distinction at this point. An immunizing serum is derived from the blood of an animal that itself has been immunized to a certain organism. The injection of such a serum into another animal may induce a *passive* immunity in that animal. A bacterial *vaccine* consists of the living or dead bodies of micro-organisms prepared for injection into the animal body with the purpose in view of creating in that animal body an *active* immunity. A *sensitized vaccine* is composed of micro-organisms which, as a part of their preparation, are subjected *in vitro* to the sensitizing action of the serum of an animal that has been immunized to the given organism, thus rendering such a vaccine more readily and easily broken up when injected into the healthy tissues of another animal. An *auto-genous* vaccine, it is perhaps hardly worth while to state, is one, the material for which is furnished from a pathological process resident in the body of the animal for which the vaccine is intended, while *stock vaccines* are those made from strains of organisms of heterogeneous origin.

Auto-Sensitized Vaccines.—Murphy has lately advanced the theory, based upon Rose-now's experiments on the transmutations of bacteria, that organisms intended for auto-genous vaccines afford a more specific and efficacious vaccine if grown on the patient's own blood serum. He holds that this is one reason why vaccine therapy has not been more successful and claims for this method in his clinic much more satisfactory results.

Without going into an elaborate consideration of the question of immunity, it may be stated that the therapeutic and prophylactic

application of vaccines rests upon the postulate that the body cells of an animal may be stimulated to produce anti-bodies against a given micro-organism, when that organism gains entrance into or is introduced into the animal's body. By the injection of a vaccine into the healthy tissues of an animal, increased amounts of antibodies are formed thus adding to antibodies that may have been already formed in response to the actual presence of the bacterial disease; in other words, exploiting the healthy tissues in behalf of the diseased ones. The response on the part of the body cells to the artificial introduction of the bacterial cell results in an increase of opsonins and the consequent enhancement of phagocytic activity on the part of the leucocytes, or the production of lysin or of agglutinin. Through the aid of one or all of these antibodies, the victory over the original bacterial invasion may be won.

In this paper, it is not intended to enter into an account of smallpox vaccination, tuberculin treatment, or immunization against rabies. With this understanding, we may pass on to the question of employment of vaccines, first for

PROPHYLACTIC PURPOSES.

Typhoid.—Under this heading, typhoid prophylaxis should probably rank first, at least in this country. The prevention of typhoid by vaccination is now a well-recognized, dependable procedure and deserves to be far more generally practiced. It is simple of application, inexpensive, causes very slight discomfort to the patient and is of proven efficacy. Three doses should be given, the first containing five hundred million organisms and, at intervals of ten days, two additional doses of one billion each. After thoroughly shaking the vaccine, inoculations are made subcutaneously with a sterile syringe after a brief treatment of the point of inoculation with tincture of iodine. A cathartic the day before is advisable but not necessary. The time chosen for inoculation should be in the late afternoon so that the reaction may occur during the night. The reaction is apt to be more severe during the menstrual period. There is distinct disadvantage in deep injections on account of increased pain and likelihood of greater intensity of general and local reaction.

Occasionally there is some edema and pain

but this is the exception. The reaction consists, as a rule, in slight reddening, a little swelling at the point of inoculation, which disappears in about two days. The general reaction may manifest itself as a headache or general malaise, or aching of the limbs and back; rarely chills with fever, or nausea and vomiting. In the absence of any marked general reaction, the individual may attend to his usual occupation.

As to the value of this procedure, we need refer only to the excellent results obtained in our army since 1911 (2 cases in 20,000 men at San Antonio when there were 49 cases with 19 deaths among civilians). In opposition to the opinion formerly held that inoculation during an epidemic would prove harmful, Leishman and Russell as well as others of wide experience hold that such a view is incorrect and that inoculation should be practiced during an epidemic. The duration of the immunity conferred by three inoculations as given above is considered to be on an average about two years, but, even after four or five years, the inoculated show a lower rate of incidence than do the uninoculated.

Prophylaxis against *cholera* and *plague* is attainable by inoculations similar to those employed in the case of typhoid. The efficacy of the procedure has been abundantly proven during the European war.

Much work remains to be done on the prophylaxis of other bacterial diseases, but the field is very promising and already considerable has been accomplished in the direction of preventing cerebrospinal meningitis, dysentery, whooping-cough and scarlet fever.

THERAPEUTIC APPLICATION OF VACCINES.

Perhaps the most brilliant results obtained in the therapeutic application of vaccines have been in cases of subacute localized infections due to pyogenic organisms. For instance, it may be justly claimed that scarcely any other therapeutic procedure may be expected to give more entirely satisfactory results than a case of furunculosis carefully and skilfully treated with autogenous vaccines after the removal of the predisposing factors. Staphylococcus is usually the causative organism. The initial dose of the staphylococcus vaccine should not, as a rule, be less than one hundred million for an adult. This may be increased in subsequent inoculations to five hundred mil-

lion to one billion according to the clinical indications. The injections should be repeated every five to ten days. If the injections are having the desired effect, there will appear around the abscesses an area of hyperemia with slight pain and swelling. Such a response as this should always be attained and the dose should always be sufficient to produce it. Simultaneously with the inoculation of the vaccine, local drainage and, if necessary, scraping of the wall of the abscesses should be employed. The use of strong or moderately strong antiseptics in subacute abscess does more harm than good. In the first place, the bacteria are too deeply buried in the tissues of the abscess wall to be reached by the antiseptic solution. Further, the tissues are devitalized by the action of the antiseptic and are thus rendered more susceptible to the action of the remaining bacteria. The use of ordinary salt solution is better than antiseptics. The constitutional symptoms indicative of an adequate dose of staphylococcus vaccine may be headache, slight rise of temperature and slight increase of pulse rate, together with perhaps appreciable increase of the purulent discharge. *Acute* abscess has also been treated successfully with vaccines. Here the initial dose and subsequent doses should be relatively small and the interval shortened to every third or fourth day. After a cure is established in any case, recurrence of infection should be guarded against by prophylactic injection of a few doses of five hundred million at week intervals followed by two or three injections of the same strength at monthly intervals.

Mastitis or cellulitis or abscess of the breast is usually due to staphylococci though sometimes to streptococci. In the latter case it assumes an interstitial form and there is no clotting of the milk. Either variety is fairly amenable to vaccine treatment. The application of ointments and hot fomentations will help only so far as they aid in bringing more readily to the part phagocytes and the antibodies naturally circulating in the serum or produced as a result of the vaccine injections.

Erysipelas, which is due to streptococcus longus, is sometimes benefited by vaccines though immediate curative results are not often obtained. However, the patient is generally rendered more comfortable by the administration of vaccines, the fever is lowered and its

period shortened, while the incidence of severe complications is reduced. In severe cases, the initial dose of the vaccine should be five million. If improvement follows this initial dose, five million should be given every other day. In mild cases, ten million should be given in a like manner.

Septicemia.—There is a conflict of opinion as to what may be claimed for vaccines in generalized infections such as septicemia. Some authorities assert that to employ vaccines is merely to add fuel to the flames, while others claim excellent results. In this condition, little else can be done for the patient by other than general supportive measures and it is unfortunate that bacterial therapy has here been so often disappointing. This much may be said, however, that the bacteria circulating in the blood stream do not excite the production of antibodies, while those in the form of vaccines, injected into the healthy subcutaneous tissues, do and, for this reason, we may yet hope for some method that will give results. Autogenous vaccines should obviously hold out the best hope of success in this condition. Doses ranging from ten to twenty-five million of streptococcus, pneumococcus, or gonococcus may be administered, while twice this strength should be used in septicemias due to influenza bacillus, staphylococcus or pneumococcus. The temperature, pulse and general condition of the patient should be the guide as to the interval between injections, which, as a rule, should be given on a falling temperature, while other measures are taken in the meantime to eliminate toxin by the skin, kidney and bowels.

In *ulcerative endocarditis*, which so often attends or is preceded by a septicemia, we have a difficult problem from the standpoint of vaccine therapy. Although bathed in blood, the actual blood supply to the tissues involved is meagre and the lesions inaccessible to surgical procedure. It is therefore difficult to understand how anything could be hoped for from vaccines. However, if the process has not extended over too long a period, some hope is held out by bacterial therapy, though here again clinical reports are conflicting. Gonococcus, pneumococcus, streptococcus and staphylococcus are the organisms commonly encountered in blood cultures from cases of endo-

carditis. The dosage and intervals are the same as for septicemia.

In *acute rheumatic fever*, it is pretty generally accepted that streptococcus rheumaticus or viridans is the cause. Although still in the experimental stage, bacterial therapy in this disease has given some gratifying results and there is reason to believe that future experience from the standpoint of a true infection will develop a dependable vaccine therapy. The same, in part, may be said of *pneumonia*. Undoubtedly cases have been benefited by doses of twenty to fifty million of a stock vaccine followed by an autogenous one as soon as this could be prepared. If after 24 hours there is no change, the dose should be repeated and subsequent doses given at longer intervals as the clinical condition of the patient demands. As to the value of such inoculation, Parry Morgan treated 43 cases of pneumonia with 2 deaths. Wright working among the natives in the Rand mining district, where a severe type of pneumonia was prevalent, got no better results in the inoculated than in the uninoculated. Obviously, the status of vaccine therapy in pneumonia is very doubtful.

Urethritis, Acute and Chronic.—Here again the testimony of various clinicians is at variance. Aronstam treated 54 cases with stock vaccines avoiding all local measures. He concludes that recovery from acute gonorrhoea may be brought about in four weeks without injection or irrigations. The majority of workers agree that vaccines have little effect in shortening the disease. (Bruck, Schindler, Fockler, Pollock and Harrison). Results are no better in gonorrhoeal ophthalmia and vulvovaginitis. Whenever the treatment is employed, it seems that only massive dosage can be expected to produce any effect whatsoever. In recent pyosalpinx, cautiously administered gonococcal vaccines have apparently been of some benefit. Schotmuller and Barfurth have found a considerable number of cases of pyosalpinx to be due to anaerobic organisms instead of to gonococcus, 35 per cent. out of 79 cases. Manifestly, the use of gonococcus vaccines in such cases would be useless, and, equally manifestly, the bacteriological diagnosis cannot be made with certainty antemortem.

Gonorrhoeal arthritis seems to be influenced in a decidedly beneficial way by the use of vaccines, particularly before definite organic

changes and adhesions have taken place in the joints. Baetz treated 28 cases in the Canal Zone and states that he got good, sometimes brilliant results, with no unfavorable effects due to the treatment. Schultz got prompt improvement in 11 of 16 cases and concluded that the treatment is specific and that patients having reactions attended by fever do best.

Bacillus Coli Infections.—Hugh Cabot found that improvement occurred in 50 per cent. of cases of pyelitis due to the Colon Bacillus. Geraghty found no improvement from vaccine therapy. However, some cases undoubtedly respond to vaccines and the method should be given a trial. It is well to begin with small doses of twenty-five to thirty million, on account of the variable toxicity of different strains, increasing as the clinical evidence calls for it.

Typhoid.—Typhoid fever, falling as it does under the heading of generalized infections, is not logically amenable to any particular degree, to bacterial therapy. Undoubtedly, however, some cases of typhoid, particularly if treated at the onset by vaccines, have been very favorably influenced. "The bad effects of introducing toxic substances into a body already overtaxed with substances of the same nature may be as evident to the careful clinician as to the serologist. But too often they are attributed to unforeseen turns of the disease rather than to their true cause. The possibility, or rather the probability of doing harm by adding to the toxemia of the patient by the use of vaccines, as they are ordinarily prepared, should preclude their use in general infections." However, Ichakawa reports 87 cases treated by intravenous injection of sensitized vaccine with immediate and permanent cure in one-half the cases and considerable improvement in others. He considers the mortality reduced by one-half. Other similar results have been reported. Such results must depend upon an entirely non-specific action of the vaccine, that is, not upon the formation of antibodies, bacteriolysins and agglutinins.

One most useful and fairly dependable application of typhoid vaccine is in the treatment of carriers in doses of one hundred million to one billion at seven day intervals. Many carriers will thus be cured if definite cholecystitis has not been set up, in which event the gall bladder must be drained.

The discovery of a diphtheroid bacillus in the lymph nodes of Hodgkin's disease led to trials of autogenous vaccines for this disease, but the value of these has not been definitely determined.

MIXED STOCK VACCINE.

"Cases are occasionally met with in which more than one organism seems to be concerned in the pathological process, and for these vaccines containing both organisms may seem desirable. The use of mixed vaccines should, however, be restricted to those cases in which careful studies have been made and the bacteriology of the infection determined. The indiscriminate use of mixed cultures (which usually means unknown cultures) should be discouraged.

"Finally active immunization has been brought into grave disrepute by attempts to utilize vaccines as a cure-all in diseases in which there is no evidence that they are of value, in those of undetermined infectious origin, and in those in which there is no evident infectious cause. The literature on vaccine and serum therapy is loaded with favorable reports of such procedures, based on mistaken premises and supported by conclusions entirely unwarranted by clinical facts. In consideration of the scientific basis of active immunization this misuse of vaccines is reprehensible and deplorable; injurious to the unfortunate patient and demoralizing to the physician.

"The absurdity manifested in the treatment of diseases of unknown infectious etiology and of those in which there is no evidence of infectious origin by commercial mixed vaccines is surpassed only by the inoculation into patients suffering from various diseases, infectious and otherwise, of filtrates containing the metabolic products of a variety of pathogenic bacteria. Such a procedure is indefensible on scientific grounds, and is not supported by adequate clinical facts."

GENERAL CONCLUSIONS.

In conclusion, it may be stated that the whole subject of the value of vaccine is beclouded with conflicting opinions based upon divergent clinical results, with only here and there something clear and definite—sufficient to yet afford us hope that the future will bring a better understanding, a more scientific and successful application of this potentially great therapeutic procedure.

A CASE OF FATAL CEREBRAL HEMORRHAGE OCCURRING IN A NEWBORN INFANT, FOLLOWING BREECH DELIVERY.*

By ROBERT YOUNG SULLIVAN, M. D.,
Washington, D. C.

This unusual case occurred in my practice on August 11, 1914, with circumstances that seemed of special interest, particularly on account of apparent lack of cause for such an accident. The parents of this patient present no abnormality of any nature that could account for any hereditary tendency to hemorrhage. Each had always been well and active. The father is a young lawyer, twenty-eight, of rather studious habits, of pronounced unathletic appearance and tendency. His mentality is good, however, and, excepting myopia, presented no suspicious symptoms. The mother is a well nourished and developed woman, thirty-two, enjoying excellent health, of very cheerful and happy disposition. Each parent denied long or serious illness; the venereal history was entirely negative. The mother's menstrual history had always been normal. Pelvic measurements revealed normal diameters with slight bulging forward of the first portion of the sacrum and rather great rigidity of the coccyx.

Eighteen months previous I delivered this same patient with forceps, the indication being inertia with head on the perineum in the L. O. A. position. That child is living and well. During the ninth month of her second pregnancy I discovered that the infant presented by breech. Remembering the necessity of interference in the first delivery and believing that if external version could be accomplished it would probably not persist until labor, I decided to allow matters to take their course.

The patient went into furious labor on the day estimated for the termination of her pregnancy. She was evidently at term. The position was L. S. A., and the entire time of labor was covered by a period of six hours. Pains were very hard, though I have never seen a more normal breech delivery; there was little water, however.

The breech presented, distended the perineum, and both legs and the posterior arm were born quickly. The body rotated spontaneously, bringing the occiput to the symphysis, allowing the

anterior arm to be born with very little help, that is, pushing it forward from behind the ear. The after-coming head was delivered by the method of Mauriceau, the entire amount of force used, however, being exerted by the two fingers passed over the shoulders and about the baby's neck. There was no abnormal pressure made. The infant passed through a sea of meconium, but immediately cried and breathed normally after that. I was amazed at the ease of the spontaneous breech delivery, and immediately said everything would be well.

Twenty-four hours after delivery the baby appeared to nurse poorly, the failure being more pronounced with each attempt. Thirty-six hours after delivery I was called by telephone and told that the infant had had a severe vomiting attack which was followed by marked cyanosis and continual respiratory difficulty. The case occurred in the Providence Hospital and as Dr. Foote was passing at that moment he kindly administered first aid.

Artificial respiration was instituted by means of the pulmotor and other more passive measures. The infant was taken to the window and kept as still as possible. Feeding by dropper was instituted and continued by nares when the mother's milk arrived.

For the first twenty-four hours following the first vomiting and cyanosis there alternated periods of asphyxia and normal breathing. There were no convulsive movements, no findings that in any way suggested any cerebral accident. The pulse was good, the temperature normal, and the intestinal condition was as normal as could be so far as any of us in attendance could determine. There seemed to be marked respiratory obstruction, and the case was treated on that basis temporarily, which consisted of heat externally and air after effectually clearing the upper air passages of mucous. After spending twenty-four hours in this condition the trouble seemed to be overcome, and the infant spent twelve hours of comfort, sleeping most of the time. This was followed, however, by an entirely new situation of affairs—at least in appearance.

The vomiting returned with decided cerebral manifestations as typical hydrocephalic cry, convulsive movements involving the face, eyes, arms, trunk and legs. There was fixation of the right pupil and marked clonus on the left side of the body. There was no paraly-

*Read before the Washington Obstetrical Society, November, 1914.

sis until much later. There was bulging of the fontanels. This condition seemed to come on gradually, becoming very definite in the course of a few hours. After convulsions made their appearance, they became more and more marked with each attack, and the interval between became shortened until the infant died at the end of four days.

I was extremely fortunate in having Dr. John A. Foote, Dr. William H. Hough and Dr. Thomas S. D. Grasty in consultation. Dr. Hough kindly did lumbar puncture, finding blood in the cerebro-spinal canal, and at his autopsy found the hemispheres bathed with possibly four ounces of blood, some of which was also found at the base of the brain. Dr. Grasty repeatedly called attention to the bulging fontanels and extreme heaviness of foetal bones, also the apparent ossification of sutures. I was entirely at a loss to know what force caused rupture of vessels with such an enormous resulting hemorrhage.

Looking into the literature of the subject, I find that Williams, De Lee and Hirst look upon breech presentations with considerably more danger than the cephalic variety both for the mother and child. They estimate foetal mortality variously from fifteen to thirty per cent. Very little is said by obstetricians about hemorrhagic conditions following breech delivery. Slight mention of fracture of the bones of the skull and extremities is made and the hematoma occurring under the scalp and over the sterno-clido-mastoid muscle. They lay great stress upon the degree of dilatation of the cervix and the force of pains in breech cases as causes of such accidents.

Holt discusses the situation at great length, accurately describing my own case. He says hemorrhage in the viscera of the newborn is frequent and is a causative feature in possibly thirty to sixty per cent. of infant deaths within the first four days of life. He classifies these hemorrhages as spontaneous and traumatic.

Spontaneous hemorrhages, of course, are due to a peculiarity of infant blood and also to the delicateness of structures of the newborn, rather than to arrested development. He says this is due for the most part to the result of syphilis or sepsis. Visceral hemorrhages of this type may occur in the brain, liver, lungs, kidneys, and in the intestinal tract, diagnosis

and treatment resulting in failure in such cases.

Traumatic hemorrhages, he says, occur frequently at birth, and he is comforting in saying that they do not depend necessarily upon the external force. In his classification of cerebral hemorrhages, forceps in cephalic presentation is first in a number of cases, breech presentation, however, following closely. He says, furthermore, that in forceps cases or normal cephalic cases, hemorrhages are more apt to be found at the base while in breech cases they occur more often on the hemispheres and are considerably larger, varying from one drachm to four ounces. This would seem to be true when one considers the points and direction of application of force.

Medical and surgical treatment for cerebral and other visceral hemorrhages of the newborn result in failures in a great majority of cases. Cerebral hemorrhages result in deaths in the very great majority of cases, even in the hands of some of the most eminent obstetricians. A few cures are reported, however. Those infants that recover without operation have sustained minute hemorrhages, and it is reported, according to Holt, that they are usually idiots, mentally deficient, or later show paralysis. It would seem that more frequent autopsy would aid earlier diagnosis in cases to come, and that operation would result in a larger proportion of cures.

The Burlington.

Proceedings of Societies, Etc.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Reported by EMIL MAYER, M. D., New York, N. Y.

The following is an abstract of the principal papers read before the American Laryngological Association, at its meeting at Niagara Falls, Canada, June 1-3, 1915, editorial mention of which was made in a preceding issue of the *Semi-Monthly*:

Papilloma of the Larynx.

By THOMAS HUBBARD, M. D., Toledo.

Cases presenting complications and describing special features of surgery and general treatment were reported.

The first case was like a papilloma, but was diagnosed microscopically to be an epi-

thelioma. Two tumors removed at different periods were pronounced malignant. The treatment was removal by forceps, followed by cauterization, made thorough by means of a fenestrated intubation tube whereby the crystals of trichloroacetic were rubbed into the base without injury to the sound mucosa. No recurrence up to now, about twelve years.

A case presenting asthma as a complication was reported. The larynx was the source of the reflex which excited bronchial spasm of the most severe type, uncontrolled by morphin and adrenalin, and making operative procedures extremely difficult.

Two cases of papilloma in children were reported. Both had emergency tracheotomy. Operations by direct laryngoscopy and curettement through tube and also through the tracheotomy wound were successful. One case required a second operation in less than a year, the removal of one large papillomatous tumor giving her complete restoration of voice and no recurrence for now a year. The other case, a boy of four, was cured in one curettement by upper and lower route. No recurrence in three years.

Papilloma of the larynx in an adult, operated thoroughly about six times in one year with active recurrence each time, was finally brought to a successful issue permanently by the aid of neck massage. This was begun one month prior to final operation, and it seemed to the operator that the operation was made more easy in that the patient controlled the larynx better than formerly. Massage was continued after removal of many small papilloma from all parts of the larynx except the interarytenoid space, and at this date, now six months, there is a perfectly clear larynx. It seems to the author that massage accomplishes precisely what is aimed at in the tracheotomy: the absolute rest method advocated by Clark and others, and in a much more rational physiologic manner. Normal nutrition is restored and normal functional activity is maintained. The author urges trial of massage in connection with timely operative procedures even in young children, in preference to tracheotomy and prolonged rest.

DISCUSSION.

Dr. J. Payson Clark, Boston: I wish to take exception to Dr. Hubbard's view with reference to tracheotomy in children. I can-

not agree that leaving the tube in place for a long period hinders the restoration of function of the larynx. I have had patients who have worn the tube for a number of months, and after its removal there was no difficulty in the re-establishment of laryngeal function. It seems to me to be dangerous to remove the tube in children as long as there is any of the growth in the larynx, because there is apt to be an increase of this, and one may face the problem of doing another tracheotomy, which, as is well known, is more difficult than the primary tracheotomy.

I would also like to register a plea for the indirect method of laryngoscopic examination. With the invention of all the instruments for the direct view of the larynx there is great danger of neglect of the indirect method, which seems to me to be much better for adults.

Dr. E. Fletcher Ingals, Chicago: I would like to ask the reader of the paper about his results with trichloroacetic acid. I cannot understand how it can be used in strong solution. Neither do I understand whether the tube, through which he did the cauterization, was removed immediately after the operation or later. If it was removed at once, was there no swelling or trouble in restoration of function afterward?

Dr. Clark says the second tracheotomy is more difficult than the first. I have not had much experience in this regard, but my recollection is that the second was the easier. I do not see why this should not be the case.

In curetting the growth from below, was it done on sight—could Dr. Hubbard see what he was doing? I would also like to know whether he used an interrupted stitch in suturing.

Dr. Allen B. Thrasher, Cincinnati: I have not seen cases of papilloma of the larynx very often in adults, because these intralaryngeal growths assume a different character; in children, however, they are very frequently encountered. In these cases one should never operate without telling the patient that the operation probably will have to be repeated. The larynx must be kept clear until the child is fifteen or sixteen years of age. There is always danger of recurrence while the larynx is small. I have kept a tracheotomy tube in for four years without any trouble. It was

removed in the meantime, of course, but not left out entirely. In this case I could not see the patient regularly, as he lived one hundred and fifty miles up in the country, and was unable to make frequent visits to Cincinnati. This patient is now perfectly well and has had no trouble since he was sixteen years old. He wore the tube constantly from his twelfth to his sixteenth year.

I have found tracheotomy more easily performed the second time than the first.

I am doubtful about the advisability of massage. It seems to me that it would increase the blood flow to the larynx, and this increased blood supply would be apt to stimulate growth. I have had no experience in this regard, but it does not appeal to me as being a scientific procedure. I believe the fact that Dr. Hubbard has not had trouble with his cases is due to accident. I would be afraid to try it in cases of papilloma. In other cases it may facilitate the return of the voice.

In cases of papilloma of the larynx, as in cases of warts elsewhere, I have used nitrate of silver. The mucous membrane of the larynx is much more easily destroyed than that of other parts, but nitrate of silver will not destroy it.

Dr. John F. Barnhill, Indianapolis: It has seemed to me, judging from my own experience, to be impossible, under certain circumstances, to get all the growth out, including the base of the mucous membrane. Dr. Lynch's method is largely in the open, and that is why it will prove successful. In all cases in which I have absolutely cured this class of disease, I have opened the larynx thoroughly and have seen that I actually removed all of the growth. Laryngofissure is not satisfactory in all cases. To open the larynx, to see what is there, and to thoroughly remove it under antiseptic precautions, is a plain surgical procedure, and with proper closure of the wound, is, it seems to me, the best method.

Dr. Harmon Smith, New York City: A few days ago I had the opportunity of seeing Dr. Lynch operate on a papilloma of the larynx in a boy fifteen years of age. The larynx had been thoroughly cleared out by another laryngologist. The growth recurred. For a number of years the patient wore a tracheotomy tube, with no particular effect on the growth. He finally fell into my hands, and I used fulguration. Then another used radium. The

growth would disappear partially and then recur. There had remained a fibropapillomatous mass in the anterior commissure, in the subglottic space. Dr. Lynch operated, curetting out this fibropapillomatous mass thoroughly. He could hold the cords aside and look underneath. I think Dr. Lynch has devised a surgical procedure for these cases.

Dr. Yankauer has invented a method by which fulguration may be used and oxygen sent in in a current; but there is not the deep burning that is necessary for the removal of these deep growths. Fulguration will certainly take off the skin, but that is not sufficient.

There is a difference in the infectivity of these laryngeal warts. In studying a series of cases of warts in children I myself got warts on my hand. There is a great difference between the multiple laryngeal warts in children and those in adults. In adults it is much easier to get rid of them. Radium, in two or three applications, will remove them in adults, but not in children. We do not know the true pathology of these papillomata. If we destroy the mucous membrane at the base and remove the blood, we may be reasonably sure that the growth will not recur.

Dr. Lewis A. Coffin, New York City: In the clinic I feel hopeless when I see a lot of children with papilloma of the larynx. We have records, however, of cases in children of removal by radium with no recurrence. A case was successfully treated by Dr. Abbe. Another case was that of a woman, forty-three to forty-five years of age, a singer, who was treated by two applications of radium, lasting from one-half to three-quarters of an hour, with the disappearance of every vestige of the growth. There has been no recurrence for more than three years. I have now under my care a man from whose larynx I removed growths by the direct method. I treated him with applications of monochloroacetic acid, but the larynx filled up completely. One year ago, when he phonated, the larynx was entirely filled with the growths on the arytenoids and in the anterior commissure. Dr. Abbe sent me one hundred milligrams of radium in a tube; this was applied to the growths, and in forty-eight hours they were entirely gone. After the removal of the growth on the epiglottis and the one on the arytenoid had grown smaller, I could see the large growth on the

anterior commissure. Another application of radium was made to this for an hour. Five days ago when I saw the man I found the growths had simply withered up. There is still a small growth on the arytenoid and a ridge on the epiglottis.

Dr. Emil Mayer, New York City: I would like to hear the views of the members regarding the etiologic factors concerned in these growths. I have had two cases in adults working in tunnels and breathing compressed air. It seems rather rational that such a thing might occur. Removal by the indirect method has also resulted in the complete disappearance of the growths. If tracheotomy is employed, the tube must be carried for quite a number of years. I have had a case which is illuminating in this connection, and which shows that there is danger after tracheotomy. A little child had so large a papilloma in the larynx that tracheotomy was necessary. While I was cleaning the tube and putting it back again the child nearly passed away. After that I had two tubes, and as soon as one was out the other was put in, and in that way managed very well. The child lived quite a distance from me. One day while at play the child grasped the tape attached to the tracheotomy tube and pulled it out, gave one cough, and, before help could come, died.

Dr. D. Crosby Greene, Jr., Boston: Recurrence followed in a case in which I operated, and the patient went to another laryngologist, who removed the growth by thorough thyrotomy under direct vision. Six months later I saw the patient again, and the larynx was entirely filled with papillomatous tissue. Dr. Lynch's method will not be sufficient unless the immunity of the patient has been established. Within the past six months I have seen a case in which the patient presented warts on the skin simultaneously with papillomata of the larynx. Removal of the papillomata in the larynx was followed, within a short time, by disappearance of the warts on the skin.

Dr. Henry L. Swain, New Haven: Many years ago I had under my care two cases of papilloma of the larynx, one in a boy, the other in a woman thirty or more years of age. The boy was intractable and passed out of my hands. Nine years afterward he coughed up the remains of his papilloma. I have seen him within the last two years, and he has

no growth at all. If he had staid with me his single papilloma would probably have become multiple. The woman was treated in various ways. I cauterized with pure nitrate of silver and with electricity; I curetted, and rubbed in lactic acid, and despite all this the papilloma returned. Some time ago Dr. Sperry called me in to see a patient, thinking laryngotomy was necessary. I found my old patient, the woman, with several papillomata. She had coughed off one growth, but the others had remained the same for some years. There was never any obstruction in her case. Whether they will become malignant, of course I do not know. In another case I have used alcohol sprayed on the surface of the papilloma, and have certainly prevented the necessity of instrumentation. I have done nothing else in this case, and the larynx is now entirely free. The growths have reappeared four different times, but for ten years I have done nothing but spray the surface with alcohol. This case is subject to the criticism that the growths might have disappeared if left alone, but I hardly think that true, as they disappeared so quickly under the treatment. At one time there were five distinct papillomata in this case.

Dr. William E. Casselberry, Chicago: In the glamour of the new we are apt to forget the merits of the old. No one has mentioned the old galvanocautery. At the last congress in Washington I presented a cautery which I devised, and which I have been using ever since. I cannot understand why fulguration possesses any advantage over galvanocautery. After removal of the growth with the forceps, by either the direct or the indirect method—and I have sometimes used both in the same patient—and after curetting (and I have never been able to curette satisfactorily in my own mind, always feeling that I have left shreds), the cauterization of the base with the galvanocautery is desirable. It is the easiest and most convenient method.

Dr. Harris P. Mosher, Boston: Did I understand Dr. Hubbard to say that the tracheotomy tube worn for any length of time interferes with the return of the voice? I have not found that to be the case. This particular part of his theory, while very pretty, is not borne out by the facts.

Dr. James E. Logan, Kansas City: I have had the very best results after curettement.

Within the past two years I have had two cases of special interest. In one case there was a suspicion of carcinoma. I removed the growth a number of times, large pieces of what appeared to be fibrous tissue being taken off, and followed this with curettement. There has been no return. Another case was that of a woman, sixty years of age, the mother of nine children. A few years ago she had every evidence of carcinoma. After removing as much as I could of the growth I used the galvanocautery to remove the rest. Today she has as good voice as ever. In another patient, forty years of age, I have prevented recurrence for seven years by the use of the galvanocautery. Fulguration cannot be localized as can cauterization with the electrodes, suggested by Dr. Casselberry.

Dr. Robert Clyde Lynch, New Orleans: My experience with papilloma of the larynx covers sixteen cases. I will give briefly the histories of two or three, which will illustrate the results obtained with the method which I have devised.

The first case was referred to me by Dr. Jackson, by whom the patient, a woman, had been treated for two years. He had reoperated every month or six weeks for recurrence of papilloma of the larynx. The patient then removed to my neighborhood. I attempted to operate, as Dr. Jackson had done, with his forceps and other instruments. The method in my hands was entirely unsuccessful. At that time I began to use the suspension apparatus. The patient was anesthetized, and I carefully dissected out every portion of the growth which could be seen, both above and below the vocal cords and around the epiglottis. I cleared the area entirely. I suspected that I would have a good deal of postoperative edema, and kept the patient in the hospital for several weeks. Healing was perfect. That was a little more than two years ago, and there has been absolutely no recurrence since that operation.

The second case was that of a little boy, reported last year. The patient came into the hospital very much cyanosed, and the fright of coming into the clinic practically stopped his respiration. Tracheotomy was performed and the tube left in place. I thought that would be sufficient to clear up the papilloma, but it had no effect. I operated nine times by the direct method, clearing out each time as

much of the growth as I could see. Each time the papilloma recurred. Then I attempted thyrotomy. With the tube in place I opened the thyroid. The child was two years old, and this was very difficult. I was not successful in cleaning out the larynx entirely, and in the course of three weeks it was again filled with papilloma. I left the child alone for six months, with the tracheotomy tube in place. In the meantime I was trying to learn some new method for dealing with such cases. Finally I suspended him, and dissected out the growths as far down as the end of the tracheotomy tube. That was two years ago, and I saw the patient just before I left home. There was no recurrence. I took out the tube twenty-four hours after doing this dissection. It was the first time in two years that the child had been without it. He had some voice at the end of twenty-four hours, and in two weeks his voice was as good as ever.

The third case was that of a negro woman. I dissected out the papilloma in the same way, and she returned home. She was very religious, had attacks of "hysteria," when she "shouted" and sang, as the negroes do in their meetings, and at the end of six months she came back with papilloma of the larynx. All my operative work in this case had been devoted to the region above the vocal cords. I thought this the first case in which I would have to report recurrence after operating with suspension. In looking over my records, however, I found that our previous efforts had been confined to the region above the cords, whereas the present papilloma was below the cords. This was dissected out, and there has been no recurrence.

It is impossible to remove papillomata completely by any method of punching or pinching or biting, using the forceps in one hand and some other instrument in the other. It is for this reason, I think, that we have so much recurrence. In the sixteen cases in which I have operated by dissection with suspension there has been no recurrence up to the present time.

Dr. Hubbard, closing the discussion: I think Dr. Lynch has devised the most surgical and precise method of dealing with these growths. All, however, have not the apparatus for this particular work, and so there is a field for the older procedures. I have found it a very useful procedure to put interrupted

stitches in the tracheal ring. One must have a free field, snipping off, if necessary, all the isthmus which obscures the view. I usually take up the trachea and put in silkworm gut, about one-third back, through the ring in a child. In other words, I want it as firm as possible. The suture is placed between the cellular tissue and the tracheal ring, one stitch on either side, drawn together, and the ends left long. The ends are brought out on the neck and fixed with adhesive plaster. One can then pull on these and draw the trachea and the larynx forward, getting a glimpse of the lower end of the larynx. Otherwise the curetting is done blindly. Thorough curettage of the larynx can be accomplished by this method with curettes of various sizes and angles. If the papillomata are "ripe" they can be gotten out at the base; those that are in a state of active growth cannot be entirely removed. I always inspect the growth from above prior to curettement.

In using the trichloroacetic acid I simply moisten a small swab, smear with the crystals, and go over the surface with this. The tube is fenestrated, it is inserted in the larynx, and is left there.

I want to call attention again to massage as a factor in producing the condition which brings about the restoration of the normal processes of the larynx. Any simple method like massage is superior to the absolute rest of the larynx induced by the prolonged wearing of the tracheotomy tube.

(To be continued.)

Analyses, Selections, Etc.

The Cancer Campaign and What It Has Accomplished.*

In a talk before the Medical Society of Virginia, October, 1915, Dr. Thomas S. Cullen, of Baltimore, briefly sketched the various cancer campaigns that have been launched during recent years. He referred to the excellent work that has been done by Dr. J. H. Carstens, of Detroit, and to the campaign in Pennsylvania so ably handled by Dr. J. M. Wainwright, of Scranton, Pa. He then spoke of the cancer campaign committee of the Clinical Congress of Surgeons which was appointed at the annual meeting in 1912. This com-

mittee was given wide latitude, and was instructed to write or to have written articles, these to be published in the daily press, weekly or monthly magazines as might be deemed most expedient. After careful consideration, this committee got in touch with the Ladies' Home Journal, and through the assistance of Mr. Bok, the editor, and Mr. Harriman, managing editor, the co-operation of Samuel Hopkins Adams was enlisted. After careful study Mr. Adams wrote a two-page article, giving the salient points in the more common forms of cancer and pointed out what might be accomplished by early operation. Mr. Adams also wrote an extensive article in McClure's Magazine and a page article for Collier's weekly. It was estimated that a reading public of about ten millions had been obtained through Mr. Adams' article. His Ladies' Home Journal paper was widely abstracted by the daily press. Baltimore papers and the New Orleans News Item published very full accounts of Mr. Adams' work, and the Detroit News Tribune copied the Ladies' Home Journal article in full, giving a full newspaper page to it. Dr. Cullen pointed out the immediate effect of these articles and drew attention to the fact that patients with early cancer coming as a direct result of Mr. Adams' article were reported from Indianapolis, Chicago, Columbia, S. C., Baltimore, and other places.

In May, 1913, the American Society for the Control of Cancer was formed in New York. Among those taking prominent part were some of the most active business men in New York. The treasurer is Mrs. Robert G. Mead, 11 West 11th St., New York. This society has been doing admirable work, and its membership is continually growing. Dr. Cullen strongly urged the citizens of Richmond to join this society, which is straining every effort to educate the public as to what may be accomplished by early operation in cases of cancer.

Shortly after the formation of the American Society for the Control of Cancer, the American Medical Association, through its council, appointed a cancer committee. This committee is scanning the country for practical articles on cancer, and having reprints made. These reprints can be obtained from Dr. Frederick R. Green, 525 N. Dearborn St.,

*Author's abstract of his remarks.

Chicago, Ill., or through the American Society for the Control of Cancer, Mr. C. F. Lakeman, 289 Fourth Avenue, New York.

Dr. Cullen predicted that it would not be necessary to keep up this campaign for very many years, because in the course of four or five years people would be just as familiar with what might be accomplished in cancer cases as they now are with the splendid results achieved in early appendix operations.

Finally the speaker referred to the increasing percentage of recoveries in cancer of the uterus. He said that fifty years ago practically all cases of cancer of the body of the uterus died; now about two-thirds can be saved by early operation. While cancer of the cervix is not as amenable to treatment, he said that some operators are able to show at least 25 per cent. of patients well five years after abdominal operation for cancer involving the neck of the womb.

Editorial.

Medical Military Preparedness.

The Southern Medical Association, at its meeting in Dallas, November 8-11, took a strong stand for preparedness of the medical military service in case of emergency, and adopted resolutions, copies of which have been forwarded by Dr. W. L. Rodman, president of the American Medical Association, to the president of every State medical society in the United States, with the request that the attention of members of all local societies be called to the matter, to the end that they will individually and collectively, by committees or otherwise, urge upon their representatives in Congress the necessity for giving the subject the consideration it deserves.

The resolution follows:

Whereas, The President and the Honorable Secretary of War have announced in the public press that a scheme for the reorganization of the Army will be presented to Congress at its coming session, which will materially increase the military establishment, and

Whereas, We recall the indignant protests and criticisms of the nation at the failure to provide adequately for the sick and wounded at the beginning of the Civil War and the Spanish-American War, and

Whereas, It is known that this failure was due to the lack of a sufficient number of medical officers in the regular army and a means for increasing the medical establishment at the outbreak of war, and

Whereas, In spite of the lessons of the Spanish-American War, which were fresh in mind in the reorganization of the Army in 1901, the Medical Department was not properly increased, and no provision was made for its expansion in time of emergency, and

Whereas, To correct the defects in the 1901 legislation, subsequent legislation was necessary in which the medical profession of the United States was called on to assist;

Therefore, Be it resolved by the Southern Medical Association, in session at Dallas, Texas, that the Secretary of War be petitioned to make adequate provision in the reorganization of the Army about to be presented to Congress for a sufficient number of medical officers for the regular establishment, which provision should aggregate a proportion of medical officers of, at least, seventy-five hundredths of one per cent. of the enlisted strength of the Army, or such number as the Surgeon-General of the Army may deem necessary, and,

Be it further resolved, that the Secretary be petitioned to make provision in this reorganization for the expansion of the Medical Department at the beginning of war, by calling into service in the Medical Reserve Corps physicians from civil life who have been instructed in their special duties as medical officers in our summer camps, and otherwise as the War Department may see fit.

With an idea of presenting the views of the profession of every State in the Union, arrangements have also been made by Dr. Rodman by which the President of the United States and the House Military Committee will give an audience to the presidents (or their representatives) of the various State medical societies on Monday, January 24th, at 12:30 P. M. It is planned that the doctors will hold a preliminary conference at the Hotel Raleigh at 10 A. M.

We are in hearty accord with all proper efforts for maintaining peace, but peace should only be with honor. Probably actual invasion of our mainland by a foe is a thing remote, but we do not feel quite so sure of our outlying possessions. While we might be willing

to give away some of those more distant, surely we would not calmly submit to having them stolen. Those of our citizens who travel the high seas, or wherever else they may be in the legitimate exercise of their rights as Americans, are entitled to our protection, and we should be prepared to give it so far as is possible. The individual who will not defend himself nearly always gets more gratuitous offense than the one who resents it; and so we believe it is with nations. Reasonable preparedness is, we believe, desired by our people at large as a matter not alone of protection to Virginia, Missouri, Idaho, Texas, New York, or other State, but because it will likely make those countries that now seemingly pay slight regard to our rights think seriously before they draw us into needless conflict.

We are for preparedness, but this should not be one-sided. No one branch of the service should be neglected. And certainly those who risk health, life, and limb for their country have every right to expect that the government will support them with a competent medical service.

Tri-State Medical Association of the Carolinas and Virginia.

The Richmond meeting of this Association will be called to order by Dr. J. Allison Hodges, Richmond, Va., chairman of the committee of arrangements, in the auditorium of the Jefferson Hotel, February 16, at 10 A. M. Medical and surgical clinics will be held at Memorial Hospital from 3 to 6 P. M. on that day and a number of interesting papers will be presented at the various sessions. Dr. James H. McIntosh, Columbia, S. C., is president, and Dr. Rolfe E. Hughes, Laurens, S. C., secretary-treasurer.

The entertainments include a reception to the members by Dr. Stuart McGuire, on the evening of the 16th, on which occasion the ladies will be tendered a theatre party, and on the evening of the 17th, there will be a reception, supper and dance at the Jefferson Hotel, for members and the ladies accompanying them. In addition to the evening affairs, the ladies will be given a luncheon at the Country Club, followed by an automobile ride on Wednesday and a reception at the Woman's Club on Thursday.

It is urged that all members attend, bring their wives and daughters and help make this a banner meeting. A number of excellent hotels will furnish adequate accommodations, although, where possible, reservations should be made in advance. Details as to railway rates will be given on the provisional program, now in press.

The State Board of Medical Examiners

Reports the following list of successful applicants from those who took the examination in Richmond in December:—Drs. C. L. Bailey, Sutherlin; George C. Beach, Hampton; Baxter Israel Bell, Swan Quarter, N. C.; Jas. G. Boisseau, Richmond; Roscoe W. H. Buckner, Charlottesville; Edward A. Brown, II, Norfolk; Fitzhugh L. Brown, Ruthville; Carolyn A. Clark, Marion; A. W. Deans, Battleboro, N. C.; Daniel A. Dees, Greensboro, N. C.; John de B. Dickinson, Cobham; P. E. Duggins, University; R. McRae Echols, Bristol, Tenn.; C. A. Folkes, Roanoke; J. Brooks Foster, Ocean View; John A. Gentry, Richmond; E. L. B. Goodwin, Highland Springs; James Matthews Hayes, Union Level; Isaac B. Hunt, Washington, D. C.; W. G. Hunter, Augusta, Ga.; C. H. Iden, Richmond; Bernard L. Jarman, Charlottesville; Frank E. Johnston, Moore, Pa.; U. G. Jones, Coal Creek, Tenn.; U. S. Grant Jones, Charleston, W. Va.; Albert E. Leggett, Newport News; D. L. P. Le Kites, Grottoes; James E. Marshall, Ashburn; J. D. Martin, New Orleans, La.; Carl H. McFarlane, Lebanon; L. P. Miligan, Washington, D. C.; J. L. Moorefield, Hillsboro, N. C.; John Luther Nall, Spout Springs; Edwin H. Norton, Petersburg; Anagros Peppas, City Point; John E. Porter, Richmond; M. S. Read, Franklin; Frank P. Richter, Richmond; Charles B. Rohr, Timberville; John H. Robinson, Hampton; Roy P. Sandidge, Petersburg; Lea B. Sartin, Raven; Samuel Saunders, Jr., Jordan Mines; Chas. J. Sawyer, Windsor, N. C.; Joseph R. Spencer, South Mills, N. C.; Silas S. Thompson, Washington, D. C.; Waverly S. Tucker, New Glasgow; John D. Williams, Manassas; Berton O. Wire, Richmond.

The Lynchburg and Campbell County (Va.) Medical Society,

At its annual meeting, elected the following

officers for 1916: President, Dr. E. W. Peery; vice-president, Dr. P. M. Strother, and secretary Dr. Bernard H. Kyle, all of Lynchburg. Meetings are held monthly on first Mondays.

Doctors on Duty at Hopewell.

Adjutant-General W. W. Sale ordered Capt. Harry F. White, Fishersville, Medical Corps, 1st Infantry, Virginia Volunteers, to relieve First Lt. W. Nelson Mercer, Medical Corps, 1st Infantry, January 8, 1916.

Lt. Mercer was on duty with the troops at Hopewell, Va., for one month, being detailed as camp surgeon and temporarily assigned to Major Bowles' staff. Dr. Mercer has resumed his practice in Richmond.

Dr. Rupert Blue

Will continue as Surgeon General of the U. S. Public Health Service, his appointment having been confirmed by the Senate.

U. S. Navy Annual Medical Report.

Surgeon-General William C. Braisted, U. S. Navy, in his annual report states that during the year ending June 30, 1915, twenty-four medical officers were admitted to the corps and 8 retired or resigned, leaving the total strength of the medical corps at that time, 327. He urges that the present corps be increased by 150 medical officers as, owing to the shortage of men in this field during the past year, it was necessary to continue the services of certain officers of the medical reserve corps.

From reports on various diseases, it is interesting to note that during the past year, there were only 13 cases of typhoid fever with no deaths, while as recently as three years ago, the naval service showed a total of 222 cases with 15 deaths. This great reduction "is due almost *in toto* to prophylactic inoculation." Throughout, the report is both interesting and instructive.

Married—

Dr. Samuel Meredith Wilson, Lynchburg, Va., and Miss Louise Garland, Amherst, Va., January 12.

Rev. Edward R. Dyer and Dr. Anne Fulton Humphreys, a medical missionary to China, November 6, 1915. They are making their home at Paoying, Kiangsu, China. Dr. Humphreys,

who is a daughter of Prof. Humphreys, formerly of the University of Virginia, practiced medicine in this State several years prior to going as a missionary to China.

Dr. Ira J. Haynes.

Pleasantly remembered by many doctors throughout this State, West Virginia and North Carolina, as the representative of W. B. Saunders Company, publishers, won the gold watch offered by that company for selling more books than any other salesman for a period of time ending November, 1915.

The State Board of Health of Virginia

Met in this city January 11, with the following members in attendance: Dr. W. M. Smith, president, Alexandria; Dr. S. W. Hobson, vice-president, Newport News; Dr. J. B. Fisher, secretary, Midlothian; Drs. Lewis E. Harvie, Danville; George B. Lawson, Roanoke; Stuart McGuire, Richmond; L. T. Royster, Norfolk; Reid White, Lexington; and O. C. Wright Jarratt. The principal matter before the board was the adoption of resolutions calling upon the United States government to establish a leprosarium, as most of the cases of leprosy detected in this country are among the immigrants, and should not be a charge on the State and local government where the case is found. This action of the board was due to the recent diagnosis in Richmond of a case of leprosy in a Greek immigrant who had been working at Hopewell and applied to a local hospital for treatment. He has been put in a special ward at the Richmond smallpox hospital.

Dr. H. M. Miles.

Who is doing post-graduate work in eye, ear, nose and throat work at the New York Polyclinic Hospital, expects to return to his home in Wise, Va., about the middle of February.

Dr. A. C. Sinton, Jr.,

Who after his graduation from the Medical College of Virginia in 1914 served as interne at Hudson Street Hospital, New York City, passed examinations to enter the U. S. Navy and has been appointed to service on the training ship, Franklin, in the Norfolk Navy Yard.

Epidemic of Grip.

The most serious epidemic of grip ever known in this country has spread over the United States from coast to coast, in many places having been of so virulent a type as to have exacted a heavy death toll. Along with this has come also in a number of places an epidemic of pneumonia. In Chicago during December, there were reported 1,440 cases of pneumonia with 666 deaths, 201 of which occurred in the last four days, and nearly 50 per cent. of 971 deaths reported in Philadelphia for the last week in December were ascribed to pneumonia and grip. The various cities of Virginia, while reporting an unusually large number of cases of grip, have had the disease in a milder form. In many cities, the health authorities have had physicians give talks on the prevention of grip in the schools and other public places, and in Richmond, the health officer has published a bulletin, instructing the people in the means of prevention of this disease.

Dr. William H. Taylor,

Who has for many years been coroner of this city, qualified early this month for another term of four years in this position.

The Buncombe Co. (N. C.) Medical Society,

At its annual meeting, elected Dr. Charles L. Minor and Dr. Gaillard S. Tennant, both of Asheville, president and secretary, respectively.

Military Orders in Medical Corps.

Dr. Thomas V. Williamson, Norfolk, Va., has been appointed first lieutenant, medical corps, having been examined and commissioned. He will be assigned to duty with the Fourth Infantry.

Dr. John L. Kable, Staunton, Va., has been appointed first lieutenant, medical corps, and been examined and commissioned. He will be assigned to duty with the Second Regiment.

A leave of absence has been granted Captain H. Norton Mason, medical corps, from February 14 to March 10.

Dr. Hugh McGuire

Has returned to his home in Alexandria, after a short stay in this city.

Dr. E. F. Reese, Jr.,

Returned to his home at Courtland, early this month, after a visit at Brookneal, Va.

Medico-Military Aspects of the European War.

In April, 1915, Surgeon A. M. Fauntleroy, U. S. Navy, was detailed by the U. S. Government to visit the war zone in France, and his recently published report of this service, made from observations taken behind the allied armies, graphically tells the tale of the horrible struggle that is now going on. Military organization and equipment are mentioned in considerable but interesting detail, while the use as well as the results of the use of death-dealing agencies, such as grenades, asphyxiating gases, liquid fire, shrapnel, machine guns, etc., are depicted with a vividness that makes the reader shudder. Transportation and care of the sick and wounded, work of the various field stations and base hospitals, as also general field conditions are likewise fully and clearly described. The report, which is profusely illustrated, is the most valuable document of the kind we have ever seen.

Dr. J. G. Rennie

Has returned to his home in Petersburg, Va., after a trip to Cumberland and Baltimore, Md.

Dr. G. C. Godwin

Has moved from Hope Springs to Pine Level, N. C.

Poverty as a Factor in Sanitation.

As poverty is the greatest of all disease breeders, Surgeon-General William C. Gorgas, U. S. A., in an address before the Clinical Society of Surgeons, directed attention of the sanitarian to the need of alleviating more or less the poverty at present existing in all civilized communities, as a means of establishing improved health conditions. He stated that measures should be directed for increasing the number of jobs, and to this end suggested putting into use the 55 per cent. of arable land in the United States which is, for one reason or another, held out of use. This would greatly increase the number of jobs, and he believes could be accomplished by imposing a tax on land values.

Dr. G. A. Ezekiel,

Who is in charge of the treatment of drug addicts at the City Home, Richmond, by invitation, addressed the Piedmont Medical Soci-

ety on "The Treatment of Drug Addiction," at its meeting in Gordonsville, January 15.

Dr. and Mrs. L. W. White

Have returned to their home, Suffolk, Va., after a visit to Plymouth, N. C.

Appropriation urged to Fight Pellagra.

On account of the report submitted by the U. S. Public Health Service with regard to pellagra, in which it is estimated that there were approximately 75,000 cases of pellagra with 7,500 deaths therefrom in this country last year, Secretary McAdoo has asked Congress for a rush appropriation of \$100,000 for studies and demonstration work in rural sanitation with a view to checking pellagra and typhoid fever.

Dr. C. L. Nottingham,

Cape Charles, Va., has let a contract for the building of a handsome residence on the water front in that place.

Dr. W. B. Pettet,

New Canton, Va., recently returned from a third visit to England since the early autumn, and reported much of interest in connection with his trips.

Increased Appropriation Recommended For Public Health Work.

The Secretary of the Treasury, in his annual report, made numerous recommendations for the extension and expansion of governmental agencies for the protection of the public health. It was stated that there was great need of additional medical officers; an increased appropriation for field work was requested; an additional building for the Hygienic Laboratory, and an increased appropriation for carrying on the work done there was recommended, and the establishment of a national leprosarium was urged.

Dr. J. T. Buchanan,

Recently located at Fuquay Springs, N. C., has moved back to his old home, Oxford, N. C.

Dr. John W. Brodnax

Has been re-elected assistant city coroner for

Richmond, to serve on the Southside, for another term of four years.

Dr. G. A. Neuffer,

Abbeville, S. C., has been appointed a member of the board of visitors of the State Hospital for the Insane at Columbia.

Principal Causes of Death.

The vital statistics report just issued by the Bureau of the Census states that more than 30 per cent. of the 898,059 deaths reported for 1914 in the registration area of the United States (which contains about two-thirds of the population), were due to heart diseases, tuberculosis and pneumonia. As compared with 1900, there was a marked increase in the number of deaths from heart diseases, while there was a reduction in the number from tuberculosis and pneumonia. The death rate from railway and street-car accidents was the lowest on record, the former totaling 7,062 and the latter 1,673. There were 10,933 suicides reported in 1914, 3,286 of these being by means of fire-arms and 3,000 by poisons.

Dr. Henry Christian,

Of Boston, was a recent visitor to his old home, Lynchburg, Va.

Dr. E. C. Levy,

Chief health officer of Richmond, attended a meeting of the special committee of the National Commission on Milk Standards, in Washington, January 17.

Lack of Doctors in London.

Owing to the fact that already 170 of the 1,440 doctors who look after London's poor, through the operation of the medical insurance act, have joined the forces, there is a growing need for doctors there. For this reason it is believed women will have to be encouraged to enter the medical profession or arrangements will have to be made for the education in medicine of poor but clever men.

Dr. Stuart N. Michaux,

Of this city, recently visited his sister in Norfolk, Va.

The Petersburg, (Va.) Doctors,

So we are informed, have in the past few

months been kept unusually busy with the influx of new comers due to the growth of Hopewell.

Dr. James P. Roy

Has been appointed to serve another term as one of the jail commissioners of Richmond.

Price of Drugs Still Soaring.

Not only has the price of many drugs increased, some as high as 100 per cent. during the past few months, but it is hard to obtain some drugs at any price. Among those on which the market shows a decided increase in cost may be named bromides, chloroform, alcohol, wood alcohol and bicarbonate of potassium. The price of bromides has risen from 35 cents to \$5.50 a pound, and at times it is hard to obtain at any price on account of their use in the manufacture of munitions of war.

The Sheltering Arms Hospital,

Richmond, which cares for only charity cases, admitted 833 patients to that institution last year. Of these, there were 186 medical and 689 surgical cases, with 892 operations, 21 births and 31 deaths. There were 174 different physicians in attendance and the total expenditures were \$14,220.95. Much of the money used for running this hospital is raised by King's Daughters circles throughout the State.

Dr. and Mrs. Robt. B. Davis,

Who were visitors in Richmond this month, have returned to their home at Holdcroft, Va.

The Health Department of Lynchburg, Va.,

Reported a considerable decrease in infant death rate for 1915 over previous year, the rate being 16.8 as compared with a rate of 21.2 for 1914. This decrease is attributed to a number of improved health conditions. Next to tuberculosis of the lungs, pellagra is the reportable disease having the greatest incidence, there being 23 cases of pellagra in Lynchburg, 20 white and 3 colored. No new cases of this disease, however, were reported in December.

Dr. W. C. Nunn,

Of West Point, Va., has been confined to his house by rheumatism.

The American Orthopedic Association

Announces the appointment of Dr. Mark H. Rogers, Boston, as editor of *The American*

Journal of Orthopedic Surgery, the only periodical in the English language devoted to Orthopedics. The journal, which has now completed 13 volumes as a quarterly publication, will henceforth be issued monthly, the first number in its new form being that of January 1916. The subscription price is \$4 per year. The office of publication has been transferred from Philadelphia to Ernest Gregory, 126 Massachusetts Avenue, Boston.

Dr. J. J. Terrell,

Lynchburg, R. D. 1, Va., has been re-elected surgeon for the Garland-Rhodes Camp, Confederate Veterans.

A Home Nursing Class

Is the latest innovation to the curriculum of the Y. W. C. A., this city. The object of the class, which will be in charge of graduate nurses, is to teach women first aid treatment and give general instructions as to the care of the sick in the home.

The Sale of Red Cross Seals

In this State, it is estimated, will approximately total \$8,000 for 1915. The sale in Virginia in 1914 came to less than \$4,000.

Dr. A. L. Gray,

Chairman of the Medical Faculty, Medical College of Virginia, has been appointed by Dr. J. A. White, president of the Medical Society of Virginia, to represent the Society at the annual meeting of the Association of American Medical Colleges, which convenes in Chicago, February 8.

For Sale—well established medical practice with desirable dwelling house and other buildings, on railroad in famous Shenandoah Valley. Macadam roads; collections the best; climate and social advantages unsurpassed. Will introduce successor, who must have some money. *Address*, Box 32, Rockingham, Va.

Obituary Record.

Dr. William A. Swimley,

Of Winchester, Va., died in Staunton, December 18, at the age of 69 years. He was a graduate of the Cincinnati College of Medicine and Surgery in 1876.

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ACIDOSIS.*

By St. GEO. T. GRINNAN, M. D., Richmond, Va.

The study of acidosis is beginning to solve some problems that have either been incorrectly explained or not explained. Acidosis embraces so many problems that it will not be possible to take up here but a small part of the subject.

The experiments which are going on now concerning the application of colloid chemical principles to problems of biology and medicine are reaping a rich harvest.

The term acidosis has been applied to certain disturbances associated with decreased alkalinity of the blood and changes in the urine resulting in acid intoxication. The intoxication is of the nature of a chemical poison and is capable of producing severe symptoms and even coma and death. Acidosis varies widely in degree. There is a close association between carbohydrates and fats in body metabolism. The carbohydrates in the body are partly converted into fats.

Beta-oxybutyric acid is formed in the metabolism of fats, and in health is quickly oxidized so that no accumulation takes place.

In acidosis, oxidation fails to occur, probably because of the non-combustion of carbohydrates. The beta-oxybutyric acid and its derivatives, acetone and diacetic acid, accumulate in the blood, being eliminated by the urine. Acetone is also eliminated by the breath.

Among the causes to provoke an attack of acid intoxication may be mentioned adenoids, chronically inflamed tonsils, fat indigestion, lack of carbohydrates, continuous profuse vomiting, chronic pain interfering with digestion,

eye-strain, headache, kidney disturbances, and diabetes. While no age is exempt, children are frequent sufferers from such disturbances.

A cause frequently overlooked is eye-strain, but indiscretion in diet is the most common cause. Repeated attacks materially aid in the diagnosis.

Children suffering from acidosis usually have loss of appetite, nausea and vomiting, headache, pallor, great restlessness, and some increase in body temperature. In the severer forms of acidosis, abdominal pain (especially in the region of the appendix), dizziness, intense thirst and shortness of breath are well established symptoms.

The study of the relation between edema and acidosis and chlorid retention and acidosis has been made by numerous investigators. The work of Dr. Martin Fisher is particularly interesting in this connection. The theory which formerly prevailed concerning the acidosis of certain types of heart disease and nephritis was that the inability of the kidney to eliminate sodium chlorid and its retention in the body was responsible for edema. The salt-free diet was the result of this theory. Good observers noted a failure in the sodium chlorid restriction. According to the studies of Dr. Fisher (*J. A. M. A.*, Jan. 23, 1915) "the hydrophilic (protein) colloids of the body and their state are chiefly responsible for the amount of water absorbed and held by any cell, tissue or organ under physiological and pathological circumstances."

"There exists a complete analogy between the absorption of water by simple protein colloids and by living cells. The presence of any salt, including sodium chlorid, reduces the amount of water absorbed by any (protein) colloid, and similarly the amount held by tissues either under normal circumstances or in states of abnormally great hydration (edema).

*Read before the Medical Society of Virginia at its forty-six annual meeting at Richmond, October 26-29, 1915.

"These considerations have compelled the conclusion that sodium chlorid restriction as a scheme of therapy is not only wrong in principle but harmful in practice. *Sodium chlorid retention is not due to an inability of the kidneys to eliminate it, but to a change in the proteins (and other colloids) of the body as a whole. Sodium chlorid retention does not lead to edema, but the changes which lead to edema and to sodium chlorid retention are the same, consisting in the main of an abnormal production and accumulation of acid in the body.*

"The water retention likely to be observed in all these states is not secondary to the chlorid retention, but both are due to the existing acid intoxication. The presence of acid in abnormal amount in the body not only increases the hydration capacity of the (protein) body colloids, but also increases at the same time their capacity for holding chlorid."

Experiments are easily made with gelatin. Acidified gelatin takes up a very much larger quantity both of water and sodium chlorid than neutral gelatin.

Kerley's recent text-book on Pediatrics points out the retention between scurvy and acid intoxication. The blood in scurvy is 35/200 of the normal alkalinity. Scurvy may, therefore, be regarded as a form of acid intoxication.

The result of an operation on a diabetic depends on the preparation of the patient. The necessity of storing glycogen in the body before operation has been fully demonstrated, and the best means yet devised to this end is the oatmeal treatment. As pointed out by Crile, the application of the principles of "anoci association" helps to mitigate the exciting causes of diabetic coma.

This would bring us to a study of the intravenous use of colloidal (gelatin) solutions in shock.

The coma of diabetes, while usually due to acidosis, may be due to uremia or other causes.

The diminished alkalinity of the blood in acidosis is unfavorable to diuresis, and acetone, therefore, may not be properly excreted. For this reason acetone bodies may only moderately appear in the urine of a patient who has severe acid intoxication.

Analysis of the blood is of great importance when we realize that the accumulation of acetone in the blood and its excretion in the urine does not always conform to any fixed parallel

(W. McK. Marriott, *J. A. M. A.*, Aug. 1, 1914).

The estimation of the degree of acidosis can be easily worked out at the bedside. "Five c.c. of urine is mixed with 2 or 3 drops of glacial acetic acid and 1 c.c. of a 0.5 per cent. solution of starch. Then 6 drops of 1 per cent. tincture of iodine is added. Normal urine turns blue. When no blue tint is apparent—not even for a minute,—the presence of diacetic acid is revealed. By graduating the tint in a set of test tubes it is possible to estimate the degree of acidosis" (Steensma and Kopmann, *J. A. M. A.*, Aug. 8, 1914, page 520).

Another simple method of estimating the degree of acidosis has been pointed out by Dr. Yandell Henderson of Yale (*J. A. M. A.*, July 25, 1914, p. 318). He finds that the time that the breath can be held is an index of the degree of acidosis. Research work along this line is now being made. This method is especially valuable when considering an anesthetic.

If the individual with acidosis cannot hold the breath for twenty seconds, general anesthesia is contra-indicated.

In noting the effects of acidosis C. Coombs (*British Med. Jour.*, June 6, 1914) reported two cases of acidosis terminating chronic myocardial disease. This is especially interesting, giving some indication of the far-reaching effect of this trouble.

That acidosis, unless properly treated, may become chronic, is evidenced by cases of cyclic vomiting and cyclic diarrhoea, lasting for years, occurring at fixed periods with efforts at self elimination.

Dr. Henry E. Hale has reported a case of acidosis and death in a girl aged nineteen months (*Archiv. Pediat.*, April, 1909). In cases of diabetes, some patients on a carbohydrate free diet run the risk of acidosis and coma. The long withdrawal of carbohydrates is not without danger and, as noted by Dr. David Riesman (Foreheimer, Vol. 11, page 735) "acts as a double-edge sword in diabetes. It lessens the hyperglycemia but favors acidosis." In order to meet this situation Von Noorden introduced the oatmeal treatment of which so much has been written.

Von Noorden thinks oatmeal has a specific effect on carbohydrate metabolism of the liver. Dr. Riesman thinks the oatmeal treatment is applicable to all cases of acidosis, especially

those in which the exclusion of carbohydrates fails to render the urine sugar-free. If on a restricted carbohydrate diet a strong ferric chlorid reaction is given, alternate oatmeal days and vegetable days are needed. In severe cases it is possible by the oatmeal treatment to render the urine sugar-free and thus relieve acidosis of diabetics.

In the acidosis of children buttermilk poor in fat is good. Butyric acid which is present in butter and cream, distinctly increases the ketone bodies in the urine. As both butter and cream are so valuable in child life, it is an easy matter to have both butter and cream washed for cases of recurring or present acidosis.

Regarding the alkaline treatment of acidosis, it must be noted that the quantity of sodium bicarbonate to be prescribed, though large in comparison with the usual custom, is at times almost insignificant in relation to the acidity to be neutralized.

As much as 3,000 grains has been given daily to a youth of sixteen years for a week. In the severe cases, "every available channel of introduction—by mouth, intravenously, sub-cutaneously, and rectal,—are called for, with heroic doses. Grains of bicarbonate must be replaced by drachms!"—(Editor, *J. A. M. A.*, Dec. 26, 1914, page 2297).

201 West Grace Street.

DIET IN CHRONIC NEPHRITIS.

By WILLIAM J. MALLORY, A. M., M. D.,
Washington, D. C.

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Department of Medicine, and Attending Physician
to the Out-Patient Department of the
University Hospital.

Every rational act must be intelligently purposeful. This is especially true of the treatment of disease, for, in order to avoid empiricism, any therapeutic procedure must represent an intelligent effort to prevent or arrest pathogenic process and equalize function with requirement. This is especially true of the chronic nephropathies. Even palliative measures must be governed by this rule, and, in order to be effective, they must be based upon a knowledge of pathology and physiology. A knowledge of pathological changes produced, and an understanding of the manner in which these changes impair function is necessary, in order that pathogenic changes may be limited

as far as possible and the functional requirements maintained within the limits of capacity.

If the consideration of chronic nephritis be approached from this viewpoint, the effect is at first unsatisfactory to the clinician because the picture presented by the pathologist is discouraging. The classification according to etiology into toxic and infectious nephritis is helpful toward prophylaxis; but the description of a tubular nephritis, a capsular glomerular nephritis, an intracapillary glomerular nephritis, and a vascular nephritis, with such definite permanent changes that there is little hope in therapy of any kind, is depressing, although accurate.¹

The experimental physiologists have attempted to build further upon the excellent foundation laid down by pathologists, and while all that they present is not universally accepted, some of the information furnished is of such a character as to require a re-statement of the problem of the management of nephritis.

By making use of the selective action of certain poisons on the different parts of the kidney, it has been possible to produce in experimental animals a nephritis in which the glomeruli and vessels were damaged, and the tubules unaffected; and in others a marked damage to the tubules, while the vascular apparatus was left intact. The excretion of different non-poisonous substances was then studied in each class of lesions in the experimental animals, and then the same tests were made on chronic nephritics.

It was found that the nephritics naturally fell into two classes: one class eliminated sodium chloride and potassium iodide normally, and other substances slowly, while the other class of cases showed a marked retardation in the excretion of salts and a free excretion of the other substances.²

It is not claimed, even by the most enthusiastic, that all nephritides may be separated into two pure forms, vascular and tubular; but it is claimed, and the best pathologists agree, that each variety practically may occur in pure form at first, and later may be combined in varying proportion. This is obvious when it is recalled that the kidney consists essentially of four units, viz., an afferent vessel, glomerulus, tubule and efferent vessel. Destruction of either one of these units results sooner or later in atrophy of the other three.³ Bearing this

limitation in mind, the classification of chronic renal disease most useful to the clinician is:

1. The vascular or arterio-sclerotic, which includes both the primary and secondary contracted kidney—interstitial nephritis.

2. The tubular or parenchymatous—the large white kidney and large variegated kidney.

3. A form called “azotemic” because it is characterized by an increase in the “rest” nitrogen in the blood.⁴ This, however, is a physiological and not a pathological variety, and as yet lacks an experimental analogue.

Clinically, *the vascular type of nephritis* is characterized by abundant urine of low specific gravity, little or no albumin, few or no casts. Edema is almost always absent, and when present is due to failing cardiac compensation. Hemorrhages from the nose, stomach, uterus, lungs, sclera, and retina, and also apoplexy, are frequent. True albuminuric retinitis does not occur, nor does uremia except in the terminal stages. Subjective symptoms, such as hemicrania, substernal pressure, asthmatic attacks, sleeplessness, angina pectoris, and attacks of rudimentary pulmonary edema, are frequent. These are commonly looked upon as uremic symptoms, but are probably vascular phenomena, as are occasional attacks of hemianopsia and paresthesia of the hands and feet. Just as cramp of the coronary vessels may produce angina pectoris, a cramp of the cerebral vessels may produce a transient hemiplegia or aphasia. These so-called vascular crises of Pal are the result of arterio-sclerosis and high blood pressure.

Functionally, this type of kidney excretes sodium chloride and the iodides normally, while milk sugar (in the test of Schlayer) is retarded, reduced and prolonged, as is also the phenolsulphonphthalein excretion. An important characteristic of the vascular type is that if an increased quantity of water be given, it is promptly eliminated; and, on the other hand, if the quantity be suddenly cut down, the subsequent urine will show a distinct rise in specific gravity. In other words, the kidney retains the ability to concentrate the urine; the ability to concentrate is lost in tubular nephritis.

Clinically, *the tubular form of nephritis* is characterized by edema, especially of loose connective tissue, as that of the eyelids, buttocks, scrotum, dorsum pedis and around the

Achilles tendon. This is to be distinguished from the edema of heart-failure, which appears in the dependent areas. Cardiac hypertrophy, high blood pressure, hemorrhages, albuminuric retinitis and “uremia” are absent except in the late stages. Death is not in uremia, but dropsy and pulmonary edema. The urine is scanty, albumin is abundant, casts of every kind are very numerous.

Functionally, this type of kidney shows retarded and reduced excretion of sodium chloride and potassium iodide, but a normal elimination of milk sugar.

A third form known as “azotemic” is characterized by the retention of nitrogenous bodies in the blood. This form lacks an experimental analogue, as it is impossible to produce experimentally, the site of the elimination of nitrogenous bodies being still a mystery. It sometimes occurs in combination with the tubular form, in scarlet fever, or as a closing chapter in other forms of chronic nephritis.

Clinically, in the pure form there is no high blood pressure or edema. The symptoms are headache, great tiredness, disgust for meat, nausea and vomiting. The vomitus may smell of ammonia; the diarrhoeal stools are alkaline. True albuminuric retinitis, and occasionally hemorrhagic pericarditis and pleuritis, occur. Death occurs in “uremia”—i. e., unconsciousness, coma and convulsions. Necropsy often reveals intestinal ulcers, but no marked change in the blood vessels.

Functionally, the azotemic form is characterized by a retention of nitrogenous bodies in the blood. This is demonstrated by placing the patient on a diet of very low nitrogen content, and then either increasing the nitrogenous food or giving ten grams of urea by mouth. In either case there will be an exacerbation of the symptoms above named, and if the excretion of urea is observed, it will be found that instead of eliminating the increased nitrogen in about twenty-four hours, as a normal person would, it requires several days. Both salt and milk sugar are excreted normally.

The attempt to particularize in the treatment of nephritis according to the above classification does not lead to perfect results, it is true, but by means of the various functional tests now available, diagnosis may be made a little more precise, and when this is done,

treatment will naturally become a little more specific, which is certainly a step in the desired direction.

Attention has been repeatedly called to the fact that vascular nephritis, that is, the contracted kidney, is not a local disease, but a part of "atherosclerosis" of the small arterioles in all the organs of the body, including the kidney. In the treatment, therefore, it is not a local but a generalized condition which must be dealt with even when the symptoms are predominantly renal.

In the first place, further damage to the vessels should be prevented by removal of the great cause, infection, by treating syphilis, when present, and especially searching for and removing all foci of infection in the tonsils, teeth, ears, genito-urinary tract and pelvis. Excesses in alcohol, tobacco, coffee, physical exercise and mental emotion should be avoided, because they increase the already high blood pressure above the point of compensatory reaction. On the other hand, the blood pressure should not be lowered by electrical treatment or depressing drugs beyond the point necessary to compensate for the increased resistance due to vascular disease.

A discussion of the dietetic management of this type of renal disease is important because it is in this vascular form that errors are frequently made. Chloride and nitrogen elimination not being impaired, a burdensome restriction of salt and nitrogenous food need not be enforced. Still, since one form may merge into another, excesses should be avoided, especially since nothing is to be gained by indulgence. The advice so frequently given to nephritics to drink plenty of water should be avoided in this form. The amount of fluid taken should be kept within physiologic limits, that is, about a liter a day, because an excessive amount tends to increase vascular irritability, high tension, hypertrophy and the subjective vascular symptoms of which the patient complains. The old plan of giving large quantities of milk—three or four liters a day—is not suitable in this form. And for the same reason carbonated waters should be prohibited.

The effect of a high protein diet has been shown to exert an unfavorable influence on the clinical course of chronic interstitial nephritis. In those cases showing an increase

in the nitrogen content of the blood, such symptoms as edema, nausea, headache, vomiting and loss of appetite,⁵ occurred or were increased in severity. There is no constant relation between the nitrogen content of the blood and blood pressure, or the phenolsulphonphthalein excretion. The exact effect of an increase in blood nitrogen produced by a high nitrogenous diet is not known at present, but presumably it is unfavorable to the best interest of the patient, since it seems to increase his discomfort.

Hot and cold baths should be avoided on account of their stimulating effect on the vessels, and tepid baths taken instead.

Should edema develop, as it sometimes does in the late stages of this variety of nephritis, it is due to cardiac weakness, and should be treated by rest in bed and the administration of digitalis.

It is in the tubular or parenchymatous nephritis that the salt-free or salt-poor diet is of value. The total intake of sodium chloride should be reduced to two or three grams per day, though in some cases as much as five grams per day is tolerated. The main part of the food should be fats and carbohydrates. A diet consisting of salt-free bread 200 grams, meat 200 grams, vegetables 250 grams, salt-free butter 50 grams, and sugar 40 grams, will furnish 1,500 calories (which is sufficient for a patient resting in bed), and will provide 60 grams of protein, which is adequate but not excessive. A milk diet is not applicable because in the quantity given it may contain more of both salt and protein than is desirable (1.6 NaCl per liter and 30 grams of protein per liter).

In the azotemic form there is a retention of the products of protein metabolism in the blood, so the diet should contain a minimum of protein, and the nutritional requirements be met by carbohydrates and fats. Here again is place for caution against the milk diet. A patient on a purely milk diet may be getting more protein than is good or desirable. A patient in bed requires about 1,500 calories. In order to provide this, about two and a half liters of milk must be consumed. This means that the patient is getting 75 grams of protein and about 4 grams of NaCl. It has been repeatedly shown that a person in moderate activity may be maintained in a state of ni-

trogenous equilibrium on a much smaller amount than this, e. g., 30 grams of protein,⁶ and a patient threatened with "uremia" may very well have his protein reduced far below this, or even be placed on a protein free diet for a few days. Some good authorities advise only water and carbohydrates in the form of fruit juices and sugar for several days. In the acute cases this may be combined with venesection followed by infusion of dextrose solution.

In the chronic cases one gram of albumin per kilogram of body weight, or about two liters of milk for a person weighing about 125 pounds, may be allowed, the remaining requirements to be made up by sugars and fats in some other form. Soups and broths should not be given, because of their low nutrient value, high salt content and the presence of meat extractives.

In this parenchymatous form of nephritis there is a special reason for the use of a diet rich in carbohydrates, for investigation has shown that the action of the poisons which produce necrosis of the parenchymatous cell of the liver and kidney, namely, chloroform, phosphorus, potassium chromate and uranium nitrate, is greatly reduced when a diet rich in carbohydrates is used. The carbohydrates in some way exercise a protecting influence over the parenchymatous cells of the liver and kidney against these poisons.⁷

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1720 Connecticut Avenue.

FRACTURE OF THE PELVIS WITH LACERATION OF THE URETHRA—REPORT OF A CASE.*

By ROBERT C. BRYAN, M. D., F. A. C. S., Richmond, Virginia.

There is probably no surgeon in this room who has not at some time in his professional career seen the results of some degree of traumatic injury to the urethra, whether it be in the old scarred, long-standing state characterized by a history of urethral stricture, or more recently acquired by violent trauma and in the acute throes of laceration and urinary retention. The male urethra, as a long mucous tube swung from beneath the pubic arch, is predisposed by virtue of its anatomical position to the crushing infringing violence of athletic games, horseback riding, and occupational work, such as carpenters and iron-workers, who fall astride of staunch, unyielding objects.

Rupture of the urethra may be: 1, complete; or 2, incomplete. It is the incomplete type that is most frequently seen, the inferior wall being torn, the upper remaining intact. Hemorrhage, blood clots, and partial retraction of the curling ends are sufficient barriers to block the flow of urine as if the injury were of the complete type. In the latter, separation may be an inch or more, a large blood clot packs its way in between the severed ends, urination is impossible, the bladder slowly fills, and urgent surgery is imperative.

The physical findings of rupture of the urethra are contingent upon the site of the injury, which may be: 1, anterior to the cut-off muscle; 2, between the two layers of the triangular ligament; 3, posterior to this structure.

If in the penile urethra, there may be a serious escape of blood dependent upon the degree of trauma and mucus or mural laceration. There may be no urinary retention. The hemorrhage finally stops, bogginess and swelling determining the site of fracture. The bladder is intact and, continuing to fill, soon demands evacuation. The well-defined tumor of the distended bladder, the great desire to void, with absolute inability, instantly differ-

*Read before the second annual meeting of the Association of Surgeons of the Chesapeake and Ohio Railway at White Sulphur Springs, W. Va., September 3, 1915.

entiate this form of urethral rupture from the posterior type, which is characterized by a urinary extravasation and infiltration into the pelvic and surrounding tissues. With this infiltration, shock and urosepsis are manifested, and there is no hypogastric tumor nor imperious desire to void. The catheter is unable to gain the bladder. The urinary desire is not so insistent, but the rapidly developing septic state demands immediate surgical measures. It is, then, the external cut-off muscle which decides extravasation. Ruptures anterior to this point must be signaled by distention of the bladder, while rupture posteriorly is characterized by urinary infiltration, absence of bladder tumor and the septic state.

Rupture of the urethra, associated with fracture of the pelvis of either one horizontal ramus or both, complicates the picture, as the displacement of these bones, or their fragments, may be a further indirect cause of injury to the urethra and soft parts. The escape of urine and blood are into the extraperitoneal tissues, the space of Retzius, and by stripping up the peritoneum may establish pelvic cellulitis, and peritoneal or subdiaphragmatic inflammatory states.

The symptoms of rupture of the urethra are easily recognized: hemorrhage, retention of urine, and tumefaction in anterior lacerations, and later infection and urosepsis in posterior rupture, should determine the condition. There may be at first an escape of urine before the passage has become blocked by blood clots. Soon there is pain, a feeling of pressure, boggy tissues and profound shock; the swelling increases, infection is now inaugurated and urgent measures must be adopted. The skin is white and shiny and, unless incised, becomes dark-red; black-blue spots and blisters appear, and gangrene is obvious. Drainage is necessary to do away with this retained cesspool. With a small rent in the urethra there may be a slight leakage or infiltration of urine which gives rise to a train of constitutional symptoms which will require careful investigation, but later subside, requiring no operation.

Rupture of the urethra is to be differentiated from rupture of the bladder. In rupture of the latter there is no escape of blood or urine from the urethra; on examination the

bladder is not found distended, and the catheter introduced through the uninjured urethra finds its way to the bladder, but no urine flows, it having escaped either extra- or intraperitoneally.

Prognosis is contingent upon sepsis. Early operation is urgent. Coffman states that the mortality without pelvic fracture is 14.3 per cent. and with pelvic fracture 41.7 per cent.

Treatment is surgical. It may be roughly divided into two categories: 1, rupture anterior to the cut-off muscle, inability to void and tumefaction of the bladder; 2, rupture posterior to the cut-off muscle, inability to



Fig. 1.—Bladder filled with bismuth subnitrate is seen in the center. There is no communication with the urethra.

void, with no tumefaction of the bladder, and the rapidly developing septic state. Suprapubic cystostomy is the operation of choice.

The case which the writer wishes to report is that of W. B., age 34, engineer. On November 4, 1914, he was in a railway wreck and sustained a fracture of the rami of both pubic bones, traumatic laceration of the urethra and consequent retention of urine. Twenty-four hours afterwards perineal section was made. The urethra could not be found, and drainage could not be established. This was followed by four other suprapubic operations in attempt to restore the continuity of the canal. January 28, 1915, the patient was admitted to Grace Hospital, examined and found to have a small suprapubic cystostomy opening through which alkaline infected urine

was trickling away. A No. 26 sound went about 6½ inches to the external cut-off muscle where it stopped abruptly. Under ether anesthesia a sound was inserted through the

drawn backward into the bladder and through the suprapubic opening.

No attempt was made to suture the ends of the lacerated urethra. The distance between the two was about two inches. The patient made a clean post-operative convalescence, and the tube was removed on the 18th day. On April 2, 1915, he went home, taking No. 28 F. easily. He had had several emissions. There was perfect control of the flow of urine, and but for a delayed and imperfect union of the bony parts, the patient claimed that he was as strong as he ever was.

Another instance of rupture of the urethra from trauma, which the writer would take this opportunity to present, is that of Mr. J., referred by Dr. R. D. Garcin, Richmond, Va. Seventeen years ago, as a carpenter, he fell

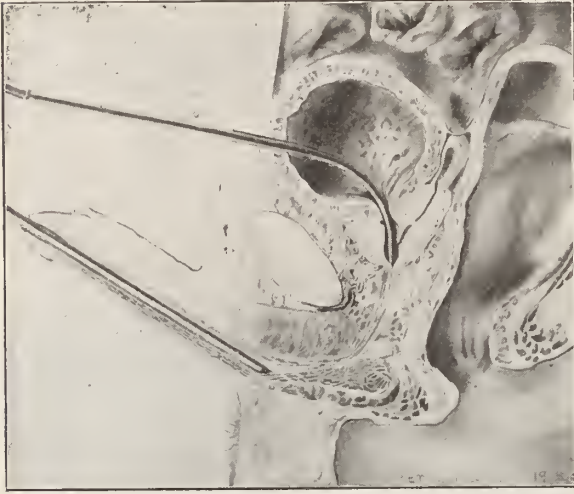


Fig. 2.—The sounds in the bladder and in the urethra show the intervening obliteration of the urethra.

urethra as far as the point of occlusion. The finger was inserted through the suprapubic opening and an attempt made to force the sound backward through the sclerotic tract as



Fig. 4.—Stone in the prostatic urethra—an accurate mold.

astride of a beam, crushing the urethra so that he could not void. He was carried to a hospital, but refused to have anything done other than a suprapubic puncture. During the succeeding fifteen years he had voided through this opening in a squatting posture, declaring that he had always perfect control of the flow. When seen by the writer about two years ago on account of pain and great vesical tenesmus, a sound was inserted through the suprapubic fistulous tract which elicited the click of a stone. The suprapubic opening could not be sufficiently enlarged to remove the stone, so a perineal section was performed, the calculus being wedged in the prostatic urethra, the two ends tapering off and enveloped by the cut-off muscle. (Photo is herewith shown.) The continuity of the canal was restored and a tube inserted through the urethra into the bladder.

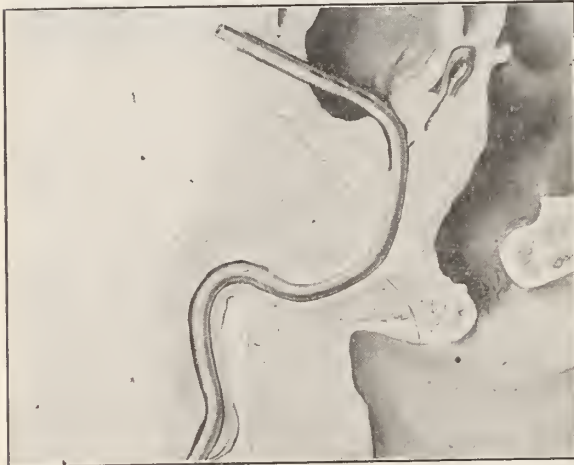


Fig. 3.—Tube inserted through the bladder and urethra for drainage.

far as the bladder. This could not be done. A long pair of curved dressing forceps was then forced through the urethra and on until it gained the prostatic urethra proper. A rubber drainage tube about No. 22 F. was

The patient made a happy convalescence, and when last seen was voiding *per viam naturalis*.

Grace Hospital.

PODALIC VERSION VERSUS FORCEPS.*

By JOHN L. HANKINS, M. D., Fordwick, Va.

It is with fear and trembling, and after due consideration, that I present this apparently heretical paper; but I have felt that we have been too closely bound by the conventional forceps, when we could accomplish the same purposes, in many instances, by doing podalic version, followed by an immediate delivery.

Version, or turning, is an operation which changes the polarity of the fetus with reference to the mother, with the object of changing an abnormal, or relatively abnormal, relation into a normal one.

There are three kinds of version, viz.; cephalic, breech, and podalic. Cephalic version was preferred in the time of Hippocrates, under the belief that the child would be best born head first. Celsus, about the time of Christ, and Aetus, five hundred years later, did podalic version; but it seems that the art was lost until the time of Ambrose Pare (1550). Wiegand, in 1807, revived it; but before this time it was being done in Japan and Mexico in a manner too cruel to discuss. It remained for Wright (1856) and Braxton Hicks (1860) to perfect the combined method.

There are three methods of doing version—external, internal, and a combination of the two—bipolar.

When speaking of version, it is usually the podalic that is meant, and by the bimanual method, and it is to be preferred, because

First.—Cephalic version is too difficult and, in many cases, impossible.

Second.—Usually there are immediate or prospective indications for rapid delivery on the part of the mother or child.

Third.—There is often slight pelvic contraction and, to many obstetricians, there seems to be proof that the aftercoming head is more easily delivered under such conditions than otherwise.

The conditions for this operation are—

First.—Cervix dilated enough to allow the

hand to pass, and, if delivery is to follow at once, dilatation is to be completed, provided this condition does not exist at first.

Second.—The pelvis must not be too much contracted.

Third.—The uterus must not be in a tetanic state, or retracted over the head of the child.

Fourth.—DeLee says that it is best not to do a version on a dead child; but I do not agree with him, unless there is some maceration of the fetus.

Fifth.—The child should be mobile; but this is not always essential.

The indications for version are—

First.—Transverse presentations.

Second.—Placenta previa.

Third.—Eclampsia.

Fourth.—Slightly contracted pelvis.

Fifth.—Face or brow presentations.

Sixth.—Prolapse of the cord, any condition requiring a rapid delivery, or, I might say in a general way, almost the same indications as forceps.

The methods of doing podalic version depend on the relation of the axis of the child to the mother, so I will describe only one method which I have used with a great deal of satisfaction for the past several years and, I believe, is well worth trying when you are about to use forceps in a cephalic case.

After making a correct diagnosis of the position and the requisite toilet of self and patient, anesthetize the patient, place her in the lithotomy position across the edge of the bed, with the feet held by an assistant. With careful boldness enter the uterus, *between* pains, with the hand which will present the palm to the baby's belly, or, if the operator has a decided preference, he can use the other hand instead, advancing the hand until the feet are caught just above the ankles between the index, middle and ring fingers. Then pull down gently enough to take the slack out of the legs, which will put the base of the palm against the child's forehead. At this juncture hyper-extend the wrist joint, which will throw the head up and at the same time make greater traction on the legs. By this movement you will have the greatest diameter of the child engaged above the thin uterine ring during the most critical period, thereby lessening the chances of rupture.

Of course, you are to assist your internal

*Read before the Augusta County Medical Society, Inc., at Staunton, Va., November 3, 1915.

hand by external manipulation, pressing the child against the internal hand.

If one foot is caught, try to get the anterior one, in order to get the child's back forward; but if the case is unusually difficult, I am satisfied to get either foot. A few moments of gentle traction on the feet, between pains, will be rewarded by complete version. Right here some books tell us to leave the rest to nature; but I am convinced that it is best to complete the delivery while you have the patient anesthetized, which can be accomplished in a few minutes, all things being favorable.

There are few operations, I believe, that are so satisfactory as podalic version, when done at the proper time and in the proper manner, and few so fraught with danger when performed without due consideration.

The application of high forceps is a major operation as compared to version, which is a minor operation.

Second.—A great deal of skill and experience is required to properly and safely use forceps, and in the hands of an inexperienced operator, it is a dangerous weapon. *Per contra*, a good knowledge of anatomy, complete anesthesia, and a cool head will, in most cases, do the trick in version.

Third.—Most of the indications are for rapid delivery, and not always is there a good dilatation, and version is a great deal more speedy and can be done with safety by any person who will not be frantic or excitable, and will duly consider the anatomical relations of the two bodies, with *perfect* relaxation under anesthesia.

Fourth.—Podalic version can be done with less assistance, less skill and with possibly less chance of infection, and with more rapidity.

DeLee tells of a most able man doing version after failure to engage the head. From statistics given by this same author we have this evidence of how version is an ever-present help in time of trouble. In two hundred and eight cases in which forceps were used, version had been tried on only one ($\frac{1}{2}$ per cent). In forty-four cases in which version was done, forceps had been tried in six cases, or fourteen per cent.

I risk the statement that podalic version can be done in most all cases where high forceps are indicated, and, unless the presenting part is in an exceptionally good position and

an expert with forceps is present, it is better to do version.

My observation of good obstetricians using forceps has shown more damage to mother than version.

It seems to be true that the infant mortality is greater in version than forceps; but that can be explained by the fact that most of the version cases are (in maternity hospitals, where statistics are made) extreme cases, and are brought to be delivered at once on account of some emergency, and a great many times the child is dead before being brought in, having gone through the "watchful waiting" of several hours or days by some indulgent midwife. I believe that if we could get some reliable statistics taken from private practice, the figures would be smaller; but, at any rate, a dead child is better than one with the various forceps palsies.

I hope I have not made claims that are too extravagant for this operation, and I want to reiterate some of my statements which are highly necessary to observe to procure the ideal results:

First.—Make a correct diagnosis of the case.

Second.—Complete anesthesia is necessary *during* version, and less *during* delivery.

Third.—Do the manipulations of version *between* pains, and during delivery make the necessary traction *during* the pains.

Fourth.—Do not be frantic; but be cool, considerate, and careful, remembering that "knowledge comes; but wisdom truly lingers," and you can leave your patient with the sweet consciousness of a duty well performed.

RECTAL DISEASES AS A CAUSE OF NERVOUSNESS.*

By LLEWELLIN ELIOT, M. D., Washington, D. C.

That nervousness may be produced by diseases of the rectum is a fact we cannot deny, if we reflect upon the many cases of unexplained nervousness presenting in practice.

Neuralgia, pruritus, sciatica, insomnia, hysteria, even insanity, may be due to some rectal affection.

Constipation, by the absorption of the toxins of the feces, is a well recognized cause of many diseases. Dr. J. Harry Thompson, as far back as 1872, contended in his lectures at

*Read before the Medical and Surgical Society of the District of Columbia, December 2, 1915.

the Georgetown Medical School that constipation was a prolific cause of insanity.

My desire in selecting this subject is to draw attention to rectal affections as a cause of much of the unhappiness in some families, much of the suffering of patients, and to suggest that physicians give more attention to the rectum as a cause of many unexplained complaints.

It only too frequently happens that we question a nervous patient regarding all the diseases his far-away ancestors have suffered, and neglect to ask questions as to the rectum. When our examination has been completed, the patient is given purgatives, digestives, asafetida, valerian, or the bromides. Our examination has dealt probably with every organ in the body, blood pressure, temperature, condition of the bowels, whether constipated or regular; the intestinal canal has been followed to the splenic flexure. These organs have not explained the case satisfactorily, so a diagnosis holding the uterine or the ovaries responsible is made, or we just relegate the patient to the class of "devilish nervousness." We then treat according to this diagnosis; frequently we succeed in benefiting the patient, sometimes we do not, and they become disgusted and go to some other medical man. Our successor will oftentimes promise most marvelous results; in time he will lose the patient to some who has a remarkable skill in just such cases. Had we paid a little more attention to the patient's history and permitted the ancestors to remain in peace, it would have been much more profitable. Instead of allowing our investigation to end at the splenic flexure, had we gone a little further and investigated the sigmoid colon, the rectum and the anus, we might have been greatly surprised at the revelations.

In one instance, we may have been dealing with a psychoneurosis; in another instance, we are dealing with the true explanation of the patient's complaints.

Without further comment, I shall relate some experiences in the management of some unexplained nervous troubles.

Case 1. *History.*—White man, aged 32 years. Some years since he fell straddle the shaft of a farm wagon; Considerable pain and swelling followed; in a few days all evidence of injury had disappeared and he was

well as ever. At the end of two years he complained of severe pain in rectum and the surrounding parts. Abscess formed and was incised; a fistula was the result of the incision. The discharge, at first small, gradually increased in amount, and he was compelled to wear a cloth in order to prevent soiling his clothing. Fears of cancer possessed his mind, and from being active in politics, hail-fellow-well-met, he became morose, cross, irritable, lost interest in all things and gave himself up as incurable. I met him, and he allowed me to examine him. I assured him that he was suffering from no incurable disease, but that an operation to cure the fistula would restore his health. Two years after this he came to me, whereupon he was placed in a hospital and directions given for the cure of his trouble.

His condition was: Bowels constipated, tongue furred, no appetite, broken rest, headache, cold sweatings, a constant fear of insanity and death of cancer. He had a complete fistula in ano; the external opening was everted and was discharging freely. When he was sufficiently quieted, preparations were made for operation, which he at first refused. However, gentle persuasion and plain talk upon his foolishness overcame his objection. He was given chloroform, and fought like mad during the administration. The fistula was divided and scraped, and was then packed with oakum saturated with carbolized oil. Healing occurred by granulation. His convalescence was uneventful, and at the end of six weeks he was discharged cured, his nervous symptoms being nearly gone. He again took up his work and made good.

Case 2.—*History.*—White woman, aged 24 years, had been under treatment by a stomach specialist for some months; the line of treatment had been stomach washing, digestives, regulation of diet, exercise in the open air. Very little improvement attended his treatment. The diagnosis had been ulcer of the stomach and intestinal indigestion. I saw her in last November, when her condition was as follows: Complexion sallow, bitter taste, bowels obstinately constipated, vomited nearly all the little food she ate, insomnia, constant and noisy belching, headache, unable to remain in one place for any length of time. On examination I found a spasmodic sphincter with retraction of the anus. The finger was first

passed, the rectum being very hot; then a rectal tube was passed, then a proctoscope. A rectal tube was then passed through the proctoscope and a large amount of gas released. An ano-rectal ulcer was found. Under a local anesthetic the ulcer was divided, curetted and dressed with an antiseptic powder. A pill of cascara sagrada was ordered night and morning, and rectal irrigation with a saline solution. This line of treatment was followed for one month when, having improved, she was given a rectal dilator to insert morning and evening, leaving it in place for one hour. The bowels became regular in action, her appetite returned, sleep was uninterrupted, the belching ceased, her nervousness left her and she was practically well. I saw her a few days since. She has taken on flesh, looks after her house, has no stomach or intestinal trouble, and is well.

Case 3.—*History*.—White woman, aged 57 years. Is a woman of good physical development. First seen in February, 1911. Her history as to antecedent diseases was negative; extremely nervous; has spells of despondency with suicidal tendencies; is a great grumbler and makes herself disagreeable to every one.

About thirty years ago, she had proctitis with mucous discharges, these soon assuming a jelly-like character with ribbon stools; stools sometimes were in small balls. Very shortly after the appearance of the proctitis, she noticed a small hemorrhoid; in time others formed; stools contained blood, were extremely painful; therefore, she was always constipated. Her treatment was with ointments, cold applications, rest in bed and nervines.

Condition at the time of examination: In a highly nervous state; bowels constipated, no appetite, sleep broken, despondent, does not want to live, and requires constant watching. There was spasm of the sphincter, and defecation was followed by severe pain lasting for several hours. A large ring of hemorrhoids was inflamed, angry-looking, and dark in color; they were both external and internal. Digital examination conducted very slowly was extremely painful, therefore not complete; rectum very hot and burning to the finger; dreads having an action from the bowel. It was folly to temporize in her case, so operation was advised and, after much hesitation, she accepted, but without hope on her

part of relief. On the following day an anesthetic was administered and the anus dilated with the calibrator. The proctoscope showed the rectum highly inflamed and thickly coated with mucus. There was also an extensive ano-rectal ulcer. The hemorrhoidal tumors were well drawn down and excised, the suture clamp operation being done. Twenty-five sutures were required. One of the external hemorrhoids extended far under the cutaneous surface, so more of the skin was removed than is usually done; consequently much pain followed the operation. Several small lipomatous tumors were also removed, and the ulcer destroyed. Following the operation the catheter was needed for nine days. On the sixth day an enema of olive oil was given, followed on the next morning by a dose of citrate of magnesia; the bowels acted well and there was no pain at the action. There was no rise in temperature during convalescence, and the patient was discharged from treatment on the twenty-seventh day after the removal of her disease. Her condition at that time was an entire change of disposition—no nervousness, no grumbling, but thorough contentment and happiness, and this condition has continued to the present time.

I could continue relating cases of a similar nature, but these are sufficient to prove my point, that rectal diseases are a cause of nervous affections. 1106 P Street, N. W.

THE PHYSICIAN'S DUTY.*

By ISRAEL BROWN, M. D., Norfolk, Va.

"Faith, honor, duty—duty calmly done,
That shouts no self praise o'er a victory won:
One bugle note, one only battle call,
One single watchword, Duty—that is all."

The practice of medicine, unlike that of law, rests upon no precedents or musty tomes. The practice to-day is different from that of even a decade ago. It is an advancing profession, ever seeking new truths and ideas, developing them and, if found not valuable, casting them aside, but always advancing to the common goal of benefits to mankind.

The physician to to-day is very much of a free-thinker in ordinary affairs and, not being tied by hide-bound precedent, is able to seek new ideals, yet earthly enough to be guided by utility and the benefits that will accrue.

*Address of the President, delivered before the Seaboard Medical Association of Virginia and North Carolina, at Norfolk, December, 1915.

He is a very valuable man in public affairs, especially those having a medical trend; thus, he owes a duty to the public. However, his first and highest duty is that to his patient. As there is no word more sublime in the English language than duty, so there can be no greater good than duty to his fellow-man. The true physician will always subordinate self to duty to his patient, but he is apt in his dealings to allow kind and tender feelings for the sick and ailing to lead him astray in pleasing and encouraging the patient with half truths which, though not meant as such, are the basest kind of falsehoods. The continuation of this tempering with duty has led him into slipshod practices and routine prescribing and treatment.

The cancer question is thought to be assisted in its solution by public education. Educate the public to recognize the early symptoms of cancer, and immediately seek the advice of the physician before it is too late,—the Mayos, Rodman, Ochśner, Murphy, Bloodgood, and other leaders, tell us when there is a possibility of cure with the knife. Education is doing its work; but is the general practitioner doing his duty? How often, instead of facing the truth, does he procrastinate, tell the patient to return, or treats her for weeks awaiting development of symptoms; then either operates, or refers her, when cachexia and other symptoms have occurred to such a degree that a man in the street can diagnose the case. In cases of cancer of the uterus he tells the patient to wait until other hemorrhages occur, or informs her that she has "ulcer of the womb."

In cases where there is a small lump in the breast, how often do we wait to see what it is going to do, or poultice, or paint it with iodine, or remove without a radical operation, perhaps fearing that the radical operation will be unto him a monument? Or should the truth be disguised as in the case of one physician, who bluntly informed a patient that he suspected cancer, and an operation was necessary, only to have the patient disappear. Meeting the doctor a few weeks later, she very blithely informed him, "Oh! Doctor, you were dreadfully mistaken; Dr. X. operated on me, and he said I did not have a cancer at all, but only a small carcinoma."

The cancer of the stomach which is treated

for six months or a year for chronic indigestion, until "he who runs may read," and make a diagnosis; those early ulcers of the stomach which are treated and presumably cured, and in which cancer occurs later; the preventive field of cancer so beautiful and magnificent in its benefits—are we doing our duty towards it? The great surgeons and research workers are doing their part, but can we say we are doing our daily duty, to these early cases? In figures, about two-thirds of the benefit is gained by publicity and over one-third lost by physicians.

Another duty we owe our patients is in lessening or withholding our approval of the large and increasing numbers of ill-prepared specialists. The specialist is a necessity, but not the ill-prepared specialist who, after a six-weeks' post-graduate course, fosters himself upon his own initiative as a specialist, and professes and charges more for his services, though he has no more knowledge in diagnosis and treatment than the general practitioner. Then we have the specialist who treats every patient that applies to him by reference or otherwise, for every disease of every organ in the body, because, forsooth! in the correlation of the organs the treatment of all improves the one of his specialty. There are general practitioners who claim themselves as specialists in certain lines, and thus patients are first treated as special patients with the ultimate hope of having them remain as general patients. The evil of specialty has caused the opprobrium of fee splitting, accompanied by the extortionate fee charged.

The annual vacation of the physician and his visits to centers of knowledge and learning are duties he owes to the patient as well as to himself. He must keep himself prepared and abreast of the times. He must get out of the rut of routine and return with new hope and ideas, so as to give to his patients not only all that is best in him and his knowledge of medicine, but what the future promises to behold.

Duty to the Public.—The successful physician should assume his position as a public-spirited citizen in affairs of state and nation. He is a student of human nature, and by his very close contact with the people, comes to know them, their ideas and wants intimately, and is in an easy position to become their

leader; his advice in sanitation and hygiene are needed, and unless he seeks to serve to his capacity in public affairs, he is derelict in his duty. He is needed on boards and on committees, for his knowledge of the prevention of disease, first aid and hygiene, better housing conditions, welfare of children, betterment of human conditions, etc. He must awake out of his lethargy and assume his proper position.

He owes a duty to his State and the Federal Government in taking the initiative in military preparedness. God forbid that our Nation should ever be plunged in so great a war as that which is devastating the nations of the old world, but we can prepare for defense. Not alone the few, but every physician should prepare himself for service to his State and his nation.

In times of stress this preparedness would tend to the avoidance of confusion and be life-saving. Do not labor under the fallacy that a physician by his training is competent to become a military surgeon; it takes months of preparation and training to fit him for this particular duty. Were war to come to-day, our nation has a very efficient body of army surgeons, but only sufficient for two divisions of regulars in the field and perhaps enough for eight or ten divisions of the organized militia, but all the rest of a large army of respectable size, in these days of millions, would be volunteers. Whence could the large number of surgeons come for the volunteers but from civil life? There would be no time for the selection and training of competent men, so badly needed for concentration and mobilizing camps; most of the competents would be at the front, although they would also be needed elsewhere to combat the dangers of epidemics and disease, as in the Spanish-American war. In 1861, according to Weir Mitchell, there were 12,261 surgeons connected with the Northern Army. Need we the lesson of England, whose system is a volunteer one like our own? Medical students are being commissioned as surgeons, and advertising is being done for doctors. There are already 28 per cent. of the Australian physicians in service, and yet the cry is always for more, and these have to be prepared.

The militia and reserve corps offer the opportunity of preparation. A yearly outing of

two weeks or more under canvas, outdoor life, discipline and study give the physician a training of mind and body that is a recreation and relief.

The physician owes a duty to the public and to the profession of membership in medical societies: one evening a week he owes to the profession. Lodges! What greater brotherhood than that of medicine! He not only gains comparative knowledge, but the society of his brethren forms new ties of friendship and dissipates "that envy which is the darling of doctors," and allows us to present a solid front to the public. His duty to his profession is one of courtesy and honor, "to do unto others as you would have them do to you."

In conclusion, Guy de Chauliac in the 14th century said what is equally applicable to-day: "Let the surgeon be well educated, skillful, ready and courteous; let him be bold in those things that are safe, fearful in those that are dangerous; avoiding all evil methods and practices. Let him be tender with the sick, honorable to men of his profession, wise in his predictions; chaste, sober, pitiful, merciful; not covetous or extortionate; but rather let him take his wages in moderation, according to his work and the wealth of his patient, and the issue of the disease and his own worth."

THE PRACTITIONER'S LABORATORY.*

By A. A. HOUSER, M. D., and L. T. STONEBURNER, Jr., M. D., Richmond, Va.

The entrance of clinical laboratory work into the curriculum of the medical college is of so recent date as to be remembered by all present, while within only the past few years has an effort been made to graduate the student proficient in the simpler and more practical laboratory procedures. Even when the latter is accomplished, it not infrequently happens that the young practitioner finds he does not know how to prepare or buy certain of his stains and reagents—a difficulty that must be overcome before his laboratory knowledge can be put into working form.

The widespread demand by the laity and profession alike for correct diagnosis frequently taxes to the utmost the resources of the practitioner and leaves unpardonable the omission of the help that intelligent laboratory work

*Read before the Medical Society of Virginia at its forty-sixth annual meeting, at Richmond, October 26-29, 1915.

may give. The limited use of clinical laboratory procedures becomes more striking as the rural districts are considered where this work is the exception rather than the rule, though manifestly the need for it is just as acute as in the cities. The factors responsible for this are lack of knowledge, lack of time and possibly the cost of the necessary equipment.

Quite fortunately those examinations which are of most practical importance, the ones indicated oftenest, are not only the easiest to perform, but require little time and modest equipment. Reference is made to the usual examinations of urine, blood, feces, sputum, stomach contents and the simpler bacterial examinations. It is the purpose of this paper to deal with these from the standpoint of the general practitioner. No claim is made for originality unless it be a systematic presentation of those procedures which every doctor should be able to do, with the omission of all work that has little diagnostic value or requires the expenditure of much time or money. For these last the assistance of the professional laboratory man must be sought. His knowledge is invaluable, but to refer all work to him is impracticable, not only because of the increased cost to the patient, but also because of the necessary delay. Within the scope of this paper time does not permit technique to be included, but only an outline of what can be done in the practitioner's laboratory.

The examination of the urine presents itself oftener than any other laboratory work and is second to none in importance. The following data should be secured: the color, odor, specific gravity, reaction, and the presence or absence of albumin, sugar, acetone, diacetic acid, indican and bile determined. Microscopically, red blood cells, pus cells and casts are by far the most important elements sought. The color is determined by looking at it, the specific gravity by means of the urinometer and the reaction by litmus paper. The test for albumin may be quickly and accurately made with heat and dilute acetic acid; the presence of sugar may be determined with either Fehling's or Haines' solution; of acetone by Lange's test; of diacetic acid by ferric chloride; of indican by Obermayer's method and of bile by overlying with one per cent. iodine in alcohol. The sediment from a centrifuged specimen is then examined with the microscope, the low power

lens being used for casts and the high power for pus and red blood cells. Rarely are other findings of diagnostic value.

The examination of the blood in elementary work is confined to the following: the per cent. of hemoglobin, the absolute white and red counts, the differential count and the examination for malaria. The hemoglobin may be determined quite accurately with the Sahli instrument, but for clinical purposes the Tallquist scale is easier and almost as good. The absolute white count is preferably made with a dilution of one to ten, one per cent. acetic acid being used as the diluting fluid. The absolute red count can be made most conveniently if the dilution of one to two hundred is employed. Normal saline does very well as a diluent, but Toison's fluid gives somewhat better results. To make accurately the differential count, it is essential that both the smear and the stain be good. The former requires practice. For the latter, Wright's stain will meet every requirement. Malarial organisms are satisfactorily shown up by means of this same stain.

When the feces are examined, it is usually for the ova of intestinal parasites and occasionally for occult blood. To accomplish the former it is only necessary to macerate a small portion of the feces in water, make a smear on a slide and while still wet search with the low power lens. Detection of occult blood in feces is best done by treating a small portion with glacial acetic acid, making an ethereal extract, and applying the extremely sensitive guaiac test.

The practitioner will seldom wish to examine sputum, except for tubercle bacilli. A thin smear steamed in carbol fuchsin, decolorized with acid alcohol and counter-stained with methylene blue, prepares the specimen for examination with the oil immersion lens.

The gastric contents are frequently examined chemically. From this standpoint, the amount of free hydrochloric acid, total acidity and the presence or absence of lactic acid is the information sought. The quantity of the free acid and total acidity is calculated after titrating with tenth normal sodium hydrate. Dimethyl-amidoazobenzol is the indicator for the free acid and phenolphthalein for the total acidity. Lactic acid is readily detected by adding a drop of filtered gastric contents to a tube of extreme-

ly dilute ferric chloride—a canary-yellow color resulting if this acid be present. Microscopically, search is made for remnants of food from previous meals, red blood corpuscles, pus cells, excess of yeast cells, sarcinae and bacteria.

Pus from the male urethra is frequently examined for gonococci. For this purpose staining with Loeffler's methylene blue is satisfactory. From the female genital tract the smears must be prepared by Gramme's method. This is not a difficult procedure. The smears are fixed with heat, stained with fresh aniline gentian violet, then with Gramme's solution, decolorized with ethyl alcohol, and counterstained with very dilute carbol fuchsin.

Since the report of Drs. Bass and Johns, last February, on Riggs's disease, it is becoming a common practice to search for the endameba buccalis, the supposed causative organism of this condition. The specimen for examination is secured from below the gum line of one of the suspicious areas. A dental scaler is quite effective. The material is teased up on a warm slide with normal saline, a cover glass dropped on and examination made with the high power dry lens. The endamebae are more or less abundant and are easily recognized by characteristic movements.

The general practitioner will find that the procedures listed above include the great bulk of the laboratory work that he will require. Certain extremely useful procedures, of which the Wassermann reaction and the cultivation of the bacillus diphtheriae are striking examples, have been omitted. These, however, require more time than it is advisable for the general practitioner to devote to this work, and more skill and equipment than he usually has.

For the purpose of demonstrating the possibilities of limited equipment, there has been set up in the small room to the right of the entry, going out, a laboratory which is within the reach of all. Compared with its usefulness, the total cost of \$107.00 is a trivial matter. In there it is possible to do all the work listed above and more. Someone will be in charge throughout the meeting to demonstrate in detail the technique of the tests referred to in this paper, to make reagents and stains, prepare slides, count blood, and display specimens.

Accommodations for visitors to the labora-

tory have been prepared, and it is needless to say that all who may find time to come will be most cordially welcomed.

105 North Third Street.

Proceedings of Societies, Etc.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Reported by EMIL MAYER, M. D., New York, N. Y.
(Continued from page 516.)

Leucoplakia Buccalis and Lingualis.

By ROBERT LEVY, M. D., Denver.

This paper is intended to review the bibliography from 1902 to the present time and to offer a critical analysis of opposing views.

The author presents a case as a text. The patient had been under his observation continuously for seven years, during which time the case passed through the various changes incident to leucoplakia. Large papillomatous masses developed and a diagnosis of carcinoma was at one time made, resulting in the extirpation of the lower jaw. Subsequent papilloma and leucoplakia again occurring, doubt was thrown upon the diagnosis of malignancy.

Microphotographs showing the development of papilloma as well as the histology of leucoplakia are presented. The author discusses names, definitions and varieties, etiology, pathology, the frequency of cancer; pathologic manifestations indicating the development of carcinoma, clinical manifestations indicating cancer and treatment.

The author arrives at the following conclusions:

1. Leucoplakia is of special interest because of its doubtful etiology and because of the dispute regarding the question of degeneration into epithelioma.

2. The case reported shows the uncertainty of the diagnosis of malignancy. The most definite clinical appearance cannot always be relied upon.

3. Leucoplakia is a generic term. Excluding syphilitic lesions, it may be considered a pathologic entity.

4. The views of writers who attempt to show the degeneration into cancer are not tenable in the light of our present understanding of the genesis of cancer. Degeneration of existing cells into cancer cells does not take place. A cancer is such from the beginning,

and is not caused, only influenced in its development, by irritative lesions.

5. Our understanding of leucoplakia has been confused by attempts to describe a "pre-cancerous stage" or to establish the theory of its "degeneration" into a malignant growth. Leucoplakia may, however, be looked upon as a warning.

6. Certain clinical manifestations may arise which, though not positive, are sufficient to arouse the suspicion of malignancy.

7. The results of treatment are unsatisfactory. Fulguration offers considerable encouragement.

DISCUSSION.

Dr. John F. Barnhill, Indianapolis: During the past year I have had one case of this nature. The patient, a woman thirty-two years of age, had formerly lived in Indiana, but because of tuberculosis had moved to Florida, where she had been living for four or five years. When she came to consult me she had this condition, as diagnosed by a number of physicians, pathologists, bacteriologists, general practitioners and laryngologists. She also had tonsillitis. She would not allow operation because of the tuberculosis. She had been treated by means of X-rays, washes, etc. The mouth got absolutely well, and the patient is much better generally.

Dr. Thomas Hubbard, Toledo: I have had three cases of this kind. I had a good deal of difficulty in establishing the diagnosis between this and pemphigus. In one case the patient had pemphigus, but the lesions in the throat were not typical pemphigus lesions, and had the case not gone on to typical pemphigus of the skin, the diagnosis would not have been cleared up. In another case this condition occurred in a man who had syphilis. He was a heavy smoker. The third patient was also a heavy smoker. He smoked from twenty to thirty cigars a day. After one week's cessation of smoking there was a complete disappearance of the lesion. These were typical leucoplakia lesions.

Dr. E. Fletcher Ingals, Chicago: About thirty years ago I reported a case of leucoplakia treated with the cantery, with cure. The lesion was not more than a centimeter in diameter.

Dr. Emil Mayer, New York City: I think leucoplakia is practically always the forerunner of malignant disease. I have under my

observation at the present time a patient who, fifteen years ago, showed the first signs of leucoplakia. Within the year he has developed epithelioma. I have seen a number of such cases.

Dr. Charles W. Richardson, Washington: The cases which I have seen have usually been so extensive that any of the operative measures suggested here or elsewhere would be entirely out of place. In the last case which I had, not only, the whole dorsal surface of the tongue, but the buccal cavity as well, was involved. The man had the most intense pain. He has since died. In all probability it would have developed into malignant disease. In some of the cases the dorsum of the tongue, the surface of the hard palate, the under surface of the tongue and the buccal walls were involved.

Dr. D. Bryson Delavan, New York City: Most of the cases which I have seen have become malignant. Any irritative course of treatment is particularly contraindicated. Elimination of the source of irritation, as in tobacco smoking, will result in improvement. In view of the malignant tendency of this condition, it would seem that radium would offer advantages not likely to be realized by the older forms of treatment. Some cases have been subjected to this treatment and have improved under it. I do not know of a case, however—the matter being a recent one—in which a cure is said to have been effected.

Dr. Levy, closing the discussion: The case cited by Dr. Barnhill, of tuberculosis, might have been a case of leucoplakia suffering with tuberculosis. I have never seen a case of leucoplakia caused by tuberculosis, nor do I see how this could be determined. If it were due to tuberculosis, it was certainly remarkable. The fact that it got well is evidence that it was not leucoplakia. Various other skin diseases have been mentioned in this connection. Dr. Ingals went over the subject very thoroughly in his paper, which was one of the most satisfactory papers ever written concerning this condition.

The question of leucoplakia always terminating in cancer is of course an important one. In the full text of the paper will be found many views *pro* and *con*.

The case I reported is an unusual one in view of the extent of the lesion. Other cases

quite as extensive have not developed malignancy. It is not necessary for the case to terminate in cancer. The lower jaw, the parotid gland, and the surrounding structures were all removed, yet it was not cancer, as proved by the subsequent history of the case. If we wait long enough we may find cancer developing in the patient who had leucoplakia. Given a case of leucoplakia, however, it is not necessary that it will terminate in cancer. In cancer cases, undoubtedly, it is often possible, by going back far enough, sometimes as far as forty years, to find that the patient had leucoplakia. While cancer may be antedated by leucoplakia in many instances, it is not proved that all cases of leucoplakia will terminate in cancer. Leucoplakia of the tongue is reported by some writers as being more likely than that of other localities to terminate in cancer.

(TO BE CONTINUED.)

AMERICAN PROCTOLOGIC SOCIETY.

Reported by A. J. ZOBEL, M. D., San Francisco, Cal.
(Continued from page 462.)

Notes on Rectal Fistula.

By J. RAWSON PENNINGTON, M. D., Chicago, Ill.

The etiology, conformation and classification of fistula as presented in our textbooks is not satisfactory.

The rectum extends from the termination of the sigmoid, at a point opposite the middle of the third sacral vertebra, to the pectinate line. The anal canal extends from this line to the anus. A fistula, then, with the external opening in the anal canal should be classified as an anal-fistula, or fistula-in-ano. A fistula with the internal opening in the pectinate line, or junction between the rectum and the anal canal, partakes of both of these structures, the rectum and anal canal, and should be known as an ano-rectal fistula. Those cases with the internal opening in the rectum should be known as rectal fistula. Complex, compound, horse-shoe, and other so-called varieties of fistula are simply expressions of complexity, position, or shape, of one or the other of the foregoing divisions, or a combination of them.

Methods of treatment.—Many methods have been proposed for the treatment of fistula. The author desires to submit herewith another which he believes to be far more important

than any as yet presented—the preventive treatment. All methods may be classified under three general heads, viz.; the preventive, palliative, and curative. Under the former may be considered the prophylactic and the abortive treatment. Under the latter the injection and the operative treatment.

(a) Prophylactic Treatment.—It is said that an ounce of prevention is worth a pound of cure. This injunction is as apropos in the treatment of fistula as in the treatment of any other malady. A complete history and careful examination usually elicits the fact that practically every individual who has fistula has or has had hemorrhoids, cryptitis, fissure, pruritus ani, proctitis, or some other form of curable rectal disease. These conditions favor the invasion of the peri-rectal tissues with pyogenic organisms, which are usually followed by an abscess and fistula. Hence, if people were educated to keep their rectums in a healthy state, and did so, fistula would become less frequent. Since the number of cases may be reduced by education, it becomes our duty as proctologists to launch a campaign for the prevention of this loathsome affliction—fistula.

(b) Abortive treatment.—The time to abort fistula is during the infection or abscess stage. If the abscess is opened early and the pus allowed to escape, and the abscess wall is not interfered with in any way with instruments or drugs, but the cavity drained freely, and gently filled with subnitrate of bismuth ointment, and this treatment repeated every two, three or four days according to the indications, fistula will, as a rule, be aborted.

“Pa.” asked Johnnie, “what is a pathologist?”

“He’s a man who lays out paths in parks and elsewhere. my boy. Now dont’ bother papa any more: he’s busy.”—*Exchange.*

Judge.—“What proof have you that your husband has been untrue?”

Irish woman, suing for divorce.—“I’m sure he ain’t the father of me last choild.”—*Exchange.*

Editorial.

The Feeble-Minded.

Feeble-mindedness is one of the vital sociological and scientific problems of the day. Its prevalence and its relation to crime, poverty, immorality, prostitution, illegitimacy, venereal disease, inebriety; its association with insanity and epilepsy; its causes; the most effective methods of its prevention, and the most feasible plan for the care of its victims, are matters to which some of the greatest minds are giving serious thought. In England and other European countries, and in several of the States in this country, special commissions have made, or are making, investigations; several institutions and organizations, and groups of scientists and individuals, here and there, are devoting earnest study to this great problem.

The Legislature of Virginia directed the State Board of Charities to investigate the question of feeble-mindedness in this State and report a comprehensive and practical scheme for the segregation and training, and the prevention of the procreation of mental defectives. The Board had the aid and advice of mental experts and social workers in this State and elsewhere, and had its secretary and other representatives to visit other States in search of information and to observe the methods that were in successful operation. The Board and its secretary have performed well the public duty assigned them, and it is hoped that their suggestions will be put into effect.

The number of mental defectives in Virginia, including defective-delinquents in the prisons and reformatories, and patients in the State hospitals—who, in addition to feeble-mindedness, are suffering from a psychosis—is no less than five thousand; that is, the ratio of the feeble-minded to the general population is about one to five hundred. It is stated upon good authority that there are in this country at least two hundred thousand feeble-minded persons, only one-tenth of whom are receiving proper institutional care. With the exception of less than one hundred at the Colony at Madison Heights and a few in the hospitals for the insane, Virginia has made no proper provision for them.

From the surveys made in this and several other States, it appears that at least sixty per cent. of the inmates of almshouses, and those

indigent persons receiving public aid, and the inmates of houses of prostitution, are mentally subnormal. Wherever systematic examinations have been made, about two per cent. of children attending the public schools have been found to be handicapped by mental inferiority. Compulsory school attendance would, without doubt, bring to light many that are now kept in their homes because of their inability to keep up with their grades. In private homes throughout the land there are thousands of individuals whose minds have never developed beyond that of the mind of a normal child under ten years old, and consequently constituting a grievous care and burden. In the absence of adequate preventive measures—and practically none have been instituted in this State,—the number of feeble-minded, epileptic, and insane continues to grow. It is estimated that the average number of children born to a feeble-minded mother is a fraction over eight, including still-births; while that of the normal mother is four.

The relation of crime to mental deficiency is a subject of investigation in the courts, especially the juvenile courts of some of our large cities, notably Boston and Chicago. It has been demonstrated that criminality and mental inferiority are more often combined in an individual than are criminality and insanity. Examination by alienists and psychologists has brought out the fact that from thirty to fifty per cent. of the inmates of prisons and reformatories are either feeble-minded or insane.

As to causes: It is incontestable that bad heredity, a general tendency to transmit defect, is responsible for two-thirds or more of the mental defectives. In the parents, grandparents, great-grandparents, or others in the family of the feeble-minded, are usually found feeble-mindedness, insanity, epilepsy, and sometimes confirmed criminality. The neuropathic ancestral taint in the germ plasma may be transmitted to posterity, skipping a generation or two. Drunkenness in parents, injuries at birth, poverty and neglect in early life, are etiological factors. It is probable that heredity, accentuated by environment, has its influence in crime somewhat like it has in subnormal and abnormal mental conditions. There may also be anatomical and glandular defects, the nature of which we do not yet understand, which may enter as a cause.

Physical defect, or disability, are readily

recognized in the infant or very young child, and in many instances corrective surgical procedure can be successfully instituted either then or later in life. The highest order of intellect is not incompatible with physical defect. The future mental growth and moral status of the new-born is purely speculative. There has not yet been discovered a cure for idiocy or feeble-mindedness, and palliative measures are only feasible for the latter. Perhaps some day surgical skill will, in a measure at least, improve the mental and moral status of some of the defectives. In the present state of our knowledge, the mental defective starts life hopelessly handicapped, and, unless taken into competent hands, will be an increasing burden and menace. The State should, therefore, undertake the most effective and practical methods of prevention and care. Action looking to the checking of mental disease and defect in this State is of tremendous social and economic importance, as indicated by the following facts: There are probably five thousand feeble-minded persons unprovided for. Last year the State hospitals for the insane and the colony for epileptics admitted 1,781 additional patients, and cared for a total of 6,944 (4,702 of whom were whites and 2,242 negroes). There are now in the five institutions nearly five thousand patients. Although Virginia spends less per capita for construction and for the maintenance of her institutions than any other State, it paid out last year in additional construction and for the care of her insane and epileptics, over seven hundred thousand dollars.

In order to make clear what constitutes feeble-mindedness, the following definition, compiled by experts, has been incorporated in a bill "To Define Feeble-Mindedness and to Provide for the Examination, Legal Commitment, and the Custody and Care of Feeble-Minded Persons; and their Segregation in Institutions: The words 'feeble-minded person' in this act shall be construed to mean any person with mental defectiveness from birth or from an early age, but not a congenital idiot, so pronounced that he is incapable of caring for himself or managing his affairs, or of being taught to do so, and is unsafe and dangerous to himself and to others and to the community, and who, consequently, requires care, supervision and control for the protection and welfare of himself, or others, and

the community, but who is not classifiable as an 'insane person,' as usually interpreted."

In making a diagnosis it is of course contemplated that the two examining physicians shall, as far as practicable (certainly, in doubtful cases), utilize the Binet-Simon, or some other psychological test, in conjunction with the family history, personal and developmental history, progress at school, moral reaction, economic efficiency, and everyday knowledge. It is required that each colony for the feeble-minded—the one in connection with the State Epileptic Colony, and the one in connection with the Central State Hospital, at Petersburg—shall have such tests applied by experts to all patients admitted, so that their intelligence may be accurately graded.

The State should set about its duty to the feeble-minded in a systematic and methodical fashion. There should be a general educational propaganda by which the public would be better informed regarding mental hygiene, the nature, causes and prevention of feeble-mindedness and allied mental conditions. The mentally retarded or defective school children that have mentality enough to be trained should be provided for in separate schools or classes, in order that they may be trained to become self-sustaining citizens.

Statutory prevention of the marriage of the unfit, or the nullification of such marriages, deserves serious consideration; for it has its place as a preventive measure. Several of the States have some such laws, but in many instances they have not been enforced, and if they were enforced, illegal unions would probably be increased. Stock-farm methods are not applicable to the human race in the matter of marriage and mating. At all events, in addition to more stringent marriage laws, one requiring a clean bill of health as to certain constitutional diseases, notably, syphilis, and defects, would be a valuable preventive measure. Another effective means would be to make illicit cohabitation by a normal with a feeble-minded person a felony, to which should be attached a very severe penalty.

Sterilization to prevent procreation is effective, and should be legalized, with proper safeguards and limitations. The procedure should be permissible only after an accurate diagnosis of the mental condition has been made by an alienist or psychologist. It is a measure in ad-

vance of public opinion, and the public conscience will have to be awakened before such a law could be enforced. Radical innovations, especially of this character, without an approving public sentiment, would be a dead letter. It is incumbent, therefore, upon the medical profession, to educate the public in this, as well as in all preventive measures bearing on physical and mental health. In States where sterilization has been sanctioned by law as a means of prevention of multiplication of mental deficiency, insanity, crime, etc., it has not been utilized to any appreciable extent except in institutions. If sterilization were practiced generally among the feeble-minded outside of institutions, it is probable that the spread of venereal diseases would sometimes be increased, the fear of pregnancy being eliminated. It might be somewhat hazardous to practise sterilization upon alleged feeble-minded persons whose mental condition had been diagnosed exclusively by general practitioners who have not had the advantage of experience in dealing with insanity and feeble-mindedness. It sometimes requires an expert to differentiate between some grades of mental defectiveness and some forms of mental disease. At all events, sterilization has a distinct value and should be applied with due precautions as to diagnosis and in selected cases, either in or outside of institutions.

Segregation in properly organized and conducted institutions or colonies seems to be the most effective and feasible method of dealing with the feeble-minded. Recognizing this to be the best method, Virginia has made a start in establishing a colony for feeble-minded white women at the State Epileptic Colony, and is taking steps to establish, on the property of the Central State Hospital, at Petersburg, a similar institution for the colored feeble-minded women. It should not be contemplated that this State would take under its fostering care all the feeble-minded, but those for whom constant custody is most needed, both on their own account and in the interest of the public good. Many of the idiots and imbeciles could and would be kept at home; but such cases should, whenever necessary, be placed under the general supervision of some competent authority, such as the State Board of Charities, so that the families of such persons could be instructed regarding proper care and management. As idiots are easily recognized and do not propagate—cer-

tainly very seldom,—we are not so much concerned about them. They could be well cared for in district almshouses, which should take the place of the disreputable county poorhouses. It is the middle and high grade feeble-minded—the moron—that most needs constant supervision, for their real mental condition is not always recognized except by an expert. The moron is one of the most dangerous and uncertain elements in the community. From a casual observation, such an individual seems hardly defective enough to be committed to the custody or care of the State; but, upon a careful expert examination it would be found that he has not sufficient mentality to apply himself, except for a brief period, to any physical or mental task; that he has not the power of moral inhibition, hence has not a true realization of the meaning of a moral code. If such a person is not supervised (and it is most difficult to manage him outside of an institution), he is apt to become a vagrant, a dependent, and make assaults or commit other crimes. Surely the defective-delinquent should be permanently segregated.

The most optimistic idealist can hardly hope to eliminate feeble-mindedness, epilepsy and insanity by the application of any or all of the foregoing methods; yet their number can eventually be materially reduced, and it is the duty of the medical profession to unite with other influential agencies in accomplishing this reduction.

W. F. D.

The Augusta County (Va.) Medical Society

Held its regular meeting in Staunton, February 2. Dr. W. F. Hartman, of Swoope, presiding. Dr. J. S. DeJarnette read a paper on the "Sterilization of the Unfit," which brought forth much discussion and resulted in the passing of a resolution recommending and endorsing the move for sterilizing the unfit at any time or during the age of reproduction, with the consent of the parents or guardian. Dr. M. J. Payne, who was appointed by Dr. J. A. White to represent the Medical Society of Virginia at the audience given by the President and the House Military Committee in Washington, January 24, in the interest of military preparedness, spoke on this subject, and the society endorsed the policy of the President in regard to preparedness. A resolution was also passed opposing that portion

of the Mapp prohibition bill providing for dispensing alcoholic liquors in drug stores. A committee was appointed to investigate the matter of having a full-time health officer for Staunton and Augusta County, and to report to the society at a called meeting.

The Mecklenburg County (Va.) Medical Society,

Which meets quarterly, has a membership of 19 members—all except two eligible doctors in the county. The president is Dr. W. W. Wilkinson, La Crosse, and the secretary-treasurer, Dr. H. M. Snead, South Hill.

The Tri-State Medical Association of the Carolinas and Virginia,

Which is scheduled to meet in this city, February 16 and 17, gives every promise of being a most pleasant meeting socially and scientifically. A large attendance is promised. Dr. J. H. McIntosh, Columbia, S. C., will preside.

Inadequate Appropriations Made for Health Work.

A report made from the study of municipal health department activities in 227 cities of the United States having a population of 25,000 or over in the 1910 census demonstrates the fact that inadequate appropriations are allowed the various health departments throughout the country to properly safeguard the public health. The average per capita allowance of these cities was 22 cents, the largest figure being 98 cents for Seattle, Wash., and the smallest being three-fourths of one cent for Clinton, Iowa. The two groups of States with the largest average per capita are the East South Central and the South Atlantic States, as they are known to the U. S. Census. On the whole, the Southern and Pacific cities were found to have better developed municipal health departments than the Northern cities from the Rockies to the Atlantic. This investigation was conducted by Franz Schneider, Jr., the sanitarian for the department of surveys and exhibits of the Russell Sage Foundation.

Dr. J. W. Waldron,

Of Grundy, Buchanan County, Va., was among those who lost by the fire which visited

that place the latter part of December. Dr. Waldron had the misfortune to lose his residence and office and nearly all they contained, their value being only about half covered by insurance.

Dr. J. W. Williams,

Who has practiced medicine in this city for many years, has moved to Louisa, R. F. D. No. 5, Va., and will continue the practice of his profession at that place.

The Newport News (Va.) General Hospital

Was opened a little over a month ago, at which time the St. Francis Hospital in that city, was closed.

Dr. Edward McGuire,

Of this city, was a recent visitor in Savannah, Ga.

Dr. Emmett Bradley,

Who recently moved to Highland Springs, Va., from Charles City County, has been appointed to fill the vacancy on the Henrico County Board of Health, occasioned by the death of Dr. G. T. Collins.

A Campaign for Good Health

Will be held in Emporia, Va., the latter part of February, at which time a number of talks will be given on various health subjects. Dr. R. L. Flannagan, of the State Board of Health, will assist the local committee in their arrangements for the meeting. While this campaign will be primarily educational, it is hoped the follow-up work will result in permanent improvement of health conditions in the town and community.

Dr. and Mrs. R. M. Taliaferro

Have returned to their home in Lynchburg, Va., after a visit to Florida.

Board of Pharmacy of Virginia.

At the examination held in this city, January 18 and 19, there were 22 applicants for examination as registered pharmacist. Of this number the following were successful: R. P. Bendall, Danville; L. C. Wombwell, Richmond; E. F. McKennon, Washington, D. C.; E. R. Deffenbaugh, Staunton; H. J. Nowlan, Richmond; B. H. Hunton, Washington, D. C.; A. V. Winfield, Petersburg; L. N. Pence, Bed-

ford; M. V. Koontz, Richmond; M. D. Webber, Salem; B. H. Meador, Richmond, and J. M. White, Norfolk, and J. A. Coffield, Portsmouth, were given the registered assistant certificate.

Of eight applying for examination as registered assistant pharmacist, W. D. Frye, Richmond; R. P. Booth, Clifton Forge; J. O. Lewter, South Hill, were successful.

The following were registered by reciprocity: C. Mosby, Portsmouth, from Tennessee; W. E. McCoy, Buchanan, from West Virginia; J. T. Vinson, Roanoke, from Alabama; R. H. Gardiner, Reedville, from Maryland; and H. H. George, Hopewell, from West Virginia.

Examinations are held in this city on the third Tuesday and Wednesday of January, April, July and October. All applications shall be filed with the secretary, Mr. T. A. Miller, at least ten days prior to examination date.

Married—

Dr. Lewis Franklin Cosby, Abingdon, Va., and Miss Sarah English Baumgardner, Bristol, Va., January 19.

Dr. J. Allison Hodges.

Of this city, was re-elected medical director of the Atlantic Life Insurance Company, at its annual meeting in January.

Drs. F. P. Righter and Fred M. Hodges were also re-elected to their positions as medical officers in the company.

A Pneumonia Commission

Has been appointed by the Philadelphia Health Department to investigate the causes of the present outbreak of pneumonia in that city, and to make a study of the pneumonia problem. It is thereby hoped to reduce the death rate from this disease and finally eliminate it. The commission is composed of men representing the various medical schools in that city, with Dr. David Riesman, of the University of Pennsylvania and the Philadelphia Polyclinic, as chairman.

Dr. C. B. Crute,

Formerly of Farmville, Va., but more recently of Charleston, W. Va., has moved to Hopewell, Va.

The Health Department of Richmond,

By vote in the Common Council, January 25, is to be placed under the direction of the Administrative Board. We cannot see at this time what advantage is expected from the change.

“Watch Your Sneeze”

Poster stamps, large and small, are being supplied at cost by the Association for Improving the Condition of the Poor, 105 East 22d Street, New York City, to health officers, civic organizations, public schools, etc., in a campaign to control the spread of respiratory diseases.

Drs. Dunkley and Hughes.

Drs. J. H. Dunkley and T. J. Hughes, of Roanoke, Va., have become associated in the practice of medicine and have offices at Ferguson Building.

Dr. John Winston

Has returned to his home in Norfolk, after a visit to his sisters at Bowling Green, Va.

Dr. Joseph A. Gale,

Roanoke, Va., chief surgeon of the N. & W. Railway, who was sick for some time at Johns Hopkins Hospital, Baltimore, is much improved.

Doctors as Staff Officers With Sons of C. V.

Dr. J. Garnett King, Fredericksburg, commander of the Virginia Division, Sons of Confederate Veterans, named the following physicians as staff officers: Dr. J. N. Barney, Fredericksburg, division quartermaster; Dr. Virginius Harrison, Richmond, division surgeon, and Dr. W. A. Harris, Spotsylvania, assistant division surgeon.

School Dentist Recommended.

For the purpose of diminishing the number of children who suffer because of improper attention to oral hygiene, it has been recommended to the Finance Committee of the Richmond City Council, to appoint a school dentist, to give attention to the teeth of the school children of this city, at a salary of \$900 per annum.

Dr. William H. Parker

Of this city, was a visitor to New York the latter part of January.

Dr. Alexander W. Terrell.

Of Lynchburg, Va., and several friends are enjoying a visit to Florida.

Professional Building for Richmond.

Plans have been formulated for a seven-story professional building for physicians and dentists, to be erected at the southeastern corner of Fifth and Franklin Streets, this city. It is stated that a number of doctors have already agreed to take offices in this building.

Dr. J. Shelton Horsley,

Of this city, was the guest of the St. Louis Medical Society in January, at which time he read a paper on "Blood Vessel Surgery."

An Anti-Spitting Campaign

Has been instituted by the New York City Department of Health to stimulate public education in health and decency. In one week over 1,500 offenders were brought into magistrates' courts for violation of the ordinance in public places, and practically all were fined from \$1 to \$10.

Dr. Luther Apperson.

Formerly of Phenix, Va., has recently located at Highland Springs, Va.

Dr. R. A. Martin,

Health officer of Petersburg, Va., addressed the Civic League of that city, February 1st, on the subject of "A More Efficient Health Department."

Dr. Frank Redwood,

Of Richmond, was the recent guest of his parents in Suffolk, Va.

Dr. J. Wood Jordan,

Ashland, Va., has been very sick at his home with pneumonia.

Increased Number of Male Babies in War Times.

The *New York Medical Journal*, quoting from the *Medical Press and Circular* for December 8, 1915, states that since the outbreak of the European war there has been a marked in-

crease in the number of births of males over females. The figures the correspondent was able to secure showed that the births among the two sexes balanced each other during August and September, 1914, while from May to September, 1915, the increase of male births over female ranged from 9.4 to 30 per cent. for the various months.

Dr. Gory Hogg.

Havey, W. Va., according to the *West Virginia Medical Journal*, is being prominently mentioned as Democratic candidate for governor of that State.

Dr. Wm. T. Oppenheimer,

Of this city, was elected a member of the board of directors of the Commonwealth Club, at its annual meeting in January.

The Petersburg (Va.) Health Department

Reported a total of 618 deaths—one less than for the previous year—and 703 births for the year 1915. Among the deaths were included 94 non-residents, many of whom were brought to the city for treatment and died in the hospitals. The three most prominent causes of death were cerebral hemorrhage, Bright's disease and pulmonary tuberculosis. There was a marked reduction in the incidence of typhoid fever. In this connection it may be stated that there has not been reported a death from this disease among the resident white population since May, 1914.

Dr. C. V. Montgomery,

South Hill, Va., visited Richmond during the latter part of January.

Dr. Ross V. Patterson,

Sub-dean of the Jefferson Medical College, Philadelphia, has been appointed visiting physician to the Philadelphia General Hospital to succeed the late Dr. R. N. Willson, Jr.

Dr. D. D. Talley,

Of this city, spent a few days in Atlantic City, N. J., during January.

Eugenical News

Is a small bi-monthly bulletin, which made its initial appearance in January. It is published at Cold Spring Harbor, Long Island, N. Y., at twenty-five cents for six numbers per annum. It will be a medium of communica-

tion between eugenical field workers and others interested in eugenics throughout the country. In addition to this, it is intended to include notices of future meetings and reports of meetings already held, eugenical laws passed by different states, and various other matters which may arise in connection with this work, which is practically in its infancy.

Dr. William DeH. Fitzhugh,

Of Doe Hill, Va., is spending some time at Johns Hopkins, in Baltimore.

Quinine Still Advancing in Price.

At the beginning of the European War, sulphate of quinine was selling at about 20 cents an ounce, wholesale; today the same quantity is quoted at about \$1.50. England, controlling the bulk of the cinchona bark industry in her possessions of India, Ceylon and Jamaica, is using the supply for her armies and those of her allies. Holland, obtaining a supply from Java, is furnishing the central powers. As armies in the field need a vastly larger supply of quinine than would the same number of men in civil life, the securing of quinine may yet become a serious problem for this country. As an example of the amount used in the United States, for the fiscal year ending June 30, 1914, we imported 3,000,000 ounces of the sulphate of quinine and over 3,648,000 pounds of cinchona bark.

Tuberculosis in New York City.

The New York City Department of Health estimates that there are 50,000 cases of tuberculosis in that city. Of 37,000 cases known to the Department, only 3,200 are registered under the care of private physicians, 6,000 in the care of city institutions and about 15,000 as receiving treatment at the various clinics.

Vermont Medicine.

Published at Rutland, made its appearance for the first time in January of this year. It is the official organ of the Vermont State Medical Society, and Dr. A. Stuart M. Chisholm, of Pennington, is editor. The Journal makes a neat appearance, and states that its columns shall be kept free from medical politics, its purpose being "to promote the cause of scientific medicine in the State of Vermont."

The Cumberland, Md., Department of Health

For the year 1915 reported 391 deaths, including 67 non-residents, or a death rate of 12.67 per 1,000 population—the lowest death rate since the inception of the present health department. There were 711 births. There was a notable reduction in the number of cases of scarlet fever, diphtheria and typhoid fever and an improvement in the reporting of births.

Fly Poison Peril.

In October, 1914, *Child Betterment and Social Welfare* started a campaign against the fly poison peril, owing to the number of children's deaths traced to arsenical poisoning from various fly destroyers. The campaign has been productive of results, as is evidenced by the fact that from July to October, 1914, prior to this campaign, there were 46 cases of arsenical poisoning of children from this cause reported in the daily press, while from May to October, 1915,—a longer period of time—there were 26 cases reported, or a decrease of 40 per cent. A bill has been passed by the Michigan Legislature regulating the manufacture and sale of poisonous fly destroying devices. Any one interested may secure a copy of this bill from *Child Betterment and Social Welfare*, 60 W. Washington Street, Chicago.

For Sale—Complete line of surgical instruments, cabinets, small tables, operating tables, etc., of the late Dr. A. B. Tucker, of Berryville and New York. Great bargain for quick buyer. Ask for detailed description. Address Archibald Osborne, M. D., Berryville, Va.

Obituary Record.

Dr. Richard Henry Whitehead.

It is with sorrow we announce the death, at his residence at University, Va., February 6, 1916, of Dr. Richard H. Whitehead, Dean of the Medical Faculty at the University of Virginia, and one of the most gifted and honored men of the medical profession in this section. Death resulted from pneumonia, after an illness of only a few days.

Dr. Whitehead was a native of North Caro-

lina, having been born in Salisbury July 27, 1865. He was the son of Dr. Marcellus and Virginia Coleman Whitehead. His academic education was obtained at Wake Forest College, from which he received the degree of A. B. in 1886. A year later, 1887, he graduated in medicine at the University of Virginia. He then served in the medical department of his *alma mater* as a demonstrator for two years. In 1889 he was elected Professor of Anatomy and Dean of the Medical Faculty at the University of North Carolina, where he became widely known as a leading physician and teacher. In 1905 he was made Professor of Anatomy and Dean of the Medical Department at the University of Virginia, to which position he devoted his whole energy, and with much credit, to the time of his death. The honorary degree of LL. D. was bestowed on him in 1910 by the University of North Carolina.

Besides being identified with a number of local and national societies, shortly after his removal to this State, Dr. Whitehead joined the Medical Society of Virginia, and was an attendant upon most of its meetings, the papers which he presented relating chiefly to medical education and public health.

In 1891 Dr. Whitehead married Miss Virginia Whitehead, of Amherst, Va., who, with his brother, Dr. John Whitehead, of Salisbury, N. C., survives him. Interment was at University Cemetery.

As one of the Associate Editors of this journal, we feel his death as a personal loss, and we shall long remember his kindly greeting, and his words of cheer and encouragement on numerous occasions.

Dr. William Francis Jones,

One of the oldest and most beloved physicians of Gloucester County, Va., died at his home at Gloucester C. H., January 24, after an illness of more than a year. Dr. Jones was born in Petersburg, Va., August 9, 1844. At the beginning of the war between the States, he entered the famous Fifth Virginia Cavalry, with which he remained throughout the war, participating in many important engagements. After the war, he located in Gloucester County, later entering the University of Pennsylvania, from which he obtained his medical degree in 1874. He became a member

of the Medical Society of Virginia in 1895 and was made an honorary member in 1906. His widow and two daughters survive him. As a token of the esteem in which he was held in his community, all business houses were closed during the funeral services.

Dr. William A. Bell,

One of the most widely known physicians of the Shenandoah Valley, died at his home in Winchester, Va., January 29, following an illness of several weeks. He was about 65 years of age. He received his medical diploma from the University of Pennsylvania in 1873, and had been a member of the Medical Society of Virginia since 1892. He was a member of the city council of Winchester, and was prominently identified with financial and other interests of that place. Several brothers and sisters survive him.

Dr. Frederick Lawford

Died at his home in Norfolk, Va., January 25, after an illness of four weeks of pneumonia. He was born at Susquehanna Depot, Pa., in 1875, and received his academic education at the Baltimore Polytechnic Institute, after which he studied medicine at the University of Maryland, graduating in 1900. He was widely known for his charitable work as well as for his ability as a physician, and was a member of the State and local medical societies. He is survived by his parents and three sisters.

Dr. J. F. Hughes,

Of Clifton Forge, Va., died January 31, aged eighty-two years. Since his graduation from the University of Maryland in 1860, with the exception of the time he served as surgeon in the Confederate States Army, he had made his home in Alleghany County, and was one of its most prominent citizens. Three daughters survive him.

Dr. R. Cary Buck,

A well-known physician of Prince William County, Va., died suddenly at his home at Manassas, February 1. He was born at Front Royal, Va., in 1851, and received his medical education at the Louisville Medical College, and the University of Maryland, graduating from the latter in 1874. His widow and eight children survive him.

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DEEP ROENTGEN RAY THERAPY.*

By CHARLES A. PFENDER, M. D., Washington, D. C.
Roentgenologist, Gallinger Memorial Hospital, George-
town University Hospital and Sibley Memorial
Hospital.

The invention of a new type of X-ray tube by Dr. W. D. Coolidge, of Schenectady, N. Y., has opened up hitherto undreamed-of possibilities in deep Roentgen ray therapy. Before the development of this device Roentgenologists were confined to the usual standard radiographic tubes and those arranged for water-cooled appurtenances. The results achieved in the use of these tubes were no doubt gratifying, but to a large degree dependent upon the experience and skill of the operators, for it was impossible to maintain a desired penetrative radiation for any length of time, nor could the therapeutic efforts be carried out to the degree necessary without great consumption of valuable time and almost prohibitive expense for maintenance of numerous tubes; in other words, true deep Roentgen therapy was not practical for pecuniary reasons, and only a comparatively few could afford this luxury, as not many institutions even are blessed with a sufficiently large endowment to make this boon to humanity possible in a broader sense.

Most all of you are no doubt acquainted with the earlier treatment tubes, and the general gross appearance of the Coolidge tube is at first glance no different. It is composed of a 7-inch glass tube, exhausted of all gases to the extreme possible limit, in which is supported the cathode so arranged that it may be heated by an electric current. The cathode is composed of a conducting cylinder of molybdenum, in which is contained a tungsten spiral which is

heated and so located as to focus the cathode rays on the target or anticathode. The target is composed of wrought tungsten, which has a fusing point of 3000 degrees C. The tungsten filament in the cathode is heated by either an insulated storage battery or an auto-transformer and an ammeter with rheostat control is placed in circuit. The main advantages of the tube are absolute control of the penetration and intensity of the Roentgen rays. The tube may be operated for hours continuously without change in the intensity or character of the rays desired. Another advantage which I have not heard much about may reside in the fact that every tube brings \$125.00 into circulation; unfortunately a large percentage is not of the centripetal variety.

Every Roentgenologist employs his own special technique, dependent to some degree on what kind of apparatus he is using. Generally speaking, however, the majority of leading operators follow a rather uniform technique with slight individual variations of application.

In the treatment of uterine fibroids, for instance, they are agreed in every detail with the one exception of the number and sizes of areas treated at one series and possibly the size of the fee involved. A few employ very large areas, giving a total of only four erythema doses at one series, while others treat from eight to sixteen areas at one series, and probably collect proportionately. I employ about eight areas at one series, and repeat in three to four weeks. The tube is brought as close to the body as possible, the skin-focus distance usually being about ten inches, sometimes less. A spark gap of 8 to 9 inches is enforced, and from 5 to 10 milliamperes given over each area until an erythema dose is attained, which usually requires from three to six minutes, depending on the milliamperage given. I use four millimeters of aluminum and

*Read before the Galen Society, November 15, 1915.

one piece of sole leather to filter out the soft rays, and I insist on protection of the patient by covering head and body with sheet lead or rubber infiltrated with lead. It may not be absolutely necessary to do this, but I am inclined to apply the maxim, "safety first," particularly in this branch of the work, so as to discourage all possible legal technicalities that my grateful patient may feel incumbent upon himself to throw in my way.

An important factor in deep Roentgen ray therapy is: When is the treatment to be repeated? Assuming that a full erythema dose has been given, not less than three or four weeks should elapse before this area should be subjected to a second radiation. There are some patients, no doubt, whose skin would probably permit earlier treatment, but it seems to me better to take the limit and feel safe in the repetition of the dosage than to cause an irritative condition of the skin by allowing an insufficient interval which precludes further radiation. In cases where less than an erythema dose has been given the radiation may be repeated in two weeks, but care must be exercised in the amount of dosage employed. To my mind this engenders an evidence of risk which I should feel disinclined to assume. I prefer to give the full erythema dose treatment and await the necessary interval before repeating it. I might add that this also gives the patient more time to make the necessary financial preparations so conducive to perfect amity and concord.

I expect to be criticized for my statements. As physicians, we should no doubt revolve in a plane far beyond such sordid environments as pertain to even remote association with so-called filthy lucre; like Satan, such thoughts should persistently be put behind us, and perhaps we may not be held consistent when we recall the scriptural text which states that we cannot serve both God and mammon. But, whenever I desire to improve my equipment so as to maintain its maximum efficiency so that I may serve my God and fellow-man to the best of my ability, I find that nothing less than the coin of the realm will make the slightest impression on the manufacturers. All other blandishments are of no value and do not purchase materials. About the only thing they will get for you is the good-will of the salesman, and I have never heard yet

of an instance where that could be discounted at the banks.

Deep Roentgen ray therapy in post-operative mammary carcinoma as a prophylactic against recurrence has proven of inestimable value. My personal experience has thus far been limited, and insufficient time has elapsed to speak of cures, but of all cases treated immediately after operation none has recurred. In a number of recurrent cases appearing from several months to six years after operation, temporary arrest of the progress of the disease and alleviation of pain was obtained with few exceptions. The results of the work done by Dr. Holding, of New York, in this regard justifies us in giving all inoperable cancer cases the advantages of deep therapy. The same applies to uterine carcinoma. I have observed exceedingly gratifying results following deep therapy in inoperable cases of gastric carcinoma. All subjective symptoms disappeared entirely after a comparatively short period of treatment. Splendid results have also been observed in primary mammary carcinoma where operation was refused, but as a rule these patients belong to the surgeon, and usually get there. In tuberculous adenitis and in tuberculous sinus cases the results are so prompt as to be almost startling. I feel sure that surgeons, realizing their inability to cope successfully with these conditions, will welcome the broader application of X-ray therapy in these cases. And the time is approaching when every case of exophthalmic goiter will be thoroughly rayed before surgical procedure will be considered, and then only as a final resort in such cases where the Roentgen ray treatment has failed to prove effective in alleviating the symptoms. A discussion of sarcoma, epithelioma, and allied conditions is deferred for a future meeting.

I should like to cite a few case histories, if I may be permitted to do so. Probably they may prove more interesting than this rather varied preamble, for I observe some of my surgical confreres in what appears to be a state of collapse, no doubt induced by the mental picture of the future conjured up by my remarks.

Mrs. W., white, aged 48, had experienced menstrual irregularity for the past eight years. I first saw her about a year before X-ray treatments were given. She gave a his-

tory of metrorrhagia with gradually diminishing intervals from 30 days to 15 days. She presented the clinical picture of extreme anemia and was bedridden most of the time. Rest in bed, ice, ergot, hydrastis, etc., at the menstrual period proved of little value. Surgical interference was declined. On July 19, 1913, deep Roentgen ray therapy was begun. This was immediately after cessation of bleeding following a menstrual period. The standard water-cooled tubes were used. The treatments were repeated in three weeks, and menstruation had not yet returned at that time. Twenty-four days after beginning of the X-radiation a scanty flow appeared, lasting for four days. The amount was less than she had experienced at any time since the beginning of her trouble eight years ago. The patient and family appeared skeptical as to results of X-ray treatment in the beginning, and rather had assumed the attitude of "throwing good money after bad." With the quick result obtained, however, they were encouraged to continue treatments at intervals of a month for three months, after which treatment was stopped. The menstruation ceased entirely after the first treatment and has not recurred. This was over two years ago, and the patient is once more enjoying perfect health.

Miss M., aged 36, suffered much from general systemic exhaustion; had ovarian cyst removed about a year ago. Numerous fibroids noted in uterine wall at the time. These tumors were so small, however, that hysterectomy was not done. Patient recuperated very slowly from operation, and was convalescent for about nine months before able to return to her duties as stenographer in one of the government departments. In August, 1912, she began to notice a small swelling on left side of abdomen, which caused considerable pressure on the bladder. Examination proved this to be a uterine fibroid about the size of a golf ball. Patient dreaded another surgical procedure on account of her delayed recovery from the previous intervention, and consulted me with the view of obtaining electrical treatments. I advised deep Roentgen therapy, to which she consented. Before the second series of treatments were begun the patient noticed a disappearance of pain and pressure symptoms and a slight decrease in size of tumor could be observed. At the end

of the third series of treatments the tumor was no longer palpable, and there has been no recurrence of growth or symptoms to date, three years later. I saw the patient recently, and she expressed herself as being in splendid physical condition. This case was also treated with the ordinary water-cooled tubes.

Since the use of the Coolidge tubes I have treated other fibroid cases and find that results are obtained more quickly and with much less difficulty than before. I shall report those cases in detail at some future date.

In conclusion, I will trespass a few minutes more upon your time by briefly citing four cases of cervical tuberculous adenitis treated successfully with deep Roentgen rays.

Miss G., white, aged 18, has suffered since childhood from inflamed tuberculous adenitis of the neck and has been operated on repeatedly by some of the best surgeons in the country. Recurrences again and again. In all, eight operations, four of them deep excisions, were done. Referred to me for deep therapy by Dr. Guy Latimer, October 9, 1914. This patient was given treatments at intervals of three to six weeks until March 8, 1915. Improvement was manifested after the first series. The enlargement of the neck was reduced considerably, and the former rigidity of the neck soon disappeared entirely. Synchronous with local improvement was the gain in weight and general constitutional betterment. Towards the month of March there was observed some loss in weight. On March 8, 1915, patient received last treatment. Based on the assumption that repeated doses of X-rays in the vicinity of the thyroid had probably diminished the internal secretion of this organ, I advised the administration by mouth of one-half grain of thyroid extract (B. W. & Co.) three times daily. This was gradually increased to three grains a day. The patient improved at once and has been free from symptoms of any kind for the past five months.

Mr. K., white, aged 24 years, has pulmonary tuberculosis. Spent two years in Colorado. Lately developed recurrent attacks of bilateral cervical adenitis. Two erythema doses were given August 27, 1915. Swelling and pain in the glands disappeared entirely in a few days. No sign of recurrence to date.

Advised additional treatments as a prophylactic measure.

Miss W., white, aged 26 years has had repeated surgical operations for the removal of tuberculous glands of the neck. Recurrences when seen on May 25, 1915, in consultation with Dr. Linnaeus Savage. Deep X-ray treatments were applied to both sides and back of neck. The second series of treatments was given June 12th, and at that time all objective signs and subjective symptoms had disappeared. To date, the patient has had 15 erythema doses and appears to be entirely well.

Miss F., white, aged 36 years, history of tuberculous adenitis cervicis. Several glands had been removed, but recurrences were frequent. The entire neck was greatly swollen and painful when patient was referred to me by Dr. Lawn Thompson for deep Roentgen ray treatment, May 26, 1915. Three erythema doses filtered through two millimeters of aluminum and one layer of sole leather were given in three sittings and patient instructed to return in three weeks. By June 14th patient was much improved and felt entirely well. The stiffness and enlargement of the neck had disappeared, and she was no longer troubled with pain. A second series of treatment similar to the first was given and patient returned to her employment as waitress. Soon afterwards the patient left the city, and I have not heard from her since.

304 Rhode Island Avenue, N. W.

HOOKWORM HISTORY SCHEDULES OF TWO MALE PATIENTS TREATED WITH OIL OF CHENOPODIUM AT THE U. S. MARINE HOSPITAL, WILMINGTON, N. C.

By M. F. ELMENDORF, M. D.,
and
J. E. WALKER, M. D.

Introduction.—The publication of these histories has two points in particular in view, namely, (1) to place on record certain results obtained in the use of oil of chenopodium, and (2) to show the schedule method that has been in use for several years at the U. S. Marine Hospital in Wilmington in taking clinical histories of parasitic infections.

Our schedules consist of a three-page printed sheet of catch words that represent the characters or symptoms it is desired to observe. These words are "checked" in case of positive

findings and crossed out in negative findings. While the resulting diction is not always so euphonic as in some other plans that are adopted, the schedules have the advantage of greater uniformity and completeness, so that in a large series of cases the separate symptoms can be more easily compared than is usually the result in clinical histories taken by different observers. There is nothing new in principle in the plan, but so far as can be judged from literature on hookworm disease, its application and details represent several departures from usual procedures. While in charge of the Marine Hospital at Wilmington, I assigned cases to my different associates in order to test the schedule system rather thoroughly in hookworm infection and I now purpose to publish several of these histories in various medical journals in order to give the system, as applied to hookworm disease, a wider publicity.

C. W. STILES, M. D.

Case No. 33. Uncinariasis. Treated with Oil of Chenopodium.

By DuMONT F. ELMENDORF, M. D.,
Technical Assistant.

G. W. C., from Columbus County, N. C., admitted September 4, 1914, at the request of Dr. Covington, of the office of the State Board of Health.

Patient is a white boy, twin of Case No. 34, age said to be five or six years.

Family History.—Father a section master on a lumber road; age 53, living, heavily infected with *Ascaris lumbricoides* and hookworms. Mother, housewife, heavily infected with *Ascaris* and hookworms; previous health has been poor; becomes edematous at times; has lost three children, one still-born, one lived six hours; one died at age of six years, cause not known to mother, but she says this child was affected similarly to the twins, and became very edematous before death.

Patient has two brothers and two sisters; one twin, Case No. 34, the others 7, 10, and 15 years old, respectively; the three latter children are affected with *Ascaris* and hookworms.

Personal History.—Patient is too young to give trustworthy answers to questions concerning his health. He was sent here by the State Board of Health for treatment and observation. His home is in a small rural settlement about 35 miles from Wilmington.

Physical Examination.—General appearance is poor; apparent age about five years; personal hygiene poor; emaciation slight; head relatively large, hair blond, oily, smooth, scant; no pediculosis, skin has a lemon yellow tinge.

Eyebrows poorly developed; stare blank; pupils contracted; reaction to distance and light slow; convergence normal; sclerae markedly pearly; conjunctivae pale. Glasses, exophthalmos, von Graefe, blepharitis, and trachoma negative; vision not tested as child does not know his letters.

Ears normal in shape; hearing good; pain and discharge negative.

Facial expression slightly pinched.

Trunk symmetrical, negative as to scoliosis, kyphosis, and lordosis. Shoulders rounded, drooped, left lower than right; clavicles prominent, scapulae markedly winged; abdomen very protuberant, girth 22 inches at umbilicum; no hernia.

Arms and legs not deformed; no complaint of joint pains.

Skin lemon yellow in color, otherwise apparently normal (not especially dry or moist, not pale, mottled, jaundiced, or atrophied); no scar, ulcer, scabies, *tinea*, acne, or *pediculus vestimentii*.

Edema present under eyes, but not on hands, legs, feet or elsewhere.

Muscles soft and flabby; infrascapular un-

der-developed; grip poor; left handed; dynamometer, right 1-1-1. left 1-1-0 (kilos).

Cervical glands enlarged, thyroid, axillary, and epitrochlears normal.

Respiratory System.—Speech slow and hesitating, not clear, rapid, drawling, or stuttering. Mouth breathing slight; nose negative as to epistaxis, discharge, and obstruction. Both tonsils slightly enlarged, pharyngeal adenoids present.

Chest is markedly barrel shaped, negative as to Harrison's groove. Respiratory rate 28, normal right and left; dyspnea with marked asthmatic breathing; bronchitis; chest measures 24 inches at expiration, 24 1-2 inches at inspiration, so that expansion amounted only 1-2 inch or 1.2 cm.

Vocal fremitus normal (not increased or diminished); percussion resonance markedly increased, right and left; breath sounds, right and left, prolonged and loud at expiration with piping rales on inspiration and expiration; some expectoration.

Circulatory System.—Temperature 37.3° C.; pulse 120; systolic blood pressure 102. Pulsations marked in precordial and jugular regions but none in epigastric; heart slightly enlarged, apex beat diffuse, at nipple line, sounds muffled; no murmurs present. For blood counts, see table 2.

Digestive System.—Lips pale, no herpes; tongue pale, not coated or fissured. Teeth ex-

Table 1. Doses of Chenopodium and Number of Hookworms Collected. Case 33.

1914	OIL OF CHENOPODIUM				HOOKWORMS COLLECTED		
	1ST DOSE		2ND DOSE		Male	Female	Total
	Minims	at	Minims	at			
Sept. 5	10	6 a. m.			104	126	230
" 6	10	8 p. m.					
" 7	12	6 a. m.			55	103	158
" 8	14	6 a. m.			6	12	18
" 9	14	6 a. m.			2	6	8
" 10	15	9 a. m.			1	0	1
" 13	15	6 a. m.			0	0	0
" 17	10	9 a. m.	10	10 a. m.	0	0	0
Total	100		10		168	247	415

Table 2. Blood counts. Case 33.

1914	Weight Pounds	Total Red Cells	Total white Cells	Hb. (sahli)	Color index	POLYMPHONUCLEARS			MONONUCLEAR		Transitional
						Neutro.	Eosino.	Baso.	Small	Large	
Sept. 4	38.0	4,401,000	14,650	74	0.84	45.5	25.0	1.0	20.5	6.5	1.5
" 14	38.5	4,046,000	8,950	68	0.84	31.8	37.6	1.2	19.2	4.4	2.8
" 19	42.0	4,432,000	7,850	77	0.87	25.0	32.0	1.0	36.5	4.0	1.5

cessively decayed, uncared for. Gums normal. Appetite fair. Pains in stomach; epigastric tenderness; nausea and occasional vomiting, but patient does not mention heartburn, hematemesis, or eructations. Bowels irregular. Liver and spleen palpable. Stools contain eggs of *Necator Americanus*, but negative for other parasites.

Nervous System.—Patient sleeps well; no proof of restlessness, insomnia, somnolence, talking, dreams, gritting of teeth, headaches or dizziness.

Diagnosis.—Uncinariasis and asthma with bronchitis.

Treatment.—Oil of chenopodium was used as shown in table 1. The results were entirely satisfactory. No toxic or other untoward symptom has been noticed, although the drug was given on six successive days. In addition, syrup of ferrous iodide has been administered as blood stimulant; and an asthma mixture was also given.

Tables 1-2 give details as to dosage, worms collected, weight, and blood counts.

Case No. 34. Uncinariasis. Treated with Oil of Chenopodium.

By JOHN E. WALKER, M. D.,
Assistant, Hygienic Laboratory.

E. J., from Columbus County, N. C., admitted September 4, 1914, at the request of Dr. Covington, of the office of the State Board of Health.

Patient is a white boy, twin of Case No. 33, age said to be five or six years.

Family History.—See Case 33.

Personal History.—Patient says he has gone barefoot nearly all his life.

Physical Examination.—General appearance is poor: apparent age about four or five years; personal hygiene poor; head large; hair blond, dry, smooth, abundant; no pediculosis.

Eyebrows poorly developed; stare blank; pupils normal, reaction to light and distance normal; convergence, right and left, medium; sclerae pearly; conjunctivae pale; eyes negative as to glasses, von Graefe, blepharitis, and trachoma.

Ears normal in shape.

Facial expression normal.

Trunk symmetrical, negative as to scoliosis, kyphosis, and lordosis. Shoulders drooped; clavicles not prominent; scapulae prominent; abdomen markedly protuberant, girth 49 cm. at umbilicum; no hernia.

Arms and legs not deformed.

Skin dry, pale, sallow, not jaundiced or atrophied; perspiration scant, no night sweat.

Edema noticed on face and especially under eyes.

Muscles flabby; infraspinalis slightly underdeveloped; grip poor; right handed; dynamometer not taken.

Thyroid and epitrochlears normal; cervical, axillary, and inguinal glands slightly enlarged.

Respiratory System.—Speech clear, slow, not hesitating, drawing or stuttering. Mouth breathing moderate, nose with tallowy skin and with slight obstruction in left nostril. Tonsils normal; adenoids not found.

Chest normal, no trace of Harrison's groove; measures 57 cm. on inspiration, 53 cm. on expiration, so that expansion is 4 cm.; spirometer not taken.

Vocal fremitus, percussion resonance, breath sounds, and whispered voice normal; no rales, bronchitis, or expectoration.

Circulatory System.—Temperature 37.4° C.; pulse 120; systolic blood pressure 98. Pulsations slight in precordial, not present in jugular or epigastric region; heart normal in size, apex beat punctuate, inside nipple line; sounds normal, no murmurs. For blood counts, see table 4.

Digestive System.—Lips pale, no herpes, tongue pale, teeth moderately decayed, uncared for. Stools contain eggs of *Ascaris lumbricoides* and of *Necator Americanus*. Liver and spleen not palpable. Patient continually holds fingers or some other thing in his mouth.

Treatment.—Oil of chenopodium was used.

The stools were gone over every day of the stay in the hospital and search made for *Ascaris* and hookworm. After September 14th, the patient received daily thirty minims of syrup of ferrous iodide. At times, possibly due to the purging, the stools contained an excessive amount of mucus. For this, sodium bicarbonate was given, one dram before meals.

Table 3. Doses of Oil of Chenopodium and Number of Worms Collected. Case 34.

1914	Minims oil chen.	HOOKWORMS			ASCARIS			
		Male	Female	Total	Male	Female	Sex*	Total
Sept. 5	10	9	29	38			5	5
" 6	10							
" 7	12	130	153	283	8	7	2	17
" 8	14	131	179	313	13	16	1	30
" 9	14	12	10	22	10	3	4	17
" 10	20	3	5	8	5			5
" 11			1	1	1	1	1	3
" 12								
" 13	15	1		1				
" 17	15							
" 18		1		1				
" 19	15		1	1				
" 20	20	3		3				
" 28	20		6	6				
" 29		1		1				
Total	165	294	384	678	37	27	13*	77

*13 Immature specimens under 4 c.m. in length.

Table 4. Blood Counts. Case 34.

1914	Weight Pounds	Total Red Cells	Total White Cells	Hb. (sahli)	Color index	POLYMORPHONUCLEARS			MONONUCLEARS		Transi- tional
						Neutro.	Eosino.	Baso.	Small	Large	
Sept. 4	35.5	3,992,000	14,350	75	0.94	47.6	48.8	1.2	29.2	2.8	0.4
" 13	36.0	4,228,000	7,600	85	0.10	38.4	20.4	0.0	34.4	6.0	0.8
" 21	38.0	3,810,000	9,600	94.5	0.12	37.6	25.4	1.2	27.6	5.6	1.6
" 27	39.5	4,228,000	10,150	94	1.11	66.0	9.2	0.8	18.0	4.0	2.0

RUPTURE OF THE KIDNEY—REPORT OF CASES.*

By C. C. COLEMAN, M. D., Richmond, Va.

The kidney, notwithstanding its mobility and protected position, is frequently injured by a severe blow or violent body compression. The injury is usually a sub-cutaneous one and is generally produced by forcing the kidney against the last rib with resulting compression of the distended renal pelvis. Rupture or fracture of the kidney occurs more often in the male and is seen with equal frequency on the two sides. Injuries of the right kidney may be associated with severe damage to the liver. The type of injury varies from a slight tear in the capsule without damage to the parenchyma to an extensive crushing of the entire organ. In the common type of severe injury of the kidney, the fracture is a transverse one, either above or below a line drawn through the center of the organ. A slight trauma of the kidney may easily escape recognition owing to the absence of marked local and general symptoms, and also owing to the failure to examine the urine.

It has been experimentally proven that there is no secretion of urine from the surface of the fractured cortex. Extravasation of urine does not take place unless the injury extends into the calyces or renal pelvis. Severe injury of the kidney results in hemorrhage and infection. Unilateral nephritis, hydronephrosis, and cyst formation, have been traced in a few cases to ruptured kidney. Extensive injuries of the kidney are readily recognized. The history of an accident, with the symptoms of pain, shock, bloody urine and acute anemia, followed later by a lumbar tumor and evidences of infection, form a sequence of events almost pathognomonic of the condition. Hematuria, either gross or microscopic, is found in all cases unless the ureter is torn from the kidney, but the appearance of blood in the urine may be delayed. Bloody urine is frequently continuous after the injury, but may be intermittent, as a result of obstruction of the ureter by blood clots. The signs of peritoneal irritation are so pronounced in many of these cases as to give rise to a strong suspicion of injury to an intra-peritoneal organ. There is generally diffuse tenderness over the abdomen and muscular rigidity in varying degrees may be present. These symptoms may come on short-

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ly after the injury and are due either to the presence of blood in the free peritoneal cavity when the signs are diffuse, or to the response of the peritoneum to the presence of blood on its posterior surface when tenderness and muscle spasm are localized to the injured side. The symptoms of acute disease of the kidney frequently bear a strong resemblance to those of an intra-peritoneal infection. In the early stage of an acute renal infection, for example, the similarity of this condition to some purely abdominal emergency is very striking, and correct differentiation can only be made by careful study of the case. All surgeons are familiar with abdominal distension, tenderness, and rigidity following a prolonged and difficult operation for the removal of stone from the kidney or ureter. The peritoneal reaction in such cases is probably due to traumatism of the sympathetic nerve plexuses. The peritoneal irritation in severe injuries of the kidney may be so marked as to simulate closely an actual peritonitis. To determine whether the abdominal disturbance is the result of trauma of the kidney alone or whether there is an associated injury of some intra-peritoneal organ is at times an important and perplexing question.

Infection is a common result of kidney injuries. The formation of a tender lumbar mass follows the shock and evidences of acute anemia. Neither temperature nor blood count is of great value in determining whether the local and general symptoms are a result of trauma and tissue digestion of extravasated blood or whether the resistance has been overcome and an abscess is forming. The advocates of the expectant treatment of this condition state that even large lumbar masses following rupture of the kidney are absorbed in about four weeks. The statistics from Korte's clinic published in 1907 were very convincing to those who advocate medical treatment for this condition. Korte's cases were treated with morphine, absolute rest, and ice-bags to the affected side. This treatment may be employed with advantage in the stage of shock not due to progressive hemorrhage, or where the facilities are inadequate for rapid and thorough work. With the improvement in surgical technic of the past ten years, however, operative treatment of rupture of the kidney gives the best results. The advantages of an

early operation, as stated by Kelly, are as follows: Operation relieves the uncertainty as to the future course of the case, and transforms the obscure into the obvious. The source of hemorrhage is discovered and the hemorrhage controlled. An early operation insures against later infection. Such sequelae as nephritis and hydronephrosis are prevented. The entire kidney or a part may be saved by an early conservative operation. Convalescence is shortened and much suffering prevented. The purpose of the operation is to remove the blood clots, explore the kidney and its surroundings, control the hemorrhage, and repair or remove the damaged kidney. In the large majority of cases bleeding can be effectively controlled and the kidney repaired by mattress sutures.

This type of operation, with drainage of the kidney fossa, would in most cases save an important organ with great capacity for repair and one whose removal is justified only when it is hopelessly damaged, or as a means of controlling hemorrhage. Uncontrollable hemorrhage demands removal of the kidney as the only certain means of preventing further loss of blood. Operation and exposure of the kidney are urgently indicated when there is an elevation of temperature associated with other evidences of infection. It is of great importance to estimate by ureteral catheterization with some functional test the working capacity of the supposedly healthy kidney before undertaking the operation. It is impracticable to do this in some cases. The operation must be done at times to meet the pressing emergencies of hemorrhage or infection, relying upon the clinical history and examination of the patient to establish the presence of function of the uninjured kidney. The mortality of rupture of the kidney is largely due to associated injuries of intra-peritoneal organs. It is wise, therefore, to explore the abdomen in doubtful cases. Advantage may be taken of abdominal incision to determine the presence of the opposite kidney. The following cases are reported as rather typical of severe kidney injuries:

Case 1. Mr. R., white, farmer, age 61. Referred by Dr. M. Schoenbaum. Admitted to Memorial Hospital one hour after receiving a kick from a horse on the left arm which was lying across the abdomen. The patient's body was not touched by the horse's hoof, and the

injury to the arm was of no consequence. When the patient entered the hospital he was in a condition of marked shock. His blood pressure was 110, pulse 100, and of poor volume. He had voided a considerable quantity of pure blood twice since the accident. He was nauseated and had vomited twice. There was considerable tenderness over the entire abdomen. Percussion of the abdomen showed flatness in its dependent portion. A diagnosis of rupture of the left kidney was made, and injury to some abdominal organ, probably the spleen, was strongly suspected. An attempt was made to do a cystoscopic examination for the purpose of demonstrating the presence and function of the right kidney. This was impossible on account of a dense fibrous urethral stricture which would only admit a very small metal catheter. The patient was given morphine and ice-bags were applied to the left lumbar region. The symptoms increased in severity and the signs of peritoneal irritation became more pronounced. Operation was therefore decided upon and begun six hours after the injury was received. On account of the signs of considerable fluid in the peritoneal cavity and the impossibility of excluding rupture of the spleen or injury to some abdominal organ, a high left rectus incision was made. The abdominal cavity contained a large quantity of blood, the source of which was difficult to determine at once, but was finally located as arising from the vessels of the peritoneum overlying the left kidney. This bleeding was controlled by ligatures. There was no injury to any abdominal organ. An enormous retro-peritoneal blood tumor was found lying in the region of the left kidney extending from the spleen level downward below the crest of the ilium. The right kidney was palpated through the abdominal incision and found to be of normal size. The abdomen was closed in the usual way. A rubber tissue drain was placed over the point where the peritoneal hemorrhage had occurred and brought out through a stab incision. The usual oblique incision for exposure of the left kidney was then made. The blood clots were evacuated and the kidney delivered. It was transversely fractured through the cortex and pelvis near the lower pole. In addition to this fracture there was another circular fracture on the anterior surface involving both the cor-

tex and the pelvis (Fig. 1.) The latter injury appeared to have been produced by compression of a full pelvis. The two fragments of the kidney produced by the complete transverse fracture were widely separated by a blood clot. The removal of this blood clot was followed by marked hemorrhage which came from one of the vessels about the pelvis. On account of the extensive damage to the kidney and its pelvis and of the uncertainty of controlling hemorrhage in a patient who has lost



Figure 1. J. R.—Ruptured left kidney. Transverse fracture through the cortex and pelvis and circular fracture involving the pelvis are shown in photograph. Nephrectomy. Recovery.

an enormous quantity of blood a nephrectomy was decided upon.

This was quickly done, although some trouble was experienced in stopping the bleeding from a large vein which appeared to have been ruptured by the accident and withdrawn into the surrounding tissues. All bleeding was finally controlled and a drain placed down to the pedicle. The blood clots were removed and the wound closed in layers about the drain. The patient's condition was very grave when the operation was completed. Adrenalin and saline were given with apparent benefit. During the first 24 hours following the operation the patient voided 16 ounces of urine, and at no time afterwards did there seem to be any marked impairment of the renal function as shown by repeated examinations and functional tests. The operative incision healed promptly and the patient left the hospital in good condition in four weeks. The family

physician has reported several times on the patient's condition since he left the hospital. His reports indicate no impairment of the patient's health as a result of the removal of the kidney.

Case 2. Mr. H., white, merchant, age 27, referred by Dr. W. H. Craig. Patient's previous history is of no importance, except that he had syphilis five years ago, for which he received the usual treatment. Five days before admission to Memorial Hospital, while crossing a railroad bridge, he fell about thirty feet, landing on his right side. He was unconscious for a few minutes. After walking a few squares he was compelled to lie down on account of severe pain which radiated from the

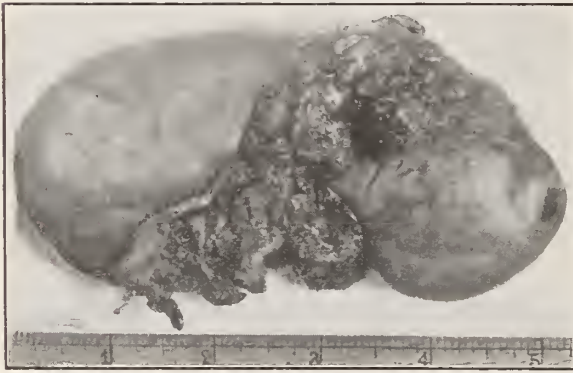


Figure 2.—W. H.—Ruptured right kidney. Line of fracture and comminution through the lower pole of the kidney and the pelvis.
Nephrectomy. Recovery.

right kidney region down the course of the ureter. In half an hour he voided what he thought was almost pure blood. Vomiting began in a short time after the injury and was rather persistent. For the next few days his temperature ranged from 101 to 102 and pulse from 110 to 120. The hematuria continued. By the third day a considerable mass had formed in the right lumbar region. This mass was exceedingly tender. Examination after admission to the hospital showed a well-nourished but anemic looking man. There was a large mass in the right lumbar region, extending anteriorly almost to the median line. Muscular rigidity and tenderness were marked over the mass. The urine contained a considerable quantity of blood. The patient's temperature was 102 and pulse 115. Hemaglobin was 50. Total leucocytes 25,800, and polys, 90. The patient was kept under observation 12

hours, during which time he had a severe attack of colicky pain and voided a large amount of almost pure blood. Operation was done six days after the injury was received. The usual incision for exposure of the kidney was made and a large amount of dark grayish looking material removed. In stripping the fatty capsule from the kidney, marked hemorrhage occurred. The kidney was transversely fractured and crushed (Fig. 2.) Packing was tried temporarily but did not control the bleeding satisfactorily. A nephrectomy was therefore done.

On account of the patient's very poor condition the pedicle was not ligated but the clamps were left in position. The cavity was loosely packed with gauze and the patient given saline and spartein subcutaneously. He was very ill the first 24 hours. During this time he voided 22 ounces of urine. The clamps were loosened at the end of the third and removed on the fourth day. He made a satisfactory recovery and left the hospital in four weeks. A small sinus persisted for some time after the operation. This sinus rapidly healed after the removal of a small fragment of gauze which accidentally became detached from the packing. The patient's general health has been excellent since he left the hospital.

200 West Grace Street.

PITUITRIN, ITS USES AND LIMITATIONS IN OBSTETRICAL PRACTICE.*

By M. P. JONES, M. D., Churchville, Va.

One Sunday afternoon not long ago, a young man who had never had his hands on the steering wheel of an automobile five minutes in all his life, came to me and asked to borrow my machine to take his best girl out for a ride. Strange as you may think of it, I loaned him the machine. He soon returned it, with thanks, and has not asked for it again.—and I hardly think he will. At any rate, when I next saw him out with the same girl he was driving a very plain, rather rusty looking old buggy and a very ordinary looking, rather skinny, long-legged old bay horse. I have no reason to think that he disliked the machine but think he probably experienced some difficulty in running it.

Last year, as you all know, I had the honor

*Read before the Augusta County Medical Society, Inc., at Staunton, Va., November 3, 1915.

of being the president of this organization of distinguished medical men. I had never tried to prepare an address of any kind, but under the stress of circumstances felt that it was absolutely incumbent upon me at least to make the effort. I am sure, too, you will understand why I naturally felt that I must try to use a style of writing somewhat in keeping with the dignity of my high and honorable station. I felt so utterly helpless in the matter that I must now confess the awful sin of trying to adopt the style of another, but I find it won't work,—I just can't run his machine,—and shall proceed at once in the plain old horse and buggy style of my own, and if you don't like it, please don't ask me to write any more papers.

Your secretary has asked me to prepare a paper on "Pituitrin, Its Uses and Limitations in Obstetrical Practice." I hope you will all take it for granted that I could have prepared a better paper on almost any other medical subject, but Dr. Fisher has given me no choice in the matter, and I shall do the best I can under the very trying circumstances. I shall not call this a paper, but rather just a few remarks based almost entirely on my own personal experience with the preparation.

The pituitary gland, as you all know, is located at the base of the brain in the sella turcica of the sphenoid bone. Pituitrin is an extract of the posterior lobe of this gland, the glands utilized being of the bovine type. To W. B. Bell—an Englishman I think—belongs the credit for having first used pituitary extract in obstetrical work. He reported his first cases in 1909. Who first prepared it and what led to the discovery of its therapeutic value I do not know and cannot find out.

My experience with pituitrin has been very limited. I used my first dose of the preparation a little over 18 months ago. Since that time I have had 58 obstetrical cases and used pituitrin in 14 of them,—four primiparae and ten multiparae. I have tried to be very careful in the selection of my cases. I have never used it before dilatation was almost, if not quite complete; until I assured myself that the position was such as not to materially interfere with delivery; until I felt reasonably sure there was no special abnormal resistance in the soft parts or in the bony pelvis; nor have I ever used it until the pains had become in-

efficient and the progress of labor markedly retarded or entirely arrested. I have never given more than one c.c., nor have I ever repeated the dose.

In two of the primiparae the result was good, though not nearly so pronounced as in some others. The pains were stimulated very much, almost immediately, and one case was delivered in about 35, and the other in about 45 minutes after giving the pituitrin. In the other two cases I was much disappointed. In one, there was just one strong pain in from 3 to 5 minutes after inserting the medicine and then all pain ceased and I delivered a little later with forceps. In the other, pains were temporarily stimulated but soon grew weaker, and I resorted to instruments again.

But what of the ten multiparae? You may doubt this now just as much as you like; you may look at each other and smile and cast your doubtful glances; you may hunch your nearest neighbor, and shake your heads if you care to, but I will give you my word that in each case in less than 20 minutes—and sometimes much less—a crying baby was born. The pains came on almost immediately—certainly in not over 3 to 5 minutes—and kept up good and strong as long as pains were needed. One objection, as I see it, is that at times they come with almost no interval between them. Now, considering the fact that in every case there was marked uterine inertia with no prospect of an early termination of labor, I regard the effect as very remarkable. I have given chloroform in perhaps one-third of the cases after giving pituitrin, but, strange as it may appear, the patient seems to be so taken up with the changed condition of affairs and the progress of labor that she rarely says much or complains of the pains being unbearable. By way of illustration, I should like to give you something of the experience with my first patient of the kind—a multipara. After waiting a good long time on a tedious labor and a tired patient, with many misgivings and forebodings I decided to give pituitrin. The result was, of course, as above mentioned. Early in the calm that followed the awful storm, the patient turned her face to me and innocently said, "For the Lord's sake, doctor, what-fur stuff was that you put in my arm?" I gave an evasive answer and asked why she wanted to know. She said, "Well, I don't know much

about it. but it 'peared to me it must a bin dynamite." So, gentlemen, when you use pituitrin in this class of cases you had better have things in readiness for an immediate reception. We, as children used to say, when the nose itched, "somebody's coming." The itching nose sometimes failed to bring the visitor. but pituitrin, never!

It may naturally be asked if all these cases would have been instrumental ones, and if they could not have been delivered just as readily with forceps as by the use of pituitrin. Some of them I am quite sure—and I think at least one-half of them—would have been delivered with forceps, and with proper help this could have been done quite easily. To be sure, some city practitioners may prefer this line of procedure, but when we "country devils," to use Dr. Fisher's designation of us, have to act as operator, assistant, anesthetizer, nurse and "granny," I prefer the pituitrin. And, besides, with pituitrin you can get through before you can get your forceps boiled.

In none of the 14 cases was there a laceration of the perineum, or a post-partum hemorrhage. In one case, however, I encountered extreme difficulty in delivering the placenta. Whether or not the pituitrin was in any way responsible for this trouble I do not know, but am inclined to think it was. I have used pituitrin in one case of post-partum hemorrhage (though it had not been used during labor) with very prompt and satisfactory results—more prompt and pronounced than I have ever gotten from ergot or ergotole. Why the effect is so much less satisfactory with primiparae I do not know, but in my experience such has certainly been the case.

I think I have indicated, in a general way, what I would consider some of the most important contra-indications. I find it is often used in the first stage of labor, but from what I know of its action I would not expect very satisfactory results until dilatation is well under way. What pituitrin does, it does so quickly and with such tremendous force I would feel that there was too much resistance to be overcome when used early, and my experience has been that better and stronger pains are produced when used later. I have never used it in abortion or premature labor, but do not see why it should not do well when the pains lack force. It seems to me that its field of usefulness in obstetrical work is rather

a restricted, but at the same time a very, very important one. When indicated, I am quite sure we have nothing in the way of an oxytocic that can be compared with it. The fact is, in properly selected cases I give it with as much confidence as I give a hypodermic of morphine for the relief of pain in renal or hepatic colic.

Other preparations of the kind have come and gone, at least so far as I am concerned, but, like the *Cimex lectularius*, pituitrin has come to stay. I never read or quote much poetry but, if I use it at all, I like the kind that rhymes and means something:

"The June bug disappears in June,
The lightning bug in May,
The bed-bug takes his bonnet off
And says 'I've come to stay.'"

And pituitrin says "*me*, too."

OBSTETRIC FORCEPS.*

By B. H. GRAY, M. D., Richmond, Va.

It is not my object to give an exhaustive review of the forceps, but to confine my remarks to broad principles, and to call attention to some of the often neglected principles from which this useful instrument suffers.

Forceps are designed for the extraction of the foetal head through the birth canal, without injury to the foetus or the maternal passages.

When one considers its application—the most common of all obstetric operations, and its use most frequently by the novice—it is not surprising to hear of the adverse criticism and traumatic injuries, foetal and maternal, charged against it.

The passage of the foetal head through the pelvis is a mechanical process, and to understand the uses of an instrument designed to aid in this process necessitates a thorough knowledge of the normal movements the head must make in its normal passage through the various planes of the pelvis unaided. In other words, we must fully appreciate the normal mechanism of labor, before the principles of the application of forceps can be understood.

Indeed, it is surprising how little regard is displayed in many instances to these fundamental principles in the use of forceps, with the inevitable result of grave traumatic injuries to passenger and passage.

*Read before the forty-sixth annual meeting of the Medical Society of Virginia, at Richmond, October 26-29, 1915.

The over-crowded gynecological wards of the public hospitals bear witness to some of the injuries of the pelvic structures caused by the improper and injudicious use of forceps. Not all such injuries, however, can be charged against forceps, as there are many cases in which their use has been neglected, and in which their proper and timely employment would have saved days of suffering and invalidism.

Again, we see in the institutes of defective children, those whose miserable condition is the result of faulty application and brute force, yet, among them are those who have suffered cerebral palsies from prolonged labor and compression, who could have been saved by a timely simple forceps operation.

Sachs has observed that a very considerable number of cases of cerebral paralysis were either first-born children or those who had been born after prolonged, often dry labor. Statistics of several hundred such cases showed less harm by instrumental delivery than by prolonged labor, although unskillful instrumental delivery had been a frequent cause of trouble.

Indications. Broadly speaking, the forceps are to be used whenever the life of the mother or child is in peril, and the labor is to be quickly terminated, the dangers to the mother or child being such that the use of forceps partly removes or diminishes them.

Maternal exhaustion and fetal asphyxia are the general indications. The anomalies of labor which require forceps are largely mechanical, and are chiefly due to fetal or maternal dystocia.

Fetal dystocia may arise from malposition, such as—

- (a). Occipito-posterior positions.
- (b). Deep transverse arrest.
- (c). Face or brow presentations.

Maternal dystocia may be due to—

- (a). Uterine inertia.
- (b). Rigidity of the lower birth canal.
- (c). Contracted pelvis.

Non-mechanical complications of labor are eclampsia, placenta previa, abruptio-placenta, and severe acute or chronic diseases.

The most frequent indications for forceps is uterine inertia, the forceps being used to reinforce the *visatergo*.

A fairly good working rule, frequently fol-

lowed in uncomplicated cases, is to apply forceps when the head, if above the perineum, fails to advance with satisfactory contractions in two hours, and in one hour if on the perineum.

It would, of course, be unwise to wait when the contractions are becoming weaker and weaker and the mother becoming more worn out and exhausted. This, however, is a matter of personal capability in judging the powers of expulsive force.

Interference is not indicated in uncomplicated cases when labor is progressing.

Conditions to be Fulfilled. Before applying forceps certain conditions should be fulfilled in order to minimize the accidents and injuries to mother and baby:

1. The cervix must be fully dilated or dilatable. To attempt the use of forceps through an undilated cervix is certainly to be followed by lacerations of the cervix which may cause profuse hemorrhage and call for immediate repair.

2. The membranes must be ruptured.

3. There must not be any marked disproportion between head and pelvis.

4. The head must be engaged in the pelvis, or capable of engagement with moderate force.

5. The child must be living.

Functions of the Forceps:

1. The primary use of forceps is traction, to aid the forces of the uterine and abdominal muscles. Traction must be made in the axis of the pelvis, following the same mechanical process the head follows in its natural transit through the planes of the pelvis.

Many of the difficulties encountered in forceps operations are due to force and traction applied in the wrong direction, to say nothing of the injuries inflicted upon the fetus and mother.

2. Compression is enumerated as one of the functions of the forceps. While a moderate amount of compression is unavoidable, forceps are not intended as a compressor, and when compression of the head is indicated, the delivery of a live child is not to be expected. In such cases the basiotribe is a better instrument. Only enough compression should be used to allow the forceps to grasp the head firmly.

3. *Rotation:* In the hands of the expert forceps are available as rotators, as in occipito-posterior positions. Rotation with the hand.

when possible is generally preferred. The Scanzoni method of rotation with forceps serves a useful purpose where the manual method fails. This is a method whose dangers, however, must be appreciated by those unskilled in the use of forceps.

4. Leverage and irritation have also been enumerated as functions of the forceps.

Classification. There is no uniformity of opinion regarding the classification of forceps operations. The one adopted by Edgar is a good one:

1. High forceps is an operation in which the presenting part is still above the pelvic inlet, the maximum circumference not having passed the plane of the inlet.

2. Median. The maximum circumference has passed the plane of the inlet:

(a). Median A, in which the ring of the cervix has only partially retracted over the head, the latter being within the uterine cavity.

(b) Median B, in which the complete retraction of the cervix has taken place.

3. Low Forceps. In this form, the presenting part is on the pelvic floor.

Application.—There are two methods of application—(1) the pelvic, and (2) the cephalic.

In the pelvic application the blades are applied to the sides of the pelvis the position of the head being disregarded. Injuries to the head and pelvis are more common in this method on account of the unfavorable position in which the head is grasped.

In the cephalic application, which is preferable and more scientific, the blades are applied to the sides of the head, making compression over the parietal bones. In this position the blades are applied in the greatest amount of space, the least compression is exerted, and the dangers of traumatism to head and pelvis minimized. Moreover, this application more closely imitates the mechanism in which the head normally passes through the planes of the pelvis.

In order to make a cephalic application the operator must know the position the head occupies. In low forceps where the sagittal suture usually occupies the antero-posterior diameter of the outlet, the occiput is directed either toward the symphysis or the hollow of the sacrum. In either case the forceps when

applied to the sides of the pelvis will grasp the head in the ideal manner. Under these circumstances, the left blade is applied first.

When the head lies above the perineum and the greatest circumference has passed the inlet, the sagittal suture lies in an oblique or transverse diameter of the pelvis, the fontanels are on a higher level and more difficult to palpate, hence the accurate diagnosis of position is more uncertain. Two or more fingers of the hand are passed into the cervix and the posterior ear located; the blade corresponding to the posterior ear is then applied whether it be right or left.

The objections urged against this method are that when the right blade is applied first the handles have to be crossed to adjust the lock, and this causes injuries to the head by the tips of the forceps. In a considerable experience I have never had such an accident to occur, and have found that the greater ease of application by this method outweighs any objections urged against it. It is particularly advantageous in occipito-posterior positions where manual rotation of the head has been done. Applying the blade corresponding to the posterior ear holds the head in the corrected position while the second blade is being applied.

Briefly described, the technique is as follows:

Pass two or more fingers of the right hand into the left posterior segment of the uterine cavity (in L. O. A.); after the posterior ear is located, the hand is held in place as a guide for the blade. The left blade of the forceps is then taken with the left hand and held as a pen in a perpendicular manner, the handle held in the median line. The blade is then passed into the pelvis under the guidance of the right hand until the tip strikes the head, the handle then abducted allowing the cephalic curve to follow the contour of the head. The blade is gently urged forward by slight pressure of the right thumb on the shank; as the blade passes into the pelvis the handle is lowered, allowing the blade to follow the curve of the axis of the pelvis until it lies over the posterior ear, making a cephalic application. The right blade is then applied by passing the fingers of the left hand into the right posterior segment of the pelvis, making no attempt to locate the anterior ear, but applied

to the side of the pelvis. This blade is then rotated around by using the fingers as a fulcrum placed at the junction of blade with the shank until it lies opposite the first blade. The blades are then adjusted and handles locked. A careful examination is then made to be sure the forceps are properly applied and no soft structures included within the blades. A trial traction is made and fetal heart sounds auscultated. Traction and retraction are then made intermittently, imitating the normal expulsive forces, and allowing the head to follow the normal mechanism of rotation from the oblique to the anterior position as it passes to the pelvic outlet.

Unless some urgent indication in interest of mother or child demands rapid delivery, the operation should be deliberate and sufficient time allowed to gradually dilate the lower birth canal. So long as the condition of mother and child are good there is no necessity of rapidly extracting the head through an undilated birth canal. The forceps should be used before the point of maternal exhaustion or fetal asphyxia are reached.

The foetal heart sounds should be carefully watched during the course of labor, and auscultation should be done frequently during the forceps operation. A rapid fetal heart (above 160) or a slow heart (100 or below) is indicative of fetal asphyxia and demands prompt termination of labor in interest of the child.

Greater difficulties are encountered in the application of high forceps than in the median or low operation. The head occupies a higher level, the greatest circumference has not yet passed the inlet, forceps have to be passed higher into the pelvis, and the head is grasped in a more unfavorable manner.

Usually there is some disproportion between head and pelvis. The indications should be urgent, and dilatation and retraction must be complete.

Since the blades are passed high into the pelvis, the application must be made so as to have the pelvic curve correspond to the curve of the axis of the pelvis. Should the cephalic application be made, one blade will lie over the promontory and the other behind the symphysis, taking up the space the head has to occupy.

In making application, the blades, when applied to the head, will usually occupy the direction of the sagittal suture, one lying over the occiput and the other over the face. The handles are more widely separated than in cephalic application owing to the blades being applied over a larger diameter.

Caution must be exercised in making traction with the ordinary forceps, as undue pressure exerted by squeezing the handles will traumatize the head. The axis-traction forceps is the better instrument as the direction of force is in the axis of the pelvis.

In inlet contractions Walcher's position should be used until the head has passed the inlet. After the head has passed the inlet, forceps should be removed and reapplied, making a cephalic application.

Forceps in Posterior Occipital Presentation. Occipito-posterior positions furnish many difficulties to the obstetrician. There is at the present time no unanimity of opinion as to the best methods of handling them. Early rupture of the membranes takes place in a large per cent. of cases, labor being prolonged and made more painful for this reason and because of faulty position.

Foetal asphyxia and maternal exhaustion are common. Mortality and morbidity are increased. When delivery takes place in the posterior position, deep perineal lacerations are prone to occur from excessive distention of the perineal structures.

In 400 posterior occipital presentations studied by Rice, 162 failed to rotate anteriorly; of these, 85 delivered spontaneously after manual rotation, 71 required forceps, and 6 were delivered by version.

When the occiput remains posterior, the methods available to effect rotation are the postural, rotation with the hand, and rotation with forceps.

The postural is rarely successful.

Manual rotation is frequently successful; forceps are then applied in the more favorable position.

Failing in the above, forceps can be used as rotators by applying Scanzoni's maneuver. This method has served me well in many instances, and converted a difficult posterior occiput into a simple extraction. Bill in a recent paper reports 137 cases successfully deliv-

ered by this method, using it in high, median and low operations.

The rotary motion should be carefully carried out, keeping the blades in the axis of the pelvis. Improperly performed, severe injuries to the soft structures of the pelvis will result.

Technic. A correct diagnosis of position is essential. The cephalic application must be made, and in doing so, the concavity of the pelvic curve looks toward the child's face. After the two blades are applied, the handles are depressed toward the perineum and occiput to bring the blades parallel with the occipitomenstrual diameter of the head. The head being poorly flexed, this movement brings the blades into better position. The forceps are then locked and the handles brought in the direction of the symphysis until the blades are in the axis of the pelvis.

The handles are then grasped firmly and carried around in a circle with a swinging movement, so as to keep the blades in the axis of the pelvis and cause the head to rotate with the forceps. Failure to keep the blades in the axis of the pelvis will cause injuries to head and pelvis and result in failure. When the head has rotated, the forceps will be inverted; slight traction is then made downward to fix the head, when the forceps are to be removed and re-applied. The extraction is usually carried out as in anterior positions. Although some condemn this method of rotation, when properly carried out it entails no dangers.

Relation of Forceps to Contracted Pelvis.—When forceps are used to overcome obstruction due to deformity, the operation should be undertaken only after careful pelvimetry and fetometry, when an estimate of the relative size of head and pelvis has been gained.

The great majority of high forceps and forceps on the floating head are due to median or minor degrees of contracted pelvis—relative contraction (9.5—7.5 c.m.). Major or absolute contractions of the pelvis (below 7.5 c.m.) are positive contra-indications to the use of forceps.

Forceps should not be used in contracted pelvis when the disproportion is such that labor could not be reasonably expected to terminate spontaneously under strong uterine contractions or expulsive forces.

In reviewing recent literature of the treatment of contracted pelvis, one of the most

striking features is the prominence given to the frequency of spontaneous labors in relative contractions.

Burger, in 1,840 cases of contracted pelvis with a true conjugate between 10 and 9.5 c.m., reported 89 per cent. of spontaneous deliveries; in 2,486 cases with a true conjugate between 9.5 and 8.6 c.m., 80 per cent.; and in 840 cases with a true conjugate between 8.5 and 7.6 c.m., there were 54 per cent. spontaneous deliveries.

Kronig and Zweifel report 84 per cent. of spontaneous deliveries in pelvis between 8.5 and 7 c.m. true conjugate.

Many others report spontaneous labor with equal frequency.

The treatment of medium and minor degrees of pelvic deformity is not dependent upon the size of the pelvis alone. The obstetric problem is one of relative size of the fetal head and the pelvis. We may have two moderately contracted pelvises with the same measurements, yet the treatment called for may be entirely different, depending upon the size and malleability of the fetal head, and the expulsive forces of the uterine and abdominal muscles.

Every means we have should, therefore, be utilized in determining the best method to pursue—internal and external pelvimetry to determine the size of the pelvis, and external cephalometry to estimate the size of the head, as well as Monroe Kerr's method of estimating the relative proportion of pelvis and head. This latter, also known as the Kerr-Mueller method, has served me well on several occasions in determining whether or not forceps could be safely used. It consists in a combined examination under anesthesia. The Pawlik grip upon the head with the external hand forces the head into the pelvis, while the internal fingers feel the manner it engages, or grip the pelvis; the outside thumb palpates around the brim to ascertain the amount of overlapping.

If the head engages, we have a workable contraction, and if the forces of labor are not sufficient, the forceps can be used to aid in bringing the head through.

The fetal head is an important factor in these types of pelvises, and deserves more consideration than has previously been given it. Fetal heads vary in size somewhat, and very considerably in flexibility or malleability. Those which have wide fontanelles and sutures are much more capable of molding than are

those which have narrow fontanelles and sutures.

These are important considerations in dealing with forceps at the inlet in medium deformities. A head that is malleable and that can be made to grip the pelvis, presents a very different obstetrical problem from the head with narrow fontanelles and sutures.

Finally, I would urge that in doing forceps operations the same surgical principles should obtain as in other major pelvic operations. The general practitioner is too content to work under conditions where surgical technic is sacrificed and mortality and morbidity invited.

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 1303 Grove Avenue.

PREVENTIVE MEASURES FOR GASTRIC AND DUODENAL ULCER.*

By A. B. GRUBB, M. D., Cripple Creek, Va.

The whole alimentary canal is over thirty feet in length, yet for a few inches along the pylorus and upper two-thirds of the duodenum there can perhaps be found more real stubborn pathology than along all the other part combined. For instance, a patient has typhoid fever and the ileum is full of ulcers, but, when the stage of convalescence is reached, these ulcers rapidly heal and leave absolutely no scar tissue, no contractions, etc.; but with an ulcer once established along the pylorus, nothing short of a very major operation—and it is major, too—affords relief.

So, to my mind, it is just as essential when treating a case of gastric origin, but of non-cancerous age, to keep in mind the possibilities of gastric and duodenal ulcer, as it would be when treating a tonsil with white patches

to remember the possibilities of diphtheria, or trouble at the apex of the lung as a genuine tuberculosis. In other words, we should attempt by all means to make an early diagnosis, and in case our diagnosis is in doubt, we should treat the case almost as if we knew ulceration had really taken place, or just as when we doubted between tonsillitis and diphtheria.

As is well known by this body, all secretions below the opening of the common bile duct are alkaline, while those in the stomach and upper two-thirds of duodenum are acid. As one-third of the duodenum is below the opening of the common bile duct, it is bathed by the alkaline bile and is practically free from ulcers.

It seems that man in his evolutionary state has not yet passed entirely into the realm of the carnivorous state, and that he came from an herbivorous ancestry. For instance, we have an abnormal hyperacidity when we pass very much above two per cent, yet, the dog, a purely carnivorous animal, thrives heartily on a three per cent acidity.

Following an anastomosis of the stomach to the jejunum, an ulcer very frequently follows just below the anastomosis, due to the acid secretions being poured upon the epithelium. All the evidence is so striking that we do not have to prove that these ulcers are due to excessive acidity, but simply to admit that it is true and this hyperacidity does not date back to the beginning of the ulcer but may date back years before.

An examination of the secretions after a test meal practically always gives an hyperacidity in gastric ulcer, but that same case years before might have given the same analysis, so it is not so much a symptom of gastric ulcer, but a cause of the ulcer; and I have held to the theory that if we would begin in time to neutralize the acidity, remove all gastric stimulants, and give proper diet, an ulcer would never form (except, of course, in those rare cases of thrombosis of the gastric artery).

There has been in time past a great abuse of artificial digestants, such as pepsin, papain, pancreatin, etc. It is very plain that these preparations, unless very accurately used, can do an irreparable injury. Many of these cases give a true history of having burning in the epigastrium, acid eructations, pain, etc., and

*Read by title before the Southwest Virginia Medical Society at Wytheville, Va., June 23-24, 1915.

have been given some of the many digestants on the market, when they should have received antacids and rigid dietetics, especially a restriction of proteids, and even rest in bed if the case is very threatening.

For all patients, of course, the rules of hygiene should be observed, such as regular meals, thorough mastication and the withdrawal of highly seasoned foods, too much rich meats, condiments, pickles, spices, and the like. If there is one point which I would wish to reiterate it is that we should always consider the possibility of ulcer in every case giving any sign of gastric disturbance and to treat for ulcer even before it exists.

After the hunger pain has occurred in duodenal ulcer, we could not exactly say we were using preventive measures, but it has been my experience that the hunger pain comes very early if we properly interpret its meaning. It seems to me that the hunger pain has not until very recently been properly understood even by physicians themselves. I believe these patients can be completely cured if treatment is begun at the very beginning of the hunger pain.

The treatment I would suggest would be to give any of the antacids, large doses of bismuth subnitrate, and an absolute milk diet for a few days at least, and then hold the patient down to a light carbohydrate diet for say ten days, before giving any of the proteids.

Analyses, Selections, Etc.

Pellagra.

The study of metabolism began in the chair of Sanctorius Sanctorius. Three centuries ago, when this clever Paduan seated himself in a chair which he suspended from a steelyard, and weighed himself before meals, during meals, and after meals, measuring also his excretions, and calculating the amount of his invisible perspiration, he unlocked a department of medicine which has since been so well studied that by this time we have investigated metabolism in protozoa, milch-cows, new-born infants, Eskimos, in forced feeding, during type-writing, and in states of emotional stress.

After Sanctorius had been at rest for a centennium, a Spanish physician named Gaspar

Casal wrote a book in which he described a disease which he called rose sickness. Twenty years passed, and Casal's book still lay in manuscript, but Francois Thierry heard of it, and in the Parisian *Journal of Medicine, Surgery and Pharmacy* first published an account of *mal de la rosa*. Later the Italian doctor, Francesco Frapolli, undertook a more careful study of the malady, and gave it the name by which it has since been known—rough skin, or *pellagra*.

During the eighteenth century the incidence of pellagra increased more rapidly than our knowledge of it. When the nineteenth century arrived, pellagra was one of the great Italian problems. It was Italy's most destructive endemic disease, and among the physicians who determined to learn its etiology, none was more earnest than Cesare Lombroso. He reached the conclusion, after years of experiment and research, that pellagra is caused by the frequent use of damaged maize, containing toxins, which is consumed by the peasantry of Northern and Middle Italy in the form of polenta and maize bread, whilst the ground landlords and their bailiffs live upon the better qualities of maize produced by the same peasants."

In 1872, Lombroso announced these results before the Medical Academy of Milan. But Lombroso was not hailed as a national benefactor; instead, the dean of the medical faculty of Pavia, who was an advocate of the great landlords, accused him of having deliberately falsified his experiments, and of having artificially induced lesions in the animals he experimented upon—and so Lombroso and his pellagrous chickens were laughed out of the halls of science.

This medical heretic was soon to learn what it means to antagonize class-interests: through the machinations of the agrarian powers, Lombroso's practice was ruined, his consultations ceased, his reputation was jeopardized—and the peasantry, in whose behalf he was sacrificed, was dumb. "I did not weep," said Lombroso, quoting a verse from Dante, "I did not weep, but my heart was turned to stone."

After years of heated controversy, Lombroso's theory that pellagra is a food-intoxication was accepted by the Italian government and became the prevailing view, although Sambon claimed it was a protozoal disease transmitted by the *Simulium* fly, while Alessandrini said

it was due to the colloidal silica in drinking waters, and others contended it was caused by photodynamic substances.

But while Italy continued to be ravished by pellagra, and the malady appeared in France and Roumania and Egypt, the United States seemed immune. It is true that John Gray, of Utica, reported a case, and Tyler, of Massachusetts, described another, but our physicians saw little of the disorder that brought dermal lesions and mental disturbances in its train. Lombroso's biographer, Hans Kurella, asserted he met pellagrins in the asylums of Pennsylvania and Illinois, but his American colleagues smiled at Kurella's diagnosis. Only a few years ago, William Osler wrote in his *Principles and Practice of Medicine* that "pellagra has not been observed in the United States."

But by 1908 pellagra had invaded our Southern States, and in that year it caused twenty-five deaths; since then it has increased so enormously, that in the year 1915 alone, 75,000 cases of this puzzling disease occurred, at least 7,500 being fatal. It is now admitted that in many sections of our land only tuberculosis and pneumonia exceed pellagra as a cause of death.

The nation was aroused, and realizing that it must grapple with this new monster, the government doctors went to work. They studied the old theories and made new experiments—and, finally, they were ready for the crucial test. In the center of the Mississippi Farm stands the State Penitentiary, and here were detained several healthy human beings—who never had pellagra. At the request of the Public Health Service, Governor Earl Brewer offered to pardon a dozen of these convicts if they would submit to a bountiful but one-sided diet—an excess of carbohydrates, but an insufficiency of proteids.

For the sake of science and freedom the volunteers came forward; for over two months they were medically watched, then they began to eat—biscuits, fried mush, grits and brown gravy, syrup, corn bread, cabbage, sweet potatoes, rice, collards and coffee with sugar. As the days went by, they may have sighed for meats and milk and eggs—but proteids and escaping were forbidden.

Nervous symptoms soon appeared; gastrointestinal disturbances followed; a few months

later the unmistakable skin lesions developed. Experts were called to examine these men; all made the same diagnosis: pellagra. Thus on a Friday morning, on the twelfth of November, 1915, the United States Public Health Service released for publication two mimeographed pages announcing that it had discovered the cause and cure of pellagra.

So pellagra is a disease of metabolism, and the older investigators were wrong, but their work was not for naught. Ask Joseph Goldberger, and G. A. Wheeler, or the other members of the Public Health Service, if they could have accomplished the task they achieved had it not been for the previous labors of Marie, Sambon, Lombroso, Babcock, and Lavinier. They who follow the paths of science do not walk in vain; often they go astray where there are no sign-posts, and are lost where the landmarks end, but their footsteps remain to guide and warn.

And today, while we congratulate the Public Health Service for having won the latest triumph in metabolism, our thoughts may go back to Sanctorius Sanctorius—eating his dinner, and opening up a fruitful field of investigation.—(*Editorial, Review of Reviews*, February, 1916.)

How to Blow the Nose.

E. Harrison Griffin, in the *Medical Record* of December 11, 1915, claims that 75 per cent. of the catarrh cases applying for treatment are due to improper use of the handkerchief. Also many of the ear cases are affected in the same way.

The average winter cold starts in the head. The patient instead of properly using his handkerchief begins to hawk the secretion back into the naso-pharynx; some of the mucus is expectorated, while a certain amount will stay glued to the pharynx and the inner border of the soft palate. This becomes loosened when the patient removes from one temperature to another, like leaving the house to go outdoors or *vice versa*. Thus a constant string of mucus hangs down from the palate which keeps up a constant cough; this winter cough is nothing but a symptom of faulty handkerchief service.

The morning vomiting of catarrh is the result of this accumulation on the pharynx and the palate of a large amount of mucus that has been hawked back. This constant hawking and

cleansing of the nose through throat is responsible for an irritable pharynx and the vomiting to which some are so prone.

Elongated uvulas have been blamed time and time again as causative factors of winter cough, and were partly or wholly removed without any benefit. The cough or tickling in the throat is not caused by the uvula, but its congestion is due to the mass of phlegm and the habit of hawking on the part of the patient. Dr. Griffin is even led to believe "that the improper use of the handkerchief is a salient factor in the development of consumption."

As the nose communicates with the frontal cells, the antrum of Highmore and the lachrymal duct, it is not only an organ of smell or organ to breathe through, but is a general drain for the sinuses of the skull and head. All these discharges must be removed by the handkerchief.

Breathing by sucking the alae nasi together renders the nose hermetically sealed and defeats the purpose. The way to breathe is from the chest with the chest as a bellows and the nose as the end of it. The alae nasi only act as a cover to the nose and should be used as such.

To blow the nose properly, it is best to take a deep inspiration, filling the chest with air, one finger placed upon the ala of one nostril to obstruct the passage, and with a violent expiration the air from the chest is forced through the nose and the offending discharge caught by the handkerchief. Such a maneuver is repeated on the other side. It is a simple mechanical process but rarely utilized.

By instituting in our public schools drills for the proper use of the handkerchief, catarrh would be diminished, ear cases less common, and the germs finding their way into the anatomy through the nostril would be expelled before they had time to find a nidus of infection in the human system.—(*Ibid.*)

The School of Regular Medicine.

What has become of cholera? What has become of infant diarrhea? What has become of smallpox, once a terror equal to the plague? What has become of diphtheria and membranous croup? Who is gradually conquering tuberculosis, the greatest of human plagues? Who has dissipated the dread specter of hydrophobia? Who achieved the marvels of mod-

ern surgery? Has it not been the school of regular medicine? One by one the hostile schools of healing have been reared to combat the ancient profession of Hippocrates. Where are they now? Only echo answers, Where? Who is frantically and supplicatingly in demand upon those long battle lines in Europe? Is it chiropractics? Is it osteopaths? Is it Christian Science healers!—(*Lamar Democrat, Missouri.—Ibid.*)

Sodium Bromide and Dyspepsia.

Levin says that dyspepsia and its consequences are due to hyperesthesia of the solar plexus: hence, he has employed in the treatment of that common and troublesome affection, bromide of sodium as the best sedative of this form of gastralgia. Conjointly with carbonate of bismuth, the salt gives relief independently of other treatment.

Bromide of sodium exercises its action on various painful gastric symptoms, and can be prescribed with excellent effects in all lesions (ulcer, cancer, etc.) of that organ. It acts on hunger pain as well as on spasm of the pylorus, and on the painful sensation felt after ingestion of food. It is a powerful modifier of all spasms localized to the digestive tract—pharyngeal, esophageal, gastric, intestinal. These spasms exist without any lesion, and are frequently due to flatulence and constipation.

The bromide is prescribed as follows:

℞
Bromide of Sodium ʒ v
Water ʒ x. M.

A tablespoonful in the middle of the two principal repasts where the gastric spasms or lesions require prolonged contact of the salt with the mucous membrane of the stomach. If, on the contrary, it is advisable to act on the nervous system in general, it is preferable to give the solution in a little water half an hour before meals, so that it may pass through the stomach as quickly as possible. The bismuth is given between meals in drachm doses.—(*Medical Press.*)

Internal Secretions and Gynecology.

In the present state of our knowledge of this subject the internal secretion of the ovary is bound up chiefly in the activities of the corpus luteum. The latter supplies a principle which presides over the growth of the genitals and precipitates menstruation. A second hor-

none has a hemostatic action on the menses. The two, acting in alternation, cause the entire phenomenon of menstruation. The stroma of the ovary also produces a hormone which protects the development of secondary sexual characteristics. The ovarian secretions antagonize the production of breast milk and may be used in therapeutics to check galactorrhœa. There are many facts of gestation which point to the existence of a placental hormone. The ovary and thyroid promote each other's activity. The latter enlarges at puberty and during menstruation and pregnancy. Gestation aggravates ordinary goiter and Graves' disease. In hypofunction of the thyroid the genitals may suffer in development and activity. The hormone of the parathyroids has an activity quite similar to that of ergotin. The above summary was given by Franz Colm last June at a meeting of the Frankfort Medical Society (*Berliner klinische Wochenschrift*, August 2d). Somewhat less obvious are the relations between the hypophysis and female genitals. Hypopituitarism inhibits the development of hyperpituitarism. Conversely, castration of women is sometimes followed by acromegaly. The phenomena of overgrowth seen during gestation are doubtless due to activity of the hypophysis. Destruction of the hypophysis has caused precocious sexual development. The relations of the thymus with the ovary appear paradoxical. The adrenals are activated by pregnancy and are responsible for its chloasma and various other phenomena. Puerperal osteomalacia appears to be due to a general disturbance of the internal secretions.—(*Medical Record*, New York).

Lactic Acid Treatment of Tuberculosis.

A new application of chemotherapy in the treatment of pulmonary tuberculosis is reported by F. Jessen of the Forest Sanatorium of Davos (*Zeitschrift für Tuberkulose*, July, 1915). This new method was suggested by the use of partial antigens in the treatment of tuberculosis which antigens were obtained from tubercle bacilli by subjecting the latter to the action of dilute acids. It was found that weak solutions of lactic acid readily destroy tubercle bacilli growing in culture. The question arose whether this action might not also be exerted in the living body. Accordingly Jessen essayed the use of intravenous injections of 1 per cent. solutions of lactic acid in the

treatment of incipient cases of pulmonary tuberculosis. The results are said to have been brilliant. The amount of the solution injected at one time is not mentioned though the statement is made that the injections were used from once a month to once or twice weekly, according to the severity of the case. The point is emphasized that this method of treatment is suitable only for early cases of the disease. In advanced cases a considerable part of the tuberculous area is not reached by any medication introduced into the blood stream. Moreover, if the disease is extensive the lytic action of the lactic acid may be so great as to overwhelm the body with the toxic decomposition products of the tubercle bacilli.—(*Medical Record*, New York).

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

The Practice of Pediatrics.—By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 pages, 139 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6.00 net; half morocco, \$7.50 net.

This is a standard work on diseases of children, and has become immensely popular with pediatricists. Besides its general detailed description of disease, symptoms, treatment, etc., a feature of the book that materially adds to its worth is that numerous matters, which are usually only mentioned in most text-books, but which are nevertheless of common interest and require attention and answer in the sick-room, are here considered sufficiently important to merit a full share of attention. There are also chapters on Therapeutic Measures, Gymnastic Therapeutics, and Drugs and Drug Dosage. The index consists of forty-five pages, double column. The book is comprehensive, clear in descriptions, well illustrated, and is altogether a very valuable addition to any medical library.

The Illustrated Catalogue for 1916, of W. B. Saunders Company, Philadelphia and London, has recently been issued. It contains eighty-four pages, stating what to find in their books and is an index to about 300 titles, including 45 new books and new editions. A copy may be had *gratis*, upon application to the above Company.

Editorial.

The Medico-Legal Value of the Early Manifestations of Paresis.

When parietic dementia is in its period of full development the symptoms are so characteristic that there is no special difficulty in recognizing them. The same cannot be said of the earliest stage of the disease when the symptoms may be easily overlooked. When this happens, proper preventive measures are neglected, the patient is permitted and even encouraged to be at large, to travel, to teach, to transact business and even to govern. It is only when grave and irreparable errors are committed that attention is drawn to the patient's condition and alarm is sounded. The consequences may be deplorable.

By reason of gradually developing moral and affective perversions which announce the onset of the disease, the initial period of the disease is a real medico-legal period. It is then that misdemeanors are frequently misinterpreted and that the individuals are sent to prison. It is then that we have great difficulty in convincing the patient's family of the existence of the malady. The reason lies probably in the unconscious and progressive adaptation of the relatives to the equally unconscious and insidiously progressive deterioration of the mental faculties of the patient. As long as the latter automatically carries on his former habits and other acts concerning his usual occupation, he continues to live among his people. The lapses of memory, the digression in his conduct apart from his regular work, the changes of his character or sentiments are all attributed to fatigue or absent-mindedness. Notwithstanding the fact that the previously economical man commences to dissipate, that the sober man abandons himself to excesses, frequents undesirable places and associates with undesirable persons, and that the refined man commits grave infractions of rules of politeness and surprises his friends with marks of indecent manners, early parietics are not infrequently permitted to have liberty of action and to continue in their responsible positions such as banking, teaching, engineering, conducting a train or a ship, etc., until misconduct occurs which results sometimes in the loss of lives. The psychologic automatism by virtue of which ordinary acts of life may

be executed correctly for a long time is dangerously misleading in the early period of paresis. It is at this period that illegal acts and crimes are most frequently committed. Its recognition and proper interpretation is a matter of grave importance from a medico-legal point of view.

ALFRED GORDON, M. D.,
Philadelphia.

The Tri-State Medical Society of the Carolinas and Virginia

Held its eighteenth annual session in Richmond, February 16 and 17, Dr. J. H. McIntosh, of Columbia, S. C., presiding. There were nearly two hundred doctors registered at the various sessions and more than fifty physicians were admitted to membership. Dr. J. Allison Hodges, chairman of the local committee of arrangements, called the meeting to order. The addresses of welcome by Lt. Governor Ellyson and Dr. A. G. Brown, were responded to by Drs. J. H. Way, from Waynesville, N. C., and Chas. W. Kollock, from Charleston, S. C. Because of the large number of technical papers, the meeting was divided into medical and surgical sections which were presided over by the president and vice-president respectively. A number of interesting medical and surgical clinics were held on the afternoon of the first day. All spare time was taken up with entertainments arranged for the doctors and the ladies accompanying them.

Durham, N. C., was selected for the next place of meeting, although Asheville put in a strong bid for the honor. Dr. J. R. Gildersleeve, Richmond, was elected to honorary membership. The following officers were elected for the ensuing year: President, Dr. J. A. Hodges, Richmond; vice-presidents, Drs. C. O'H. Laughinghouse, Greenville, N. C., H. E. McConnell, Chester, S. C., and W. F. Drewry, Petersburg, Va.; secretary-treasurer, Dr. Rolfe E. Hughes, Laurens, S. C.; new members of the executive council: Drs. J. N. Upshur, Richmond, J. Howell Way, Waynesville, N. C., and J. H. Taylor, Columbia, S. C.

Bill to Re-Impose License Tax on Doctors Defeated.

The Browning bill to re-impose the license tax on doctors, which was abolished by the General Assembly of this State in 1914, was

defeated in the House of Delegates, February 17, by a recorded vote of 57 to 24. Delegate James H. Price, of Richmond, summed up the feeling of a majority of the members in stating that physicians in the State should be given special recognition over members of other professions for the peculiar nature of the services they perform for the Commonwealth, especially through the Department of Health. The voluntary work done by the doctors relieves the State Health Department of the necessity of greatly enlarging its machinery and the employment of local sanitary inspectors. The defeat of the bill was largely due to the excellent work of Dr. A. L. Gray, chairman of the legislative committee, Medical Society of Virginia, who was ably assisted by a number of physicians including Dr. George A. Stover, South Boston, former chairman of this committee.

The Montgomery County (Va.) Medical Society

Met at Christiansburg, January 25, with a fine attendance—13 being present. As this was the first meeting for nearly a year, the time was taken up in discussing some matters of an ethical nature which were of especial importance to the Society. It was planned to amend the constitution so as to have meetings only twice a year instead of quarterly. The matter was left undecided as to whether the Society would accept the charter from the Medical Society of Virginia or exist as an independent society. The next meeting will be held in May, 1916, at which time will occur the election of officers. Dr. A. M. Showalter, Cambria, is secretary-treasurer.

The Lynchburg and Campbell County (Va.) Medical Society

Held its regular monthly meeting at 8:30 P. M., February 7, in the Clark Building, Lynchburg, Dr. E. W. Peery, presiding. Dr. Robert Lemmon, who served eight years in the U. S. Army during which time he was stationed in the Philippines, read an interesting paper on "Experiences as Surgeon in the U. S. Army." Dr. Manfred Call, of Richmond, has been invited to address the Society on April 3. Dr. Bernard H. Kyle is secretary.

The Elizabeth City County (Va.) Medical Society,

At its annual meeting, elected Drs. J. Wilton Hope and Harry D. Howe, both of Hampton,

president and vice-president, respectively, and re-elected Dr. William E. Knewstep, also of Hampton, secretary-treasurer.

Property Owners to Make Sewer Connections.

Health officials of Prince George County, Virginia, were upheld by Judge West, in their right to force Hopewell citizens to connect drain pipes with the sewer systems. The defendant claimed that the charges of connecting with the sewer were too high and that the county health officials were without authority to force him to make the connection. Judge West held that "the health officials were empowered under the statutes to take any steps necessary to insure the health of a community and that, in issuing the rule that Hopewell citizens should make connections with a sewer, they were only working to this end." Several citizens had refused to obey the mandates of the health officials until after this test case had been decided.

Physicians Among Deputy Grand Masters of Masons.

The following Virginia physicians were among district deputy grand masters appointed by the Grand Lodge of Virginia Masons at its meeting, February 10:—Drs. M. J. Payne, Staunton; M. G. Robinson, Wytheville; E. M. Wilkinson, Hillsville; and C. D. Barksdale, Sutherlin. Dr. Robert L. Page, of Batesville, remains as one of the lecturers in the committee on work.

Dr. G. Fred Floyd,

Of Bridgetown, Va., who is representing Northampton County in the House of Delegates, entertained some of his friends in the House at dinner on February 8. Eastern Shore diamond back terrapins and oysters were included in the menu.

The Mary Washington Hospital.

Fredericksburg, Va., which is raising a fund for the enlargement of the hospital and for installing certain improvements, has been the recipient of \$2,000 towards this fund from Mr. Frank J. Gould, of New York.

Dr. James M. Northington.

Who has accepted a position in the University of Minnesota as a teaching fellow under the Mayo Foundation, was tendered a complimentary banquet by his associates the latter

part of January, before his departure for Minneapolis.

Disease Transmitted by Cigar Cutters.

The New York City Department of Health having determined that disease may be transmitted through the use of common cigar cutters in tobacco shops, as was definitely proven in one case, has suggested that the moistening of cigars before cutting be dispensed with as also cutters which have the conical sockets into which to insert the cigars for cutting.

Salvarsan Made in U. S.

Owing to the shortage of salvarsan on the market and the difficulty with which it may be obtained during the European War, the Philadelphia Polyclinic, in its dermatological laboratories, has commenced the manufacture of salvarsan, or arsenobenzol, and will sell it direct to those wishing it, at the same prices at which it was sold prior to the war. This new preparation has been carefully tested and has been found exceedingly efficacious, although it is slightly less soluble than Ehrlich's preparation and the solution has to be filtered.

Surgeon H. S. Cumming.

Of the U. S. Public Health Service, was in Richmond early this month for conference with the State Board of Health in regard to proposed legislation relating to water supplies and tidal waters.

Dr. Sydney E. Bray.

Who was for some time engaged in research work in New York, has returned to Savannah, Ga., where he will resume the practice of his profession. He has recently made several trips abroad and, upon returning from his last trip, visited his sister in West Point, Va., before leaving for Savannah.

Lt.-Col. Jefferson R. Kean.

Medical Corps, U. S. A., a native of Lynchburg, Va., has been detailed temporarily by the War Department to co-operate with the American Red Cross in organizing field, hospital and supply resources for quick mobilization in case of emergency. An effort will be made to have Congress pass a bill authorizing the permanent detail of an officer for such work.

Married—

Dr. Hatley Norton Mason and Miss Frances Lockert Bemiss, both of Richmond, February 15.

The Association of American Medical Colleges,

At its meeting in Chicago, February 8, elected Dr. John L. Heffron, Syracuse, N. Y., president, and re-elected Dr. Fred C. Zappfe, Chicago, secretary-treasurer. Beginning January, 1918, it was decided that colleges belonging to the Association should require two years' college work as an entrance qualification. The Medical Department of the University of South Carolina was recommended for membership in the Association. No definite action was taken by the delegates on the question of a national board of medical examiners.

Dr. Cyrus Thompson,

A prominent member of the medical profession of North Carolina and a speaker and writer of recognized ability, is the Republican nominee for governor in that State.

New York's Insane.

According to the *Institution Quarterly* of Illinois, there were reported in New York State on August 4, 1915, 36,240 insane in institutions in that State, or 353.6 to each 100,000 population. Of these, 1,360 were criminal insane; 980 were in private institutions, and 23,900 in the 14 State hospitals. More than 6,300 persons not including 175 medical officers, were employed in caring for the patients in the State hospitals.

Prohibited in District of Columbia.

According to a regulation of the Board of Commissioners of the District of Columbia, adopted December 3, 1915, common drinking cups, towels, eating and drinking utensils and toilet articles are to be prohibited in public places.

The National Committee for Mental Hygiene

Held its eighth annual meeting in New York City, February 2, at which time Dr. Llewellyn F. Barker, of Baltimore, was elected president. It was announced at this meeting that the Rockefeller Foundation had donated \$22,800 to the committee for carrying on surveys

of the care of the insane in sixteen states during the present year so that it would be possible for the Committee to greatly extend its work. It was announced that societies for mental hygiene are already conducting campaigns in ten other states and the District of Columbia, and societies will be organized in several other states during the year. We regret to note that Virginia is not included in this list.

Dr. J. M. Bland,

Of Boykins, Va., spent several days recently visiting friends and relatives at his old home in King and Queen County, Va.

Dr. Perkins Glover,

Of Arvon, Va., was in Richmond on business, early this month.

National Leprosarium Urged.

A number of physicians, nurses and others testified before the Senate Health Committee, February 15, as to the need of a national leprosarium, as leprosy is spreading in this country. Instances were cited where segregation had been most successful in reducing the disease. There are at this time only three state or municipal leper asylums in the United States, and it is estimated that there are more than 500 lepers at large in this country. It is stated that chaulmoogra oil is used in the treatment of leprosy in institutions in this country and abroad and favorable reports of its efficacy have been given.

Dr. James Walker Walters,

Lynchburg, Va., was among those whose nominations were sent to the Senate, February 15, for first lieutenants in the Medical Reserve Corps.

A Post-Graduate Course in Tuberculosis

Will be offered physicians at Saranac Lake, N. Y., beginning May next. This is the first school in the world to be established for tuberculosis specialists and was planned by Dr. Edward Livingston Trudeau, shortly before his death. A number of scientists of national prominence have agreed to lecture at this school. The first session will be from May 17 to June 28.

U. Va. Students Equip Ambulance.

Students of the University of Virginia raised

a \$1,000 this month, with which to buy and equip an ambulance to send to the hospital corps on the firing line in France. The ambulance will be driven by a University of Virginia graduate—Robert Kent Gooch. Several alumni from this school are now at the front in the European War and some have gained considerable distinction.

Dr. John E. Porter.

Ambulance surgeon at the Virginia Hospital, this city, who was stricken with an acute attack of appendicitis while on duty, February 10, was operated on that evening. Dr. C. H. Iden took his place as ambulance surgeon during his illness.

Col. Walter D. McCaw, U. S. A..

Will be relieved from duty in the Philippine Department, June 3, 1916, and will return to the United States, subject to further orders.

The Brenizer Sanatorium,

The private sanatorium of Dr. Addison G. Brenizer, Jr., of Charlotte, N. C., was opened about the middle of January.

Baby Week

Will be observed in this city March 6-11, inclusive, during which time the committee in charge will endeavor to have a store on a principal business street in which to have demonstrations and lectures daily. It is also planned to have a series of "follow-up" lectures by physicians and nurses, in order to keep up the interest started at this time. The Children's Bureau of the U. S. Department of Labor reports that 1,727 communities have announced that they will observe this week.

The Southside Virginia Medical Association

Will hold its next quarterly meeting in Petersburg, on March 14. Further information may be obtained of the secretary, Dr. E. F. Reese, Jr., Courtland.

Dr. William Graham.

Richmond, has been the recent guest of his sister in Wytheville, Va.

Dr. F. G. Scott, Jr.

Of Orange, Va., was a visitor in Charlottesville, early this month.

The State Hospital Board

Held its quarterly meeting at Central State Hospital, Petersburg, February 9, Commissioner Bauserman presiding. Reports from the several State hospitals were read and discussed and an inspection of the Central Hospital showed everything to be in a highly satisfactory state.

Dr. Emmette E. Walker,

Recently of Pamplin, Va., is now located at Disputanta, Va.

Dr. Herbert C. Chase

Has returned to his home in New York City, after a visit to his sister in Petersburg, Va.

Emporia's Campaign for Good Health.

During the health revival, which commenced in Emporia, Va., February 21, the moving picture theater showed films furnished by the State Board of Health and the American Red Cross Society. Among the speakers were Drs. George Ben Johnston, E. G. Williams, J. A. Hodges, W. A. Brumfield, E. C. Levy, Roy K. Flammagan, and Miss Agnes Randolph, of Richmond; Dr. L. T. Royster, Norfolk; Dr. A. W. Freeman, Washington, D. C., and Miss Fannie Clement of the American Red Cross.

Dr. Leland E. Cofer,

An Assistant Surgeon General with the U. S. Public Health Service, and well known in Virginia, has been a recent visitor in this city.

The Theta Nu Epsilon Fraternity,

Sigma Sigma chapter, held its annual banquet February 11, at the Commonwealth Club, this city, Dr. Thomas W. Murrell, Richmond, acting as toast-master. Twenty-two new members were initiated at this time.

Dr. J. Fulmer Bright,

Major with the Richmond Grays, was appointed official surgeon of the Battleship Pennsylvania on her trial trip off the coast of Maine. He accompanied the battleship from Newport News to the northern waters.

French Red Cross Work.

There are 66,449 women in the French Red Cross Volunteers, equipping 1,500 hospitals with an aggregate of 118,000 beds. The Red Cross flag flies over 288 buildings in Paris

alone. The mortality among the Red Cross nurses has been very heavy considering the character of their work and the immunity which they are supposed to enjoy under international regulations. A number of them have been killed under shell fire and others have succumbed to contagious diseases.

The Instructive Visiting Nurses' Association,

Of Richmond, at its annual meeting, reported that during 1915, 31,780 visits were made to 3,579 patients. The number of deaths was 156 and the number sent to hospitals was 216.

An Anti-Spitting Crusade,

Similar to the one in force in New York City, has been ordered by the chief of police of this city.

For Sale—Paying practice, with personal and real estate in rich section. A big bargain.

A cash payment of at least \$500 required to close deal. *Address* Box 7, Lucketts, Virginia.

Obituary Record.

Dr. Ralph William Hill,

A prominent young physician of Garrisonville, Stafford County, Va., died at the Mary Washington Hospital, Fredericksburg, February 20, about a week after undergoing a very serious operation. He was 32 years of age, and had obtained his medical diploma from Marquette University, Milwaukee, in 1908. He became a member of the Medical Society of Virginia in 1910. Dr. Hill is survived by his wife, parents and several sisters and brothers.

Dr. George Dwight Kahlo,

Chief resident physician of White Sulphur Springs, W. Va., died February 12, of cerebral hemorrhage, at Old Point Comfort, Va., after an illness of some months. He was fifty years of age. His body was taken to Indianapolis, his former home, for burial. His daughter was with him at the time of his death. Dr. Kahlo received his medical diploma from Bellevue Hospital Medical College of New York in 1891, and he had gained wide reputation as an internist in Indiana, before accepting the position at White Sulphur Springs.

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SEPTIC INTRACRANIAL THROMBOSIS ACCOMPANIED BY FRONTAL SINUSITIS AND FOLLOWED BY ABSCESS OF THE BRAIN.*

By ALFRED GORDON, M. D., Philadelphia, Pa.
Neurologist to Mount Sinai, Northwestern General and Douglas Memorial Hospitals.

The following case presents several instructive features from the standpoint of onset, evolution of symptoms, mode and nature of infection, from the standpoint of cerebral localization and, consequently, of major surgical intervention in strict accordance with the localizing signs.

R. S., girl of 16, with no special personal or family antecedents, developed about four weeks before she died a symptom-group which was diagnosed influenza. At the same time a swelling of the right upper lid was noticed. Soon the swelling opened up and pus exuded. She was admitted to the Mt. Sinai Hospital in Dr. A. Watson's service and the following notes were taken:

Fairly well developed girl. Very restless, hyperesthetic, mentally slow. The right eye shows a swollen, tender, inflamed upper eyelid with abscess formation. The eye-grounds appeared then normal (Dr. Le Fever). Thoracic and abdominal viscera negative. The patient complained of severe headache, especially in the right frontal region. On the day of admission she had a violent chill and her temperature oscillated at various hours of the day between 102 degrees and 105 degrees.

Drs. A. Watson and L. Fisher examined the nasal cavities and their report is as follows: "Right nostril has some muco-pus. There is a large spur running up from the right side of the septum towards the middle turbinate, compressing it very tightly. It is impossible

to introduce an applicator between the middle turbinate and septum. It is difficult to probe the frontal sinus because of the deformity. The right frontal sinus is extremely tender and there seems to be some thickening and induration at the level of the right supra-orbital notch. It is possible that the orbital abscess is due to penetration of pus from the frontal sinus into the orbit. There is at present an acute frontal sinusitis on the right side."

When the patient was referred to me for an opinion, the following condition was found:

There is a distinct left hemiplegia but no rigidity in the affected limbs. The paralysis was not pronounced, the patient could make some movements with the arm and leg. The knee-jerks could not be obtained on the left, but ankle-clonus and Babinski were present. When a test was made to elicit the paradoxical reflex, a contra-lateral response was obtained on the right side.

The left arm was ataxic and dysmetric. In the finger-to-nose movements especially hypermetria or hypometria would be noticeable; the finger would either overstep its destination and strike the forehead or the other cheek, or else would not reach the nose and strike the cheek of the left side. There was also complete asymbolia and astereognosis in the left hand. She was unable to recognize not only the form, shape and consistency, but also the nature of the most ordinary objects.

The face was also somewhat involved. The right naso-labial fold was deeper than the left, and the left lower half of the face was drawn to the right side. Sensations to touch and pain were diminished in the left arm and leg. Patient had difficulty in turning her head to the left side. Her neck was rigid, head thrown back and it could not be moved forward without causing her considerable pain. The right frontal region of the skull was tender to touch. Patient experienced some difficulty in swallow-

*Read by invitation before the Section on Otolaryngology of the College of Physicians, January 19, 1916.

ing. She could control the sphincters. The spine was tender to touch. There was no speech disturbance. Pus from the right upper lid was examined and the pneumococcus was found.

Another examination of the eyes was made by Dr. Ch. Le Fever and this time the veins of both eye-grounds were engorged and tortuous, disc margins were hazy, and the vessels were crowded in the cups. Both eyes were turned to the right.

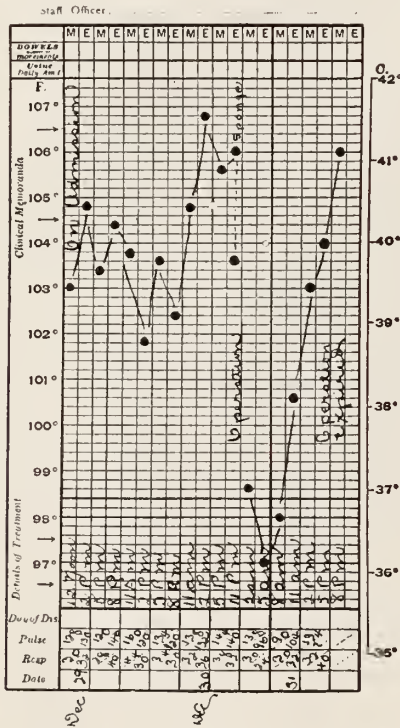
The course of events in this case appeared to me as follows: Onset infectious (pneumococ-

fixation of the head, high temperature, the condition of the eye-grounds, the finding of the pneumococcus in the purulent secretion of the eye-lid—all these circumstances suggested to me the possibility of a purulent meningitis or of a well-organized abscess in the right frontal lobe and sufficiently extensive to produce some pressure backward on the motor area but not destroying it. Subsequent events, as it will be seen later, confirmed fully this method of reasoning.

Moreover, the repeated rigors which the patient presented at that time and on the next day, also the abrupt elevation and sudden lowering of temperature, ranging between 107 degrees and 96.8 degrees (see chart), suggested to me the picture of a septic thrombo-phlebitis in the right anterior fossa producing a suppurating meningitis or an abscess formation, first, on the inferior surface of the right frontal lobe and gradually involving the entire frontal lobe (autopsy fully verified this contention). An osteoplastic operation over the right fronto-parietal region was indicated, but Dr. A. Watson thought it necessary at first to open the frontal sinus and thus install a free drainage. His notes are as follows:

“Under general anesthesia an incision was made along the right side of the nose, curved along the eye-brow, skin was retracted, periosteum reflected, right frontal sinus opened. Pus exuded freely but not very much. The frontal sinus was cleared out, was then examined and an erosion of the bone found communicating with the dura; no extra-dural pus found. The dura was then excised and the brain explored, but no pus found. The wound was then packed with iodoform and the skin approximated, leaving an opening for the brain. Immediately after the operation the temperature dropped from 106 degrees to 96.8 degrees. The patient became delirious.” The eyes examined by Dr. Le Fever after this operation showed distinct choked disc; the other cerebral symptoms remained unaltered. A major operation was then decided upon.

Accordingly, Dr. N. Ginsburg exposed the right fronto-parietal region. When the dura was excised, pus freely exuded in large quantities. The dura was found much thickened. The patient's alarming general condition prevented the surgeon from further manipulation of the brain. Rubber tissue drains were inserted. The surrounding tissue of the wound



cus). The presence of pus in the right nasal cavity and in the upper eyelid suggested the passage of the infection from the nose to the ethmoidal cells, through the anterior and posterior ethmoidal foramina to the orbit, also through the infundibulum to the frontal sinus. Finally, through the cribriform plate of the ethmoid bone the infection penetrated the anterior fossa of the cranial cavity. There the meningeal branch of the posterior ethmoidal artery anastomoses with the anterior meningeal artery. Thus the infectious element reached the meninges and the cortex.

In view of the left hemiplegia, though mild, it was to be presumed that the right motor area was involved. The presence of meningeal symptoms, namely, rigidity of the neck with

was sutured. The pus from the brain was examined and pneumococci found. The patient left the operating table in a poor condition. After the operation the temperature rapidly ascended to 106 degrees, her respiration grad-



Thrombophlebitis of the under surface of the right frontal lobe.

ually became shallower and in the night she expired.

Twelve hours later an autopsy was made and permission for removal of the brain alone was obtained.

The dura was found adherent over the entire right frontal lobe. It was very much thickened in contrast with the neighboring membranes which were normal. The entire right frontal lobe lost its smoothness and regularity. Its color was dark-greenish. Its surface showed some elevations and depressions. These alterations of the cortical surface extended backward to the ascending frontal convolution and the thickening of the dura was equally observed up to that level. Beyond that limit the meninges and cortex were normal. On the orbital surface of the right frontal lobe, besides the above mentioned discoloration, was distinctly seen a thrombotic blood vessel entering the brain tissue from the surface.

A transverse antero-posterior section of the brain showed the presence of a purulent portion in the external antero-lateral segment which is particularly noticeable when com-

pared with the corresponding portion of the opposite hemisphere.

The findings in the cerebrum and especially the vessel thrombosis corroborate, therefore, *in toto* the pathogenetic mechanism which presented itself to my mind in view of the entire clinical picture, of the onset and of the evolution of the symptoms during life.

The following important features in this case may be emphasized:

1. The occurrence of the abscess in the frontal lobe and strictly limited to this portion of the brain.

2. The passage of the pneumococcus infection from the nasal cavity simultaneously to the orbit, frontal sinus and anterior fossa of the cranial cavity.

3. The septic thrombosis of one of the blood-vessels in the orbital portion of the frontal lobe, thus producing also a meningeal suppuration and apparently encapsulated abscess.

4. Fever in abscess of the brain is usually not pronounced. It is in the majority of cases either normal or sub-normal. The extreme rigors and the unusual rise and drop of temperature ranging between 107 degrees and 96.8 degrees suggested the possibility of a septic thrombosis which was verified by autopsy.

5. Eye-ground changes are rare in abscess of



Sub-dural abscess of right frontal lobe.

brain. Here the early onset of papillary edema was conspicuous.

6. The presence of a mild hemiplegia together with the corresponding changes in the reflexes enabled one to localize the lesion in the brain. The absence of a pronounced paralysis implied not a destruction of the motor convolution, but only an encroachment and therefore only an irritation of it,—a fact which was verified at autopsy.

— 1812 *Spruce Street.*

PAINLESS CHILDBIRTH.*

By ERIC A. ABERNETHY, B. S., M. D., Chapel Hill, N. C.

No subject introduced into medicine since small-pox vaccine has aroused more widespread interest among the laity than that of painless childbirth, or the so-called "Twilight Sleep."

Since the days of the Chamberlains, of accursed memory, students of midwifery have been trying to mitigate the curse of a wrathful God who said to our traditional mother:

"In sorrow thou shall bring forth children."

Having had some success in this field I am presenting a short history of the subject together with a personal experience.

The normal contractions of the uterus in labor are painful. The reason for this is not known, as no other body function involving the contraction of unstriped muscle is painful. The pains are involuntary, the woman having no control over them. They are under the control of the cerebrospinal system. The early pains are due to the pressure of the presenting part on the nerves of the cervix and to the dilatation of the cervix, the pains radiating to the back as in all pelvic conditions. These pains are described as grinding, twisting, and are severe. As the labor progresses, the presenting part stretches the soft tissues and muscles of the vagina, the pains becoming tearing in character,—and as the child is born it seems to the onlooker, if he has red blood in his veins, that the woman is passing through the throes of death. It must seem to her

"O threats of hell and hopes of Paradise!
One thing is certain—this life flies."

So terrible is the prospect of this normal function that young, nervous women enter into it as a chamber of horrors—a frightful nervous

strain from the inception of pregnancy to its close,—to be followed by a tardy convalescence of months, and often years.

It is not surprising, therefore, that the advent of so-called "painless childbirth" should be heralded from the house-tops. The history is familiar to all. The first serious effort, after Dr. Morton's ether in 1860, was that of Abbott, in 1896, in his H. M. C.—hyoscine, morphine, and a debatable substance called cactine. The method of administration was to give hypodermically a tablet containing morphine, grain $\frac{1}{4}$, hyoscine, grain $\frac{1}{100}$, and cactine, which in most instances stopped labor by producing sleep. As the effects of the initial dose wore off and the labor progressed, another tablet, or half tablet, was given, and usually after a period of marked delay a cyanotic baby was delivered. Conservative observers, while admitting a certain degree of success, became frightened at the delay and the "blue babies," and abandoned the method. The reason for the delay and the "blue babies" is easily explained. Hyoscine not only delays delivery, but owing to its inhibitory influence over brain centers, intensifies the action of morphine, giving a much slower respiration, decreasing the amount of oxygen entering the mother's blood, and hence the cyanosis of the blue-baby. A repetition of the H. M. C. occasionally produced death in the mother and child.

The next serious movement to thwart the primal curse was made by von Steinbuechel, formerly in charge of the lying-in clinic at Freiburg, to later be developed by Kronig and Gauss into the now famous "Twilight Sleep." The following abstract of a paper by Virginus Harrison in the *Virginia Medical Semi-Monthly* is sufficient for the purposes of this paper:

"The Gauss method of obtaining 'Twilight Sleep' is to administer $\frac{1}{6}$ of a grain of morphine and $\frac{1}{150}$ to $\frac{1}{200}$ grain of scopolamin, and in thirty to forty minutes, if by tests the patient still can remember what has happened, another dose of scopolamin is given hypodermically, but no morphine. The dose of scopolamin is repeated as often as tests show that there are 'isles of memory.'

"To produce twilight sleep and conduct a woman through labor under its influence requires a good technical knowledge of the physiological and toxicological action of morphine and scopolamin, and a great deal more obstet-

*Read before the Tri-State Medical Society of the Carolinas and Virginia at its eighteenth annual meeting at Richmond, Va., February 16-17, 1916.

rical knowledge of the forces at work in both normal and pathological labor than is usually possessed by the average doctor.

"The dangers to the child are the direct effect of the drugs used; the prolonged second stage of labor, with its intra-pelvic pressure upon the fetal head, and the more frequent artificial delivery required in twilight sleep due to uterine inertia.

"The method is strictly one for hospitals, and not for the private home, unless the patient can finance the hospital facilities transferred. Primiparae are the cases that give the best results, and they must not be given the treatment until the pains are five minutes apart, and we are sure that labor will continue.

"The perineum must be watched as delivery may occur without our knowledge, as we do not have the usual signs of the two stages of labor. On this account more frequent vaginal examinations are required."

At Freiburg 60 hours is not considered too long to complete delivery, entirely too long for American obstetricians.

In trying the various methods I have found that a combination of the "Twilight Sleep" drugs and pituitary extract give excellent results. Morphine depresses both spinal and brain centres; so does hyoscine and its allied drugs, and if given in sufficient amounts will not only deaden the sensation of pain, and produce loss of memory, but will inhibit the action of all nerve centres, stopping labor. This occurs if enough of the drugs are given to relieve the pains of labor. Pituitary extract stimulates the cord centres controlling uterine contractions without any effect on the brain centres. While this stimulation is not so active as in the absence of morphine and hyoscine it will furnish sufficient stimulation to complete delivery in most cases. The same objection holds here as in the use of H. M. C., except one has control of the drugs, and, as is the case in the Freiburg method, one does not give a poisonous dose of morphine—never over $\frac{1}{4}$ of a grain. The method I have found most serviceable is as follows:

As soon as the patient becomes distressingly uncomfortable I give an initial dose of morphine, grain $\frac{1}{4}$ or grain $\frac{1}{6}$, and hyoscine hydrobromide, grain $\frac{1}{200}$. It is not well to be hasty. Labor should be established. In from half an hour to an hour and a half the patient has become decidedly more comfortable and

usually gets sleepy, but still has pains, which do not seem to greatly disturb her. The picture is much more pleasing to both the attending physician and the neighbors. Just here in my experience occurs something wonderful and very desirable—something which means everything to the expectant mother. The rigid os which has been delaying the labor has suddenly relaxed, and the tense vagina has lost its rigidity. Both of these conditions are directly due to the hyoscine and they materially facilitate the delivery instead of retarding it, if pituitary extract is given. At this point the pains gradually lose their intensity and get farther apart. A half c. c. of pituitary extract is now given. This usually causes the pains to come closer together and become harder. If the pains disturb the mother to any extent another $\frac{1}{200}$ of hyoscine is given. Later another half c. c. of the pituitary extract. Never more than $\frac{1}{50}$ of hyoscine (rarely over $\frac{1}{100}$), and not more than 2 c. c. of the pituitary extract are administered. By this time the patient is usually delivered,—there is no prolonged second stage, no tear, no shock, no hemorrhage, and after the delivery of the placenta, which is greatly aided by the pituitary extract, the uterus contracts firmly, the patient goes to sleep to awake several hours later feeling much refreshed, and with a hazy recollection of the delivery, although she has answered questions at the time.

My experience covers practically a hundred cases of all ages and social conditions. I cite a few of the typical cases:

Pauline, Negress, age 14, short, stout, primipara. Labor began at 6 A. M. At 3 P. M., dilatation of the os was about one-half inch in diameter, rigid, and vaginal outlet markedly rigid; morphine, grain $\frac{1}{4}$, hyoscine, grain $\frac{1}{100}$, administered hypodermically. At 6 P. M., three hours later, during which time patient slept (waking during pains, which were not severe), os and soft parts were widely dilated, the head presenting at the vaginal outlet. Labor had about ceased. Pituitary extract, $\frac{1}{2}$ c. c., was administered, the pains recurring in five minutes, apparently becoming severe. A second dose of $\frac{1}{200}$ grain of hyoscine was given. The pains again lost their intensity. In twenty minutes a second $\frac{1}{2}$ c. c. of pituitary extract was given, and twenty minutes later a third $\frac{1}{2}$ c. c., labor being completed four

hours after the initial dose. A baby weighing 9 pounds was delivered without a tear, the mother being asleep within two minutes after delivery. She awoke four hours later without recollection of any events after 3 o'clock, the time of the initial hypodermic. Normal convalescence.

Mrs. H., 37, white. Primipara. Saw patient after labor had been in progress 14 hours. Pains five minutes apart and severe. Dilatation of os about $\frac{1}{4}$ inch, vaginal muscles very rigid. Morphine, grain $\frac{1}{4}$, hyoscine, grain $\frac{1}{100}$, hypodermically, at 4 A. M. At 11 A. M., after having slept three hours, os and vaginal outlet widely dilated and relaxed. Pains slow and far apart. Pituitary extract, $\frac{1}{2}$ c. c. was given, pains increasing immediately. Hyoscine, grain $\frac{1}{200}$, followed by two doses of pituitary extract twenty minutes apart. Delivery painless at 1 P. M. Small, median tear. Complete loss of memory, but talkative delirium for six hours after delivery. Normal convalescence without fatigue or shock.

Mrs. N., 37, Seventh child. Labor had been in progress four hours. Rigid os about 1 inch in diameter. Pains severe, five minutes apart. Much physical effort and straining. Morphine, grain $\frac{1}{6}$, hyoscine, grain $\frac{1}{100}$, followed by pituitary extract half an hour later as pains apparently ceased. Immediate delivery, slight pain, but refreshing sleep of several hours. No shock, no fatigue. Normal convalescence with hazy memory of delivery.

Mrs. C., 24, primipara. Labor of 16 hours. Complete loss of memory, but difficult to control during pains as she could not be made to understand. A total of morphia, grain $\frac{1}{4}$, hyoscine, grain $\frac{1}{75}$ and pituitrin 2 c. c., were given. Small median tear. 13 pound baby. No shock. Rapid and normal convalescence.

It has been my fortune to try this method on several patients whom I have delivered three or more times. In these patients the results have been more than satisfactory. Allow me to cite two cases: Mrs. E., white, 30. Three children. First, forceps under ether—bad tear due to the rigidity, tardy convalescence. Second child two years ago. Spontaneous delivery—under chloroform. Much straining and bearing down, protrusion of hemorrhoids, bad tear owing to rigidity, and long painful recovery without infection, hemorrhoids giving great pain. Third child September 3rd. Labor of four

hours. Morphine, grain $\frac{1}{4}$, hyoscine, grain $\frac{1}{100}$, pituitrin, half c. c. Within one hour after giving hyoscine the cervix and soft parts relaxed and the delivery was painless,—no tear, no shock, no straining, and hence no piles; a sleep of six hours and a happy recovery.

Mrs. R., 27, white and delicate. Three children. First child delivered with forceps under general anesthesia after 14 hours hard labor; small tear. Tardy convalescence of two months without infection. Second baby two years ago. Spontaneous delivery under chloroform. Much bearing down and physical exhaustion, and long trying convalescence. Third baby in July. Labor of two hours, morphine grain $\frac{1}{4}$, hyoscine, grain $\frac{1}{100}$, and pituitrin 1 c. c. Some pain, but a hazy memory of the labor; no shock, long refreshing sleep; up the ninth day.

In both of the cases cited above the pituitrin was not administered until the pains had practically ceased.

In two cases—second babies—labor was not completed as rapidly as was desired and low forceps were satisfactorily used without any other anesthetic, both patients having no recollection of delivery. No shock, no fatigue; normal convalescence.

In the series, one post-partum hemorrhage occurred on the eighth day in a frail woman who died the 28th day of acute nephritis, and one "blue baby," which recovered, were the only accidents. The post-partum hemorrhage was attributed to the formation of a clot by gradual oozing, from a chronic pelvic inflammatory condition. The "blue baby" case was not a delayed one.

The method has given especially pleasing results in old multiparae with fibrous changes in the uterus. In these cases there is always a rigidity of the os, which is baffling, and hyoscine relieves most of them.

Three cases of delirium were observed, but in these three there was loss of memory, no especial pain, and no bad results. In a number of the cases, loss of memory was not complete because the pituitary extract was administered before the hyoscine had taken effect. Ether was given as an adjunct in these cases. The after effects were pleasant.

The advantages of this method over ether are marked. Much is being said now about the bad after-effects of ether; and ether is slow, and requires an assistant. The anesthesia is

never satisfactory and the ether itself gives shock. As against chloroform—well, the time has come when one gives chloroform at one's own risk. It is never safe. Morphine and hyoscine are given by practically all surgeons before operations and are never considered unsafe, and can be administered by any competent doctor.

The rapid dilatation of the birth canal, the absence of shock, the shorter labor, the absence of physical exhaustion, the loss of the horror, less pain, and last and of most importance, the thought on the patient's part that she is to have a painless labor, thus having her enter into this normal function, not as she would a chamber of horrors, but happy in the belief that she is not to suffer death, but is to bring forth her child without pain.

The disadvantages are: Some women do not respond readily to morphine and hyoscine, and sometimes the pituitary extract fails. And every complication, from gall-stones to ingrowing toe-nail, is charged to the drugs.

In closing, it is hardly necessary to add that one must know that there is no mechanical obstruction to prevent the delivery. And it must be remembered that one is dealing with a series of very powerful drugs, all of which, if used without care, are capable of producing serious harm and even death.

IS PSYCHO-ANALYSIS OF DIAGNOSTIC VALUE IN NERVOUS DISEASES?

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Any new method of diagnosis is welcomed by the physician, especially if relating to nervous diseases.

The theory of this method is based upon diagnosis by dreams, and holds out enough of the mystic and scientific to make it an interesting study and stimulate the enthusiasm of many advocates.

It is dependent on two facts, namely, that our dreams are the stories of our wishes, and that our mental life is divided into the conscious and subconscious, and that the subconscious or unconscious repression of our wishes and desires is often the cause of irritation and subsequent disease.

The difficulty in the application of the method is the correct interpretation of the dreams, and while a few of these interpretations may be logical and easy of application, many of them are fanciful, if not indeed farcical.

Consequently, in my opinion, there is a great deal in the theory, but practically and especially for the average physician, its methods are uncertain and inapplicable in many cases.

I believe that it is founded on a principle which has been long neglected by physicians, for most of us are too prone to treat the disease that is present and not consider the patient, or the patient's past history and life outside of the clinical symptoms that have arisen in the progress and manifestation of disease.

In other words, disease-expressions are not always due entirely to the active cause, but may be due to underlying factors that are remote and yet a present irritant.

The function of the psycho-analyst is to unravel past impressions which have become subconscious to the patient and properly value them as to their bearing upon the case in question.

The psycho-analyst believes that this can be done only by the proper interpretation of dreams, but at the same time believes in "the confessional" which he has established between himself and the patient, and my purpose in directing attention to this subject is to affirm that I believe that if the average practitioner would devote more time to a careful and conscientious study of the past history and inner life of the patient, that there would be less necessity for relying so much upon the dreams of the patient.

In the hands of specially trained scientists, psycho-analysis is more or less easy of application, but in the practice of the family physician, the method is difficult, precarious and unsatisfactory.

I believe, too, that most valuable information is often lost because we are frequently too rushed to devote sufficient time to the analysis of our cases and are too ready to treat present symptoms, irrespective of the past.

Furthermore, "He who thinks he is sick, is sick" in my opinion, as Sydenham long ago dogmatically stated.

In fact, few reach maturity without discords

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having been struck upon the delicate strings of the soul, and these discords later rise to nag and vex.

By tracing present symptoms back of memory, back to their lodgement in the subconscious mind, the practitioner is often able to effect a cure.

This is the hope, and the therapeutic end of psycho-analysis—to unravel the tangled web of life for those who, because of the pressure of unconscious forces, are living less than full, free lives.

This system of soul analysis, meaning by soul the whole stream of mind life, conscious and unconscious, comprises a study not only of disease, but of faults of character and errors in training as well.

It interests its disciples not so much in the study of symptoms, as in the cause of the symptoms, and its pathology concerns itself with origins.

Its first step is the negative determination that the symptoms have no physical origin.

Its next step is to locate their beginning in the mental or nervous life of the individual by a study of the patient's dreams, and claims that it finds in sex-disturbance, the focus and originating cause for a large group of our miserable ills.

We may be incredulous, but must admit that there is a large group of nervous disorders in which the physical derangement is perfectly real, but the origin is purely mental.

As an example of physical effects from a purely mental origin is the whole group of hysterias,—note, for example, a man lying flat of his back for ten years, and all the result of hysteria, or a woman may go totally blind, because of a condition of mind.

This system, of course, does not seek to relieve those nervous or mental disorders which have a physical basis or origin, such as neuritis, neuralgia, paralysis from pressure or hemorrhage, brain tumors, arterio-sclerosis of the brain, etc., all of which show destruction of nerve-tissue, and are due to direct physical causes.

But outside of these, there are manifold nervous conditions which have no physical derangement, and it is to these that the "diagnostician-by-dreams" applies the theories of his system, and the amazing thing about it, the

seeming miracle of it, is that the analysis is the treatment and the cure.

When Shakespeare made Macbeth ask the doctor: "Can'st thou not minister to a mind diseased, pluck from the memory a rooted sorrow and raze out the written troubles of the brain and heart?" and the doctor made reply: "Therein the patient must minister to himself," Shakespeare voiced the present day therapy of psycho-analysis.

By this system the patient works his own cure when his mind is opened to the true significance of some incident that may have happened years ago, but left its irritating scars which have never healed.

The analysis is supposed to be made by a study of the dreams; the harmful effect of past incidents and conditions is due to the fact that they are unconscious,—as soon as they are made conscious they vanish, it is claimed. For example, the paralyzed woman: the paralysis traced back to disloyalty of her husband.

In confirmation of the fact that many of our desires are repressed, it is essentially true that a distinguishing feature of child-life is want-life. Note, for example, the day-dreams of the child; the child-habit is duplicated in our night-dreams,—if poor, we dream of wealth, etc., every dream, the expression of a wish—hence, disease is a wish gone wrong. According to Freud, we are thrown into life with an all-consuming want or love-life (libido) within us. It is often suppressed in the child; it grows by what it feeds on,—it wants, wants, and yet is buried deep; it is silent, speaks no language, but just yearns.

If it is satisfied, all is well; if not, beware.

Add to this the second fact alluded to, the conscious and subconscious life, and the mystery of it all grows and enlarges.

The conscious mind is the educated, trained mind of our daily thinking, memory and judgment rule—everything that happens is chalked upon the board so that we can read the score.

But that is not the larger part of our life—in fact, it is the least important. The unconscious or subconscious is a sort of basement of the mind, into which we throw all the rubbish, all the "don't cares," all the "forgettables," that burden, or mortify or annoy us and hinder our enjoyment of life, (McFarlane.)

To use a psycho-analytic term, we "repress" them. These memories, naughty children of

our minds, also (closeted in our mental cellars) rise up in secession and produce conversion-hysterias, etc. We thought they were gone, but not so.

In my opinion, many of these buried facts which are as much irritants to the higher nerve centers as ulcers may be to the mucous membranes, may be brought into the light of clinical consideration as certainly and thoroughly by detailed study of the past life-history of the patient as by the interpretation of the fragments of the patient's dreams.

By either method, however, patience, tact and care must be exercised wisely, to make therapeutics effective.

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A REVIEW OF THE LITERATURE ON SPLENECTOMY,*

By JOHN W. WINSTON, M. D., Norfolk, Va.

The spleen, like the stomach, is not essential to human economy. Whatever the function, or compensatory changes when removed, we are beginning to realize that splenectomy is not only justifiable, but eminently to be sought.

Close association with pancreas, stomach and liver indicate that in some way it is concerned in digestion and metabolism. Why enlarged in some acute infectious diseases or whether it plays a role in producing toxins or antitoxins, we do not know. Courmont and Duffon found that spleenless animals resist diphtheria better than normal ones and more recent the removal the more marked the resistance.

Noel Patton, experimenting on spleenless dogs noted no change in the course or nature of metabolism, either during fasting or after feeding of proteids; later Fourin confirmed this.

Uric acid formation has been ascribed to the spleen, but Lo Monaco found that a spleenless patient fed on mixed diet had a normal amount of uric acid.

The spleen has a fibrous capsule without and within a reticular network filled with red and white blood corpuscles, as well as some large amœboid cells (so-called spleen cells), with bunches of terminal arterioles surrounded by true lymphoid tissue (Malpighian bodies).

Bland Sutton has said that the spleen may be "Regarded as a highly developed and specialized lymph gland."

Many have supposed that the spleen is a numerical regulator of the corpuscles and destroys the broken-down erythrocytes, but we are not able to positively affirm or deny with our present knowledge.

Vincent found in a dog fifteen months after splenectomy no increase in either the size or number of the ordinary lymph glands but an increase in the hæmolymp glands; but no such change was noted in five other spleenless dogs and the red bone-marrow also appeared to have its normal structure. He could not say whether this was increased or not.

Warthin, working on spleenless sheep, describes a hyperplasia of existing lymphoid tissue, the transformation of hæmolymp nodes to ordinary lymphatic glands and new formation of hæmolymp nodes from fat tissue and later a proliferation of red marrow. He thinks that hæmatocytolysis or hæmolysis is taken up by the hæmolymp glands and later by the ordinary lymphatics.

If normal hæmolymp and lymphatic glands take up the hæmolytic function for the spleen, our hope lies in the fact that, if these glands are normal, their function will not be as much perverted as the abnormal spleen, and increased activity stimulated in the bone-marrow will be sufficient to bring up the balance between destruction and regeneration.

It is almost conclusive that the lymphatic glands take up the work of the spleen, though they may or may not enlarge. The better the condition of the patient who comes for splenectomy, the less time and effort nature will have to spend to get back its equilibrium: therefore, they should be transfused and every means used to bring them as near normal as possible before operation is done. If splenectomy is to be done, it should be performed while the improvement is at its highest and not after the relapse has taken place. From ten days to a month after splenectomy there is reduction of the hæmoglobin, a decrease of the erythrocytes, and an increase in leukocytes.

The erythrocytes are first formed from the mesoblastic columns which form the blood vessels, from the red bone-marrow, and possibly from the spleen and lymphatics. The white blood cells come from the lymphatics, the

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spleen, and some think from the bone marrow which they say is the progenitor of both the nucleated and non-nucleated cells.

The safety of splenectomy depends on careful separation of adhesions and delivery of spleen without injury to vascular pedicle, and much depends also on size, the amount and vascularity of adhesions and thickness of abdominal wall.

The best access is through a left rectus incision to the outer side of the rectus, instead of to the inner side, after the method of Bevan on the right for gall bladder approach. This incision should extend from ensiform as low as is necessary for splendid exposure.

Hemorrhage from adhesions to parietes is best controlled by a large gauze pack until spleen is delivered. Adhesions strong enough to be cut should be tied and cut in sections. Conservation of all blood is important as, for instance, in pernicious anæmia, where the rapid destruction has caused a rapid outpour of nucleated reds from the bone-marrow destined to become normal erythrocytes if not destroyed before attaining that height of perfection. The French, after the teaching of Hayem, claimed that the blood plaques (small non-nucleated cells from bone-marrow) are the progenitors of the reds, but this has not been proven. Subscapular splenectomy, or operating from behind within its capsule, is unwise as the capsule is a continuation of the reticulum and too adherent to separate.

The vasa brevia in the gastro-splenic omentum is the most serious vascular attachment, which need not be cut until the spleen has been delivered. Adhesions reaching the crux of the diaphragm and vessels along the spine must be tied. Attachment to the kidney has little vascularity. Adhesions to the colon must be tied.

The splenic pedicle contains the tail of the pancreas which must be separated before tied. Mayo in three cases tied part of the pancreas and in one instance removed as much as three inches without harm to patient. Fat necrosis from pancreatic fluid is not to be feared in this part of organ.—due probably to not being activated by duodenal secretion. If pedicle is too short to get at to tie in sections, clamp with rubber-covered clamps (using two forceps method) and ent, as this expedites and does not injure contained viscera, being sure that neither bowel nor stomach is in line of cut. There are

cases where splenectomy is indicated but the condition of patient or the attachments make operation inadvisable. In the future the blood count may become a reliable index of the patient's resistance, and then by transfusion and other means we can build the patient to or above the safety point before operation. By tying off the splenic artery at the cœliac axis after the method of John Gerster, thus lessening the splenic blood supply, it may be possible to partly stop its perverted function and build up the patient for operation.

Experimental ligation of the splenic artery demonstrates that the normal spleen will not become necrotic, but will atrophy.

After splenectomy the space should be closed preferably with the snaking cat-gut suture which closes the space and ligates the arteries at the same time.

The mortality of splenectomy depends more on the type of case than operation carefully done. Mayo in 58 splenectomies had only five deaths following operation, one of which was due to hemorrhage and another to sepsis. Fourteen had edema of lower extremities, seventeen had ascites with myocardial and renal changes, seven were jaundiced and five had high temperatures at time of operation.

Types of cases were as follows:

1. Twenty-seven were classed as splenic anæmia, with an average weight of 1,030 grammes to each spleen removed, the largest weighing 2,000 and the smallest 500 grammes. The spleens showed a reduction in spleen pulp and also in lymphoid tissue, with the constant presence of amyloid degeneration and arteriosclerosis. They were marked by a diffuse hypertrophic fibrosis and splenomegaly in most cases. A severe type of anæmia with low color index and absence of leucocytosis is considered essential. Hæmatemesis occurs in most cases. Three operative deaths were in this series, with eight deaths in ten years; hemorrhage was the cause in two cases, one a year after operation and one five and one-half years after. In three there were hemorrhages two and three times after operation, but the patients are now in good health. Splenic anæmia shows low operative risk and good chance of recovery. Average age at operation was thirty-six and average duration of disease was thirty-two months. The pathologic picture of the spleen is that of a low grade chronic inflammation.

2. The three cases in this class resembled splenic anæmia but were marked by the presence of an endothelial hyperplasia and splenomegalia. This type is known as Gaucher's disease.

3. There were seven cases of pernicious anæmia operated on since August, 1914 (reported June 10, 1915), with one operative death. A second patient died two months after operation with severe anæmia. The third patient, two and a half months after operation, was in very good health with hæmoglobin at seventy; fourth patient's blood condition rapidly improved and hæmoglobin was at seventy-five in three months time; fifth patient, nine months after operation, has gained twenty-three pounds, with hæmoglobin at seventy, and reds, 3,026,000. Sixth and seventh patients were still in hospital at time of report. Average age of these seven cases was forty-four; average duration was twenty-seven months. Weight of spleens averaged 463 grammes. The spleens showed an increase in lymphoid tissue and an absence of fibrous tissue in all but one case. There was no pigment present, no amyloid degeneration, and no arteriosclerosis. Showers of normoblasts were seen after operation.

4. There were two cases classed as hæmolytic anæmia with marked splenomegaly, one spleen weighing 1,120 grammes, and the other 1,640 grammes.

The average age was sixty-four; anæmia was marked but typical count of pernicious anæmia not present, and spleen much larger than in pernicious anæmia. There were a few normoblasts and megaloblasts with a high color index. Like pernicious anæmia, there were showers of normoblasts after operation—in fact, they were like pernicious anæmia except the blood picture and size of spleen and reaction of bone marrow. The spleen showed a considerable fibrosis and lymphocytosis; no pigment was present but there was some amyloid degeneration. Pathologically, these cases lie between splenic anæmia and pernicious anæmia.

5. There were five cases classed as septic splenomegaly, with enlargement not marked—average weight being 700 grammes. In each case there was evidence of previous abdominal infection or systemic infection and there was a distinct splenitis present with a necrosis of the pulp and an increase in lymphoid tissue.

No pigment, amyloid degeneration or arteriosclerosis were present.

One patient is living and healthy five years after operation.

The duration of symptoms in one case was three months and the age was thirty-one.

Elting reports a splenic abscess in a woman twenty-seven years old who sometime before was thought to have had an abortion. She was first taken with a sharp pain in the upper left quadrant of abdomen, with slight nausea at first. The urine showed a few red blood cells but no whites, and X-ray picture gave no shadow at first and no signs of a stone. Later, the pain increased, nausea and vomiting appeared, and the spleen increased slightly in size, and another X-ray picture gave shadow over center of spleen. The temperature ranged from 99 to 104 degrees F., with a leucocyte count of 19,000 to 24,000. She had no chills until toward the last and no sweats.

The most peculiar feature was that there was a remittance of all symptoms for seven days,—the pain stopped, the temperature subsided, the nausea ceased and the leucocyte count dropped to 12,000 and the patient seemed to be getting well when all of the symptoms returned and persisted until death forty-two days later. The patient died from edema of lungs and rupture of a metastatic abscess in liver. Exploratory aspiration through ninth and tenth interspaces was done at different times, which did not locate the pus and proved an unwise procedure as working in the dark always is. The duration of this case was seventy-eight days. There was a rapid increase in size of spleen and rigidity and tenderness over the spleen, while during the remission these signs greatly diminished.

Many claim that there is a very high leucocytosis in splenic abscess, but a review of the literature shows it is only a little higher than in other abscesses and there have been cases in which the white count has been low. Some cases have been reported with no other symptoms than pain. This condition, which was once considered a pathological curiosity, is of more frequent occurrence than is generally supposed. Curschmann in five hundred and fifty-seven typhoid autopsies found four abscesses of the spleen. Berg, of Leipsic, in two hundred and twenty-eight typhoid autopsies, found four spleen abscesses. Vierhoff in one hundred and

twelve typhoid deaths saw three splenic abscesses.

6. Two cases of lues are noted, with marked splenomegaly, large non-gummatous spleen, with a secondary type of anæmia and a positive Wassermann reaction. Specific treatment failed in both cases to either help the anæmia or reduce the size of the spleen, but splenectomy followed in both cases by marked improvement. Average weight of spleens removed was eight hundred grammes, the surface of each was roughened, and there was considerable perisplenitis. One spleen on section was dark and one light.

There was a diffuse fibrosis and some pigment together with considerable arteriosclerosis but no amyloid change.

7. Two cases were classed as acquired hæmolytic or hæmatohepatogenous jaundice, marked by a chronic jaundice and profound anæmia. Average duration thirty months. Associated with chronic cirrhosis of liver. Average weight 760 grammes. The surface of spleen was nodular and there was considerable peri-splenitis.

There was a chronic splenitis together with an hypertrophic fibrosis.

There was no amyloid degeneration, a small amount of pigment and slight arteriosclerosis. One case was considered as advanced liver cirrhosis, as the spleen was not enlarged, nor was anæmia marked.

8. One case is put down as myelocytic leucæmia, which was regarded as splenic anæmia. This case did well for five years when leucocyte count became 64,000, with 14 per cent. myelocytes.

Osler in his 1902 edition, reports forty-three splenectomies for myelogenous leucæmia with five recoveries.

9. Three cases were classed as lymphosarcoma or lymphoma.

The first case died five months after operation from a metastasis, and the second nine years after. The third case which was thought to be malignant at operation showed a preponderance of lymphoid tissue over the sarcomatous and was not definitely malignant; this case is well eight years after operation.

Average age of these cases was forty-five, while duration was two months. The weight averaged 1,870 grammes. The surface of spleen

was rough and scarred with infarcts. On section, organ soft and dark in color.

10. One spleen was tubercular, with no evidence of disease in any other part of body.

11. Two were wandering or floating spleens. The chief symptoms were pain from twisted pedicle. These spleens present different pictures, depending on the amount of twisting and the duration. They may go so far as to even become necrotic.

Both of these cases are alive *three* and *seven* years after operation.

12. One was classed as acute febrile non-septic splenomegaly, which was in every way similar to Egyptian splenomegaly.

Abdominal enlargement was present for only two weeks while duration of case was eight weeks; the course of the trouble was marked by a remittent fever to 103 degrees F. Ascites was present but no hæmatemesis. Leucocyte count was not increased, but leucopenia present. There was anæmia with hemoglobin at seventy. Weight of spleen was 1,940 grammes.

The liver was somewhat cirrhotic. After operation there were three hemorrhages from bowel, patient remaining weak, and died in five months. On section spleen was dark and soft. The lymphoid tissue was increased and there was a parenchymatous hyperplasia of the pulp. The reticulum was slight and there was no pigment, amyloid degeneration, or arteriosclerosis.

13. There was one case of splenomegaly with marked eosinophilia,—no other such case in literature. Hæmioglobin was sixty-nine, and accompanied by anæmia. White blood count was 15,400, with 66 per cent. eosinophiles. Weight of spleen 2,110 grammes. After one year leucocyte count up to 138,000 and 80 per cent. eosinophiles. The stools in this case were negative and examination of muscles showed no trichinæ though examination was not altogether satisfactory. Duration was twelve months. There was a perisplenitis and gland on section very soft with a parenchymatous hyperplasia. There was some pigment but no amyloid degeneration. Eosinophiles were found in spleen pulp.

Patient doing well after one year.

It might be stated here that hæmolytic anæmia, lues, hæmolytic jaundice and splenic anæmia resemble each other pathologically.

Splenic anæmia is the most favorable type

for operation, and three out of seven cases of pernicious anæmia show temporary improvement nine months after operation.

In the language of Louis B. Wilson: "The knowledge of pathology of spleen associated with chronic changes in blood has made slow progress, partly because pathology of spleen has been studied only in late stages of disease. Now that splenectomy is more common, it is fair to assume that clinicians will be on the outlook for large spleens in pathological conditions of the blood and a chance will be afforded to study the early pathologic changes in the spleen. Progress can only be made by a correlation of the early pathological changes in spleen and accurate clinical phenomena.

"At present, the clinical diagnosis of the above diseases is lacking in clearness, which must be improved on before a parallel can be drawn—if any really exists—between the clinical picture and the pathology of the spleen."

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VAGITUS UTERINUS.*

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Vagitus uterinus is a term applied to the crying of the child in utero before it is born. This condition is probably the rarest that can happen to the parturient woman. Many authentic cases are on record. It is said that Mohammed and St. Bartholomew made themselves heard while in the uterus, but these probably are fables. But in the past hundred years there have appeared about sixty-five papers on this subject, in the majority of which the authors give a detailed account of a case that happened under their immediate supervision.

Up until about ten or twelve years ago, every

paper on this subject aroused a great deal of criticism, sometimes ridicule. This criticism and ridicule was not limited to the profession in general, but the bitterest usually coming from obstetricians of wide experience, who were frank to say they never saw a case and did not believe anyone else ever did.

An analysis of the various reasons given by these critics against vagitus uterinus resolves itself into two fundamental propositions.

First: What is supposed to be vagitus uterinus is a sound produced outside the uterine cavity; in other words, the observer is mistaken in what he hears.

Second: Air cannot gain access to the uterine cavity in sufficient quantity to support respiration.

I believe that both of these criticisms can be satisfactorily met. The physiological causes of vagitus uterinus must of necessity remain problematical, so with the exception of the presentation of a clinical case, all I may hope to do is to advance some theories as to its origin.

The following case occurred in my private work in the presence of Dr. Geo. T. Myers, my consultant, and two women who heard the cries very distinctly:

Mrs. P., age 31, para 4, previous deliveries difficult. First two still births: in the third, internal podalic version was done; fourth, high forceps. One miscarriage; all pelvic measurements normal. After patient had been in labor for thirty-four hours, and had reached a stage of exhaustion with nothing accomplished, the usual means of accelerating pains and dilatation were tried unsuccessfully. Patient had a partial prolapse of uterus, with cystocele and rectocele. With each pain, uterus would be forced down against the perineum, and cervix would not dilate. After consultation we decided to dilate the cervix and apply forceps, which was done, the cervix being dilated with but little difficulty. The membranes ruptured and forceps were applied. The first blade was applied without trouble, but in applying the second blade, the child commenced to cry, and cried three separate and distinct times, which could be heard in all parts of the room and by each person in the room. The cries were muffled as though the child was wrapped in a blanket. Rapid delivery was done. Child was badly asphyxiated and was resuscitated with a great deal of difficulty. It had inspired a very

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large quantity of mucus. Both mother and child got along nicely.

In a case of this kind, a subject which always arouses scepticism, corroborative evidence seems almost necessary. So I wish to say, there was present one other doctor and two women besides myself. The cries were heard distinctly by all present and no consultation was necessary to determine what they were or from whence they came. We all realized unmistakably and at once the source.

Before considering such a case, it is necessary to eliminate a possibility of error on the part of the attendant. Could a man of any experience mistake any other sound for the cry of a baby? Thorn, in his criticism of Suppel's case attributed the sound to a vibrating fold of membrane in the vagina. To my mind this does not deserve serious consideration, as may also be said of other theories advanced in explanation, such as gas passed by the rectum, intestinal rumbling, etc. The cry of a baby is a definite thing; there is nothing that resembles it closely enough to cause confusion.

For the production of crying in utero two things are necessary; namely, ruptured membranes, and the presence of air in the uterus. In any operative procedure that necessitates the introduction of hands or instruments into the uterine cavity it would be hard to exclude air. In the performance of low and medium forceps operations, the vulva gaps and the vagina is filled with air up to the presenting fetal part. The application of high forceps or the performance of internal version must necessarily be attended by the entrance of air alongside of the instrument or arm. It is impossible for the tissues of the birth canal to so closely approximate the arm or instrument as to prevent the entrance of air. Air having entered alongside of the arm or instrument, it would penetrate to exactly the same point as the arm or instrument, be that point the lower uterine segment, or the fundus. The air having once gained access to the cavity of the uterus and having an avenue of communication still open between the uterus and the outer air, what is to prevent air from entering in sufficient quantity to fill all the interstices between the fetal trunk and small parts and the uterine wall? In other words, the uterus is not a vacuum and, having an open communication with the outer

world, the atmospheric pressure within the uterus must be the same as that of the outer air.

The argument might be advanced that in order to cause this inrush of air there must be a time when there is a negative pressure within the uterus. There is such a time and it is at the moment of rupture of the membranes. With the membranes intact, and the normal amount of liquor amnii present, the uterine walls are everywhere in perfect apposition to the fetal envelopes, and there is no dead space anywhere. When the membranes rupture, the uterus contracts and readjusts itself to the shape of the fetus. After the escape of the liquor amnii, the uterus cannot so perfectly envelop the irregularly shaped fetal ovoid, as it did the regularly shaped bag of waters. Between the ventral surface of the fetus and its small parts is space formerly occupied by liquor amnii. When this liquor amnii drains away, its place can be taken by one thing and that is air. I do not mean to say that air enters the uterus in this way in every normal labor. I have simply tried to demonstrate that it is possible during operative delivery. And there are strong reasons why it should occur in operative and not in normal cases. The vertex presents in about ninety-seven per cent. of all cases at term. When the membranes rupture, the head, if not already engaged, comes down firmly into the cervix, completely filling its cavity and prevents the escape of all the liquor amnii. It is certainly safe to say in the average case that, when the membranes rupture, not more than one-half of the total amount of the liquor amnii escapes. The liquor amnii that remains must be in that part of the uterus where the uterine walls do not come in contact with the fetal surfaces. This place is the space around and between the fetal extremities and abdomen. These spaces being filled by a dense medium, there is no negative pressure,—no entrance of air.

Conversely, during operative delivery, such as internal version and high forceps, the membranes are ruptured with the hand in the uterus, and the total amount of liquor amnii is drained away. That part of the uterine cavity that is not filled by the fetus is immediately filled with air. The presence of the hand and arm or instruments in the uterus, by further separating the uterine wall from the fetal surface, enlarges this space. With air in the uterus,

one complete respiratory act would be sufficient to produce a cry. To provide a stimulus for that cry, it is necessary to compare the difference between intrauterine and extrauterine life. It is sufficient for the purpose of this paper to say that the principal differences are the establishment of pulmonary circulation and respiration.

There are two theories as to the causes of respiration. The stimulus of air on the skin and changes in the placental circulation. The first acts as an external irritation. The child is almost instantly transformed from an aquatic to a terrestrial animal, passing from a liquid medium with a temperature of ninety-nine degrees F., to the air, with a temperature of seventy degrees F., the shock of this sudden transition causing a reflex action of all the muscles including those of respiration. Second, the maternal supply of oxygen being cut off from the fetal blood as the placenta is separated or compressed, there is an accumulation of carbon dioxide, the primary action of which is that of a stimulant to the respiratory apparatus and to the brain centers governing respiration. The power of the latter faculty is often shown during or before labor, should anything diminish the supply of oxygen to the fetal blood, such as pressure upon the cord, there is an immediate effort to respire. Whether only one or both are necessary to produce respiration is a mooted question. Schwartz thinks that both are necessary for the establishment of respiration, while Pryor maintains that stimulation of the skin only is necessary. In the case I have described, it is hard to say what was the cause, but I am inclined to believe that stimulation of the skin was more than likely the cause of the respiratory act.

The effect upon respiration of stimulation of the skin such as flagellation, etc., is too well known to be more than mentioned, while placental circulatory changes may occur and be a contributing element of beginning respiration, although this is not necessary. The same cannot be said of stimulation, for cases have been reported where a pure reflex started respiration in utero. Of these two elements it is easy to say which is the stronger. A consideration of the treatment of a badly asphyxiated baby will show that stimulation often

succeeds where placental circulatory changes have failed. Many babies where the placenta is delivered immediately after the birth of the trunk do not cry until spanked vigorously. Were placental changes necessary, or even a contributing cause, it certainly fails signally in these cases.

It seems fair to state that stimulation of the skin alone is capable of starting respiration in the delivered child. It is also reasonable to suppose that the same agency that would act on the delivered child would be capable of the same effect upon the child in utero. This stimulus acting upon the child in utero would result in the muscular acts of respiration and pre-supposing the entrance of air in true physiological respiration. A child that breathes in utero, even though it be but one inspiratory effort, is capable of at least one cry.

I have attempted to explain the means by which air enters the uterus. Its actual presence in the uterus needs no proof for it is necessary in cases of vagitus uterinus, a subject that has been reported by competent observers too many times to admit of any doubt of its possibility. The necessary stimulus to respiration is furnished during operative procedures, the instruments or hand of the operator being the actual medium.

Of forty-five reported cases, more than half were operative deliveries, twelve being forceps, fifteen versions, and one replacement of arm and cord. The fetal mortality of those cases was ten per cent., many of the surviving children living only after prolonged efforts of resuscitation.

Vagitus uterinus is a possibility during any operative delivery, and, once heard, the only hope of saving the child lies in a rapid extraction, even at the expense of maternal lacerations and fetal injuries.

I also wish to state that from a medico-legal point of view, these cases of vagitus uterinus are very important, since the lungs may be partly inflated and the child die before birth. Finding air in a child's lungs would be no evidence against the individual accused of infanticide.

Clinical Reports.

SURGERY IN THE INFANT WITH REPORT OF A CASE.*

By J. W. HENSON, M. D., F. A. C. S., Richmond, Va.
Associate Professor of Surgery, Medical College of Virginia; Surgeon to Memorial and Virginia Hospitals.

On June 8, 1915, I reported before the Richmond Academy of Medicine and Surgery a case of intussusception of the bowel in an infant, which was operated upon and recovered. The published report had some errors as well as omissions. I had a chance to correct these



apparently of ileo-colitis with some meningeal symptoms. In November 1914, it had symptoms of mastoiditis. An operation revealed no pus, but the symptoms were soon better and, except for an exacerbation of its digestive troubles, the baby was soon as well as usual.

At noon on March 12, 1915, the little patient was seized with violent nausea. It continued to vomit at rather short intervals. I was called about 5 P. M. It was at once evident that the infant was seriously sick. An examination satisfied me that it had intussusception. An operation disclosed three or four inches of the ileum invaginated into the cecum. Reduction was fairly easy, but succeeding it the cecum would push itself over the end of the ileum. This was found to be due to the following conditions: The meso-appendix was so short and so arranged that it and the appendix acted as a band pulling the cecum and ileum together. About opposite the appendix, there was a band of peritoneum running from the cecum anteriorly to the ileum and so short as to have exactly the effect here as the appendix and its mesentery below. The result was a tendency for the cecum to fold over the ileum like a hood. These conditions probably existed from birth and were responsible for the digestive disturbances, and most certainly were they responsible for the intussusception. The appendix was removed and the peritoneal band was divided between two ligatures. As a result, the adjacent portions of the cecum and ileum returned to their normal relative positions.

The infant did beautifully for the first 24 hours succeeding the operation: after that, for a day or two, there was much distention of the intestines as well as the stomach. I am satisfied there was nothing more serious going on in the abdomen at this time than a local inflammatory reaction in the cecum and adjacent ileum, due to the injury of the invagination and possibly to the necessary handling at the operation. This, of course, caused some paresis of the intestinal walls resulting in the distention. As soon as the stomach was thoroughly emptied, as well as the bowel, the patient began to get better and made a nice recovery. Its health has been better than since birth, it being well nourished, quiet and happy.

Perhaps we do not always give infants the advantage of surgery they should have. They

as the secretary mailed me a copy; but I did not look at it until too late. I hope this Society will indulge me in the privilege of bringing this subject before it in a paper for three reasons: First, to correct the misinterpretations regarding it when first reported; second, because of the interesting pathological findings and, third, because I wished to present the case as a text or pretext for the expression of some views regarding surgery in the infant.

The patient, white, female, born March 1914, suffered with marked digestive disturbances from its birth continuously. It was always poorly nourished, was very nervous, had frequent crying spells as if in pain and never slept well. In April 1914, it had an attack

*Read before the Medical Society of Virginia at its forty-sixth annual meeting at Richmond, October 26-29, 1915.

may be able to stand operations under certain conditions better than we think. We know, of course, that infants and children are shocked more readily than adults. It has been pretty universally conceded that all the factors entering into the etiology of shock act more pronouncedly in infants and children than in adults, leaving out the question of old age. Certainly this applies to general anesthesia, the loss of blood, the handling of tissues (especially nerves), and the loss of time in operating. However, there are two other factors entering into the etiology of shock that I wish to discuss particularly, because I believe they have great bearing on the question of surgery in infants:

1. *The psychic factor.* This unquestionably is very potent in the production of shock in the adult, but I believe its influence in the infant is little or nothing. The infant does not know what we propose to do and it certainly can have no idea of the possible outcome. It, therefore, is spared the horror and its effect. It is true that the infant is frightened even by an examination, is frightened by covering its face in the administration of ether, but psychic impressions in the infant must be very superficial and evanescent, particularly with reference to what is going to happen to it.

2. *Factor of toxemia.* An adult in the state of toxemia is a poor subject for operation. This is by long odds more true of the infant. The crux of the matter is just here. Get the infant to the operating table before there is toxemia, if possible. If you can manage to see your case in time to make a diagnosis of a surgical condition and the necessity of an operation before toxemia is present or when it is very little in evidence, I believe the infant, with careful and quick work, will bear an operation well, of course provided there is not some other complication, as a bad heart or very feeble resistance from some pre-existing cause. In the case cited above, the infant was operated on before toxemia had developed and it had very little if any shock even in spite of the fact that it was an abdominal operation with the handling of several inches of intestines.

I attended the clinic of Mr. Styles, surgeon to the Royal Infirmary for Sick Children, Edinburgh. He did a great deal of surgery and his results were splendid even at that

time—12 years ago. My experience is comparatively small in the surgery of infants, but I am impressed with the belief that under proper conditions they do well.

Recently, I operated on an infant 28 hours old for hernia into the cord. The stump of the cord that covered the hernial sac at that time had, of course, begun to degenerate. The opening at the umbilicus was as large as a fifty cent piece and there was quite a good deal of tension. The loop of intestine in the hernial sac was congested. The infant stood the operation beautifully, had no shock and lived until the third day, when it died of paresis of the intestines and toxemia. I believe if I had seen this infant at birth and had operated on it, that it would have recovered.

405 North Allen Avenue.

GOITER.*

By J. KENNEDY CORSS, M. D., Newport News, Va.

The subject of goiter, especially exophthalmic goiter, has been discussed so frequently before the various medical societies and in the journals, and is so familiar to you all, that I shall not attempt to present any description of the condition in general, but will confine myself to the report of two cases that seemed to me to be of special interest on account of the gastric symptoms.

The first case, Mrs. F., age 27 years, first came under my care four years ago, when she was suffering from hyperemesis gravidarum of the most severe type. At that time she was vomiting everything, and was very weak and emaciated, with rapid running pulse. The uterus was emptied of a two months' gestation with careful curettement, and improvement was prompt and uneventful. For two and one-half years the patient was perfectly well. Eighteen months ago she presented herself for treatment for nervousness and rheumatic pains. Her condition improved under medical treatment until a year ago when menstrual periods became irregular and there was a return of the most pernicious vomiting. The condition was similar to the attack of three years previous. Medical treatment—ice to epigastrium and neck and gastric lavage—did not give relief. She was removed to the hospital,

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Norfolk, December, 1915.

and under gas-oxygen anesthesia the uterus was curetted and found to be normal in every respect, with no evidence of pregnancy or disease of uterus or appendages. Very little improvement resulted. After two weeks' rest in bed, gastric lavage and rectal feeding, she began to improve, and in two weeks gained in strength, when there was a recurrence of the hyperemesis. During this period, there was noticeable some enlargement of the thyroid, especially on the right side, slight protrusion of the eyes, and the pulse remained at 130 to 140 beats per minute, with tremor of hands. In the absence of any indication in abdominal surgery, and because of the gravity of her condition, I decided to do a partial thyroidectomy.

This was done under general anesthesia. The right lobe and isthmus were removed. Patient reacted well and was very little nauseated after operation. She was slow in regaining her strength, and after returning home had two slight attacks of nausea lasting only a few hours. Since then she has enjoyed perfect health, eats normally and pulse is never over 80. During the months succeeding her operation her medical treatment was chiefly the use of distilled water. This treatment for the effects of the colloid secretion was suggested to me by Dr. Stuart McGuire, and I consider it a most valuable one in these cases.

The second case was not so unusual, but presented gastric symptoms of a different character, and at variance also with the regular "gastric crises" with which you are all familiar.

This patient, an unmarried female, 29 years of age, had been treated for goiter and symptoms for over two years. Previous history negative, though her mother died of exophthalmic goiter at the age of 31 years. The thyroid was enlarged to a greater extent than the previous case, bi-laterally, but was larger on the right side; eyes protruded, though the lids met on closing the eyes. Pulse about 120; chief symptom was gastric pain. The character of this pain very closely resembled that of duodenal ulcer. It came on about two hours after eating, more frequently in the afternoon or night than in the morning. It was a gnawing pain, often (though not always) relieved by taking food, or by the use of alkalis. There was constipation, and on rare occasions, vomiting. The operation was performed under ether anesthesia, the rightlobe isthmus and part of the left

lobe were removed. Her convalescence was rapid. Pulse rate lessened to about eighty in a few weeks, nervous symptoms rapidly disappeared, but it was several months before the gastric crises disappeared entirely. This case also continued the use of distilled water over a long period.

In recent years the time that has been given to the study of diseases of the stomach, and the wonderful advances in surgery of the digestive tract, has stimulated interest in these lines, and to me the points that impressed the most were the close similarity to true disease of the stomach and intestine, which nature has created through the reflex nervous system. It suggests that possibly some of our failures in the clinical results of gastric surgery may be due to failure to recognize some obscure reflex, nervous condition, or local focus of auto-intoxication, both of which conditions exist in hyperthyroidism.

I also wish to emphasize again the value of distilled water in the treatment of this condition, both before and after operation.

Proceedings of Societies, Etc.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Reported by EMIL MAYER, M. D., New York, N. Y.
(Continued from page 540.)

The Surgical Anatomy of the So-called Capsule of the Faucial Tonsil.

By G. HUDSON MAKUEN, M. D., Philadelphia.

The so-called capsule of the faucial tonsil is not a capsule at all, in a strict sense of the term, and it consists, in part at least of that portion of the intrapharyngeal aponeurosis in a recess of which the tonsil attaches itself during the course of its development.

The intrapharyngeal aponeurosis is a broad membrane having its attachment above to the base of the skull, and extending downward it not only separates the tonsil and the palatal pillars from the superior constrictor muscle and other important tissues in the cervical region, but folds of this membrane protrude themselves between the tonsil and the pillars of the palate, and the anterior fold when it protrudes itself well in front of and below the tonsil constitutes what is known as the plica triangularis or plica tonsillarlis.

In the course of its development in embryo

and during infancy, the tonsil appears to appropriate a portion of the connective and musculo-fibrous tissue with which it is in juxtaposition, and finally in adult life it becomes firmly attached to this membrane to which has been given the name intra-pharyngeal aponeurosis, and a portion of which seems to constitute the so-called capsule of the tonsil.

As usually performed, therefore, a complete extracapsular tonsillectomy must leave a window resection of the intra-pharyngeal aponeurosis, not only exposing the palatal pillars and the superior constrictor muscle, but opening up avenues of infection in the deeper regions of the neck.

A more desirable operation, which may be called an intra-capsular tonsillectomy, or better still, an intercapsular tonsillectomy, is one in which the tonsil is removed with only the thin innermost layer of the capsule, the major portion of it being left in the pharynx as a complete lining for the fossa, where it serves as a strong wall of defense against infection in this region. The intra- or intercapsular tonsillectomy may usually be done easily and accurately with an ordinary snare in connection with the Sluder tonsillotome, and sharp cutting instruments are not required except in those rare instances where pathologic adhesions have formed between the tonsil and the mucous membrane covering the adjacent pillars.

DISCUSSION.

Dr. William E. Casselberry, Chicago: I am very glad to have heard this definition of terms. I have been doing the same operation that Dr. Makuen has been doing, but whereas he called it the intracapsular method, I have been calling it the extracapsular method. I still object to his term intracapsular for either his way or mine. Intercapsular would be a better term than intracapsular, it seems to me. Whether the capsule develops from the aponeurosis or from the tonsil itself matters not. I would not, in either event, forget the word capsule, for surely, as we see it, it is a capsule of the tonsil. The tonsil is enveloped in a smooth membrane which can be separated from the major portion of the aponeurosis. The smooth dissection of the capsule from the major portion of the aponeurosis is, I believe, the best operation. It results in no distortion of the pharynx. In the majority of instances it is unnecessary to cut much of the plica or

mucous covering of the pillar itself. Cutting the covering of the pillar is one of the things which results in infection and distortion. I, too, have been struck by the difference in the thickness of the capsule. Sometimes, when I have exposed a piece of muscle, I have thought I have gone too far, and when I have tried to get only a thin portion, I have gotten a thicker portion.

Dr. J. Gordon Wilson, Chicago: If the surgical anatomy of the tonsil is different from the anatomy, I miss Dr. Makuen's point. I cannot understand how he can call the part of the covering of the tonsil which comes from the aponeurosis of the muscle a part of the capsule of the tonsil. Poire illustrated that in his textbook. That part is not capsule of the tonsil. The capsule of the tonsil normally is very thin, as may be seen when it is sectioned. It is separated from the other tonsillar tissue by a thin layer of areolar tissue. Toldt's anatomy gives the best description of this. The crypts go right down to this connective tissue sheath. As age increases this sheath thickens; it is also thickened by inflammation.

Dr. George E. Shambaugh, Chicago: I cannot follow Dr. Makuen in tracing the thickness of the capsule of the tonsil. As I understand it, this thickness increases with age, and the tonsil becomes more and more adherent with age, according to Dr. Makuen's idea. In my experience, this is not the case. I have taken out the tonsil in people of seventy, in whom it is as loosely adherent as in infancy. If there is adherency, it is because there has been a great deal of inflammation, and not because of the physiologic character of the tissue.

Dr. Henry L. Swain, New Haven: I have obtained a good deal better idea of what the capsule really means by studying the lingual tonsil than by studying the capsule of the faucial tonsil, especially by studying the follicles, which heap themselves up around the tonsil. The follicles, accumulating around the tonsil, make a complete limiting membrane. If this is taken out it forms an impression or mould in which the tonsil lies. The larger the tonsil the thinner the capsule, and the smaller the tonsil the thicker the capsule. If the tonsil is dissected out in the cadaver, it is found that there is, in a child, a very slight line of demarcation where the covering membrane of the tonsil ends and the posterior pharyngeal wall membrane begins. Young children have very

little line of demarcation between the connective tissue on which the tonsil rests and the posterior layer of aponeurosis.

Dr. John F. Barnhill, Indianapolis: Dr. Makuen spoke of splitting the capsule. I could not understand that at the time, but having studied the tonsils which I saved, I can now see how one might speak of splitting the capsule, or, rather, the tissues around it which are removed with the tonsil. I have brought along a large number of these tonsils, which demonstrate, I think, that there is an external capsule which is connected with the deep tissues of the neck, and another which has nothing at all to do with this.

One of the tonsils in this collection, by the way, show a portion of the styloid process.

Dr. Lewis A. Coffin, New York City: My conception of the tonsil with its capsule is about that of a tangerine with its peel. The outside skin of the tangerine can be easily removed, without the fibrous covering just over the pulpy part of the tangerine, which is connected with the interfibrillar tissue of the fruit. This fibrous covering, to my mind, is the capsule of the fruit, and not the outside rind. So it is with the tonsil. If there is repeated inflammation, there will be thickening of the outer capsule.

Dr. Greenfield Sluder, St. Louis: I have listened especially for one point which has not been cleared up in the discussion. I have been very much interested in this subject for three or four years, and feel very much gratified that Dr. Makuen should have used the principle of picking up the tonsil, to which I called attention before the laryngological section of the American Medical Association in 1910. The technic was not original with me; it is the technic of Physick, published in 1827. It has been strengthened, but not changed. The point to which I referred, which has not been made clear, is the capsule splitting process. Is there a delimiting membrane which bears the crypts at one end? Is there a fibrous delimiting membrane which covers the posterior constrictor and pillars, or is the crypt open on its lateral aspect, or is it closed by the envelope? (Dr. Makuen answered that it is closed by a very thin membrane.) If that were uniformly the case, this technic would be the ideal method of tonsillectomy; if it be not the case, the turning of the blade across

does not remove the last cell of lymphoid tissue. If it does not remove the last cell of lymphoid tissue, it is not a success, because the activity of this lymphoid tissue will bring about a recurrence of the condition for which the operation was performed. Lymphoid tissue will grow up into the wound from the lingual tonsil, developing all the clinical symptoms which the case presented originally. I have seen that happen.

Dr. Makuen, closing the discussion: Dr. Casselberry has referred to terms and definitions of terms. I used the term intracapsular tonsillectomy chiefly because no distinction has been made between what Dr. Wilson has called the true capsule—and which we all recognize as the true capsule—namely, the thin membrane, and the posterior aponeurosis to which the tonsil becomes so closely attached. The English and French schools of anatomists did not distinguish between these two structures. I use the term intracapsular tonsillectomy because no distinction has been made between the true capsule and this membrane to which it is so closely attached at times that it seems to be a part of the capsule itself. I have found that after mutilation of the tonsils this section of intrapharyngeal aponeurosis is taken out with the tonsil, and it has been called extracapsular tonsillectomy, where all the capsule has been removed. I object to a sharp instrument, because it is so easy to go through this membrane. When you cut through this intrapharyngeal aponeurosis and get the finger down into the loose tissue between that and the muscle, you simply have to tear things out. That is why the finger dissection so rapidly went into disrepute. The finger nail made tears in the muscle which caused great contraction. We all do the same operation and try to get the same results, but the fact remains that we do get deformities in many instances. Someone in New York reported one hundred dissections with eighty per cent. of deformities of the palate. We do not all do the beautiful operations which some do, and unless we are very careful we will get these unfortunate results. That is why I have suggested the technic detailed in this paper.

True Myxoma of the Rhinopharynx—Report of two Cases.

By VIRGINIUS DABNEY, M. D., Washington.

Extreme rarity of true myxoma anywhere in the body, but especially in the rhinopharynx,

leads to report of two cases. Some pathologists reject entirely the term, believing no such pure tumor exists. However, sections show absolute absence of any fibrous elements.

Case 1.—Tumor seen on drawing forward soft palate. Under ether, large adenoid curette fitted over growth which was removed from attachment to the basilar process. No recurrence after ten months.

Case 2.—Two growths found at operation. Only one could be seen at examination; smaller attached to basilar process, larger to posterior ethmoid. Both were divulsed with large adenoid forceps. Patient had had similar growth removed eleven years before. Photographs of growths and of microscopic sections were given.

DISCUSSION.

Dr. Harmon Smith, New York City: This must be the exception which proves the rule. It has been definitely stated by many histologists and pathologists that true myxomata do not occur in this region. In the majority of instances myxoma has sprung from the ethmoid or somewhere else; mixed fibroma and myxoma, on the other hand, arise in the nasopharynx. So far as I know, there has been no other case reported of true myxoma springing from this region.

Dr. James E. Logan, Kansas City: I would like to ask the nationality of these patients, especially the one with the very large growth. It often happens that these growths appear in individuals of certain nationalities. Those of Scandinavian birth are more apt to have them than any other class of patients. I have had two pathologists at variance on two cases, one operated by myself and the other by Dr. Fenger. One pathologist said there was every evidence of myxoma, the other, that it was fibroid or myxofibroma. The tumor in one case, a boy of Swedish nationality, was attached to the basilar process.

Dr. Dabney, closing the discussion: One patient was German, the other American. What Dr. Smith says about the origin of these growths is the excuse for this report. They are supposed never to occur. I had the specimens examined by very skilled pathologists in Washington, at Howard University—a school for colored students, having very excellent pathologists—and also at the govern-

ment school. They are true myxoma. I have looked up the literature, and there are no other cases reported of true myxoma of the rhinopharynx.

(To be continued.)

Book Announcements and Reviews

The Semi-Monthly will be glad to receive new publications for acknowledgment in these columns, though it recognizes no obligation to review them all. As space permits, we will aim to review those publications which would seem to require more than passing notice.

Character and Temperament.—By Joseph Jastrow, Professor of Psychology, University of Wisconsin. New York and London: D. Appleton and Company. 1915.

To present a clear account of psychological subjects requires a mind of profound scientific training. Prof. Jos. Jastrow approaches his subject on Character and Temperament in a logical sequence, developing gradually thought after thought and demonstrating how one idea is the natural derivative of another. He takes up seriatim the various features of human mental make-up which constitute character and temperament and leads the reader gradually to the full conception of the fundamental basis of the component. The method he pursues reminds one of a solution of mathematical problems. He discusses sensibilities, emotions, conduct and higher stages of psychic control. Then only he brings all to a focus and, on the basis of the preceding study, he defines and critically analyzes Character and Temperament. In order to render the subject complete, he analyzes these two traits in their relation to environment. A chapter of unusual interest, especially to the physician, is one on "Abnormal Tendencies of Mind," in which he does not fail to throw a rapid glance on Freudian views.

While, technically speaking, one may not be in entire accord with the author on this particular chapter, nevertheless, the latter is an exceedingly useful presentation of the abnormal derived from the normal.

The book is illuminating, interestingly written, and should be read by every one interested in psychological subjects.

ALFRED GORDON, M. D.

Nervous Children.—By Beverley R. Tucker, M. D., Richmond, which is in process of publication by Richard G. Badger, Publisher, Boston, will shortly be off press. The book bears directly upon the rearing of both normal and nervous children, and should be of interest not only to the medical profession, but also to parents, teachers and others interested in child welfare.

Editorial.

The Malaria Problem in the United States.

Four per cent. of the inhabitants of certain sections of the South have malaria. This estimate, based on the reporting of 204,881 cases during 1914, has led the United States Public Health Service to give increased attention to the malaria problem, according to the annual report of the Surgeon General. Of 13,526 blood specimens examined by Government officers during the year, 1,797 showed malarial infection, the rate among white persons being above 8 per cent, and among colored persons 20 per cent.

Following surveys of the Public Health Service at 34 places in nearly every state of the South, there has been a reduction in the incidence of the disease from 15 per cent. in 1914, to less than 4 or 5 per cent. in 1915.

“One of the important scientific discoveries made during the year was in regard to the continuance of the disease from season to season. Over 2,000 Anopheline mosquitoes in malarious districts were dissected, during the early Spring months, without finding a single infected insect, and not until May 15, 1915, was the first parasite in the body of a mosquito discovered. The Public Health Service, therefore, concludes that mosquitoes in the latitude of the Southern States ordinarily do not carry the infection through the winter. This discovery indicates that protection from malaria may be secured by treating human carriers with quinine previous to the middle of May, thus preventing any infection from chronic sufferers reaching mosquitoes, and being transmitted by them to other persons.

“Although quinine remains the best means of treating malaria and is also of marked benefit in preventing infection, the eradication of the disease as a whole rests upon the destruction of the breeding places of Anopheline mosquitoes. The Public Health Service, therefore, is

urging a definite campaign of draining standing water, the filling of low places, and the regrading and training of streams where malarial mosquitoes breed. The oiling of breeding places, and the stocking of streams with top-feeding minnows, are further recommended. The Service also gives advice regarding screening, and other preventive measures as a part of the educational campaigns conducted in sections of infected territory.”

The malaria work now includes the collection of morbidity data, malaria surveys, demonstration work, scientific field and laboratory studies, educational campaigns, and special studies of impounded water and drainage projects.

Hospitals Help Check Trachoma.

The establishing of small trachoma hospitals in localities where this contagious disease of the eyes is prevalent presents the best solution of the trachoma problem, according to the statement contained in the annual report of the Surgeon General of the Public Health Service. The service now has five trachoma hospitals in the three states of Kentucky, Virginia and West Virginia, and so great has been the number of applicants for treatment that a waiting list has been established. In the past fiscal year 12,000 cases of trachoma have been treated, the larger proportion of which were cured, while those in which a cure was not effected have been greatly improved and rendered harmless to their associates. The great majority of these trachoma patients were people who lived in remote sections far removed from medical assistance, and who, but for the hospital care and treatment provided would have remained victims of the disease practically the remainder of their lives.

In addition to treating persons with the disease the hospitals have been used for educational work. Doctors and nurses have visited the homes of the patients and have explained how to prevent the development and recurrence of the disease. In Kentucky alone, 1,308 such visits were made during the year. Surveys were also made in sixteen counties in Kentucky, especially among school children. Eighteen thousand and sixteen people were examined, seven per cent. being found to have trachoma. Similar inspection in certain localities of Arizona, Alabama and Florida resulted in find-

ing the disease present in from three to six children out of every hundred. Periodic examination of school children for the disease and the exclusion of the afflicted from the public schools, are two of the recommendations upon which the Public Health Service lays emphasis.

A special feature of the trachoma work was the giving of lectures and clinics before medical societies in various counties where trachoma hospitals could not be established. Patients were operated upon in the presence of physicians and the most modern methods of treatment demonstrated. Throughout, the purpose has been to stimulate local interest in taking up the campaign to eradicate trachoma.

The Roanoke (Va.) Academy of Medicine

Held its annual banquet at the Ponce de Leon Hotel, in that city, February 17, more than fifty local physicians being present. Dr. E. T. Brady acted as toastmaster, and called upon Dr. J. R. Garrett, the president, to respond to the toast, "Our Society." Dr. R. H. Garthright spoke on "The Country Doctor" and Dr. E. P. Tompkins read an original and witty story in which he introduced the names of all the members of the Academy. The committee in charge of the banquet was composed of Drs. W. L. Powell, E. H. Luck and Geo. B. Lawson.

Dr. J. Elwood Knight,

Of Bristersburg, Va., had a painful accident early in February, when he was thrown from his car, and received several cuts about the face and many bruises.

To Investigate Amalgamation of Medical Schools in Virginia.

A joint resolution has been passed in the House and Senate providing for the appointment of a commission—two members from the senate and three from the house—to look into the advisability of merging the Medical College of Virginia and the Medical Department of the University of Virginia, and to report at the next session of the General Assembly.

Dr. David A. Christian

Has returned to his home at Vera, Appomat-

tox Co., after a short visit to relatives in Highland Park, this city.

Dr. J. W. Walters,

Of Lynchburg, Va., dislocated his shoulder March 3d, as a result of a fall on ice.

Dr. and Mrs. Paul W. Howle,

Of Richmond, are at home again after a short visit to New York.

Dr. Stuart McGuire,

Richmond, Va., has recently received his commission as a first lieutenant in the Medical Reserve Corps of the United States Army.

The American Medical Golfing Association.

In accordance with preliminary announcement made in the *A. M. A. Journal*, previous to the last A. M. A. convention, the American Medical Golfing Association held its first tournament in San Francisco, June 21, 1915. Arrangements were then made for the organization and that is now complete with the following directors: President, Dr. Wendell C. Phillips, New York; vice-president, Dr. James Eaves, San Francisco; secretary-treasurer, Dr. Will Walter, Chicago.

Plans are now being made for the second tournament to be held in Detroit at the forthcoming A. M. A. convention in June. The directors have decided to list as charter members, all fellows who shall have enrolled by April 1, 1916. All fellows of the American Medical Association who play the game are eligible and may obtain the desired information from the secretary-treasurer, Dr. Will Walter, 122 S. Michigan Boulevard, Chicago.

Members of the British Medical Association have a similar organization for play at their annual meetings, and it is thought that this will add materially to the social interest of the American Medical Association, as it has to the British Medical Association.

Dr. and Mrs. John Lee Grant,

Of Midland, Va., spent some time in Catlett, early in February.

Dr. W. C. Powell,

Of Peterburg, Va., was much shaken up and has suffered with his back as the result of his automobile being run into from the rear, on the

afternoon of February 28, as he was returning from Chester. Failure of the brakes to work caused the car to run into Dr. Powell's automobile.

A Test Case.

In Brooklyn, N. Y., the school board ruled that parents must send their children to school in as good physical condition as possible. According to the *Journal of the Indiana Medical Association*, as the parents of a certain child ignored frequent requests from school authorities to have the child's diseased tonsils removed as they retarded his progress, the case was taken to law. The court sustained the school board and ordered the parents to have their son's diseased tonsils removed.

Dr. and Mrs. A. A. Marsteller.

Formerly of this city, left early in March to make their future home in Cuba.

Dr. and Mrs. Charles V. Carrington.

Of Richmond, were among recent visitors at Old Point Comfort, Va.

Dr. B. B. Bagby.

Of West Point, Va., after a spell of illness, is recuperating at the home of his mother in Tappahannock, Va.

Pine Camp.

Since Pine Camp, the local tuberculosis camp, has been taken in charge by this city, arrangements are being made to install fire protection and have roofs of all the buildings painted. A plan is also on foot to make the Camp partly self supporting by establishing a truck farm to be cultivated by such patients as are able to work. Some seed will be sent through the State senators and the congressman from this district, to start the farm. After July 1st, it is planned to have a resident physician.

Dr. W. J. Chewning.

Of The Plains, Va., last month purchased a valuable piece of property in that place.

The Lynchburg (Va.) Health Department

Announces that for the first time since the establishment of the department, January of this year passed without a single new case of typhoid being reported. There was a total of only 29 reportable communicable diseases

against a total of 50 for the same month in 1915.

Dr. Powhatan Moncure,

Bealeton, Va., was a visitor in Washington, D. C., in February.

Dr. Thomas J. Stanley,

Of Bracket, Va., was a recent visitor in this city.

Popular Lectures.

The first of a series of popular lectures at the John Marshall High School this city, was given by Dr. Stuart McGuire, March 8th. Other members of the faculty of the Medical College of Virginia who will lecture this month are Drs. E. C. L. Miller, Fred M. Hanes and Greer Baughman.

The American Medico-Psychological Association,

Which numbers among its members many prominent alienists of this country, will hold its annual meeting in New Orleans, La., April 4-7. Dr. Edward N. Brush, Towson, Md., is president, and Dr. Henry C. Eyman, Massillon, Ohio, secretary.

N. C. Doctors on Tour.

During the latter part of February, a party of about twenty prominent physicians of the Old North State passed through Richmond, where clinics were held for them. They later visited Washington, Baltimore, Pittsburg, Cleveland, Chicago and Cincinnati.

Lepers Apparently Cured.

The *Report of the Philippine Health Service* states that on July 12, 1915, 23 persons in the Philippine Leper Colony were set free to return to their homes who, after repeated examinations, were found to be negative for leprosy. Each one of this number was obligated to report to the district health officer of his province every three months for a period of not less than two years.

Dr. J. Wood Jordan,

Of Ashland, Va., who has recently recovered from a severe spell of pneumonia, went for a visit to Hanover, early this month.

Dr. J. Allison Hodges

Was among the Richmond people who attended Mardi Gras in New Orleans this year.

The Health and Sanitation Committee,

Of the Richmond Chamber of Commerce, announced March 1, is as follows: Dr. A. G. Brown, Jr., chairman, and Drs. M. L. Anderson, Robt. S. Boshier, Jr., Stuart McGuire, Clifton Miller, and Charles R. Robins.

Dr. Charles R. Robins

Has been re-elected to a term of office on the Richmond City School Board, to represent the second district.

Dr. H. S. Hedges,

Of Charlottesville, Va., visited Orange, the last of February.

Dr. W. Brownley Foster,

Health officer of Roanoke, Va., was operated on for appendicitis, in February. At last report, he was doing nicely.

The Petersburg (Va.) Health Department

Reported a total of 88 deaths for January, 1915, these being equally divided between the white and colored population.

Dr. Henry A. Christian,

Of Boston, Mass. spent several days in Lynchburg, Va., the latter part of February, visiting his mother.

Typhoid Epidemics in Chicago and Milwaukee.

From January 1st to February 17th, 129 cases of typhoid fever were reported to the Chicago Health Department and, from February 22d to 25th, alone, 46 additional cases were reported. In Milwaukee, likewise, a typhoid fever epidemic is raging, over 200 cases having been reported there up to March 1st. In both places, the health departments have advised the boiling of drinking water and typhoid inoculation.

Dr. Roy K. Flannagan,

Of the State Health Department, delivered a lecture at the High School in Ashland, Va., on the afternoon of March 2, his subject being, "The Health and Care of Children."

France Appeals for Consumptives.

Another of the troubles growing out of the European War is the number of consumptives which have developed. It is at present estimated that there are in the neighborhood of

50,000 or 60,000 French soldiers whose condition is such that they may be cured if they have immediate aid, but who may become hopelessly infected if treatment is not instituted promptly. A very small amount per day is needed for each individual to help arrest the disease and possibly cure the sufferers altogether. An appeal has been made for help which it is believed will be forthcoming.

Dr. Edward P. McGavock.

Of Richmond, spent several days in Wytheville, Va., the latter part of February.

The Virginia Conference of Charities and Corrections

Held its thirteenth annual convention in Lynchburg, February 27th and 28th, followed by meetings of the State Juvenile Protective Association and State Social Hygiene Association on Tuesday and Wednesday, respectively. An address causing special comment was on The Double Standard of Morals. Mr. Taylor McCoy, of Staunton, was elected president.

Dr. Rudolph Teusler

Was among the speakers at a meeting of Episcopal laymen of this city, March 2d. Dr. Teusler, sent out fifteen years ago as a medical missionary by the Episcopal Church, was the founder of St. Luke's Hospital, Tokyo, and is recognized as one of the foremost surgeons in Japan.

Talk at School.

Drs. A. P. Traynham and J. T. Booth, of the State Health Department, have recently given interesting talks on medical subjects at the Harrisonburg State Normal School.

The Omega Upsilon Phi Fraternity,

Of the Medical College of Virginia, held its annual banquet, March 3d, at the Commonwealth Club, this city. Dr. William B. Hopkins acted as toastmaster. There were about twenty active and twenty alumni members present.

Losses Among German Army Physicians.

About the last of December, it was announced that to that time there had been 361 army surgeons killed, 530 more or less seriously

wounded, 102 taken prisoners and 90 otherwise missing.

Dr. H. B. Hiatt,

High Point, N. C., was recently commissioned first lieutenant in the N. C. National Guard, and assigned to Field Hospital, No. 1, Asheville, N. C.

Alumni of the University of Pennsylvania,

Medical School, had a dinner in Philadelphia, February 4, in commemoration of the 150th anniversary of the founding of the medical school by John Morgan.

The Southeastern Sanitary Association

Will hold its annual meeting in Brunswick, Ga., March 23 and 24, under the presidency of C. W. Oker, Hartsville, S. C. Dr. Ennion G. Williams, State Health Commissioner of Virginia, is first vice-president of the Association.

Surgeon G. B. Young.

Of the U. S. Public Health Service, was directed to deliver an address on public health at Emporia, Va., February 24.

Dr. Frederick M. Hanes

Addressed the Richmond Nurses' Club, at its meeting on March 6.

Baby Week.

During the celebration of Baby Week in Richmond, talks were given at various times by Drs. E. C. Levy, city health officer, W. A. Plecker, state registrar, B. M. Rosebro, W. T. Graham, N. T. Ennett, K. S. Blackwell, W. H. Street and by Miss Crandall, of the Public Health Nursing Association. The improved infant mortality statistics in this city alone are evidence of what may be accomplished by educating mothers in the care of their children. A rate of 224 deaths per 100,000 in 1910 has been reduced to 125 per 100,000 in 1915.

For Sale—Paying practice, with personal and real estate in rich section. A big bargain. A cash payment of at least \$500 required to close deal. *Address* Box 7, Lucketts, Virginia.

Obituary Record.

Dr. John W. Ayler,

One of Virginia's prominent physicians and a beloved citizen of Newport News, Va., died

at his home in that place, in the early morning of February 28. His death, due to cerebral hemorrhage, was a shock to his many friends, as he was apparently in good health to a couple of hours prior to the end.

Dr. Ayler was born in Fredericksburg, Va., July 15, 1838. He received his academic education at Hampden-Sidney College, and later studied medicine at the Medical College of Virginia, from which he received his medical diploma. He was an acting assistant surgeon in the Confederate States Army. Dr. Ayler moved to Newport News from Fredericksburg about twenty years ago and soon took a position of prominence in the community. He was city physician, police surgeon and physician for the Virginia State School for the Deaf and Blind, in addition to which work he had a large general practice. He was a Mason, an active worker in the Presbyterian church and member of a number of medical organizations, being an honorary member of the Medical Society of Virginia, in which he was also chairman of the Necrological committee. He is survived by his widow and four children.

Dr. Edwin L. Detwiler,

Of Herndon, a widely known physician in Northern Virginia, was shot and instantly killed by a farmer near his home, February 29. The man, who had at one time been in a hospital, was believed to be insane. Dr. Detwiler was 56 years of age and had received his medical diploma from Jefferson Medical College in 1886. He was affiliated with the State and local medical societies. His wife and several children survive him.

Dr. James Robertson Pharr.

After an illness of only a few days with pneumonia, Dr. Pharr died at his home in Dunloop, W. Va., February 21. He was born in Craig County, Va., nearly 36 years ago and, after an academic education at nearby schools, studied medicine at the Medical College of Virginia, graduating in 1903. He had been physician and surgeon for the McKell and the New River Coal and Coke Companies for twelve years. His widow and three children survive him. Dr. Pharr was a member of the Medical Society of Virginia.

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THE PROTECTIVE OR ESOTERIC SYMPTOMS OF THE ALIMENTARY CANAL WITH SPECIAL REFERENCE TO ACUTE INFLAMMATION OF THE COLON.*

By JEROME M. LYNCH, M. D., and JOHN W. DRAPER, M. D., New York, N. Y.

It is true that there are many striking analogies between the beginning and the end of the alimentary canal. This is even more marked in some quadrupeds than in man, but its incidence is neither to be doubted nor overlooked, for in the future study of these apparently remote phenomena lies all the hope of progressive therapeutics.

Surgical physiology explains many of these analogies—the lack of digestive activities; the characteristics of the motilities; the sphincteric action, both in systole and in diastole; the common tendency to hereditary variation in form,—but there is one factor in which the analogy strikingly fails: the stomach gives freely of subjective symptoms; the colon does not.

Wm. Mayo has well likened the stomach to a central telephone exchange to which distress signals are sent out from all parts of the body. Most of these, it is true, are appendicular, many are cystic, renal or duodenal in origin, but a moiety deserving of careful consideration certainly come from the colon itself.

Now, if we pause to consider why this is so,—and is not the “why” in medicine that which is the most alluring,—do we not rightly seek for the explanation among our prehistoric ancestral records? More and more it is to the

fundamental truths of heredity and evolution, of biology and its allied branches, that medicine is successfully turning for an interpretation of facts which were else barren of explanation.

Gradually, as man's progenitors arose from an unspecialized unicellular being to a highly specialized multicellular vertebrate creature, it is self-evident that his evolutionary development was wholly dependent upon food. Very early, therefore, it became an established rule that food should be taken only at periods of greatest advantage to the individual, rather than at times when the bodily resources were needed for functions other than those of digestion, as, for example, to destroy parasitic enemies; to repair the body after injury, or to protect it from further aggression. Hence, it is that the filled stomach empties as the first natural therapeutic step after any trauma, be that from without or within, and that degrees of trauma produce proportionate degrees of nausea or vomiting in the human species.

Now, while thinking along these lines, is it not interesting to consider why the innervation of the colon differs from that of the rest of the canal? It is, of course, familiar to us all that the vagus terminates at the ileo-cecal valve, while the sympathetic supplies the entire canal. Even if a plausible explanation of this is to be found on embryological grounds, are there not just as plausible reasons for believing that the omission of the colon by the vagus is due to the simple fact that it is unnecessary to the organ? And this may be so even in the presence of certain sacral nerves said to furnish vagus impulses. One can hardly study the problem without inclining a little to the Lamarckian hypothesis that structures have arisen in response to the needs of the organism.

However this may be, it is the fact that,

*Read by invitation before the Tri-State Medical Society of the Carolinas and Virginia, at its eighteenth annual meeting, at Richmond, Va., February 16-17, 1916.

From the Laboratory of Surgical Research, New York University, and from the Clinic of Colonic and Rectal Diseases, N. Y. Polyclinic School and Hospital.

although similar in many functions, the stomach and colon are dissimilar in innervation and in their capacity to transmit subjective symptoms. Hence, the stomach is often erroneously blamed and treated for a lesion which exists in the colon, and reflex symptoms veil the true location of disease. Such symptoms are esoteric.

Is it not interesting, incidentally, that one so rarely sees actual morbid processes, either cancer or inflammation, in that portion of the bowel which really does the digestive work? For digestion occurs only in the small gut. The stomach and colon are but storehouses,—the one preparing food for digestion, the other for elimination. This assertion is based upon the consideration of food digestion alone, the important relation of the stomach and cecum to metabolism and to the far reaching matters of enzyme interaction and internal secretion, being entirely outside of this field. Emphatically, absence of digestive action in both stomach and colon by no means presupposes uselessness to the general body economy.

To recapitulate: Every one is well aware that while the sympathetic supplies the entire canal, the vagus stops short at the ileo-cecal valve. What does not seem to be so universally known, however, is that almost without exception, subjective symptoms are referred to the stomach, whether the lesion is located there or not. Therefore, the stomach has been from time immemorial the object of much medication and in recent years of much questionable surgical therapeutics. But objective studies of the canal have done much to alter the viewpoint and to improve our perspective. Statistics show that out of every two thousand patients applying for treatment because of stomach symptoms, only two hundred, or just ten per cent., have actual lesions of that organ. In 90 per cent. the definite pathology is remote.

Being surgeons, we are naturally concerned with the recognition and therapeutics of diseases the lesions of which are visible, either microscopically or to the naked eye, rather than with those hypothetical lesions frequently referred to the stomach by gastro-enterologists. Since they are invisible as to pathology, and because of their disappearance after the exciting cause is removed, we are forced to consider them in most instances diagnostic symptoms only, rather than entities worthy of treat-

ment. Nor is this view at all inconsistent with the most recent objective findings, those notably of Symthies being particularly in point. For without peradventure, and after a study of many thousand individuals he has shown that the usually accepted so-called medical diseases of the stomach, if actually extant as entities, are exceedingly rare. How very important a knowledge of Symthies work is to the profession at large, and how great will be the gain when at last the laity, now growing wiser to such matters, at last grasps the fundamental truth that "indigestion" and "dyspepsia" are almost never symptoms of stomach trouble, but often the first signs of disease elsewhere.

It is our purpose to show that of these remote stimuli which come to the stomach, the colon furnishes many. Indigestion is very often the first symptom of colonic pathology. Take, for example, the so-called mucous colitis, a term loosely used to designate an uncertain pathology, usually of local origin, but withal a very common occurrence in the experience of every practitioner,—is it not a fact that the patient is usually more embarrassed by the stomach disturbances than by the actual frequency of the mucoid stools?

Another example is colonic cancer. A patient recently operated upon was treated for six months at one of the leading institutions of the country for "dyspepsia" through the department of gastro-enterology. An adeno-carcinoma, situated within 2 cm. of the anus, was the exciting cause, the stomach being free from disease.

Another whose malignant lesion was located within 4 cm. of the anus underwent four years of stomach treatment because of "pain after eating, eructations and occasional vomiting."

Still another went on to acute intestinal obstruction because of neglected primary carcinoma of the ileo-cecal valve, before the true cause of his "dyspepsia" was discovered.

These cases are cited in no spirit of criticism but simply to show the great danger of taking anything for granted, particularly as regards stomach symptoms, 90 per cent. of which have a definite basis in other parts of the body. This basis, of course, may be either medical or surgical in nature.

On the other hand, paradoxically, and as

though to prove the rule, a man suffering from gastric cancer complained only of symptoms referable to the colon, and was treated for intestinal auto-intoxication, until by chance, and too late, the lesion was discovered.

Perhaps the commonest reflex to the stomach is from a chronic appendix, and it would be wordy to enumerate any cases illustrating this familiar relationship, although in reality this is a colonic manifestation.

Finally, we come to an interesting group of cases of which little has been written and about which still less is known. These may be defined as acute and chronic purulent inflammations of the colon of unknown cause. Almost invariably, the early signs are reflex stomach symptoms. In the literature the term "acute hemorrhagic colitis" has been applied to one of the sub-groups and it is perhaps best described in the words of Lockhart Mummery: "It is an extremely serious and often fatal disease, and there are not yet a sufficient number of cases to permit us to draw reliable conclusions as to its etiology." Of this sub-group we shall speak later.

There are many degrees of inflammation between this sub-group on the one hand and its antithesis, to which we have applied the term *segmental infection*, on the other. In the main group of inflammations at present under consideration, we are purposely omitting the protozoan, except syphilis, which constitutes a group by itself, and is outside of present considerations.

Just because of the lack of cases reported regarding the sub-group referred to as "hemorrhagic colitis," and of the sparsity of the records regarding it, referred to by Mummery, we present herewith the following histories:

Miss M. S., age 23, first seen Sept. 1911. Chief complaint—*epigastric pain coming on one to two hours p. c. and heartburn*. Two weeks previously there had been an attack of diarrhoea. Chemical analysis showed "hyperacidity." Patient put on antacid treatment which relieved all symptoms. Her attending physician was thus lulled into the belief that the stomach manifestation was her fundamental trouble, that it had been diagnosed by the gastric analysis, and that the patient had been cured by the treatment. What a chimerical phantasm this proved to be! In 1912 there was slight hemorrhage at stool. "Anusol sup-

positories" were believed to be beneficial but the bleeding continued. Finally proctoscopic examination was made and an intensely congested membrane studded with pin point ulcers was revealed. Irrigations of all kind were without avail, the diarrhoea and blood continued. Noteworthy and characteristic of this sub-group was that this girl suffered no pain, showed no rise of temperature, had unusually little tenesmus and showed very little constitutional change.

Ileostomy was then done and after a short time and the usual condensation of the ileac effluent resulting from the physiological adaptation of the organ to its new function—a phenomenon to which we will refer later,—the patient was able, with a proper appliance, to be made very comfortable. Indeed, so great was her improvement, and so little her local discomfort, that she danced throughout one entire social season without any of her friends being aware of her condition. The inflammatory reaction having subsided, at the end of about a year, the stoma was closed and at the same time the operation of *developmental reconstruction* was done to remove the deformity of the colon which was rightly looked upon as the prime etiological factor, causing the original inflammation. This view is supported by the fact that the patient has remained well ever since.

Annie G., 31 years old, born in the U. S. We have been granted the privilege of reporting this case through the courtesy of our colleague, Dr. Albert Morrow. During the past ten years this patient underwent a series of operations, one of which was appendectomy. Two years ago, began to pass blood and pus from rectum. She was kept for a time under careful medical treatment but in spite of this her condition rapidly became worse. In this case the stomach symptoms were delayed. There was marked tenderness over the entire colon. Proctoscope showed œdema and ulceration. No amœbæ present. Operation by Dr. Morrow, January, 1915. Entire colon thickened and congested and many enlarged mesentery glands were found. *Cecostomy* was done and the bowel irrigated twice daily thereafter. Patient lived six weeks. In spite of heroic medical and surgical therapeutics, including two transfusions, her strength gradually failed, the pus and blood increasing until the end.

A comparison between the pathological findings in these two cases is of great interest and importance. The principal difference histologically is that in the second case the mucous membrane and submucosa is entirely replaced by a layer of exudative material. This rests upon the inner muscular coat. In the first case there is no desquamation of the mucosa. There is intense congestion in the second case while in the first there is hemorrhage into the tissues. In the second case we find round cell infiltration most marked in the neighborhood of the blood vessels. This occurs also in the first specimen, but in addition in the first case we find certain circumscribed areas of round cells somewhat resembling tubercles of tubercular origin. These tubercles contain numerous giant cells. They, however, are not tuberculous. In the second case are some areas composed of blood corpuscles and plasma cells resembling the early stage of abscess formation.

In summing up, the second case presents a picture of an acute condition which has not lasted very long. The first case might perhaps be called both acute and chronic.

Turning now to the opposite extreme, we find, on the other hand, the segmental type of infection is characterized by a very mild reaction, but oddly enough it almost invariably ends in stricture. Is it not seemingly contradictory that the more clinically severe infections rarely do so? Therefore, this is the type which, because of its apparent simplicity, should be recognized early. For, if properly treated, it can be cured often without operation. The following case is illustrative:

Mrs. S. W., age 37. No children. Wassermann negative. Trouble began in 1911 with *pain in stomach*, fainting, dizziness, eructations of gas and constipation (this is a universal symptom of all forms of acute colonic inflammation). Temporary relief at European Spa. Proctoscopic examination showed segmental ulceration with blood, serum, pus and mucus. Recovery under medical treatment.

Another case (B—n), which might have been cured early, was prolonged for many years by inadequate and unphysiological surgery. Seven and one-half years ago he became constipated, and soon after blood, pus and mucus appeared. Constant stomach trouble from the start. Diarrhœa supervened and patient lost 70 pounds. Saw many doctors, all of whom

treated him for "stomach trouble." Finally, the disease was located in the colon and a colostomy was done. But, unfortunately, and as often happens in these cases, the *stoma was placed in the centre of the infected area*, midway in the sigmoid, instead of oral to it. Convalescence from this operation was stormy and later the patient was worse than before, as he naturally had a constant discharge through the stoma in addition to that from the rectum. About a year later he came under our care. Vigorous local treatment was instituted; the inflammation subsided and the X-ray demonstrated an almost complete strictural occlusion of the descending colon. The next consideration was what to do. It was decided to explore and determine whether an ileo-sigmoidostomy or a colo-sigmoidostomy was indicated. This naturally depended upon the extent of the disease. When the abdomen was opened the transverse colon was found to be healthy and sufficiently mobile to permit of its implantation into the sigmoid aboral to the original stoma. This was necessary because intestinal contents tend to travel via the normal course rather than through lateral stomata.

This brief discussion of cases serves to illustrate the great need of applying fundamental surgical principles to all colonic infections and this pre-supposes an ability to differentiate them.

What are these principles? When the infection is severe and is known to involve the entire colon, an *ileostomy* is the operation of choice. When the infection is mild, local treatment is usually sufficient, but one must know how far to carry local treatment as there is grave danger in being over conservative and, as just cited, permitting stricture development. *The stoma should always be placed oral to the infection.* This can only be determined at time of operation and sometimes it may be necessary to open the bowel before deciding.

Appendicostomy is not a very satisfactory procedure in colonic infections because it permits of constant re-infection from fecal matter and fails to put the parts at rest. Absolute rest is necessary, but the sudden and marked improvement in several of our ileostomy cases has led us to believe that after ileostomy, as after gastro-enterostomy, very important biochemical changes † take place in the epithelial

†Cited by Patterson, of London.

secretions, and which may have quite as much to do with the gain in weight and general well-being of the patient as the better known factors of rest and re-infection. As the "rest" hypothesis has been in part explained away after gastro-enterostomy, so it no doubt will be after ileostomy. Such beneficial biochemical changes probably do not take place after appendicostomy. One of us has called attention to the elaboration of poisons by the intestinal epithelium, perverted through obstruction, and Whipple believes it to be a proteose.

In infections involving the lower rectum and anus and where stricture already exists with several fistulous openings leading from the stricture to the outside, any surgical procedure other than a colostomy is sure to end disastrously. After a colostomy and with proper local treatment, all inflammation usually subsides; the tracts disappear; the stricture can be dilated and after a time the colostomy may be closed, a perfect functional cure resulting.

This brings us logically, to the therapeutics of stricture. First and foremost, it is very important to differentiate at once between the strictures of syphilitic origin and those due to other causes. For it has been our experience that syphilitic strictures are not amenable to treatment by resection. Autopsy studies have convinced us that it is impossible at operation to determine the true limits of the arterial changes which determine the future patency of the gut. Tissue that grossly appears healthy may show microscopic changes so pronounced as to subsequently result in stricture, for scar formation and contractures are the inevitable outcome of diminished blood supply.—a sort of compromise by nature for the loss of more valuable cells. Salvarsan and mercurial treatment should of course be instituted but the same principle applies here as in tabes,—the destroyed cells cannot be replaced, although the disease can be arrested. If the segment of infected gut happens to be the ceco-colon, and is not syphilitic, *developmental reconstruction* is unquestionably the operation of choice. This procedure is so named, not to obscure, but to clarify the chaotic nomenclature of these parts. The common term "partial resection" may mean anything from a centimeter to a meter, and in any part

of the colon, whereas, developmental reconstruction has a definite limit. *It implies resection of the terminal ileum, cecum and ascending colon.* It is properly called developmental because it places the ileo-colic junction in the position where it is usually found after rotation and in some of the lower vertebrates. We have described this in full in a previous paper.†

If the whole colon is involved, obviously the indication is to remove the organ or to exclude it from the entire canal by ileostomy. The latter is eminently conservative and in our hands has proved curative. Polyposis, which we consider of inflammatory origin, may require colectomy after ileostomy. There has been a hereditary dread among the profession of intestinal stomata. One often hears men say that death is preferable to a colostomy or ileostomy. This idea is entirely erroneous. After many years of experience we have found that, with intelligent management, there is comfort and possibility for useful lives if a proper stoma has been made.** The dread of fluid feces constantly pouring over the abdomen, which has been the nightmare of every surgeon, is a myth. Surgical physiology has shown us that far-sighted nature has provided for such contingencies and we should be alive to her provisions. We have shown in a previous paper that the inhibitory center situated in the embryological prototype of the colon; the terminal ileum is a wonderful mechanism contributing so to the regulating of the ileac effluent as to quite compensate for the loss of the absorptive function of the colon.

In conclusion, we cannot emphasize too strongly the importance of studying all the inflammatory lesions of the colon from a broad biological standpoint. Such studies reveal that most of the symptoms which we have been treating as disease entities are in reality often only protective symptoms.

What is to be gleaned from this excursion into a rather new field? First, "dyspepsia" often means an inflamed colon, since the stomach frequently speaks for organs which cannot speak for themselves. Second, because of insuperable bacteriological difficulties no definite classification of colonic inflammations has yet

†Developmental Rec. of the Colon Based on Surgical Phys.

**The case of our colleague, Dr. Lyon, is illustrative. See his remarks "Contribution to the Surg. Phys. of Colon," by Lynch, Draper and Lyon, *Annals Surgery*, 1915.

been possible. Third, individual cases can be cured by surgery if applied physiologically. Fourth, through pragmatic surgery and a concise study of the cause, the present need for operative intervention upon the colon, as upon other parts of the body, will ultimately cease—through prevention.

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THE AIM AND PURPOSE OF MODERN CLINICAL NEUROLOGY.*

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FORMER NEUROLOGICAL CONDITIONS.

The name of neurologist was formerly assumed by the untrained, who deceived their colleagues by their unintelligibility, covering their ignorance with terms lacking precision or correspondence with clinical observation. Neurological science was then in its cradle, and there was no critical medical public to expose the pretender. The limits of the old neurology were the diagnoses of organic nervous diseases, which were divided into rigid clinical categories, few of which were based on pathogenesis. To this some neurologists added the treatment of functional nervous conditions. This consisted of an empirical imposition of a therapeutic blunderbuss, comprising isolation in bed, massage, electricity and over-feeding. A few gifted men added to this a shrewd knowledge of neurotic human nature, by virtue of which they converted patients without physical disease into the belief that they were well, and through this crude method achieved a certain proportion of cures.

The "rest-cure" blunderbuss also cured many persons who needed this energy-sparing and

upbuilding method, more especially patients with incipient tuberculosis and those with assimilative powers unequal to the strain of an overburdened life. Cases of simple asthenia and also persons whose social adaptations had failed were naturally benefited for a time. But the method was very expensive, many of the procedures in any single case were superfluous, and the process frequently failed because it was not properly applicable to the case in question.

PRESENT NEUROLOGICAL AIMS AND PURPOSES.

The modern neurologist has a much extended field, derived from a greater insight into the nature of the conditions dealt with. It will be instructive to consider the material now handled by neurologists and the methods by which it is approached.

CLASSIFICATION OF NERVOUS DISEASES.

The material consists of nervous disorders classifiable into three groups, each possessing a fundamentally different character. These are:

1. Anatomical changes in the nervous system itself, or in its supportive connective tissue. These are known as organic nervous diseases. The method of differentiating these disorders is generally contingent upon the topography of the nervous system. Localization and focal diagnosis are the chief diagnostic assets in such cases. The means utilized are the exploration of the reflectivity, motility, including the cerebellar functions; sensibility, including the special senses, and, to some degree, the automatic and physisic functions, more especially when the disorders of these are partial and conform to some neurological region.

Laboratory investigation becomes of help in proportion as neurological knowledge is inadequate; but in some cases the neurological signs may be lacking and the general biological reaction may settle the etiological diagnosis, which is often of greater importance than the topographical diagnosis. Examples of these principles abound, not only in neurological literature, but in general medicine. Regarding diagnosis, we should add that, unless the reports are made by properly trained neurologists, the statements should be received with reserve, even when in the best medical publications. One of the most widely read text-

*Read before the Medical Society of Virginia at its forty-sixth annual meeting at Richmond, October 26-29, 1915.

books of general medicine is a flagrant example.

Of the treatment of organic diseases of the nervous system, the former pessimism is no longer justifiable. The deep penetrating Roentgen ray, better surgical technique, combined with great precision of focal diagnosis, has made tumors of the spinal cord quite remediable. Even in tumors of the brain, a much more favorable outlook is now permissible. A striking illustration is the more widespread realization of the need for intensive treatment of cerebro-spinal lues, and the inclusion of tabes dorsalis in this rubric, for the insistence upon which in 1908† considerable hostility was aroused toward the author.

FUNCTIONAL NERVOUS DISORDERS.

But it is in the functional diseases that the greatest improvement has occurred, both in diagnosis and treatment. These comprise the other two classes of affections of the nervous system.

THE CHEMICAL PERVERSIONS.

2. Functional nervous disturbances of the nervous system may be caused by physical disorders elsewhere. One of these is caused by alterations of the medium in which the neurones have to perform their work. This is influenced by chemical substances, whether infections, intoxications or perverted secretions. The results may be either psychoses or neuroses. Typhoid and other fevers are the clearest examples. Illustrations are afforded by the following cases:‡

Case 1. *Dysthyroidia*.—A man who had lost much in weight and suffered from insomnia, irritable temper and great discomfort after eating, was diagnosed as "nervous dyspepsia" He was treated by diet, and tonics and sedatives were freely administered. The result was extreme fatigability and tearfulness. Physical examination showed greatly exaggerated deep reflexes, tachycardia and fine tremors, variable blood pressure, easily provoked perspiration and emotivity.

Though ocular signs and thyroid enlargement were absent, the case was diagnosed as hyper-thyroidism and pluriglandular dystaxia, the dyspepsia being a secondary symp-

tom. The treatment was empirical—hydrotherapy, rest and diet. The man's anxiety about himself, which naturally resulted from the morbid feelings produced by his physical condition, was allayed as far as possible. The therapeutics was difficult, but finally succeeded, and the man, freed of symptoms, returned to work.

Early *pernicious anemia* is also apt to be diagnosed as nervous dyspepsia, as is also pellagra; in each the gastro-intestinal symptoms remit.

Case 2. A woman, about 48 years of age, was seen with Dr. Cobey, of Frostburg, Md., October, 1912. She gave a history of long standing nervous dyspepsia and anæmia. Recently she had become progressively weaker until locomotion was impossible without assistance. Glossitis, varying in severity, was said to have lasted four years. She had been treated for years for dyspepsia, and pernicious anæmia had lately been suspected, but the characteristic blood picture was stated not to have been present. Syphilis was then thought of, and a mercurial course given without benefit.

Upon examination, the tendon reflexes proved all absent except those of the right arm and the left radius, which were very feeble. The plantar reflexes were feeble also, and the pupil reflexes, though brisk, were not maintained. Tingling and numbness in the hands and feet annoyed her.

Sensibility to pin pricks was lost below the knee except on the fibular border of the feet, where it was feeble, as also in the thighs. Touch and vibration were lost and impaired in the same regions, respectively. Attitude sense was lost only in the ankles. Pressure pain was everywhere exaggerated. The temperature sense was not tested.

Motility was much weakened in the whole of the lower limbs, especially so in dorsiflexing the feet. The left triceps was weaker than the right. But the patient was feeble in general. The gait was shuffling and unsteady, and she fell readily when unsupported. Ataxia was absent. The diagnosis of pellagra was confirmed by exposing her to the sun, whereupon the characteristic eruption appeared.

Nervous dyspepsia should be diagnosed only when its genesis is psychological, and this can be found out only by a proper analysis of the patient's case.

†Pathogenesis of Tabes Dorsalis—Amer. Jour. Med. Sciences, August, 1908.

‡All the cases were referred to me or seen in consultation with fellow practitioners. Many of them are published at greater length in different articles.

The Cure of Migraine.—Headache, although always a sign of disordered health, is merely a symptom. It is very unwise to treat it by a mere suppression of the pain. This is just as irrational as it would be to paint over the crack in the girder of a bridge instead of repairing the part. It should be treated by removing the cause. Fortunately, the natural body processes often do this in a few hours, or after a night's sleep, but the causes recur, and so does the headache. If only headache were the result, it would be less serious; but there is always gradual deterioration of the general health, not only on account of the strain resulting from the constancy of the pain, but by the operation of the causes themselves. These are generally complex and difficult to unravel even with all the knowledge of an experienced physician. But the results are well worth the trouble, as will be demonstrated. At the A. M. A. meeting at Detroit, this subject will be discussed by me in detail before the neurological section.

It is common to attribute headache to disordered digestion, especially as it may be dissipated after an aperient; but this is only a superficial view of a cause which lies deeper than the digestion itself.

Women often regard headaches as a concomitant of the periodicity of their functions; and they conclude that gynecological attention should remove the headaches. This, too, is a superficial view.

Imperfect refraction of the eyes is often the first thing thought of where headaches are frequent. While it is true that the strain of overcoming a refractive error does conduce to headache, and that glasses will prevent this in many instances, yet such strain does not cause headache in all cases, and even when it does, there is frequently a constitutional disturbance as well, which increases a person's susceptibility to the effects of the straining; so that even in these patients a general survey should be undertaken as well as the examination of the eyes.

I give two from over thirty examples of the cure of the supposedly incurable recurrent headache or migraine by the method which I have devised:

The following is an instance, of which I have many:

"Hereditary" Migraine cured in Three weeks.

—In April, 1915, a physician, aged 38, consulted me for a periodic headache since boyhood, a true migraine, increasing as he grew older. All his brothers and sisters and his father were affected, and there were migrainous headaches on the other side of the family also.

The attack is classical, beginning usually on the right temple, and extending quickly to the occiput. Glasses improved him slightly while in medical school when his astigmatism aggravated the headaches. They used to come every two or three months, but for six years have been increasing in frequency and intensity, although they may be postponed for a day by aspirin.

Other important negative facts are incipient tuberculosis after graduation, a frontal sinus infection while treating this in the Southwest, an æstivo-autumnal fever since 1905, ptomaine poisoning in 1910, since when he has had a feeling of severe malaise, relieved by diarrhea about every two weeks. A gastro-enterologist thought gastric ulcer with pyloric stenosis was the cause of this and explained in this way a gastric hyperacidity. After his treatment the diarrhea was less frequent but the headaches became still worse, and neuralgia every four days made life almost intolerable, as he had been only free for two weeks the whole winter. Alcohol would always provoke a headache the next day.

Examination showed over-active reflexes, small but active pupils and clean tongue. Systolic blood pressure was 153, with 98 diastolic.

This was certainly a headache due to disordered metabolism and was treated appropriately, being given the standard dietary* which I have devised, along with the proper hygiene.

Six weeks later he wrote me: "I want to take this opportunity to express to you in part my great appreciation of what you have done for me in curing me of my headaches. It is like living in another world to be free from them. I am able to eat all the green vegetables and fruit now, something I have not been able to do for several years. To be free from those

*See "A Standard Low Protein Dietary"—to be published.

terrible head pains is like a dream to me, almost too good to be true."

I believe that many cases unlike the classical description are etiologically of the same nature as true migraine, and from a therapeutic point of view, they can be no less successfully terminated.

Case IV.—*Atypical Migraine Resembling Petit Mal, Due to Metabolic Disorder.*—A bacteriologist, aged 30, was referred in the spring of 1912 by Dr. Paul Johnston because of attacks he called "bilions" (but not accompanied or preceded by constipation) which produced headache. This was preceded by numbness and pricking in the fingers, followed by dizziness, mental confusion and foolish talk of paraphasic type, without loss of consciousness. These attacks have occurred every two or three months since the age of 22; they are of very short duration. There were no scotomata, but they were formerly accompanied by vomiting. The headache is of the splitting kind, lasts all day, and is followed by dullness and slowness of thought the day following. The capacity to concentrate his thoughts is increasingly impaired even between attacks. He is at times irritable. He has no bad habits, and apart from these attacks he is well and strong.

He received a blow on the left side of the head as a boy, and there is still a dent in the left parietal region, upon which side the headache more often occurs. He has a large appetite, which he says he controls, but he eats meat thrice a day, although he says sparingly; he takes no alcohol. The blood pressure is not raised and the reflexes and sensibility are normal.

Treatment.—He was given the low protein "standard" diet. He wrote me the following winter: "Since I have increased the quantity of vegetables I have had no recurrence of those spells." Dr. Johnston informs me that he remained well to date, two and a half years later.

There is no disease neurasthenia. It is a syndrome representing an agent to be diagnosed. Some cases follow and illustrate this.

Case V. *Impotence and Neurasthenia from Hypoadrenia Due to Worry.*—A single man of 40, was referred to me by Dr. Bowen, in November, 1912. He was engaged to be married for six months, and was obsessed by a feeling that he was disqualified because of impotence.

Worrying about this reduced him so much that he lost his self-control, although he was no longer worried about that; the prospect of marriage in three weeks so horrified him that he no longer wanted to work; he wanted to go and hide. He had the belief that he "was down and out," and that he would lose his job as well. Telling his fiancée had not relieved him in the least, although she was most sympathetic. He had recovered from nervous indigestion some years ago until these troubles came. He had taken many drugs, including somnos. He was quickly fatigued after a short walk. His physician advised him to marry and go to Atlantic City, but he could not face it, being so "auto-suggestible," as he put it; all he could do was to hang around his boarding house, where his fiancée lived.

Examination showed exaggerated reflexes, small pupils, sunken eyes, very large, soft, weak pulse, without cardiac dilatation, pigmented abdomen, blood pressure 102 and 80. Psychic examination was most thorough, but it showed no important features, there being no night terrors, and the dreams, whether pleasant or unpleasant, not having pathological significance. He was prescribed adrenal gland, and wet packs to induce sleep. Three days later, not having taken the packs, the blood pressure was 100 and 80. The co-operation of his fiancée was enlisted; and his physician reports to me that he fully recovered and married, but I have not succeeded in ascertaining his present blood pressure.

Case VI. *Where Ophthalmology Failed.*—A professor of economics, aged 44, was referred to me by his oculist, Dr. Newell in March, 1913, because of headaches for three years, especially when tired after using his eyes. Twenty-one oculists in this country and in Europe had failed to relieve him. The internist had found nothing the matter with him. In addition to his headaches, he complains that at times his whole body is sore, especially the neck, and he often awakes with a pain over the sacrum, dull and heavy, radiating and intermittent, which may be removed for a time by a bath; there is no neuralgia and he sleeps well. It is significant that, though he says he cannot work because of the eyes, he easily tires also when read to. He was much worse since grip a month before.

History reveals scarlet fever when a sapho-

more, without kidney disease, followed by insomnia, which recovered while he was a school superintendent in the country. He has no cause for worry; his hygiene is excellent; formerly exercised much, but now does not feel like it, and loafs a great deal; has a lack of sexual desire.

Examination reveals a tired voice, exaggerated reflexes, great tenderness to pressure, atrophic state of skin and hair which he says is a family character. Blood pressure 114 and 78; no psychological phenomena.

Treatment.—He was ordered massage, active exercise in wood chopping, and adrenal substance, 4 grains, twice daily. In a fortnight adrenal was reduced to 2 grains. The only change was the hyperesthesia, which I attributed to the massage. After a month the voice was less tired, thinking and talking was easier, the muscles were stronger, headaches still easily provoked, and asthenopia was still marked; blood pressure was practically the same. The dose of adrenal was increased to 4 grains again. After this there was a general improvement, but the patient found that if he extended his work beyond four hours a day, he was totally unfit the following day; he was, however, doing a great deal of work in spite of this, even to completing a valuable work on the tariff in time for an insistent publisher; in this respect, he reminds one of Herbert Spencer, who had to limit his work to about four hours a day. During the last year (April, 1916), this patient has done the full work of an active professional man without further medication.

Post-Puerperal Psychosis from Hypoadrenia, with a Possible Psychogenetic Factor.—A woman, aged 38, was referred in February, 1914, by Dr. Cooper, of Hinton, W. Va., because of the puerperal psychosis which greatly accentuated spells of melancholy which she had had for some years. The analysis of these showed that she felt the burden of child-bearing which she wished to cease, but her husband was a hard man of rigid views. She was well developed and nourished, but food had no taste and she had lost interest in life; blood pressure was 112 and 84, and there was brown pigmentation of the linear alba, palate and forehead. She was placed at rest in hospital and massaged and given adrenal substance in a dose of 2 grains twice daily. In a week blood pressure had fallen to 106 and

86, and the following day to 90 and 64 respectively. Practically no rise occurred for ten days, when the dose of adrenal substance was doubled, whereupon there was an immediate rise of blood pressure, until it reached 118 and 94, where it steadily remained for a week even after she left hospital. After this she went home, and I am informed that she remains well, while the dose of adrenal substance has been reduced. She was very difficult to manage, as she desired to leave the hospital and return to her husband and was obstinately resistant to all reason to the opposite; this idea persisted even after her recovery.

Amnesia.—Loss of memory is often the first index of some neurological condition. To determine the source of this sometimes requires all available technique.

Case VII.—A woman of fifty, diagnosed as hysteric, is an example of organic aphasic amnesia. It is characterized by emotional distress and fear of insanity, due to the loss of power to express the thought in words, although the patient has the idea and can sometimes explain it.

This patient, even after ten minutes study, is unable, even with much questioning, to recall and relate the story of Noah Webster. She could answer questions intelligently if she could recall the words. She could read, but in writing, omitted words of which she was quite aware. If given a word she needed, it was immediately recognized. The condition was intermittent, but never normal. It was not a chronic intoxication, as metabolic treatment had no effect; nor was it a psychic case, as shown by its entire unamenability to psychotherapy, by lack of psychological cause, and by psychometric tests. I finally decided it to be due to cerebral necrosis from arterial defect, and therefore incurable.

Neuritis.—A most common error is a diagnosis of neuritis because of local pain, especially when increased by motion or pressure.

A case described before the Medical Society of Virginia in 1910 is here abstracted.

Case VIII. *Writer's Palsy from Psychasthenia.*—A young woman suffered from pain in the right arm, due to dragging upon the muscular attachments, caused by tension of the muscles from an occupational psychogenetic writer's cramp, of which she was cured.

In another case—referred by Dr. Barnes—

the pain (supposedly neuritic) in the shoulder of a young male stenographer was found to arise from a traumatic lesion of the connective tissues, including the subacromial bursa.

Local neuritis is an unusual disorder, except when the direct result of local trauma or infection. General infection or intoxication produces a general neuritis, the physical signs of which are well known and unmistakable. The attribution, without proper examination, of chronic local pains to neuritis, is as reprehensible as their attribution by the osteopath to a spinal displacement.

Tabes Dorsalis Must be Early Diagnosed.—A frequent error in diagnosis is the failure to detect early tabes. It may be stated in general that "rheumatism" for lightning pains, "asthenopia" for parietic strabismus, "gastric ulcer" for tabetic crises, and even "tuberculosis" for laryngeal crises and "cystitis" for tabetic bladder are not uncommon errors. The Wassermann serodiagnosis is of but little help, as forty per cent. of tabetics give a negative reaction.

Case IX.—Four years ago, with Drs. Judy and Wingerter, I saw a woman in West Virginia who had been treated six years for rheumatism at Clifton Springs and other places. She showed great loss of weight and strength, marked ataxia, almost complete loss of pain, vibration and attitude sense of the lower limbs, as well as loss of the tendon and pupil reflexes. She was recommended salvarsan and mercury against the opposition of several physicians. I saw this patient only last year and, although she has had only four periods of treatment of two salvarsans, and from four to six weeks of mercurial injections in each, she was perfectly well, at normal weight, save for the lost reflexes and a slight sensory loss in the tibial border of the feet, and she can work with enjoyment again.

THE PSYCHOSES* PROPER.

The second class of the functional diseases is purely psychogenetic, i. e., they are generated (from within or without) by impressions upon the sensory apparatus. These arouse and associate themselves with the stored-up impressions of other stimuli to form a psychological

unit known as "idea," whether accompanied by emotion or not.

Emotivity is not hysteria,—nor is capriciousness nor fantastical behavior or mere foolishness. The treatment of such symptoms as if they were hysterical is doomed to failure. Hysteria is, perhaps, the only disease of mental *causation* of which, the treatment must be purely psychological. It is essentially quite simple. The prevalent belief in its essential multiformity is an error accountable for the apparent difficulty of its therapeutics, which is in reality quite easy. The proof of this iconoclastic affirmation is afforded by the cases I have published elsewhere, and its theoretical basis, which we owe to Babinski, I have also set forth at length.

A common neurological error is the confusion of hysteria with psychasthenia, asthenic states and dementia precox. To general practitioners, such an error is excusable. But the frequency of the diagnosis of hysteria in cases of gross organic disease must be spoken of. This is particularly common in cases of cerebral neoplasm, especially of the frontal lobes. As I have said, peculiarity of humor is no criterion of hysteria; the symptoms of this are merely those produced by suggestion, and hence should make us look for some other cause and demand a thorough neurological examination. It is of supreme importance in cases of cerebral tumor that this examination should be made before the tension has so increased as to prevent co-operation by the patient, and before the focalizing signs have become masked by remote signs which will dominate and obscure the true picture.

Above all, it is important that patients exhibiting what is often loosely called hysterical behavior should be examined by a competent neurologist to ascertain if their peculiar conduct is really hysterical in mechanism or whether their peculiarities are not those of pseudo-hysteria from organic defect.

I cannot too often repeat that the diagnosis of hysteria should never be made by exclusion, but always, if possible, by its genesis, and if that is not possible, by the form of the syndrome exhibited,—by which is meant the inconsistency of the symptoms shown with those of the topographic arrangement or physiological groupings, characteristic of organic or functional disease arising in the body, as

*This word is not here used in the artificial sense adopted by alienists, but in its true sense of psychogenetic disorder.

against their consistency with functional groupings comprised under the psychological rubric "association of ideas."

The reverse error of diagnosing something else when the symptoms are exclusively hysterical is also quite frequent. The error is very common in regard to paralysis.

Knowledge of psychopathology is, of course, the remedy. This knowledge becomes dangerous when it leads to ignoring physical conditions in a case which is also hysterical. It must be remembered that the most frequent of all the suggestions of bodily disease is bodily disease itself. The removal of a hysterical fixed idea concerning the health is not enough in a patient when some physical condition also exists.

PSYCHOGENETIC CASES.

Case X.—*Paror Nocturnus*.—A girl of 16 who had been nervous for years was sent me by Dr. Litchfield, of Pittsburg. She would wake at night much frightened, unless some one slept with her. When small, she had heard terrifying stories from a servant. She had always been considered a weak child and was spoiled. Her father and aunt had been timorous children.

Examination revealed feeble reflexes, active on re-enforcement, pulse 104 (although patient said she was not excited). Heterophoria. Dancing and tennis did not tire her, although walking did.

She had no impairment of intellectual function. She dreamed of burglars or fires, whined (but did not scream) and woke frightened. She could not remember her first fear. She was sure there was some one in the house if she heard floors creak. Unless there was some one upstairs, she would not go to bed alone.

Analysis showed the fear to be, not of what the burglar might do, but of the unknown. Her written impressions showed that she could never remember having been left alone at night, since she so feared burglars.

Treatment.—She was given articles on the psychology of fear to read, and these were explained to her. She was also given exercise in mental concentration and urged to apply these to the study of her fears. The principle she was made to grasp was that fear and shame of her fears prevented her from facing and examining them, which was the essential prelimi-

nary to the understanding which would make them disappear. In ten days she returned home, not yet able to sleep alone, but beginning to obtain mastery. A month later, when awakened, she would quietly turn over and go to sleep without troubling any one, and was physically and mentally in better health than at any time in her life. She is still well two years later.

Case XI.—*Traumatic Neurosis*. (Dr. Gale of Roanoke).—A railway brakeman, after bruising his back by a fall from a car, remained very lame and seemed to lose the sensibility of his legs for six months. He was dyspeptic, yellow, emaciated, sleepless, depressed and lachrymose. Examination showed no destruction of nervous elements. Psychoanalysis showed the disability to be a function of the false idea that he *should* show such symptoms. One sitting began, and he himself completed the correction of the notion and returned to work in a month.

Case XII.—*Hysterical Hyperesthesia*.—Thought to be spinal disease. (Drs. Maphis and Hardin).—A woman of 28 had had a chill, followed by crying. Next day she felt very weak. The next she had pain in the knees, (she thinks only the left) with hyperesthesia, tenderness in the lumbar spine and, later, in the groin and hip. Six months later the pains recurred, accompanied by nausea.

Examination negative, except such hyperesthesia of both knees and one arm. Right abdominal reflex absent and right adductor exaggerated.

Although the case was psychogenetic, it was decided to remove the effects rather than to pursue psychoanalysis.

Treatment.—As approaching the knees set up spasm of the limbs, she was taught gradually to habituate herself to manipulation and pressure. Thus she was enabled to control spasm of the knee joint. She found that when the spasm ceased, so did the pain; whereupon her fear ceased also. When she was satisfied that she was in control, the mechanism was explained to her and she recovered in a week.

Case XIII. *Motor Spasm*.—(Dr. Martin). A man who had been treated for rectal ulcer, when he sat down would utter a series of barks, the trunk at the same time going into spas-

modic flexion. These attacks had begun suddenly in North Carolina, at 10 P. M., three months before. The significant fact was, that he had been eating sandwiches sent by his parents in Washington, and wishing despondently that he was there. He was also thinking about the treatment by intestinal lavage.

Treatment.—He was placed in a large chair, reclining, and showed how to deliberately contract the recti abdomini; also made to perform a series of respiratory movements. In a few moments he could contract either diaphragm or recti. He tried the exercise that night and declared himself "cured" in the morning. Two days later he relapsed but remained well after a second treatment.

METHODS OF TREATMENT—ERRONEOUS AND CORRECT.

Suggestive therapeutics, so much vaunted by some, I consider grave neurological error. Psychotherapy should be a constructive growth, built on analysis, and not a mere imposing of behavior on the patient through sidetracking his attention by electricity, hypnosis, joint manipulation or religion.

Electricity is frequently applied to patients with what is loosely called functional nervous disease. The procedure of the physician who does this has no better standing than that of the unqualified practitioner, whose existence we deplore. He forgets, if he ever knew, that the inadequacy of a patient's response to environment by means of his nervous system may originate from a bodily disorder the treatment of which has nothing at all to do with the nervous system. The apparent relief may even be due to suggestion.

Other typical examples of erroneous belief in empirical remedies and desire to neutralize symptoms are afforded by the notion that an excitable person should have bromides to meet the symptoms of excitability by a depressant; or that one feeling below par should be given stimulants—usually strychnine—although a moment's reflection should show the absurdity of treating by a purely spinal excitant an inadequacy of the higher neurones in a patient with lower neurone reflexes already exaggerated.

Finally, a serious neurological error is in sending a patient to a sanatorium for nervous diseases without knowing the class of treatment to be given. A proper diagnosis should first

be made. This will often obviate the procedure of sending the patient to an institution, and the stigma which may accrue.

Case XIV.—*Cure of a Suncide.*—(Dr. Barnes Hooe). A farmer's son, aged twenty-four, having tried to drown himself and taken laudanum, was sent to a sanatorium. After seven weeks there, he crushed and swallowed an electric light globe. Psychoanalysis showed that constant nagging by the family and others caused him to feel dispirited and ill. Being shy, he had for a year been solitary. He could not endure correction or suggestion. He felt shame at erotic fancies and masturbation, which he feared would injure his mind, having been teased by other boys; hence did not wish to live.

Treatment.—On explanation of the harmlessness of his onanism and means for overcoming his difficulties, he went home in two weeks and eventually recovered.

The conclusion of the whole matter is: observe and analyze before treating, especially in neurology, where the pitfalls are so many.

1705 N. Street.

Analyses, Selections, Etc.

The Starvation Treatment of Diabetes.

Of the important contributions to recent medical progress, none is more interesting to the internist or holds out more promise of relief to suffering humanity than the starvation treatment of diabetes, as inaugurated and practiced by Dr. Frederick M. Allen, of the Rockefeller Institute Hospital. If the results of this treatment, as furnished by Dr. Lewis Webb Hill, together with a series of graduated diets, as used in the Massachusetts General Hospital, are as successful in the hands of others, a distinct advance has been made in the therapeutics of diabetes mellitus. The plan of treatment is simplicity itself. As it has been employed with so much success at the Massachusetts General Hospital, it cannot help but be of more than passing interest to our readers. To insure success, the physician must think in grams of carbohydrate and proteid. It is not enough to cut down the supply of starch foods; he must know exactly how much carbohydrate and proteid food the patient is receiving each day. As practiced at

the Massachusetts General Hospital, the details are as follows:

For 48 hours after admission, the patient is kept on ordinary diet, in order to determine the severity of his diabetes. Then he is put to bed, and no food allowed, except whiskey and black coffee. The water intake need not be restricted. The whiskey is given in the coffee, one ounce of whiskey every two hours from 7 A. M. to 7 P. M. This diet furnishes roughly about 800 calories. Sodium bicarbonate, two drachms every three hours, may be given if there is evidence of acidosis, as indicated by a strong acetone or diacetic acid reaction in the urine. In most cases this has been found unnecessary. Those who have practiced this severe reduction in diet have noticed no evidence of impending coma. Heretofore, a severe reduction in diet in diabetics was looked upon askance, and was dreaded as the possible precursor of coma. Therefore, this observation that diabetics will tolerate starvation without ill-effects, is most important. The patient is kept in bed and on the above diet until he is sugar free, the sugar usually disappearing from the urine in two to three days; seldom does it take longer. Dr. Hill states the patients withstand starvation remarkably well, and in no case has he seen bad effects from it. As soon as the patient is sugar free he is allowed to get up and is placed upon a diet of vegetables containing 5 per cent. carbohydrate. A moderate amount of fat in the way of butter can be given with this diet, if desired. The first day after starvation, the carbohydrate intake should not be over 18 grams. Then, according to the behavior of the patient, the proteid, fat and carbohydrate diet is gradually raised, always bearing in mind that an excess of proteid is an important factor in causing glycosuria. If sugar appears in the urine during the raising process, drop back to a simpler diet. If this proves unavailing, repeat the starvation process and raise the diet more slowly. The author definitely states if the diet is raised very slowly, sugar will not reappear. If the patient is taking a fair diet and is doing well without any glycosuria, it is not desirable to raise the diet any higher than proteid 50, carbohydrate 50 and fat 200 grams. The essential points brought out by Allen are:

It is not dangerous to starve a diabetic, and

two or three days of starvation almost always make a patient sugar free.

After starvation the diet must be raised very slowly.

An excess of proteid must be regarded as capable of producing glycosuria.

It is not desirable for all diabetics to hold their weight.

Although this treatment has only been in existence slightly over two years, it apparently has yielded those who have tried it far superior results than the old methods of treating diabetes mellitus. It is yet too early to forecast the permanent effect of such a diet, but it does appear that a substantial advance in the treatment of diabetes has been made, and we give it to our readers for a trial.—(*Editorial, Maryland Medical Journal, March, 1916.*)

Editorial.

Typhoid Fever Reduced in Rural Communities.

Reduction in typhoid fever and improvement in sanitary conditions have followed the intensive investigations of rural communities carried on by the United States Public Health Service in co-operation with local and State health officers, according to the annual report of the Surgeon General of that Service. During the past fiscal year, 16,369 rural homes in eight different states were visited and many of them re-visited. In each of these homes information was obtained as to the prevalence of disease and insanitary conditions and a complete sanitary survey of the premises conducted. This was followed by re-inspections to determine if remedial measures had been instituted. In but a relatively small percentage of the cases did the persons concerned, after having their attention drawn to the danger of a particularly unhygienic condition, fail to inaugurate corrective measures. Stimulus was given to the work by means of public lectures, the formation of active sanitary organizations, and the enlisting of all public spirited citizens in the campaigns for reform. Public buildings were also inspected and local authorities were given expert advice in solving such sanitary problems as the disposal of excreta, the prevention of soil pollution, and the maintenance of pure water supplies.

The surveys made during the year 1914 had shown that in rural communities less than one per cent. of the homes had sanitary toilets and that more than fifty per cent. of the people were using water from polluted sources. Following these studies and as a result of the interest aroused, the typhoid fever rate, an excellent indicator of the sanitary status of a community, has in some places frequently been cut to one-quarter of its previous figure. In a West Virginia county, the cases of typhoid fever were reduced from 249 to 40 in one year, while in one county in North Carolina there was a reduction of the cases from 59 to 17.

The tangible results of operations in rural sanitation indicate that marked advancement in maintaining hygienic and satisfactory surroundings in country districts is possible by the application of the common principles of preventive medicine. Insanitary conditions exist largely because they are not known to be such.

The Fauquier County (Va.) Medical Society

Met at Marshall, March 7, at which time papers were read by Drs. Roy K. Flannagan, of the State Health Department; John A. Gibson, Leesburg, and J. J. Lloyd, of Catawba Sanatorium. The following is a list of officers of the Society:—Dr. Samuel W. Maphis, Warrenton, president; Dr. Phil. C. Riley, Markham, secretary, and Dr. Morton G. Douglas, Warrenton, treasurer.

The Lynchburg and Campbell County (Va.) Medical Society

Held its regular monthly meeting in Lynchburg, March 6, Dr. E. W. Peery, presiding. The secretary, Dr. Bernard H. Kyle, was at his desk. Dr. R. P. Kelly read an interesting paper on "Blood Examination as an Aid to Diagnosis." The Society is looking forward with a great deal of pleasure to the coming of Dr. Manfred Call, Richmond, on April 3. The subject of his address will be announced later.

The Southside Virginia Medical Association

Held its regular quarterly meeting in Petersburg, March 14, with a good attendance. An interesting scientific program was followed by supper at the Jefferson Hotel, that city, given by the president of the Society, Dr. H. A. Burke, Petersburg.

Dr. Gale Honored by Roanoke Doctors.

On March 1st, the fiftieth anniversary of

the year in which he began the practice of medicine, the Roanoke Academy of Medicine and Surgery presented Dr. Joseph A. Gale with a beautiful silver loving cup, in token of their esteem for him. The inscription on the cup is as follows:

"Jubilee token to Dr. Joseph A. Gale from the Roanoke Academy of Medicine. 1866-1916."

As Dr. Gale was prevented from attending the meeting, Dr. Allen J. Black, of Hollins, was appointed to make the presentation at a later date.

Dr. Gale, one of the most prominent of Roanoke's physicians, has, for many years been chief surgeon of the Norfolk and Western Railway. He was among the pioneer citizens in that place, having moved to Roanoke in 1883.

Dr. C. C. Coleman

Has been appointed to the Virginia Hospital Staff, this city, by the Administrative Board, upon recommendation of the board of trustees of the Medical College of Virginia.

Dr. O. L. Watkins,

Of Rustburg, Va., recently suffered some severe burns, especially about the face and hands, when his clothing caught fire while filling his automobile tank with gasoline. At last accounts, he was improving.

Dr. E. C. Levy,

City health officer of Richmond, has been invited by Asst. Surg.-Gen. W. C. Rucker, U. S. P. H. Service, to read a paper in the symposium on "Municipal Health Administration," before the section on Preventive Medicine and Public Health, of the American Medical Association, at its meeting in June at Detroit, Mich.

Dr. James B. Abbitt,

Appomattox, Va., went to Franklin the middle of March to join his brother, both going from that place for a visit to Florida.

Married—

Dr. Roy F. Williams and Miss Harriett I. Booth, both of Christiansburg, Va., March 9.

Annulment of Marriage Because of Disease Not Always Permissible.

Public Health Reports, for March 17, 1916, cites a case where a woman sought annulment of her marriage because her husband had concealed from her the fact that several members of his family were suffering with insanity.

The case was brought to the New Jersey courts, and it was decided that, "in the absence of a statute, courts could not annul marriages for fraud in concealing disease except when the disease was of such a nature as to render contact seriously dangerous to the other party to the marriage."

Dr. Charles C. Tennant

Has returned to his home in Charlottesville, Va., after a visit to friends in this city.

Hospital for Williamsburg.

It is announced that a model hospital is shortly to be built at Williamsburg, Va. Members of the faculty of the Medical College of Virginia will be on the hospital staff, although local physicians will have the privilege of treating their own patients there.

Dr. D. F. Dinsmore,

Who for a number of years was a successful practitioner in Lynchburg, Va., has retired to his old home in Alabama, on account of ill health.

Drs. Cary and Willis

Announce the opening of their laboratory for Wassermann tests, etc., in suite 622 MacBain Building, Roanoke, Va.

Appointed to Naval Academy.

Cyril E. Burke, son of Dr. Joseph M. Burke, Petersburg, Va., a prominent doctor of this State, has received the appointment as cadet from his district to the Naval Academy, at Annapolis.

The Medical Society of the State of North Carolina

Is to hold its annual meeting in Durham, April 18-20, under the presidency of Dr. M. H. Fletcher, of Asheville. Dr. Benj. K. Hays, of Oxford, is secretary.

Segregation of Feeble Minded Provided by State.

At the closing session of the General Assembly of Virginia, Senate Bill No. 147, approved by the Committee on Asylums and Prisons, to define feeble-mindedness and to provide for the examination, legal commitment, custody and care of feeble-minded persons, and their segregation in institutions, was passed after brief debate, by a vote of 48 to 6.

Dr. Samuel J. Mixter,

A prominent surgeon of Boston, Mass., and his wife, have been recent visitors at the home of Dr. George Ben Johnston, this city.

Dr. and Mrs. Thomas G. Burke

Have returned to their home in Roanoke, after a visit to Richmond.

Hospital Burned.

A fire, started from a defective flue on March 20th, destroyed the private hospital of Dr. S. W. Pryor, of Chester, S. C. All patients were taken out safely. The loss, estimated at \$100,000, was covered by insurance.

Dr. F. E. Harrington,

Assistant epidemiologist with the U. S. Public Health Service, was early this month sent to Tuscaloosa, Ala., for duty in connection with studying rural sanitation.

Dr. John W. Dillard,

Of Lynchburg, Va., is spending the month of March in California.

The South Carolina Medical Association

Is to hold its annual meeting in Charleston, April 18-20, under the presidency of Dr. G. A. Neuffer, of Abbeville. Dr. E. A. Hines, of Seneca, is secretary. The following physicians have accepted invitations to give the addresses in Medicine, Surgery and Pediatrics, respectively: Drs. L. F. Barker, of Johns Hopkins; William J. Mayo, of Rochester, Minn.; and Maynard Ladd, of Harvard.

Dr. and Mrs. A. Murat Willis,

Of this city, recently spent some time visiting at Pinehurst, N. C.

Dr. Hubert A. Royster,

Raleigh, N. C., is to deliver the address before the graduating class of the U. S. Naval Medical School in Washington, next month.

Dr. A. C. Sinton, U. S. N.,

Who is at present stationed on a ship at Norfolk, was a recent visitor to his former home in this city.

Dr. and Mrs. E. W. Peery,

Lynchburg, Va., visited Roanoke about the middle of the month.

Dr. and Mrs. H. Grant Lind,

Of Low Moor, Va., were recent visitors at White Sulphur Springs, W. Va.

The Field Hospital Camp, U. S. A.,

Will be held this year at Tobyhanna, Pa., July 20-30, at which time instruction will be given by prominent army surgeons in the medical care of wounded troops. The Field Hospital Company from East Radford will represent Virginia on this occasion.

Dr. E. R. Hart

And family have returned to their home in Suffolk, Va., after a visit to Florida.

Mr. J. R. McCauley.

Former students of the Medical College of Virginia will be interested in noting that Mr. McCauley, secretary of that College, has been re-elected presiding officer of the Richmond lodge of the Loyal Order of Moose.

The American Association of Medical Jurisprudence

Is to hold its next meeting in Washington, D. C., May 6, Dr. D. Percy Hickling, of that city, presiding.

Dr. Randolph Winslow,

Baltimore, is shortly to be honored with a dinner in commemoration of his having served for twenty-five years as professor of surgery in the University of Maryland.

The Retreat for the Sick, Richmond.

In its annual report, stated that 968 patients were received there during the year and 2,662 days of free treatment and board were given. Seventy-five physicians and surgeons practised in the hospital during the year.

Measles Epidemic in Lynchburg.

Measles was declared epidemic in Lynchburg, Va., on March 14, sixty-eight cases having been reported within a few days, within the city limits. This disease is also rather prevalent in Richmond and Petersburg.

Dr. Frank Lord,

Of Highland Park, this city, visited Washington, on business, about the middle of the month.

Dr. D. D. Talley,

Of Richmond, spent a short time in Georgia, early this month.

Hospital for Tropical Diseases.

The cornerstone has recently been laid at Calcutta for a hospital for tropical diseases. This is the first institution of its kind to be established in the tropical portion of the British Empire.

Dr. Alvah S. Hudson

Has returned to his home at West Point, Va., after a short visit to Gloucester, Va.

Ambulance Corps to be organized in Lynchburg.

Drs. Adkerson, Kelly, Ligon, Plunkett and Rosenthal, of Lynchburg, Va., are interested

in the organization of an ambulance corps, to be identified with the Virginia military. Enlistments are being made and as soon as a minimum of forty-three has been secured, the organization will make formal application to be mustered in.

The Professional Building Corporation,

Richmond, with Dr. L. T. Price, president, Dr. Douglas VanderHoof, vice-president, and Dr. Karl Blackwell, secretary-treasurer, has been granted a charter by the State Corporation Commission. The company has a capital of \$100,000, and, as previously stated, purpose to erect a seven-story office and professional building at the southeast corner of Franklin and Fifth Streets, this city.

Dr. and Mrs. H. H. Levy,

Of this city, were recent visitors to New York and Philadelphia.

Sanatorium for Colored Consumptives.

The recent appropriation made by the General Assembly makes possible the erection of a tuberculosis sanatorium for colored people in this State. Colored people of Virginia and the State Anti-Tuberculosis Association had already raised about \$4,500 to aid in purchasing a site. Only a limited number can be cared for at first, but it is planned to increase accommodations as soon as possible through both public and private funds. Work will be commenced on the sanatorium at an early date.

Medical Journals Combine.

The American Journal of Gastro-Enterology has combined with *The Proctologist* and hereafter will be published (beginning with the March number, first of year) as *The Proctologist and Gastroenterologist*, from St. Louis. Dr. Lewis Brinton, Philadelphia, and Dr. Anthony Bassler, New York, will have editorial charge of Gastroenterology; Dr. A. L. Benedict, Buffalo, editor of Dietetics; Dr. Rollin H. Barnes, St. Louis, will be managing editor and publisher.

Dr. Harry B. Stone,

Of Roanoke, Va., attended the American Otolological Society, meeting in New Orleans, La., March 3 and 4.

Capt. Lee R. Dunbar,

Of the Medical Corps, U. S. A., has been ordered to Ft. Myer, Va., for duty at that post.

Course of Lectures.

Columbia University, College of Physicians and Surgeons, New York City, announces a course of six lectures on Military Administration, Medicine and Surgery to be given at that College on Tuesdays at 5 P. M., beginning March 28. These lectures will be open to the general medical public as well as to the students of the College.

Dr. Thomas D. Merrick

Has returned to his home in this city after spending several weeks in Philadelphia.

Dental School for Columbia University.

Realizing the importance of teeth and mouth infections to systemic diseases, the faculty of the College of Physicians and Surgeons of Columbia University have unanimously voted to establish a dental department in connection with the medical school. It will have the first four-year dental course given in New York State.

The U. S. Civil Service Commission

Announces open competitive examination for Chief Statistician for Vital Statistics, at a salary of \$3,000 a year, on April 25, and for Assistant Physicist (qualified in spectroscopy), at a salary ranging from \$1,400 to \$1,800 a year, on May 3. These examinations are open to men only. For detailed information address the above Commission at Washington, D. C.

Do You Know That

Four per cent. of the inhabitants of certain sections of the South have malaria?

The United States Public Health Service has trapped 615,744 rodents in New Orleans in the past 18 months?

The careless sneezer is the great grip spreader?

Open air is the best spring tonic?

Typhoid fever is a disease peculiar to man?

Measles kills over 11,000 American children annually?

There has not been a single case of yellow fever in the United States since 1905?

For Sale—Unopposed country practice in Tidewater Virginia. First class location; nearest physician 10 to 12 miles. Will rent or sell property, including ten-room house

and 39 acres of land. All necessary out-houses in good condition. Write at once. Satisfactory reasons for leaving. *Address No. 55, care Virginia Medical Semi-Monthly.*

Obituary Record.

Dr. William L. Rodman,

President of the American Medical Association, died at his home in Philadelphia, March 8, after a short illness with pneumonia. He was a native of Kentucky, having been born in Frankfort a little more than 57 years ago. Upon completion of his academic education, he took up the study of medicine at Jefferson Medical College, Philadelphia, from which he graduated in 1879. For thirteen years he was connected with faculties of Louisville medical schools until he was called to the chair of surgery at the Medico-Chirurgical College, Philadelphia, in 1898. He was identified with numerous medical societies and was a surgeon of recognized ability and prominence. He was much interested in the cancer campaign being conducted throughout the country and had written largely on this and other surgical subjects. His wife was a daughter of Dr. J. Q. A. Stewart, of Frankfort.

Dr. Robert H. Hoge,

A prominent physician of Giles county, Va., died at his home at Hoge's Store, March 7, aged 65 years. A native of Montgomery county, Va., Dr. Hoge received his medical education at the College of Physicians and Surgeons, Baltimore, graduating in 1873. He was for a number of years chairman of the Board of Health of Giles county. His widow and four children survive him.

Dr. Bernard Wolff,

Of Atlanta, Ga., died March 14, following an operation at a hospital in that city. Dr. Wolff was a native of Virginia, having been born in Prince Edward County, 48 years ago. He received his medical education at the University of Virginia, from which he graduated in 1888, later studying abroad. Dr. Wolff was one of Atlanta's leading physicians and a prominent dermatologist, being professor of this branch at the Atlanta Medical College. He is survived by his wife and three children.

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(APRIL 1915—MARCH 1916, INCLUSIVE)

VIRGINIA MEDICAL SEMI-MONTHLY

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